BOOK TWO

cially radiated RF flux fields to enable the detection circuit of Figure (3) to operate as a viable motion detector system.

CONCLUSIONS

Due to the sensitivity of this motion detector and its broad frequency response, the experimenter might experience some 'false alarms' from strong locally radiated pulsed signals such as CB's, police radios, taxicabs, mobile telephones, etc.; however, the author, located in a densely populated urban area, has not experienced many of these false signals. Most of the responses appeared to have been genuinely generated by motions in the vicinity of the detector.

The experimenter should find the performance of this detector interesting. For example, the author was able to determine the sex of the 'intruder' from the gait of the motion detector response. It appears that the gait of women walking is more 'bouncy' than that of men walking. Moving vehicles such as cars did not seem to affect this detector as much as the rapidly moving planes in the sky. The sensitivity of the detector must be reduced so that movements such as cars and planes do not affect the alarm circuitry. Yet sufficient sensitivity can be retained to maintain a viable intrusion alarm for a radius of 30-50 feet.

Sufficient information has been given in this article to enable the interested experimenter to explore and develop for himself a useful intrusion alarm or just have some fun figuring out what is being detected at the moment. In addition, the experimenter could also explore the 1/f type gravitational 'wave' signals present at the meter output of the circuit of Figure (3). In general, AC coupling should be used and movement in the area avoided or the motion pulses will modulate (swoosh) the signals.

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References

(1) G. Hodowanec, "Are Cosmological Effects the Source of 1/f Noise in Electron Devices?", Unpublished Short Paper, June 1981.

(2) G. Hodowanec, Rhysmonic Cosmology, August 1985.

(3) G. Hodowanec, "Complementary JFETS Form Bimode Oscillator", ELECTRONICS, October 30, 1975.

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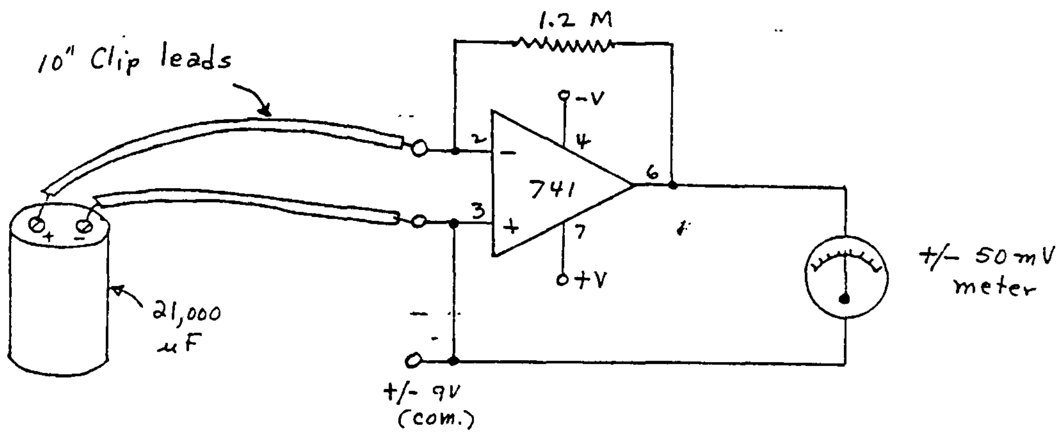

Figure (1) - Original Motion Detector Circuit.

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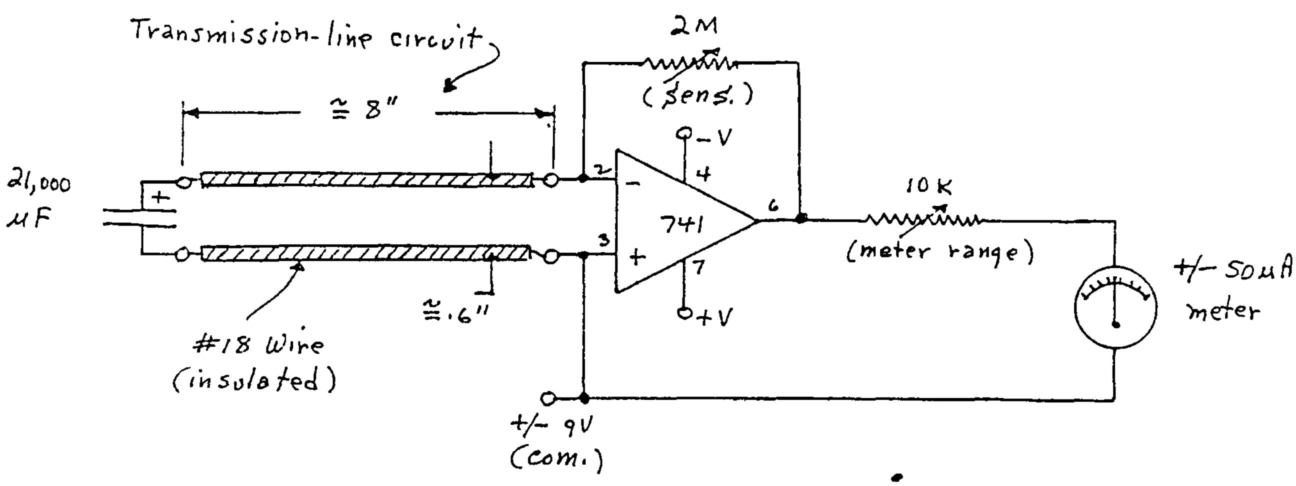
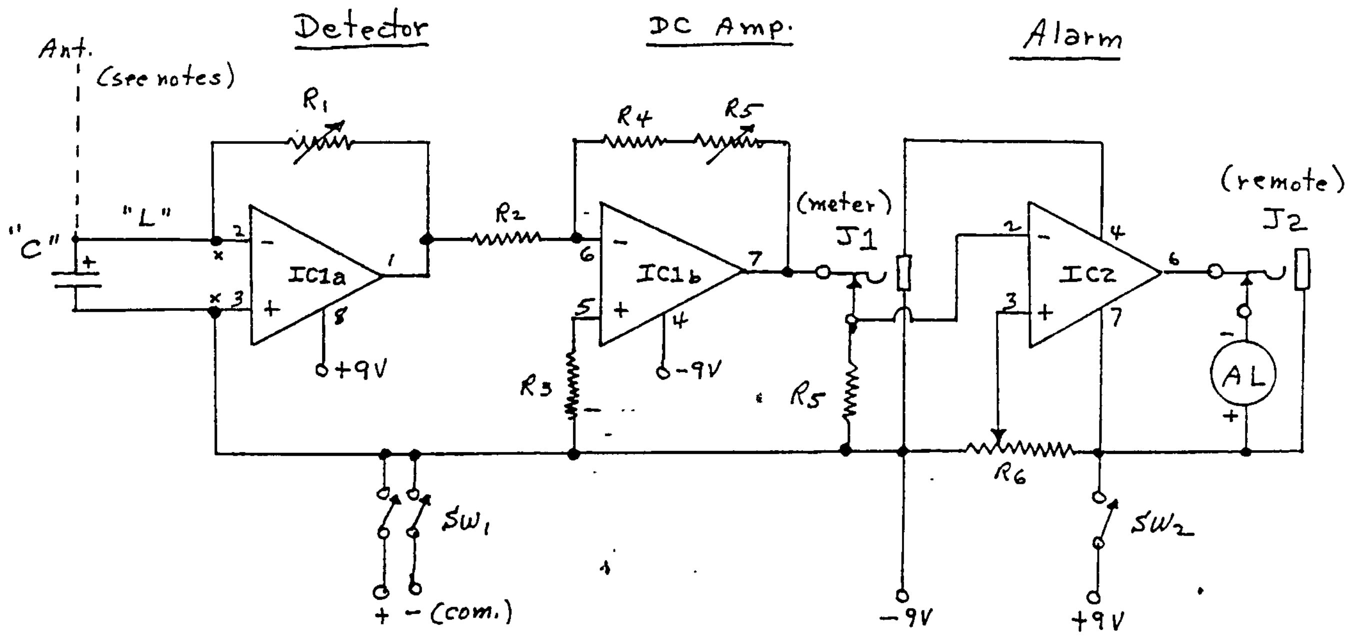


Figure (2) - Improved Simplest Motion Detector Circuit.



Parts List:

"C" and "L"	- Transmission-line circuit (See Fig. (2)).
R_1	- 2M potentiometer (sensitivity control).
R_2, R_3, R_4, R_5	- 100k, 1/4 watt
R_5	- 1M potentiometer (gain control).
R_6	- 100k potentiometer (alarm threshhold control).
J_1, J_2	- Miniature, 2-conducter, closed circuit jack).
SW_1	- Miniature, DPST switch.
SW_2	- Miniature, SPST switch.
AL	- Piezo Buzzer (Radio Shack 273-065).
IC1	- Type 1458 op-amp.
IC2	- Type 741 op-amp.

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Construction notes:

(1) Construction in a small plastic experimenter's box is recommended. Bring out the input leads of ICla (at points x-x) to a properly spaced pair of pin jacks. The transmission-line circuit ("C" and "L") should be external and connected to the pin jack inputs. Keep this line away from any ground planes.

(2) Separate power supplies are shown for the detector and the alarm circuits. This allows for individual use of either the meter circuit or the alarm circuit.

(3) For added sensitivity, a short vertical wire antenna (10 to 20 inches in height) may be connected to the positive terminal of "C", or to the casing of this capacitor.

Figure (3) - Practical Motion Detection Circuit.

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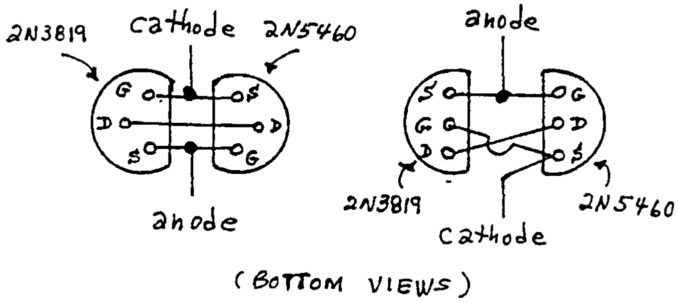
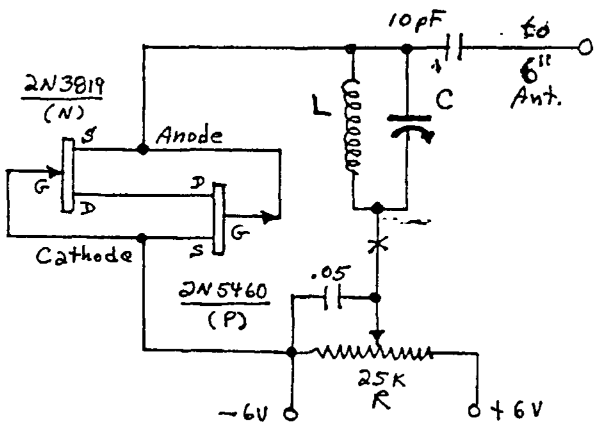


NOTE: The experimenter should verify the package pin-outs for the FET device he uses. As can be seen here, the pin-outs vary with the particular package used.

(a) FET's wired as lambda diode units.



Notes

L : 4 turns, .20" ID x .20" long, #24 wire.

C : ≅ 2-25pF

Fet's usually can be placed side by side and the device leads soldered together to form a compact λ-diode (as shown in a above).

(b) Simple Negative-resistance Oscillator Circuit.

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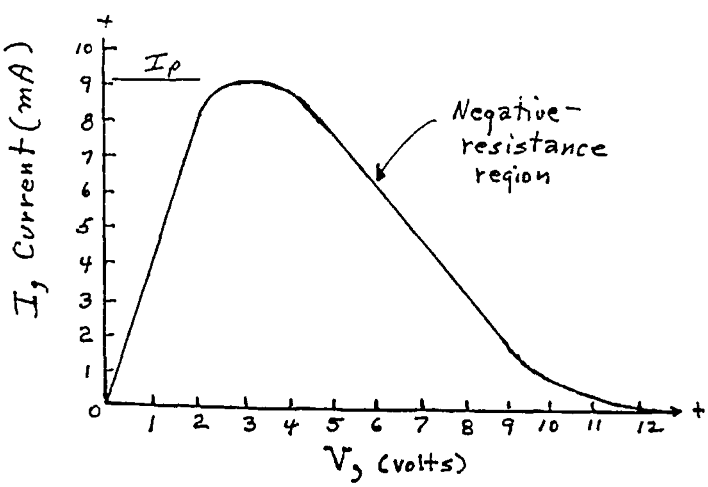

Notes

Fet's and thus the diodes vary in characteristics. Ip generally ranges between 3 & 9 mA.

Diodes should be biased in the center of the linear range to avoid the possible generation of harmonic content.

(c) I-V Characteristics of Diode in (b) above.

Figure (4) - Simple Low Power Oscillator Suitable for use in the FM Frequency Band.

OPERATION AT OTHER FREQUENCIES

Another source of a strong, but amplitude modulated RF flux, is that provided by TV stations. The strongest modulation in these signals is the blanking pedestal signals at about the 60 cycle rate. This could be high enough in rate so as not to show up more than a slight 'fluttering' of the output signal in the detector, probably just above the level of the 1/f GW signals (which are always present and cannot be eliminated). The long time-constant of the 'ringing' used in the motion detectors discriminates against such signals but they will be heard if an audio amplifier is inserted in the meter jack of the circuit of Figure (3).

This evaluation is facilitated when the test circuit is fabricated as shown in Figure (5a). The circuit of Figure (3) is contained in a plastic experimenter's box (shown is the author's arrangement), but the transmission-line is kept external and thus is readily adjustable in length. Approximate line lengths as a function of RF frequency are given in Figure (5b). While the author has not evaluated the TV frequencies, those experimenters who lack a strong FM signal but possibly have a strong TV signal in the area, might want to look into this potential.

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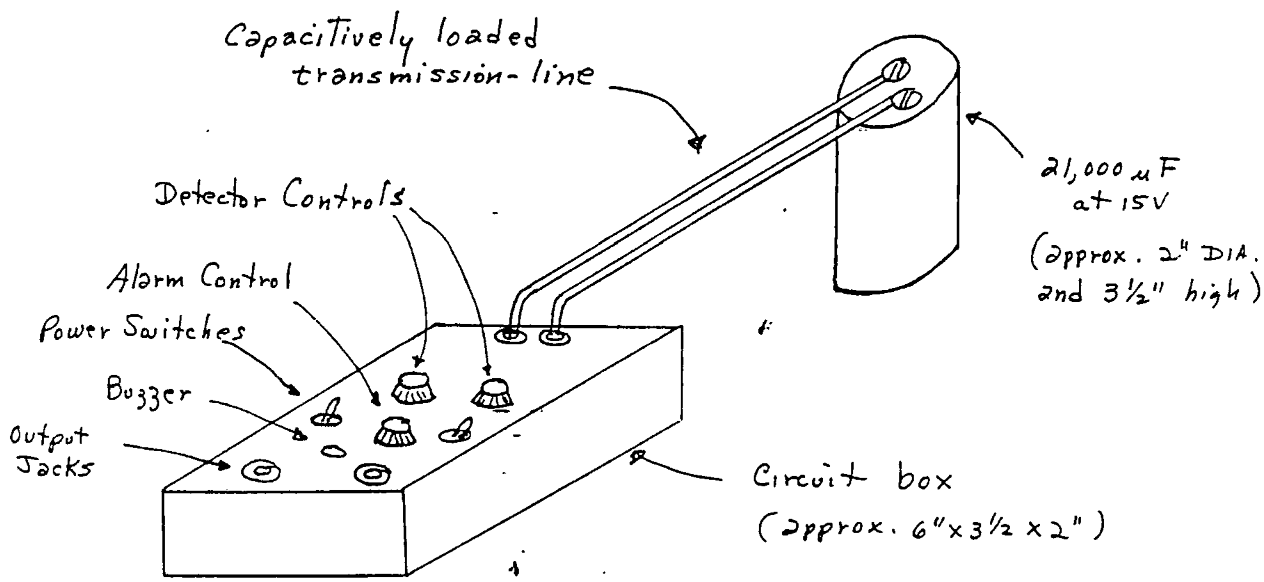

(a) Author's Prototype Set-up.

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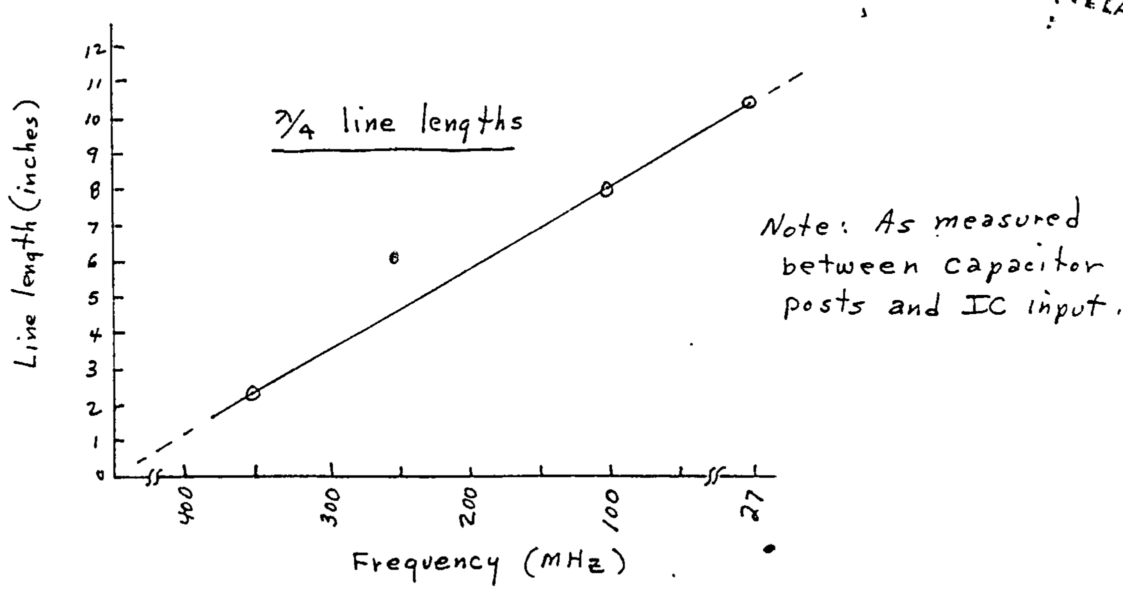

(b) Approximate resonant line lengths.

Figure (5) - Experimental Motion Detector Prototype.

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STOP pulse. Meanwhile the cycle counter passes to states 2 through 10.

The next clock puts the cycle counter into state 11, but the gate detects this and clears the BUSY flip-flop. This in turn raises the READY line, resets the cycle counter, and puts the shift register back into the LOAD mode. Thus, the transition from state 10 to the READY mode proceeds asynchronously within a few nanoseconds. During this transition the shift-register output remains high because a logic 1 is loaded from the V_{CC} line.

Transmission at 10 characters per second results if a new character is provided within one clock period (9.09 ms) of this READY indication. Even if a new character is received immediately, however, the output will remain at 1 and transmission will not begin until the next clock. This insures a minimum stop pulse duration of two clock periods. If no character is received, the converter will wait in the READY mode indefinitely.

The following modifications adapt the circuit to the Baudot code. Delete the left-hand 74165, and connect the SI and A inputs of the right-hand 74165 to V_{CC}. Then replace the 7410 gate with a 7404 inverter driven off the 7493's D output (the A output now connects only to B_{in}; B and C outputs are left with no connection). □

Complementary JFETS form bimode oscillator

by Gregory Hodowanec
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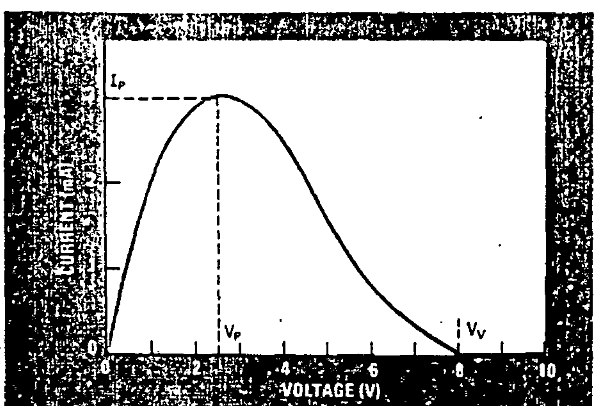
A complementary pair of junction field-effect transistors can be interconnected to form a negative-resistance two-terminal device, which makes a simple oscillator. In monolithic form this configuration is called a lambda diode [*Electronics*, June 26, p. 105] and is available with a wide range of characteristics. If two discrete JFETs are connected to make the diode, they do not have to be matched, but can be chosen to provide various values of peak current and negative-resistance-voltage range. Figure 1 shows current as a function of voltage for a combination consisting of an n-channel 2N3819 and a p-channel 2N5460.

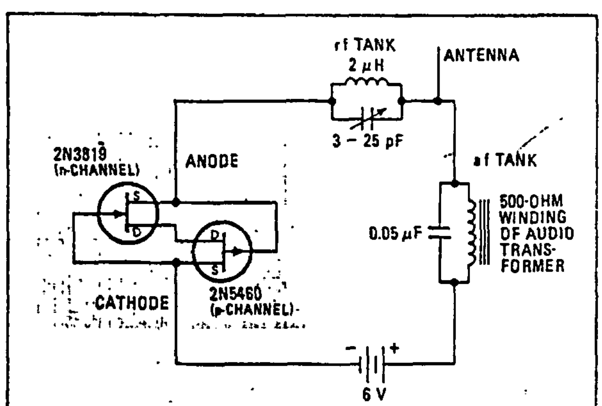
The JFET "diode" can be made to oscillate at frequencies ranging from audio to vhf. All that is required is to connect the diode in series with an inductance-capacitance tank circuit and supply a bias voltage in the negative-resistance region. Figure 2 shows a simple bimode oscillator circuit capable of oscillating at both audio and radio frequencies simultaneously. Oscillation is at approximately the natural resonances of each tank circuit. The radio-frequency tank, consisting of a 2-microhenry choke shunted by a trimmer capacitor, can be tuned over a wide range centered near 20 megahertz. The audio section uses the 500-ohm winding of a miniature audio output transformer and a 0.05-microfarad ceramic capacitor for oscillation at approximately 440 hertz. The audio section cleanly amplitude-modulates the rf section, as demonstrated by reception of the radiated signal on a communications receiver. Power output is in the order of 25 milliwatts and the signal has a range of several hundred feet with no antenna on the oscillator. The range can be extended to several thousand feet with a short length of antenna, so a form of this oscillator can be adapted to radio-control appplications.

This circuit can be used as a simple signal source for many experimental purposes. The audio section can be eliminated or shorted out if an unmodulated signal is desired. The circuit can also be adapted to any design requiring a low-level signal source. Variable frequency control can be incorporated at either or both frequency levels. □

Designer's casebook is a regular feature in Electronics. We invite readers to submit original and unpublished circuit ideas and solutions to design problems. Explain briefly but thoroughly the circuit's operating principle and purpose. We'll pay $50 for each item published.



1. Negative resistance. Current-voltage characteristics are shown for a "diode" consisting of the arrangement of the two complementary JFETS shown in Fig. 2. For any terminal voltage between 2.5 V and 8 V, the combination has a negative resistance.



2. Bimode oscillator. JFET-combination "diode" and two tank circuits can oscillate at audio frequency and radio frequency simultaneously. Resultant signal is rf modulated by af; either component can be varied for communications or control applications.

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A NOVEL SIMPLE AUDIO OSCILLATOR CIRCUIT

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ABSTRACT

A simple audio oscillator circuit which is 'energized' by gravity 'wave' signals is described. A relatively pure and constant sine-wave output is available over a wide frequency range. The unit can be constructed in a small aluminum enclosure with self-contained battery supply and thus is suitable for portable use. A square-wave output can be made available, if desired.

Introduction

There are many audio oscillator circuits available to the experimenter, some simple, and some quite complex, depending upon the requirements desired of this oscillator circuit. Described here is a very simple and novel audio oscillator circuit which depends for its operation on gravity 'wave' signals which are always present in this universe. (See R-E, -----?). The circuit is capable of developing a rather pure sine-wave output over the range of about 50 Hz to about 20 kHz, as well as a square-wave version of this output. The audio output is fairly constant over this frequency range, and thus could be adapted to swept-frequency use. The unit operates very well off a single nine volt battery (a +/- nine volt supply is preferable) and thus is easily adapted to portable operation.

How It Works

Shown in Figure (1) is the simplest version of the gravitational 'wave' detector as developed by the author.[1,2] In essence, this is a 'ringing' circuit in which damped audio oscillations are established in the input circuit of C_1 and R_f (with the presence of some stray inductance) and with the aid of gravitational impulse currents developed in the input capacitor, C_1. In general, the decay time for these damped oscillations are affected by the stray capacitance, C_2 , in the output circuit. Most IC devices and circuits introduce sufficient output capacitance to yield reasonable decay times, but in some instances, it may be necessary to introduce an additional small external capacitor for optimum gravity signal detection. For example, if C_1 is made .22 uF and R_f is 1.5 megohms, the natural frequency of oscillation (damped) would be in the order of 500-600 Hz. While most circuits may perform adequately without any external output capacitance, some circuits may require up to about .05 uF of external capacitance, C_2 , in order to have sufficient 'ringing' time for proper gravity wave signal detection. However, too much output capacitance will result in much longer decay times and thus sustained oscillations which will be maintained by the continual gravity signals (impulses) present in capacitor, C_1 . For example, in the above illustration, where C_1 is about .22 uF, C_2 is also generally made about .22 uF for sustained oscillations, ~~but~~ could be made as high as 1.0 uF or more! The inclusion of C_2 , which forms sort of a 'tank' circuit for the input oscillations, has only a second order effect on the frequency of oscillation, and should be selected on the basis of best output waveform for the frequency range of interest. For example, with C_2 in the order of .22 uF, and C_1 equal to 1.0 uF and R_f a 2.5 megohm potentiometer, the frequency range will be about 250-750 Hz with good output waveforms. With C_1 changed to .1 uF, the frequency range will now be about 750 Hz to 2.3 kHz, also with good waveforms. Since the oscillations are sustained by gravitational impulses from strong nova 'bursts', which have a natural resonant frequency of about 1 kHz, the oscillations of this circuit appear to be limited to about the 'capture range' frequency of about 50 Hz to 20 kHz.

Practical Circuits

Shown in Figure (2) are the simplest practical circuits for use in the frequency range of about 200 to 600 Hz. The circuit in (a) uses a dual nine volt supply and has about 10db more output than the circuit of (b) which uses a single nine volt battery. Only sine-wave outputs are available in these circuits.

A more useful circuit for sine-wave output is shown in Figure (3). The input capacitor is made adjustable for an extended frequency range, and the output is buffered with a unity gain amplifier stage for improved stability and waveforms. Approximate values for the input capacitors are given below:

Capacitor	Value	Frequency Range
C_1	5.0 uF	60 - 250 Hz
C_2	1.0 uF	250 - 750 Hz
C_3	.1 uF	750 Hz to 2.3 kHz
C_4	.01 uF	2.3 - 7.0 kHz
C_5	.001 uF	7.0 - 20 kHz

It may be necessary to experiment with the value of C_6 for best waveforms over this complete range.

Shown in Figure (4) is a modified circuit which is capable of both sine-wave and square-wave outputs. The unity gain amplifier is replaced by an inverting amplifier stage having a gain of about 10. An additional potentiometer, R_6 , is included to control the input levels to this amplifier stage. For sine-wave output, this control is set below the 'clipping' levels of the amplifier stage. For square-wave outputs, the control is set above overdrive levels which will saturate the output stage (clip) and thus provide for a useful square-wave type output.

Construction Hints

Since this oscillator is dependant on the ever-present gravity 'wave' signals for its operation, it should be shielded against other electrical effects such as EM waves or AC line noise which could appear as a modulation on top of the desired oscillations. An aluminum box containing the circuits and battery supplies should be adequate shielding against these effects, while still allowing the gravitational signals to come through. In general, since sustained oscillations are the desired mode of operation for this unit, assembly and wiring is non-critical. The experimenter could possibly choose values for the input capacitor and the variable feedback resistor so that the ranges can 'scale' and thus only one (two at most) calibrated dials are needed.

Conclusions

This simple and novel audio frequency oscillator should be an interesting project for the experimenter. There is room for further experimentation. For example, in principle, two tone operation may be possible. The simplicity of the circuits should also enable the design of highly stable and pure sine-wave signals of fixed frequency for many specialized amateur electronic projects. However, as mentioned above, the circuits should be shielded for best performance.

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REFERENCES

(1) G. Hodowanec, Rhysmonic Cosmology, August 1985.

(2) G. Hodowanec, "Op-Amp Circuit Detects Gravity Signals", R-E ????.

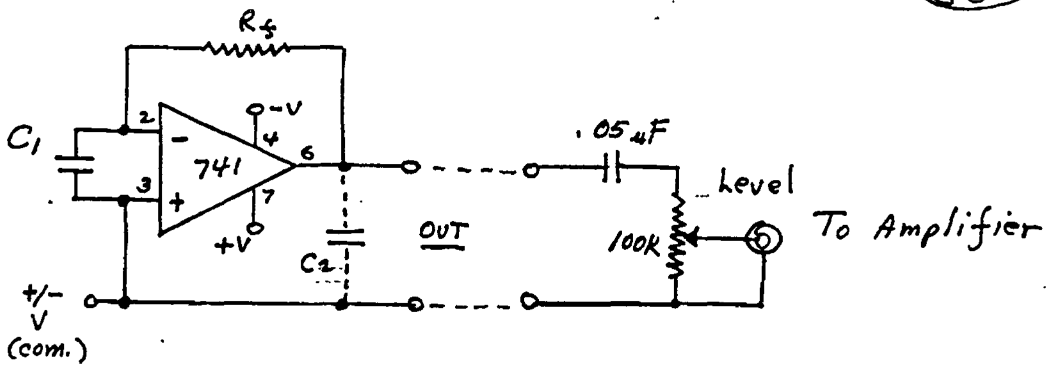

Figure (1) - Simplest Gravity 'Wave' Detector

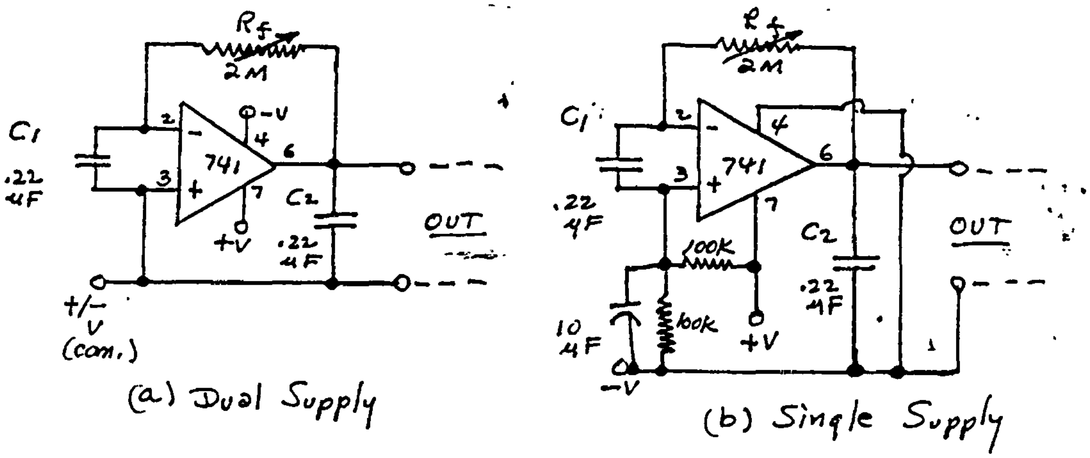

Figure (2) - Simplest Audio Oscillators

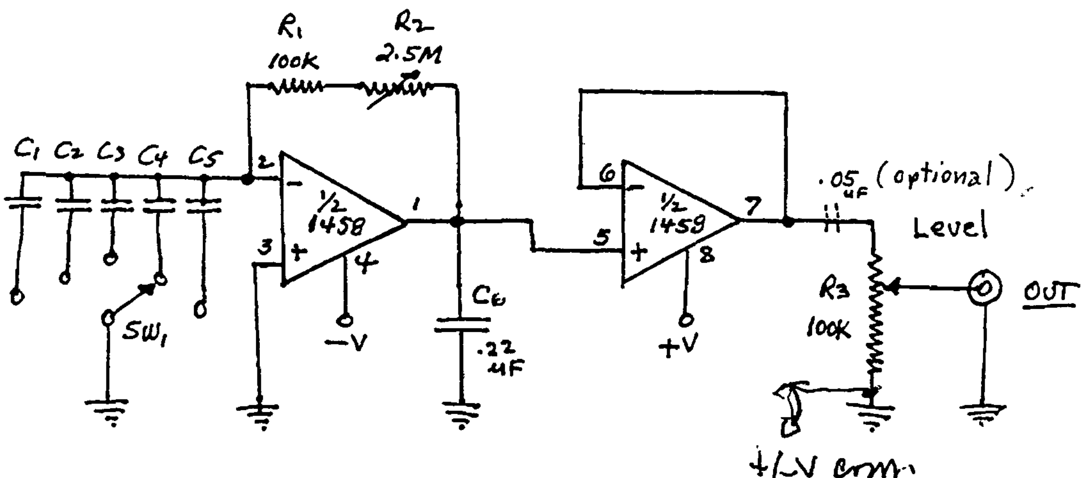

Figure (3) - Practical Sine-Wave Oscillator

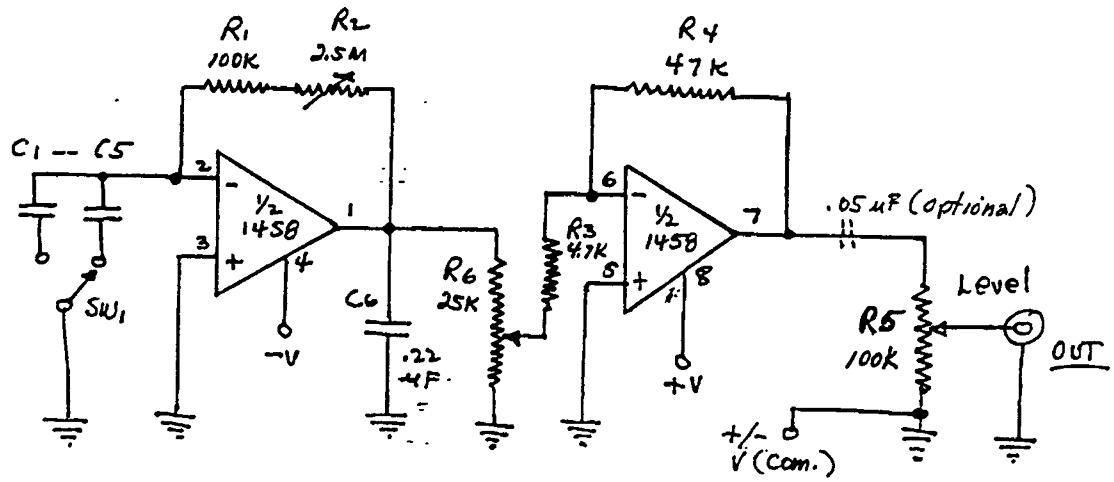

Figure (4) - Practical Sine/Square-wave Oscillator

THE AUTHOR'S DERIVATIONS OF CERTAIN ÇONSTANTS BASED SOLELY UPON HIS 'RHYSMONIC' (PLANCK) NATURAL UNITS

① (364)

Cosmology Note

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I. Confirmation of the Experimental Value of G (the gravitational constant) from Planck (Rhysmonic) Natural Units:

A. The value of G as determined from many many controlled experiments in the past is:

$$G \cong 6.67 \times 10^{-8} \frac{cm^3}{gm\ sec^2}$$

B. This value is also determinable from the Planck (Rhysmonic) Natural Units:

$$L^* \cong 1.616 \times 10^{-33}\ cm$$
$$T^* \cong 5.391 \times 10^{-44}\ sec$$
$$M^* \cong 2.177 \times 10^{-5}\ gm$$

C. Thus, the G value is:

$$G \cong \frac{cm^3}{gm\ sec^2}$$

$$\cong \frac{(1.616 \times 10^{-33})^3}{(2.177 \times 10^{-5})(5.391 \times 10^{-44})^2}$$

$$\cong \frac{4.220 \times 10^{-99}}{2.177 \times 10^{-5} \times 29.063 \times 10^{-88}}$$

$$\cong \frac{4.22 \times 10^{-99}}{63.27 \times 10^{-93}} = .0667 \times 10^{-6}$$

$$\cong \underline{6.67 \times 10^{-8}}$$

D. Conclusions:

① The close agreement between Planck (Rhysmonic) determination and the experimental value confirms <u>both</u> Rhysmonics <u>and</u> the accuracy of the experimental determinations!

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Cosmology Note

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II. Confirmation of the Experimental Value of k_B (Boltzman's Constant) from the Planck (Rhysmnic) Natural Units:

A. $k_B \cong \frac{R}{L} \cong \frac{\text{Universal Gas Constant}}{\text{Avogadro Constant}}$ (Per experiment)

$\cong 1.380 \times 10^{-23}$ J/K°/mole

$\cong 1.380 \times 10^{-16} \frac{gm\,cm^2}{sec^2\,K^\circ}$ (ergs/K°/mole)

B. The k_B value is also determinable from Planck (Rhysmnic) natural units:

$$k_B \cong \frac{gm\,cm^2}{sec^2\,K^\circ}$$ (K° is also a ~~natural unit~~!) $K^* \cong 1.42 \times 10^{32}$ [See below]

$$\cong \frac{2.177 \times 10^{-5} \times 2.61 \times 10^{-66}}{29.06 \times 10^{-88} \times 1.42 \times 10^{32}}$$

$$\cong \frac{5.682 \times 10^{-15}}{41.26} \cong .138 \times 10^{-15} \cong \underline{1.38 \times 10^{-16}}$$

C. Determination of K^*:

$$K^* \cong \frac{1}{k_B}\left(\frac{c^5}{G}\hbar\right)^{1/2}$$

Note: $\frac{c^5}{G} \cong 3.629 \times 10^{59}$ erg-sec

$$\cong \frac{1}{1.38 \times 10^{-16}}\left(3.629 \times 10^{59} \times 1.0545 \times 10^{-27}\right)^{1/2}$$

$$\cong .725 \times 10^{16}\left(3.83 \times 10^{32}\right)^{1/2}$$

$$\cong .725 \times 10^{16} \times 1.96 \times 10^{16}$$

$\therefore\ K^* \cong \underline{1.42 \times 10^{32}}$ Kelvin

D. Conclusion: Note the close agreement between Theory and experiment!

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Cosmology Note

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III. Some useful Constants involving G and C :

$$G \cong 6.673 \times 10^{-8} \frac{cm^3}{gm\, sec^2}$$

$$C \cong 2.997 \times 10^{10} \frac{cm}{sec}$$

$$\frac{G^2}{C^2} \cong 7.43 \times 10^{-29} \frac{cm}{gm}$$

$$\frac{G}{C} \cong 2.226 \times 10^{18} \frac{cm^2\, Hz}{gm}$$

$$\frac{C^5}{G} \cong 3.629 \times 10^{59}\ \text{erg-sec}$$

$$\frac{C^2}{G^{1/2}} \cong 3.479 \times 10^{24}\ \underset{(?)}{\text{gauss}}\text{-cm}$$

IV. Some useful Planck (Rhysmnic) Natural Units:

$$\underline{\text{Length}} = L^* \cong \left(\frac{\hbar G}{C^3}\right)^{1/2} \cong 1.616 \times 10^{-33}\ \text{cm}$$

$$\underline{\text{Time}} = T^* \cong \left(\frac{\hbar G}{C^5}\right)^{1/2} \cong 5.391 \times 10^{-44}\ \text{sec}$$

$$\underline{\text{Mass}} = M^* \cong \left(\frac{\hbar C}{G}\right)^{1/2} \cong 2.177 \times 10^{-5}\ \text{gm}$$

Note → $\underline{\text{Velocity}} = C^* \cong \frac{L^*}{T^*} \cong 2.997 \times 10^{10} \frac{cm}{sec} \quad (\cong C)$

$$\underline{\text{Density}} = D^* \cong \left(\frac{C^5}{\hbar G^2}\right) \cong \frac{M^*}{L^{*3}} \cong 5.157 \times 10^{93} \frac{gm}{cm^3}$$

V. Planck Constants:

$$h \cong 6.624 \times 10^{-27}\ gm \frac{cm^2}{sec^2}\ sec \quad (\text{i.e., erg-sec})$$

$$\hbar \cong 1.0545 \times 10^{-27}\ \text{erg-sec} \quad \left(\cong \frac{h}{2\pi}\right)$$

$$\underline{\text{Temperature}} = K^* \cong \frac{1}{k_B}\left(\frac{C^5}{G}\hbar\right)^{1/2} \cong 1.42 \times 10^{32}\ \text{Kelvin}$$

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VI. Determination of the Value of the Quantum of Charge, e, from Planck (Rhysmonic) Natural Units.

A. The value of e in conventional science (from experiment) is:

$$e \cong 4.083 \times 10^{-10} \left(gm \frac{cm^2}{sec^2} cm \right)^{1/2}$$

B. e is also determinable from The Planck (Rhysmonic) Natural Units.

$$e \cong \left(\frac{gm\ cm^3}{sec^2} \right)^{1/2}$$

$$\cong \left(\frac{2.177 \times 10^{-5} \times 4.22 \times 10^{-99}}{29.06 \times 10^{-88}} \right)^{1/2}$$

$$\cong \left(\frac{9.187 \times 10^{-16}}{29.06} \right)^{1/2} \cong \left(.316 \times 10^{-16} \right)^{1/2}$$

$\therefore e^* \cong 5.62 \times 10^{-9}$ ← Note: This is 1.38 larger than classical value!

or $e^{*2} \cong 3.16 \times 10^{-17}$

VII. Classical Value of (Reciprical fine-structure constant)

A. $\frac{1}{\alpha} = \frac{\hbar c}{e^2} \cong 137.06$

B. $\frac{1}{\alpha}$ in Rhysmonics

$$\cong \frac{\hbar c}{e^{*2}} \cong \frac{1.0545 \times 10^{-27} \times 2.997 \times 10^{10}}{3.16 \times 10^{-17}}$$

$$\cong \frac{3.16}{3.16} = \frac{1}{1}$$

Note: α is unity in Rhysmonics!!

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Cosmology Note

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VIII. Confirmation of the Experimental Value of $\hbar$ (Planck's Reduced Constant) from Planck (Rhysmonic) Natural Units.

A. The value of $\hbar$ as determined in many experimental evaluations is: *

$$\hbar \cong 1.0545 \times 10^{-27} \text{ erg-sec}$$

B. The value is also determinable from the Planck (Rhysmonic) Natural Units.

$$\hbar = \text{erg-sec} = \text{gm} \frac{\text{cm}^2}{\text{sec}^2} \text{sec} = \frac{\text{gm cm}^2}{\text{sec}}$$

$$\cong \frac{2.177 \times 10^{-5} \times 2.61 \times 10^{-66}}{5.391 \times 10^{-44}}$$

$$\cong \frac{5.68 \times 10^{-27}}{5.391}$$

$$\cong \underline{1.0545 \times 10^{-27}}$$

C. Conclusion

(1) The experimental value is confirmed with its Rhysmonic value --- this confirms the fundamental Rhysmonic bases for this constant.

* Page 172 Planck's Book

(6) (369) (369)

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IX. Some Constants by Planck

A. Black Body Radiation Constant: (Page 64 of Planck's Book *)

(1) Per Classical Experiment:

$$\alpha \cong 7.28 \times 10^{-15} \ \frac{\text{erg}}{\text{cm}^3\,\text{K}^{*4}}$$ ~~h used here~~

(2) Per Rhysmonics: h used here

$$\alpha \cong \frac{\text{gm}\,\frac{\text{cm}^2}{\text{sec}^2}}{\text{cm}^3\,\text{K}^4} \cong \frac{\text{gm}}{\text{sec}^2\,\text{K}^4\,\text{cm}}$$ ← ħ used here

$$\cong \frac{2.177 \times 10^{-5}}{(29.063 \times 10^{-88})(4.066 \times 10^{128})(1.616 \times 10^{-33})}$$

$$\cong \frac{2.177}{191} \times 10^{-12} \cong .0114 \times 10^{-12} \cong 1.14 \times 10^{-14}$$

B. $b = \lambda_m T$

(1) Per Classical Experiment: (Planck Page 86)

$b \cong .289$ cm degree

(2) Per Rhysmonics: ← ħ used here in K*

$$b \cong 1.616 \times 10^{-33} \times 1.42 \times 10^{32}$$

$$\cong 2.29 \times 10^{-1} \cong .229$$

C. $C_2 \cong 1.436$ cm degree (per classical experiment) (Planck Page 169)

Per Rhysmonics:

$$C_2 \cong \text{cm degree} \cong \text{cm K}^*$$

$$\cong 1.616 \times 10^{-33} \times 1.42 \times 10^{32}$$

$\cong .229$ Verify: $.229 \times 6.28 \cong 1.438$ (same as Planck!)

D. Conclusion: Differences between Classical and Rhysmonic constants are that Rhysmonics uses ħ rather

* Planck's Book: Theory of Heat Radiation, Dover Publications, 1959

(370) (370)

G H Labs, Inc.
Newark, N.J.

2/7/94
GH

Dear Colleague,

This may be of interest to you.

I have sent you data in the past that many of the so-called Physical Constants, as determined from experiment, are also determinable from the dimensional formula for these constants, using Planck's Natural Units.

Attached is the simple determination for the permittivity, ϵ^o, and permeability, μ^o, for free space. This, and many other determinations, are rather close to the experimental values found. However, as you note here, the value of the quantum of charge, e, as determined in Rhysmonics, is 5.621×10^{-9} ESU, which is 13.8 times larger than the classical value of 4.083×10^{-10} ESU. The rhysmonic determination appears to be the correct value, as seen in the attached determinations of ϵ^o and μ^o! The rhysmonic value also indicates that the reciprical fine structure constant:

$$\frac{1}{\alpha} = \frac{\hbar c}{e^*} \simeq 1.0 \,!!!$$ and not the

value of 137.06 as determined in classical physics!!! This appears to indicate that $1/\alpha \simeq 137.06$ may have been a 'fudge factor', necessary to make spectra come out right???

Regards, greg

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Cosmology Note

GH Labs 371
Newark
2/7/94
gh

I. Confirmation of the experimental value for the permittivity of free space, ϵ°, as determined from the Planck (Rhysmonic) Natural Units.

A. The permittivity of a medium, ϵ, is defined as the ratio of the electric displacement (D) to the strength of the electric field (E) at the same point, ie.,

$$\epsilon = D/E .$$

The permittivity of free space is termed the electric constant, ϵ°, and it may be determined directly from its dimensional formula, ie.,

$$\epsilon = \frac{T^2 Q^2}{M L^3} .$$

Using the Planck (Rhysmonic) Natural Units:

$$\epsilon^\circ = \frac{T^{*2} e^{*2}}{M^* L^{*3}}, \quad \text{where } T^* \cong 5.391\times10^{-44} \text{ sec}$$
$$M^* \cong 2.177\times10^{-5} \text{ gm}$$
$$L^* \cong 1.616\times10^{-33} \text{ cm}$$
$$e^* \cong 5.621\times10^{-9} \text{ ESU}$$

$$\therefore \epsilon^\circ \cong \frac{29.06\times10^{-88}\times 3.161\times10^{-17}}{2.177\times10^{-5}\times 4.22\times10^{-99}}$$

$$\cong \frac{91.86\times10^{-105}}{9.187\times10^{-104}} \cong \frac{91.86}{91.87} \cong 1.0 \text{ statfarad/cm.}$$

$\therefore \epsilon^\circ \cong 100$ statfarads/meter,

but 1 Farad $\cong 8.987\times10^{11}$ statfarads,

$$\therefore \epsilon^\circ \cong \frac{100}{8.987\times10^{11}} \cong 11.13\times10^{-11} \text{ Farad/meter.}$$
$$\cong 1.113\times10^{-10} \text{ Farad/meter.}$$

However, a rationalized:

$$\epsilon^\circ \cong \frac{11.13\times10^{-11}}{\underset{4\pi}{12.57}} \cong \boxed{8.854\times10^{-12} \text{ Farad/meter.}}$$

in S.I. units.

Cosmology Note

GH

II. Confirmation of the experimental value for the permeability of free space, μ^o, as determined from the Planck (Rhysmonic) Natural Units.

A. The permeability of a medium, μ, is defined as the ratio of the magnetic flux density (B) to the strength of the magnetic field (H) at the same point, ie.,

$$\mu = \frac{B}{H}.$$

The permeability of free space is termed the magnetic constant, μ^o, and it may be determined directly from its dimensional formula, ie.,

$$\mu = \frac{ML}{Q^2}.$$

Using the Planck (Rhysmonic) Natural Units:

$$\mu^o = \frac{M^* L^*}{e^{*2}} \quad \text{where,} \quad \begin{aligned} M^* &\cong 2.177\times10^{-5}\ \text{gm} \\ L^* &\cong 1.616\times10^{-33}\ \text{cm} \\ e^* &\cong 5.621\times10^{-9}\ \text{ESU} \end{aligned}$$

$$\mu^o \cong \frac{2.177\times10^{-5}\times1.616\times10^{-33}}{3.161\times10^{-17}}$$

$$\cong \frac{3.518\times10^{-38}}{3.161\times10^{-17}} \cong 1.113\times10^{-21}\ \text{stathenry/cm.}$$

$\therefore \mu^o \cong 1.113\times10^{-19}$ stathenry/meter,

but, 1 stathenry $\cong 8.987\times10^{11}$ henry,

$\therefore 1.113\times10^{-19}\times8.987\times10^{11} \cong 10\times10^{-8}$ Henry/meter.

$\mu^o \cong 1\times10^{-7}$ Henry/meter.

However, a rationalized:

$$\mu^o \cong 4\pi\times10^{-7}\ \text{henry/meter}$$

$$\boxed{\cong 1.256\times10^{-6}\ \text{Henry/meter}}$$

in S.I. units

D 373

Cosmology Note

GH Labs
Newark 373
3/15/94
GH

Dear Colleague: This may be of interest to you.

I. Some Speculations on the Physical 'Effects' of Gravitational Impulses

The 'stacatto-type' gravitational impulses noted on the gravity signal detectors are believed to be possibly responsible for many physical phenomena noted in Physics. a few of the many possibilities are considered here:

① Radioactivity

Radioactivity 'impulses' as noted on Geiger Counters appear to have the same 'stacotto rate' as is seen in GW detectors. It is believed that GW impulses possibly can supply sufficient energy to somewhat unstable nuclei to just place them 'over the edge' and thus result in the disintegration of these nuclei. The scalar nature of these GW impulses ensures the universal nature of these disintegrations, deep in the earth or anywhere in universe.

② Brownian Motion

The impulses seen in Brownian Motion are presently attributed to 'thermal' activity of molecules in the observing medium. However, it is known that GW impulses can also affect small 'particles' such as 'relatively free' electrons and ions, as well as 'relatively free' atoms and molecules. Thus, much of the Brownian Motion could also be due to these GW impulses, especially under the conditions noted here.

③ Zero Point Energy

Zero point energy refers to 'fluctuations' seen in the 'fabric of space' even when all thermal type activity had ceased. These fluctuations are seen in GW detectors as impulse (1/f) noise and a general white noise background. It is due to the summation of all the GW impulses seen in the universe. This is a 'fluctuation energy' and not the basic energy of the fabric of space, eg., Planck or rhysmonic energy. Therefore, it should be possible to 'extract' this energy using general physical principles.

(4) Lamb Shift

These are 'fluctuations' seen in the ground state orbit of the hydrogen atom. They are also probably due to the general GW background flux in the universe, especially the 1/f components.

(5) Microwave Background Radiation

This radiation was first noted in microwave systems as a remnant radiation not accountable by general microwave theory. Again, this is also probably due to the general GW background radiation in our black-body universe. It has a measured 'standing wave' length of about .25 cm as determined by GW detectors. These impulses are also detected as a microwave radiation frequency in the waveguides of a microwave receiver, primarily due to the gravitational impulse 'heating' of the waveguide.

II. Remarks:

The above speculations are in addition to the normally considered use of GW detectors as gravimeters and gravity signal 'telescopes'. Perhaps, it may induce some of you to 'look deeper' into these speculations --- there may be a measure of truth in them??

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4/21/94

AN ALTERNATE DETERMINATION FOR THE VELOCITY OF LIGHT

(G. Hodowanec)

I. Introduction

The nature of light and its velocity has always been a somewhat controversial subject and remains so to some extent even today. The disputed points of view are well-known to most readers of NEN and thus they will not be extensively considered here. However, some of the more salient points will be briefly stated here as a prelude to a discussion of an alternate method of determining the velocity of light in the vacuum.

Primarily, light is presently considered to be a wave motion in terms of electromagnetic theory, but it is also considered as an energy unit or photon in quantum theory. The aspects compliment each other; for example, the wave theory is generally applied to interactions between light signals, while quantum theory is used for light energy interactions, such as the photoelectric effect. Presently, the velocity of light is considered as absolute , ie., independent of the velocity of the source or the observer. Also the physical motion of any material body can never exceed the velocity of light. The velocity of light also serves as a connection between mass and energy as is noted in the well-known relation $E = mc^2$. The velocity of light appears in many physical relations, especially those relating to the various fundamental constants of nature. Thus, the determination of the true value of this velocity is of utmost importance in physics and in cosmology in general.

II. Experimental Determinations of the Velocity of Light

The first crude measurement (of importance) of the velocity of light was made by Roemer in 1675 in an experiment where he noted a change of time for the observance of the eclipsing of the moon IO by the planet Jupiter. The velocity determined here was in the order of 2.2×10^{10} cm/sec using the best parameters available to him at that time. However, since that time many more precise experimental measurements were made, as summarized in the 1983 paper by Pipkins and Ritter. (1) Most of these determinations were in the order of 3×10^{10} cm/sec, with the average being around 2.9979×10^{10} cm/sec. The more recent measurements made around 1973 or so, gave a value of about 2.9979245×10^{10} cm/sec, and this was the accepted value at that time. This generally remains the present day value, as given in some dictionaries of science (2) and the book GRAVITATION by Misner, Thorne, and Wheeler. (3)

It should be noted that most of the above experimental measurements of the velocity of light were made in the presence of gases, primarily air and possibly water vapor, and thus does not truly represent the velocity in vacuum. However, the error introduced is considered to be very minimal. Here, however, I will consider the accepted value to be 2.99792×10^{10} cm/sec, out to five decimal places only, so as to be of the same order of magnitude as for some of the other determined constants which will be used in the alternate calculations. Before doing so it is necessary to digress a bit to explain the nature of Planck's Natural Units, which are basic to these determinations.

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III. Planck's Natural Units (PNU)

Max Planck published in 1914 a curious aside in his book, "The Theory of Heat Radiation". I first became of this aside in 1959, when Dover Publications released a reprint of this volume. (4) Planck suggested that experimentally determined universal constants could be used to "establish units of length, mass, time, and temperature, which are independent of special bodies or substances, which necessarily retain their significance for all times and for all environments, terrestrial and human or otherwise, and which may, therefore, be described as 'natural units'." Planck chose the constants h, his Planck constant, C, the velocity of light in vacuum, and G, the gravitational constant. Planck expressed the numerical values of these constants in the C.G.S. system of units, ie., centimeters, grams, and seconds. By choosing the natural units so that each of the above constants assumes the value unity, he obtained the natural units:

$$\text{Length} = L^* = \left(\frac{G\,h}{C^3}\right)^{\frac{1}{2}} \cong 3.99 \times 10^{-33} \text{ cm.}$$

$$\text{Time} = T^* = \left(\frac{G\,h}{C^5}\right)^{\frac{1}{2}} \cong 1.33 \times 10^{-43} \text{ sec.}$$

$$\text{Mass} = M^* = \left(\frac{C\,h}{G}\right)^{\frac{1}{2}} \cong 5.37 \times 10^{-5} \text{ gm.}$$

using the data available to him at that time.

A paper by McNish which appeared in May 1959 (5) seemed to relish the potentials stated by Planck but expressed concern about the uncertainty of arriving at a sufficiently accurate value for the gravitational constant. However, it occured to me at that time that these natural units could perhaps be the dimensions of the aether, but pressures of earning a living and raising a family delayed my looking into this further at this time. However, in 1975 I was able to devote a few months to further studies in cosmology, primarily a fresh look at the nature and structure of space/time, the so-called aether. I was encouraged by reports on a 'structure' for the vacuum as was given by Misner, Thorne, and Wheeler (MTW) in their book. (3) Especially interesting to me was their (?) revision of Planck' natural units (PNU), using the reduced Planck Constant, $\hbar$, rather than h, since this was in agreement with my own 'structuring' of a stationary aether. This I had reported later in my monograph, 'Rhysmonic Cosmology' which I released in 1985.(6) As a result, the Planck Natural Units now became:

$$L^* \cong 1.6161 \times 10^{-33} \text{ cm.}$$

$$T^* \cong 5.3906 \times 10^{-44} \text{ sec.}$$

$$M^* \cong 2.1765 \times 10^{-5} \text{ gm.}$$

where the calculations were carried out to the most probable fourth decimal place, using

$$C \cong 2.9979 \times 10^{10} \text{ cm/sec.}$$
$$G \cong 6.6732 \times 10^{-8} \text{ cm}^3/\text{gm sec}^2.$$
$$\hbar \cong 1.0546 \times 10^{-27} \text{gm cm}^2/\text{sec.}$$

where these values were averaged from the references cited here. Since C, G, and $\hbar$ can eventually be experimentally determined to higher orders of accuracy, the Planck Natural Units will also be determined more accurately in the future.

IV. Application of PNU to the Velocity of Light

In Rhysmonic Cosmology (6) the velocity of light in vacuum was predicted to be due to a matrix-type structure for the vacuum. Here, electromagnetic effects were the result of a propagation factor, C*. This propagation factor, C*, could be called the Planck Velocity, and was equal to L*/T*. Substituting in the more recent determinations of the Planck natural units,

$$C^* = L^*/T^* = 2.99794 \times 10^{10} \text{ cm/sec},$$

which is also the experimentally determined velocity of light. It is surprising that this connection has not been mentioned by the quantum theorists (as far as I know) and especially by MTW. Therefore, it seems to me that the Planck Natural Units really do describe the structure of the aether. In the above relation it is seen that the velocity of light would be constant in an undisturbed aether. The only way the velocity could change is if L* changes (which is possible in the presence of matter where the velocity would be reduced), or if T* changes, (which some experiments could ascertain).

V. The PNU and Dimensional Analysis

Since Planck's Natural Units appear to describe the very structure of a stationary aether they may be truly fundamental units. As such, one can refine the experimentally determined fundamental constants with dimensional formula analysis. Two examples are given:

$$\hbar \cong 1.0545 \times 10^{-27} \text{ gm cm}^2/\text{sec} \quad \text{(from experiment).}$$

The numerical value of ~~ħ~~ can be determined from PNU thus:

$$\hbar^* = \text{gm cm}^2/\text{sec} = M^* L^{*2}/T^* \cong 1.05449$$

Therefore, $\hbar \cong 1.05449 \times 10^{-27}$ gm cm^2/sec (from PNU).

Also, $G \cong 6.673 \times 10^{-8}$ cm^3/gm sec^2 (from experiment, (1))

$$G^* = \text{cm}^3/\text{gm sec}^2 = L^{*3}/M^* T^{*2} \cong 6.6736$$

Therefore, $G \cong 6.6736 \times 10^{-8}$ cm^3/gm sec^2 (per PNU).

This technique was verified for many known constants, but with one notable exception. The value of, e , the quantum of charge.

$$e \cong 4.803 \times 10^{-10} (\text{gm cm}^3/\text{sec}^2)^{1/2} \quad \text{(from experiment).}$$

Dimensionally, $e^* = (\text{gm cm}^3/\text{sec}^2)^{1/2} = (M^* L^{*3}/T^{*2})^{1/2} \cong 5.6226$

Thus, $e \cong 5.6226 \times 10^{-10} (\text{gm cm}^3/\text{sec}^2)^{1/2}$. (per PNU).

Note that the PNU determined value of e is about 11.7 times larger than the classical experimentally determined value. This also explains why the so-called reciprocal fine structure constant, $1/\alpha$, where e^2 is used, becomes the value 11.7^2 or approximately 137! Thus, this PNU determination of e questions the experimentally determined value of e , the quantum of charge.

VI. Conclusions

The methods of Rhysmonic Cosmology (6) were basically used in the determinations reported herein (with support from PNU and MTW). This material appears to confirm that there is a stationary aether, having a definite structure and very high energy content, probably related to the Planck Natural Units and its many derivatives. The further study of this structure should interest readers of NEN and may possibly provide some clues to a more direct 'extraction' of the latent energy in space/time. As reported in NEN, this energy source might have been 'tapped' in some past and current experimental tests. To unambiguosly do so may provide the total energy needs of mankind in the future without polluting the earth. The writer hopes that many readers will consider the possibilities alluded to herein.

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① 379

Cosmology Note

G H Labs
Newark 379
5/11/94

I. Some additional remarks on the velocity of light and the space parameters of ϵ_o and μ_o.

A. As determined in my C-Note of 2/7/94 the rhypmonic value of ϵ_o and μ_o were given as:

$$\epsilon_o \cong 1.0 \text{ statfarad/cm}$$
$$\mu_o \cong 1.113 \times 10^{-21} \text{ stat henry/cm}$$

The velocity of light in free space can be determined from these two relations as:

$$C = \frac{1}{\sqrt{\epsilon_o \mu_o}}$$

$$\cong \frac{1}{\sqrt{1 \frac{sec}{cm} \times 1.113 \times 10^{-21} \frac{sec}{cm}}}$$ { where the final units are determined from dimensional formulae.

$$\cong \frac{1}{\sqrt{11.13 \times 10^{-22} \frac{sec^2}{cm^2}}}$$

$$\therefore C \cong \frac{1}{3.336 \times 10^{-11} \frac{sec}{cm}} \cong 2.9976 \times 10^{10} \text{ cm/sec.}$$

B. The intrinsic impedance, Z_o, of free space can also be determined from ϵ_o and μ_o as follows:

$$Z_o = \sqrt{\mu_o/\epsilon_o}$$

$$\cong \sqrt{\frac{1.113 \times 10^{-21}}{1}}$$ { where final units are determined from dimensional formulae

$$\cong \sqrt{11.13 \times 10^{-22}}$$

$$\cong 3.336 \times 10^{-11} \text{ statohms}$$

$$\cong 3.336 \times 10^{-11} \times 8.987 \times 10^{11}$$ (where 1 statohm $= 8.987 \times 10^{11}$ ohms)

$$\cong 29.98 \text{ ohms (cgs)}$$

$$\cong 4\pi \times 29.98 \cong 376.74 \text{ ohms (rationalized)}$$

(380)

C. The intrinsic impedance, Z_0, of free space can also be determined from $R = \frac{V}{I}$, where in terms of dimensional analysis:

$$R^* = \frac{M^* L^{*2}}{T^* e^{*2}}$$

$$\cong \frac{2.177 \times 10^{-5} \times 2.611 \times 10^{-66}}{5.391 \times 10^{-44} \times 3.161 \times 10^{-17}}$$

$$\cong 3.3356 \times 10^{-11} \text{ statohms}$$

$$\cong 29.98 \text{ ohms (cgs)}$$

$$\therefore Z_0 = R^* \cong 4\pi \times 29.98 \cong 376.74\ \Omega \text{ (rationalized)}$$

II Conclusions:

1. The velocity of light in free space (~~as was~~ determined above) agrees with the measured velocity of light primarily because the term e^* appearing there was cancelled out in the math. Thus it would not matter if the classical value of e or the rhysmonic value e^* was used here.

2. For the determinations of Z_0, the dimensional formulae come out the same since the rhysmonic values of e^* were used.

3. Again, it appears that the rhysmonic determination of the quantum of charge is the true value!

Cosmology Note
G. Hodowanec

GH Labs
Newark, NJ
Nov. 11, 1994

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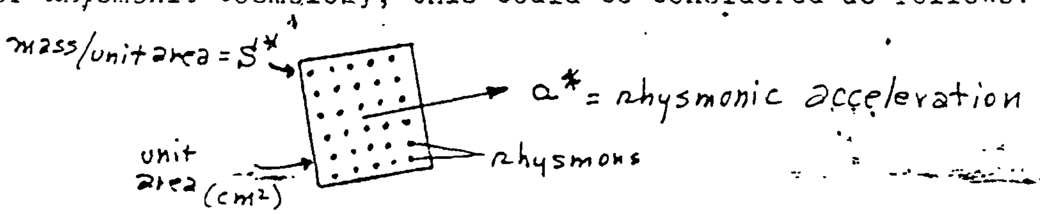
Dear Colleague: This may be of interest to you.

I. Speculations on the Gravitational Constant, G.

There are many interpretations for the gravitational constant, G, the value of which is presently determined largely from various experimental tests. I have shown in some past Notes that this value was also determinable from dimensional analysis using the Planck Natural Units. However, it intrigued me to know just what this constant really stood for. I knew that it was related to the 'force' of gravity in terms of Rhysmonic Cosmology, but past attempts to evaluate it always resulted in some extra terms in mass, length, or time. In some analyses these extra terms showed up as an acceleration, cm/sec^2, or as a surface denity, gm/cm^2 . I finally realized that both these relations could be directly obtained from the dimensional analysis of the units of the value of G! For example:

$$G = \frac{L^3}{MT^2} = \frac{cm^3}{gm\ sec^2} = cm/sec^2 \times cm^2/gm = \frac{cm/sec^2 \leftarrow \text{acceleration, a}}{gm/cm^2 \leftarrow \text{surface density, S}}$$

In terms of Rhysmonic Cosmology, this could be considered as follows:



$$a^* = \frac{L^*}{T^{*2}} \cong \frac{1.616 \times 10^{-33}}{29.06 \times 10^{-88}} \cong 5.56 \times 10^{53}\ cm/sec^2 .$$

$$S^* = \frac{M^*}{L^{*2}} \cong \frac{2.177 \times 10^{-5}}{2.611 \times 10^{-66}} \cong 8.34 \times 10^{60}\ gm/cm^2 .$$

$= \frac{a^*}{S^*}$

Therefore, $G \cong 6.67 \times 10^{-8}$ cm^3/gm sec^2, this being the same value obtained in experiment and this rhysmonic determination! Therefore, G may be a measure of the acceleration of rhysmonic flux through a unit area, something like the Poynting Vector in EM work. However, this measure may also be expressed as a surface force or a pressure gradient as follows:

$$P^* = S^* a^* \cong 4.64 \times 10^{114}\ dynes/cm^2 .$$

II. Some comments on this interpretation of G.

1. Rhysmonics implies that there is a very dynamic but highly localized structure in the rhysmoid (aether) which exists in the order of Planck Length dimensions in the 4th Dimension. Thus, when I speak about rhysmonic 'flux flow', I do not imply a movement of rhysmons over any extended lengths, which we do in the third dimension where flux flow usually means an actual movement of particles, both microscopic and macroscopic. Both result in a pressure per unit area, but in rhysmonics only the effect is transported over space, very much like sound waves or water waves are transported and where there is little relative movement of the air or water molecules. Another difference here is that the rhysmonic effects are 'transported' essentially in an instantaneous fashion as pointed out in my Cosmology.

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2. The universal gravitational 'flux' energy vectors are omni-directional in free 'undisturbed' space but due to the rhysmonic structure of space these vectors cancel and thus no 3rd dimensional effects are seen. Moreover, these energetic basic 4th dimensional vectors cannot be 'tapped' directly with most present day technology techniques. However, it is possible to 'tap' the energy in certain other existing scalar gradients in this field (or those which can be created with the use of certain field modifying techniques). The main gradients are well known: E-fields, H-fields, EM-fields, and g-fields. There may be many other field gradients which contain much energy, but most of these are as yet 'unknown' and must be 'discovered' before man can use them as an energy source. There are already hints of these in some 'free energy' experiments and energy 'machines'.

3. Much of the potential energy of the universal gravitational field has been 'captured' in particles and various radiation fields, and these provide much of our present day useful energy using the technology of today. However, as we learn more about our rhysmoid (aether) we should eventually be able to utilize this very basic energy through direct means and highly efficiently (more than 100%). That day is now approaching.

III. Conclusions

Rhysmonic cosmology is continuing to develop into a simple but sound approach to cosmology and thus increasing expectations in both the theoretical and technological fall-out. Within my very limited time here, I will continue to report to you on any further thoughts or discoveries. I will not be able to do much in terms of experiments in the near future and it would be nice to have a little more help (ala Bill Ramsay) in these lines, as well as more comments on the theory. I wish all the best regards and good experimenting.

Greg

(383)

Cosmology Note

(383)
G H Labs
4/16/98
(Sh)

Dear Colleague: This may be of interest to you.

I. Some Remarks on the Relation $C = (\epsilon^\circ \mu^\circ)^{-1/2}$

A. Introduction

While the relation $C = (\epsilon^\circ \mu^\circ)^{-1/2}$ was known (and confirmed) for well over one-hundred years, it was largely held with some doubt, primarily due to debates over the nature of ϵ° and μ°. Its proponents followed the reasoning as summarized in an article by Kulba[1], while the antagonists generally followed the arguments as expressed by Milnes[2]. Here, I will present an outlook based upon my Rhysmonic Cosmology[3] and postulate that ϵ° and μ° actually describe real physical effects and are not just constants of proportionality needed to balance out equations!

B. Rhysmonic Cosmology

As you know, I have been developing this Cosmology since about 1959 and it is based upon Planck's Natural Units and their many derivatives. To refresh your memory on the Planck Natural Units refer to my brief paper on the velocity of light[4]. In essence, rhysmonic cosmology constructs a finite spherical Universe which consists of only an extremely small 'particle' which I have termed a rhysmon (Greek for ever-moving) and the void (which could be considered as the empty space in some present theories). All else is but modifications to this basic structure! This structure (the aether if you wish) is essentially 'locally' bound as a basic cell unit and thus could be considered as a 'stationary' aether. However, it is extremely dynamic and energetic and thus provides the sole intrinsic source of energy in this Universe. For further refreshment I recommend a review of reference (3).

The dynamic nature of this structure will be further considered in a proposed Cosmology Note: "Extraction of Energy Directly from the Aether". Here, I will consider only two properties of the pure 'undisturbed' rhysmonic 'aether'. These will refer to the 'elasticity' of such a structure: (1) ϵ°, which in essence describes linear effects (ie., E-fields) and (2), μ°, which describe rotational effects (ie., H-fields) in the bound structures and thus the electromagnetic (EM) fields.

C. The Nature of ϵ^{o} and μ^{o}

Conventional theory considers ϵ^{o} and μ^{o} as fundamental to the electromagnetic field. For example, the permittivity of a medium, ϵ, is a measure of the degree to which the medium can resist the 'flow of charge' and thus is defined[5] as the ratio (at the same point) of the electric displacement (D) to the intensity of the electric field (E) that produces it, ie.,

$$\epsilon = \frac{D}{E}.$$

The permittivity of free space is termed the electric constant, ϵ^{o}, and it may be determined directly from its dimensional formula[6], ie.,

$$\epsilon^{o} = \frac{T^{2}Q^{2}}{ML^{3}}.$$

The permeability of a medium, μ, is defined[5] as the ratio (at the same point) of the magnetic flux density (B) to the strength of the magnetic field (H) that produces it, ie.,

$$\mu = \frac{B}{H}.$$

The permeability of free space is termed the magnetic constant, μ^{o}, and it may be determined directly from its dimensional formula[6], ie.,

$$\mu^{o} = \frac{ML}{Q^{2}}.$$

The relations really describe 'elastic stresses' in the aether (or rhysmoid) due to linear and rotational forces impressed on this aether. Implied is an exchange of energy between the two 'stresses' in the propagation process.

D. Determination of the Rhysmic ϵ^{o} and μ^{o}.

Planck's Natural Units (also rhysmic units) are used in these determinations (see Reference (4) for their values in CGS units).

$$\text{Here, } \epsilon^{o} = \frac{T^{*2} e^{*2}}{M^{*} L^{*3}} = 1.0 \text{ statfarad/cm.}$$

This can be converted to:

$$8.854 \times 10^{-12} \text{ farad/meter},$$

in S.I. units.

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Also, $\mu^{\circ} = \dfrac{M^{*} L^{*}}{\ell^{*2}} = 1.113 \times 10^{-21}$ statkenry / cm.
This can be converted to:

$$1.256 \times 10^{-6} \text{ henry / meter},$$

in S.I. units.

These results indicate that the rhysmnic determined values of ϵ° and μ° also agree with the presently accepted ϵ° and μ° values.

D. The relation $C = (\epsilon^{\circ}\mu^{\circ})^{-1/2}$ in terms of rhysmnics

Using Planck's Natural Units in the dimensional analysis we have:

$$\epsilon^{\circ}\mu^{\circ} = \frac{T^{*2}\,\cancel{\ell^{*2}}}{\cancel{M^{*}}\,\cancel{L^{*3}}_{L^{*2}}} \cdot \frac{\cancel{M^{*}}\,\cancel{L^{*}}}{\cancel{\ell^{*2}}} = \frac{T^{*2}}{L^{*2}}$$

where in this product all cancels out except a $\frac{1}{v^2}$ ~~term~~

Therefore, C, now reduces to:

$$C = \frac{1}{\sqrt{\frac{T^{*2}}{L^{*2}}}} = \sqrt{\frac{L^{*2}}{T^{*2}}} = \frac{L^{*}}{T^{*}},$$

a velocity term. Substituting in Planck's Natural Units for L^{*} and T^{*}, we have:

$$C = \frac{L^{*}}{T^{*}} = \frac{1.6161 \times 10^{-33}\,\text{cm}}{5.3906 \times 10^{-44}\,\text{sec}}$$

$$= \underline{2.99794 \times 10^{10}\,\text{cm/sec}},$$

which is also the experimental value for the velocity of light in free space, ie., the aether! The reason for this is that L^{*} and T^{*} (which are fundamental to the construction of the aether) are explicitly contained in the relation $(\epsilon^{\circ}\mu^{\circ})$ and thus they are fundamental units also. The relation $C = (\epsilon^{\circ}\mu^{\circ})^{-1/2}$ was originally determined empirically, but it should now be seen as another relation which can define the speed of light in free space, independent of its direction.

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II. Conclusions

1. Rhysmonic Cosmology has postulated a finite aether construction which can be described in terms of Planck's Natural Units (PNU) and its many derivatives.

2. The 'undisturbed' aether has mechanical and electrical characteristics which reflect the elastic nature of this medium. These are expressed in ϵ^o and μ^o.

3. An electromagnetic (EM) disturbance in this medium will propagate at a velocity, C, largely due to the nature of ϵ^o and μ^o. I also suspect an interaction with the universal G-field is also involved (considered in the Energy Note, TBD).

4. It is therefore concluded that ϵ^o and μ^o are real and valid concepts, not only for EM fields, but also for many other manifestations in this rhysmonic universe.

5. It is my hope that more of you will become involved in the further development of this Cosmology. I am indebted to Bill Ramsay for his useful contributions to the theory and especially his many practical experimental works.

III References

1. Leslee Kulba, "$C = (\epsilon^o \mu^o)^{-1/2}$", Electric Spacecraft Journal, Issue 18, 1996.
2. H.W. Milnes, Toth-Maatian Rev., 13, 6101-6117, (1996).
3. G. Hodowanec, Rhysmonic Cosmology, Self Published, 1985. (Now Out-of Print, copies of original pages are available from: Rex Research Archives, PO Box 19250, Jean, NV, 89019).
4. G. Hodowanec, "An Alternate Determination for the Velocity of Light", Untapped Technology in Review, Summer, 1995. Also in: New Energy News, Vol. 4, No. 5, Sept. 1996.
5. Dictionary of Physics, Penguin Books, 1977.
6. B.S. Massey, Units, Dimensional Analysis and Physical Similiarity, Van Nostrand Reinhold, 1971.

Best regards to all!

Greg

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Cosmology Note

G H Labs
Newark
4/23/98
SH

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Dear Colleague: This may be of interest to you.

I. Some Remarks on the Propagation of an Electromagnetic (EM) Field.

A. Introduction

A previous Note on the relation $C = (\epsilon^o \mu^o)^{-1/2}$ (4/16/98) implied That electromagnetic (EM) waves propagate due to the 'elastic' nature of ϵ^o and μ^o. The present Note will clarify These aspects. Conventional EM Theory states That in the propagation of an EM field, The E- and H- components are in-phase both in space and in time. Rhysmonics, however, postulates That the E- and H- components are 90° out-of-phase both in space and in time! I will now elaborate more on this.

B. EM Wave Propagation as Postulated in Rhysmonics.

A simplified diagram showing phase difference is given in Figure (1). As seen there, there is a 90° phase difference between The electric field component (E) and the magnetic field component (H), both in space and time. This also reflects the 'chain link' depiction of EM wave propogation (See my Monograph). The E-field component can be looked at as developing potential energy while the H-field component develops kinetic energy. A maximum change in the E-field (a linear perturbation in the aether) will result in a peak H-field, while a maximum change in the H-field will then result in another peak of E-field. In free space (in an undisturbed aether) such dynamic changes in These fields will result in a propagation effect, governed largely by the characteristics of ϵ^o and μ^o. That is, there is an energy exchange between The E-field (where the energy appears as a capacitive effect) and The H-field (where the energy appears as an inductive effect). Thus, all this can be viewed as a resonant LC effect in the aether, using the capacitive effect of ϵ^o and the inductive effect of μ^o. In essence, the changing E-flux shown by AB in Figure (1) will give rise to the peak H-flux shown at C, while the changing H-flux shown by CD in Figure (1) will give rise to the peak E-field shown at B. This process has to be initiated by external forces to the undisturbed aether, but once initiated the process may continue forever in space. However, it may be diminished by 'losses' caused by certain other 'disturbed' aether in space. It will be shown in another proposed Note that the process will also involve 'interactions' with the basic G-field energy which pervades the Universe.

Another view of this same phenomenon is given in Figure (2). Here, the 'charge' perturbations in the aether are depicted for illustrative purposes as:

⊖ for a reduced density of aether (negative charge)
⊙ for a normal density of aether (no charge)
⊕ for an increased density of aether (positive charge)

If the aether density is initially disturbed, say by an external E-field as a capacitive effect, ie, a charge effect, then this moving charge will create the rotational effect in the aether, which we recognize as a magnetic field (H-field). See my Monograph for more on this: Here again, a moving charge density gives rise to a changing rotational H-field which will then give rise to to a new changing charge density or E-field --- this is a propagation process. The E- and H- fields in all these depictions were shown in the same plane so as not to confuse the illustration.

In all these depictions, one must remember that we are dealing with 'bound' rhysmonic cells -- they can be moved (distorted) but remain bound --- there is no free movement of the bound rhysmons over long distances. These disturbances were considered as 'elastic' effects in the Note of 4/16/98 and were defined by ϵ^{o} and μ^{o}. There are many other 'modifications' of the pure aether which gives rise to the many other third dimensional effects in the Universe in which we live and which affect our senses, bodies, minds, and instruments. The other effects that we are discussing here are underlying fourth dimensional effects which can only be postulated by the logic of our minds.

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II. Conclusions

1. Rhysmonics offers a simple explanation for the propagation of electromagnetic (EM) fields as well as the nature of ϵ° and μ°.

2. The explanations fit in well with the postulated simple model Universe of but rhysmons and the void,

3. The model also offers simple explanations for the innumerable other processes, such as reflection, refraction, wave packets, wave and particle effects, etc., etc., --- Perhaps, this Note may stir your interest further on these many aspects.

III. Illustrations

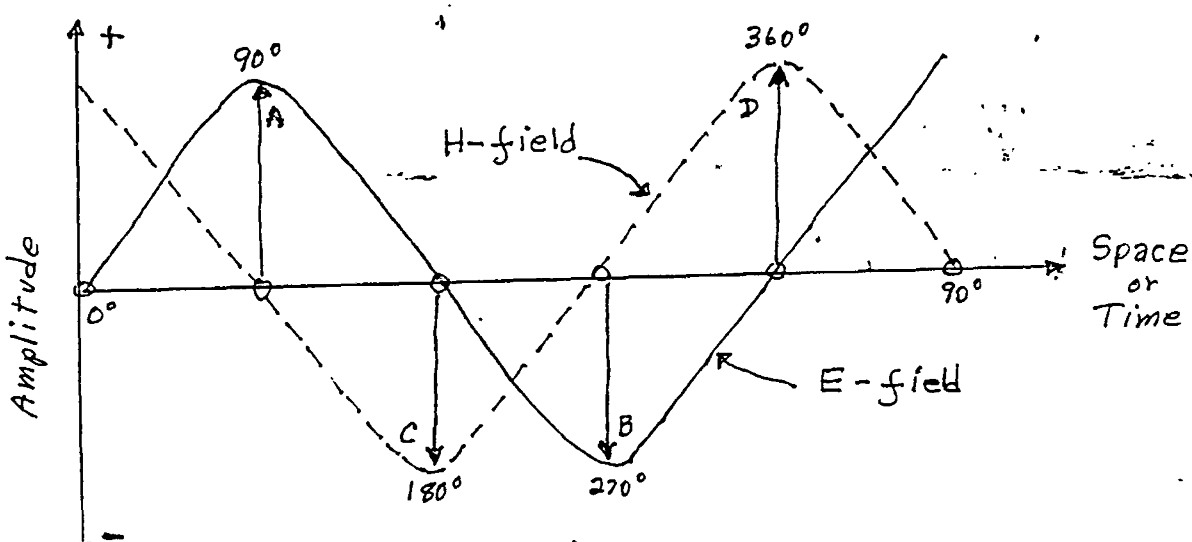

Figure (1)

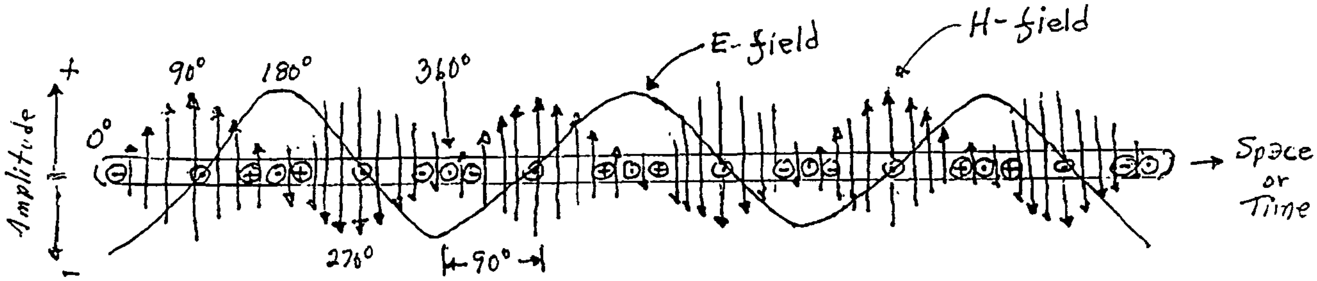

Figure (2)

GALAXY CENTER AND OTHER SIGNIFICANT ASTRONOMICAL OBSERVATIONS USING THE AUTHOR'S GRAVITY-WAVE SENSING TECHNIQUES

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Press Release

March 12, 1987

A RECENTLY OBSERVED EXPLOSIVE EVENT IN THE GALAXY CENTER IS PREDICTED TO AFFECT CONDITIONS HERE ON EARTH

The Galaxy Center, which had been relatively stable for at least the past 30,000 years or so, had apparently undergone a drastic change on about December 5, 1986, according to information obtained from a gravity signal detection system invented by Gregory Hodowanec of Newark, New Jersey, a retired research physicist. The system is based on a new cosmology developed by the inventor and depends upon electro-gravitic effects for its operation. The units, according to the inventor, detect variations in the earth's gravity field due to perturbations of this field by various gravitational effects in the universe such as the dynamic mass movements caused by novae, oscillating, rotating, or otherwise moving large masses, as well as the dense static masses, such as apparent 'black hole' structures which can cause gravitational 'shadows' to appear in the system's response. According to the inventor's theories, these gravitational signals are of the longitudinal type and 'propagate' essentially instantaneously and not at the speed of light as is predicted for the Einstein quadrature-type signals.

The inventor had been 'observing' the Galaxy Center recently in order to obtain some recorded strip chart scans of the structure there which could be helpful to some amateur radio astronomers who were interested in these techniques. On December 1 and 2, 1986, the ~~inventor~~ noted what appeared to be a movement of a mass in that structure towards the central mass in the structure. This may have been initiated by what appeared to be a closeby supernova event also noted on December 1 and 2, 1986. Unfortunately, the Center was not scanned again until December 6, 1986, at which time it was noted that the original Galaxy Center structure (which was relatively unchanged during the past 5-6 years of observation) had disappeared and a new very deep 'black hole and accretion ring' type of structure now appeared here! Operation of the detection system in its gravity 'noise' mode at this time indicated a sharp and very turbulent increase in noise response, probably due to the outward moving shock-wave induced 'debris ring' proceeding from this supernova-type event that occured at the Galaxy Center. Because of the violence and rapid velocity of these gravitational 'winds', the scientific community was alerted on December 8, 1986 (through the National Science Foundation) to look for possible reactions here on Earth, mainly changes in the atmosphere in the northern hemisphere around the 60° N. Latitude which could affect the weather patterns in those latitudes. A request was also made to look for possible effects in the atmospheres of the sun and pertinent planets. While further observations and the development of the new Center were noted and reported to NSF, it is not known if those inputs were heeded by that agency. However, as is well known now, the weather patterns in the northern hemisphere have been highly unusual since about the middle of December 1986, and that could well be attributable to the very strong 'gravity winds' which introduced a new horizontal component of gravity in those latitudes. The winds which are proceeding from the direction of the Galaxy Center are probably affecting the normal jet stream patterns. (See the attached sketch).

 (391)

In addition to the prediction that weather conditions around the 60° N. Latitude regions (much land masses there) and also the 60° S. Latitude regions (much open water there) could be affected by this event at the Galaxy Center, it was also predicted that any unstable earth structures in the region of 30° S. Latitude could also be affected as possible increases in earthquake activity, since the vertical component of the gravity 'winds' would apparently increase the normal gravity force there. Another prediction was that starlight traveling through 'disturbed' gas clouds could result in an increased 'twinkling' effect. Such effects would be initially noted by the effects of 'nearby' clouds, but should become more pronounced in time as the more distant clouds become effective (due to the finite time for propagation of light signals). At the present time, the inventor has noted a possible increase for the 'twinkling' of the star Sirius.

The observational techniques of the inventor are very simple and are very low in cost and have been released to some experimenter and amateur radio astronomer publications, as well as directly to some interested private researchers. The conventional (orthodox) scientific community has, thus far, chosen largely to ignore these techniques. The inventor will leave it to independant observations of the predicted 'observable' results of the event in the Galaxy Center to confirm the reality and validity of his gravity detection methods, and thus the possible long-range effects of the event on conditions here on our Earth as well as other planets (as well as the Galaxy itself).

<u>Note Added</u>: August 15, 1987

It is believed that the Galaxy Center event of about Dec. 5, 1986 also 'triggered off' at the same time a supernova much closer-by which lay on the same meridian as the Galaxy Center. These events were observed on Dec. 6, 1986 and the resulting 'black holes and accretion rings' have been present since that time. The two events can be separated when observing the Galaxy Center through the Earth. The other event, which appears to be in-line with the star Betelgeuse in Orion, might (?) have been the demise of Betelgeuse. The strong 'gravity winds' which have caused so much abnormal weather changes since about Dec. 5, 1986, may have come from the Betelgeuse (?) event, rather than the Galaxy Center event. More important, if Betelgeuse did go supernova, the Earth can expect a 'fire storm' of EM radiations in about 300 years' time!

<u>Note Added</u>: October 8, 1987

A supernova event from the general direction of Betelgeuse in the constellation of Orion could also result in an increase in gravity in the general region of 30° North Latitude. Perhaps, a slight increase in gravity levels was responsible for the recent series of California earthquakes? While the event at the Galaxy Center would have the effect or reducing gravity, the closeness of the Betelgeuse (?) event would prevail, resulting in a net increase of gravity levels there.

<u>Note Added</u>: April 30, 1988

A new supernova-type event was noted on the same meridian as the Galaxy Center on March 31, 1988. This new event 'swamped' the scan of the Center and did not move off for many days. After about two weeks time, the 'interloper' was no longer 'seen'. However, very strong gravity 'winds' from this event are still present at this date. GW detectors, weight scales, and 1/f noise detectors were all affected by this event. Presently, all noise detectors, including the gas tube device are much noisier than they have ever been! Perhaps, this may have been a more 'local' event rather than at the Galaxy Center region.

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12/8/86
gh
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SCENARIO

At Newark, N.J.:

Figure (1) Nov. 4,1986 2:46 PM EST	This shows a typical (high gain) GW signal response for the Galaxy Center. Comparison is made with a recent radio astronomy response of the Galaxy Center.
Figure (2) Dec. 1, 1986 1:03 PM EST	The Galaxy Center appears to have changed somewhat. A violent reaction (supernova?) was noted at about 17.6 Hr RA, near the Galaxy Center at this time. *
Figure (3) Dec. 2, 1986 1:02 PM EST	The Galaxy Center appears more normal in this low gain scan. There may be a trace of the supernova of Dec. 1st at about 17.6 Hr RA. *
Dec. 3,4,5	No observations made.
Figure (4) Dec. 6, 1986 12:45 PM EST	This was the first indication that a violent reaction may have occurred in the Galaxy Center region. There was a second reaction at about 17.8 Hr RA. *
Figure (5) Dec. 7, 1986 12:42 PM EST	Violent reaction in Galaxy Center continues? The shock rings at 'A' and 'B' are moving?
Figure (6) Dec. 8, 1986 12:40 PM EST	Scan of the Galaxy Center region at lower gain levels continues to show strong new structures. Some other new structure is also seen at about 17.75 Hr RA.
Figure (7) Dec. 8, 1986 12:36 PM EST	This scan appears to indicate that the supernova of Dec. 1st in this region may have developed into a well-defined black hole and ring structure.

not included

Fig. 9
12/10/86 Shown

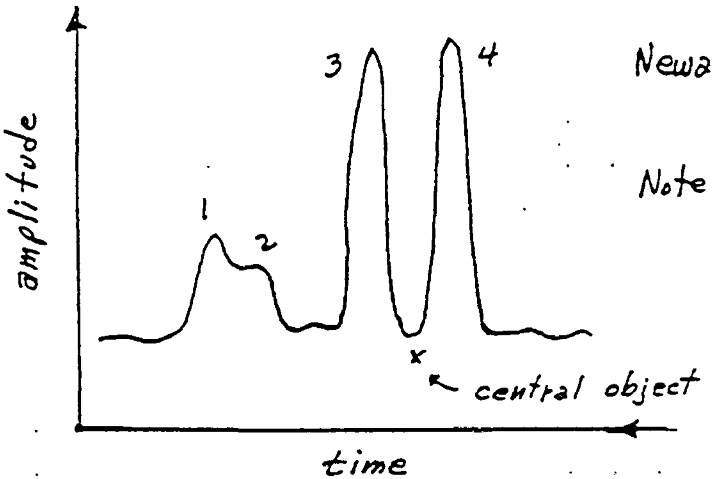
Note: Galaxy Center observations will be continued.

Note Added 4/30/88

The above scenario and scans were sent to the National Science Foundation on December 8, 1986 along with a cover letter outlining our observations. Only the pertinent scans and data are included here and these should be sufficient to illustrate that a 'drastic' event did indeed occur on about December 3rd to 5th, 1986, and the Galaxy Center to this day is the new deep hole structure and not the 'weak' hole structure seen prior to that event. Another aspect which was prominent in the following 'scans' of the Center was the rapid expansion of the Galaxy Center shock wave ring structure, shown as objects A and B. Note also that the black hole type structure which is marked as C in the scan of 12/6/86 also appears with the Center as object C in the scan of 12/10/86.

time

B. Per GW Signals (gh Ckt. #75, 10 Hz L.P. Filter)



Newark, N.J. 11/4/86
≅ 2:46 PM (EST)

Note: This is Center as it is now! Note the amplitude changes!

II. Conclusions

(1) The signal plots are similar but there has been some amplitude changes in the 32,000 years difference in time between the two plots!

Copies: AM, SSS, File

Figure (1)

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Cosmology

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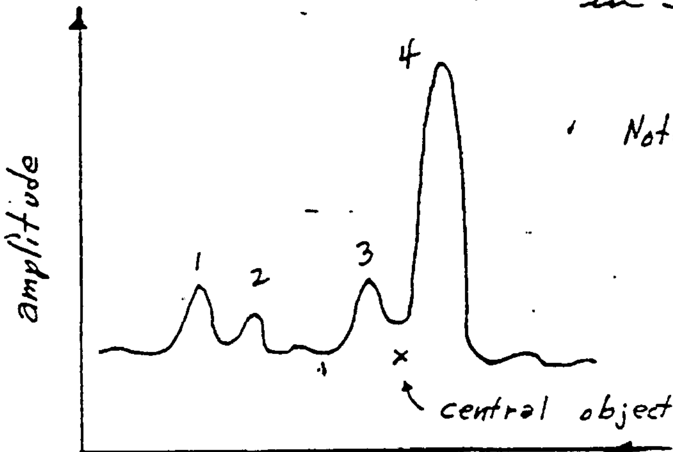
GH Fabs
Newark
11/4/86
gh

I. Galaxy Center

A. Per Radio Astronomy (From Kraus as shown in Siskel's Book)



Note: This is as the Center was about 32,000 years ago! This is due to the finite velocity of the radio signals.

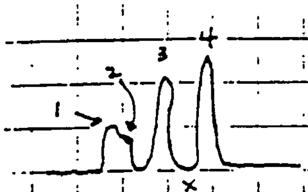
394 Figures (2) & (3)

Cosmology

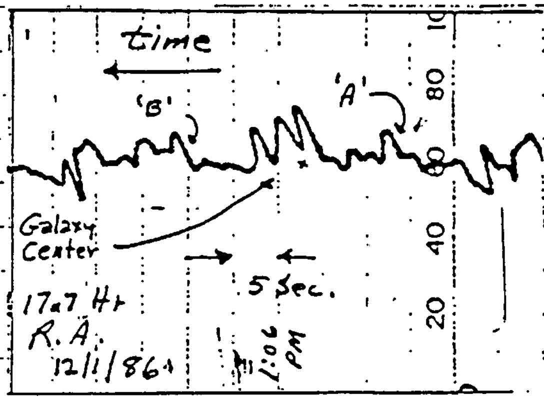
GH Labs
Newark
12/10/86

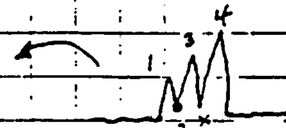
I. Galaxy Center Scans

(Low gain scans before reaction)



normal stabilized structure! (eg., 11/4/86)





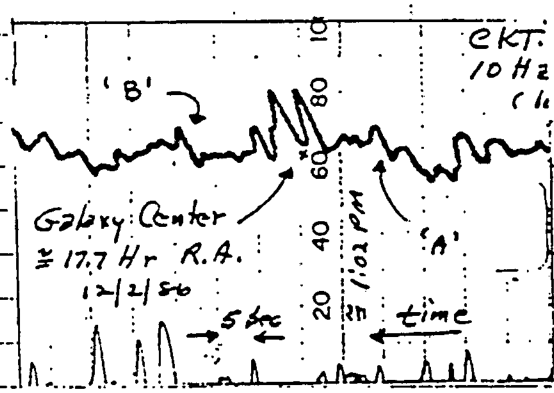
changing structure?
12/1/86

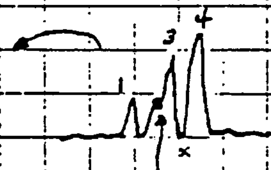
From Figure (2)

Remarks:

(1) Structure #2 which normally was about half the height of #1 appears to be moving toward #3?

Note
Trace was reduced 7% →





changing? Structure
12/2/86

From Figure (3)

Remarks:

(1) Structure #2 is now close to #3!

II. Conclusion

(1) Sometime between 12/3 and 12/4, Structure #2 appears to have been 'captured' by #3, leading to a catastrophic event in the Center region.

Copy: AM, SSS, File

Demo Unit #500 : QND Detector & Audio Oscillator

GH Labs
9/1/87

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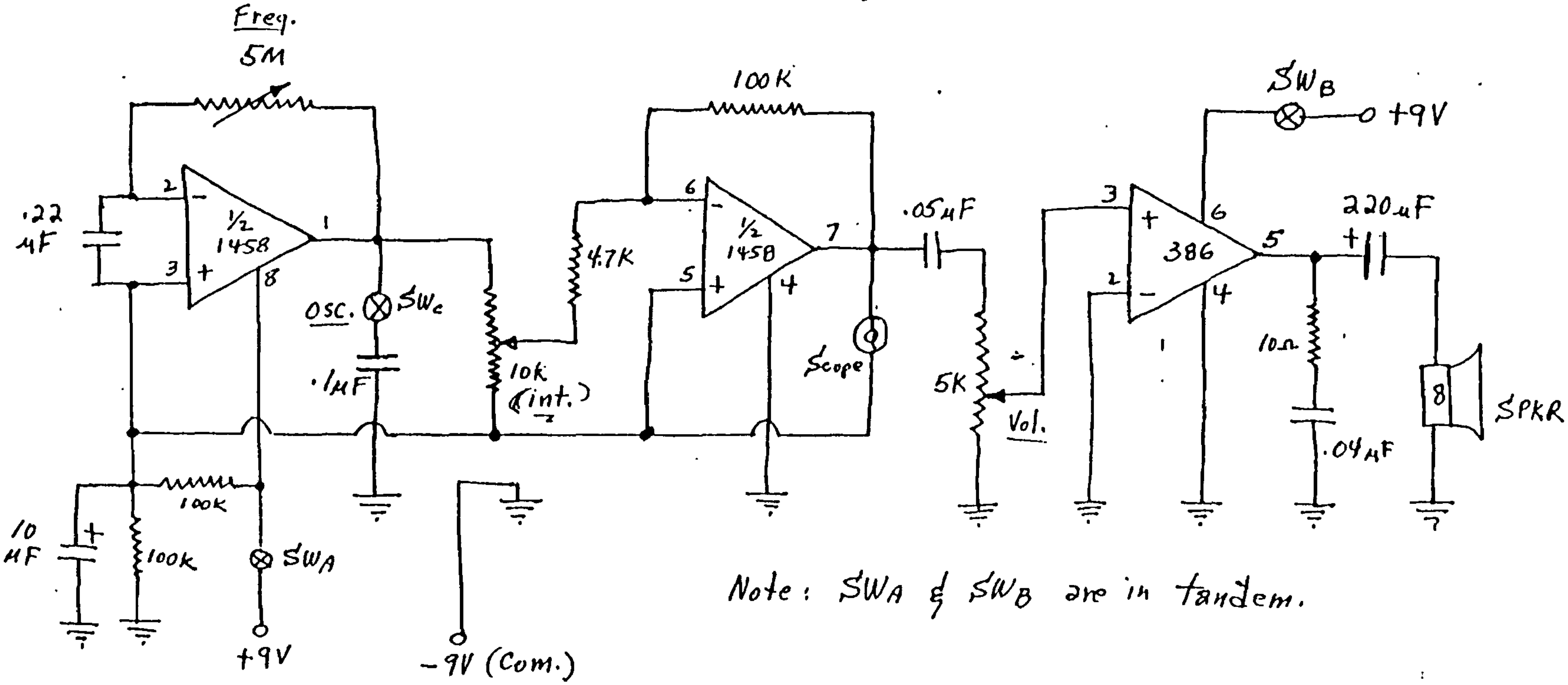

Note: SWA & SWB are in tandem.

Remarks:

1. Separate 9 volt batteries are used for the detector and power amplifier circuits.
2. 10K sensitivity control is internal trimpot.
3. Frequency & volume controls are external.
4. Unit demonstrates:
   QND type pulses on audio amplifier and/or oscilloscope.
   Sine or square wave audio oscillations.
   GW impulse source of energy for oscillator.

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Cosmology Note

GH Labs
Newark, N.J.
6/10/91

Dear Colleague: This is for your Info. Hope it is of interest.

Introduction

During the spring months of 1991 it was noticed that there was an increase in the level and turbulence of 1/f noise. Galaxy Center activity was suspect. A scan of the Galaxy Center (G.C.) made on 9/11/90 had shown only the same black hole and ring structure which had appeared since the time of the G.C. event of 12/6/86. However, a scan made of the G.C. on 5/16/91 (under earth) had shown some additional rings (possibly two more), as if the G.C. had undergone two additional 'explosions' since 9/11/90. On 6/4/91, it was decided to follow up on the G.C.----some very tentative observations are now given:

June 4, 1991: G.C. scanned about 12:45 PM EST.

A test scan at this time showed the start of three rings, but when the position of the black hole was reached, there was a very strong 'blast' noticed which washed out the other side of the ring structure. This may have been the fourth explosion of the G.C. and may have been serendipitiously 'caught'.

June 5, 1991: G.C. scanned at about 12:41 PM EST.

The G.C. region now showed what appeared to be the start of a new ring structure with some 'blast' still showing up at the black hole position. The ring was about 2 seconds of earth rotation time in diameter at this time. The original ring structures appeared to be washed out. However, this scan showed the old shock wall ring called 'B' by me, and also the long-standing black hole called 'C' by me. (See R-E January 1989 article).

June 6, 1991: G.C. scanned at about 12:37 PM EST.

Here, only what appeared to be a void and a weak ring structure with walls spaced about 7 seconds of earth rotation time, was seen.

June 7, 1991: G.C. scanned at about 12:33 PM EST.

Here, excessive unit gains introduced some 'resonances' which masked the low-level structure at the G.C.--no conclusions.

June 8, 1991: G.C. scanned at about 12:29 PM EST.

No real signs of a black hole or rings, only much fine structure. Too much turbulence at the G.C. ??

June 9, 1991: G.C. scanned at 12:31 AM EST.

In this scan the G.C. is in the zenith and Betelguese (?) may appear under the earth. However, Betelguese did not show up (?), but there appeared to be a new black hole and accretion ring to be developing at the G.C.---the ring had a diameter of about 5 seconds of earth rotation time in this scan.

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Some Conclusions

The G.C. appears to be 'active' again after relative calm since the event of 12/6/86. It is possible that the deep black hole at the G.C. had become unstable and had at least four 'explosion' in recent weeks, the last on June 4th being most violent! The very stong GW 'winds' preceeding from the G.C. are not only probably affecting the Earth's weather and geological structures, but are also altering Galactic structures. It would be nice if more of you 'active researchers' could become more involved here. Remember, the EM type effects from these events will not reach Earth for about 22,000 years!! The GW effects are here now and are affecting us now! The writer intends to follow up more on this in a couple of weeks, to allow the structures to 'settle down'. Best regards,

Greg Hodowanec

Comments:

6/11/91

Dear Bill,

Received your letter of 6/7/91. Hope you received unit #175 by this time — it was sent 1st class mail on 6/4/91! I have had several people approach me on providing GW kits & units, including my son who is in the electronics & computer business. I don't want to get involved, but these people can provide such services on their own. (One company is marketing my radar detector unit as described in R-E)!

The attached material if real may mean a long hot summer and more volcanoes & earthquakes! I will let you know if a new Black Hole develops significantly at The G.C.

Regards, Greg

(398)

Cosmology Note

GH Labs (398)
Newark, NJ
6/23/91

Dear Colleague: This may be of interest to you.

Gravitational signal astronomy techniques have been described by the writer in the April 1986 issue of Radio-Electronics and the January 1989 issue of R-E's Electronic Experimenter Handbook, as well as in some other publications. Some unpublished material was made available through Rex Research Archives. This material provides for an exciting new 'window' to our Universe and is of significant importance since the gravity signals are essentially 'instantaneous' signals and thus arrive in real time, ie., the signals display activity in the Universe which is occuring now! In particular, catastrophic events in our own Milky Way galaxy, if of sufficient magnitude, could have an affect on the earth's weather patterns and geological structures. This is believed to be due to 'gravity winds' which are generated by such events and such winds could alter the normal gravity of the earth.

The writer had ascertained (using these techniques) that on about December 6, 1986, a relatively minor 'black-hole-type' structure noted at the Milky Way Galaxy center had 'cannibalized' another close-by structure there to become a new much more massive black hole and accretion ring structure there.. It was immediately reported to the National Science Foundation and some local media that the strong 'turbulent gravity winds' noticed at this time could possibly have an affect on the earth's weather patterns and geological structures, as well as on the solar system and the galaxy in general. It is believed that the winds 'spawned' at the same time, a local supernova, possibly the star Betelguese in Orion, leaving a black hole structure there ~~which is~~ seen to the present day! One does not need to be reminded of the strange weather patterns seen since that time or the increase in earthquakes!

The new black hole and ring structure in the galaxy center has been relatively stable since its creation in Dec. 1986. It was still observed to be stable in a 'scan' made on Sept. 11, 1990. However, a scan made on May 16, 1991 had indicated that the center 'hole' may have become somewhat unstable, showing evidence of two (possibly three) minor explosions since the last observation of Sept. 11, 1990. Moreover, a scan made on June 4, 1991 showed a violent explosion occuring there at the time of this scan. Talk about serendipity! The 1/f noise detectors revealed a tremendous increase in turbulent winds at this time! The intense winds could affect the earth much more than the event of Dec. 1986! A scan of the Center was made the next day and it appeared to show that the massive black hole and some other structures at the center had disappeared leaving what appeared to be debris there. The scans were repeated for the next few days, and sporadically for the next two weeks----all confirmed that the new black hole and ring structure as well as some other long-standing structure there had really disappeared from the center!

A number of earth 'events' occuring since June 4th may be related to the new strong gravity winds caused by this latest catastrophe at the center. For on this same day, a violent volcano erupted in Japan, with some evidence that others appeared to have increased activity also. A few days later, a long dormant volcano in the Philippines erupted, and also some others were showing possible increased activity. The sun also showed major sun spot activity after June 4th! Again, a number of earthquakes were reported soon after June 4th. World-wide weather was most unusual, with increased wet and dry spells, higher than normal temperatures here in the eastern USA, and increased tornadoes and monsoons. The writer expects the earth will be in for a spate of unusual weather and increased volcano and earthquake activity for some time yet. Best regards,

Greg Hodowanec

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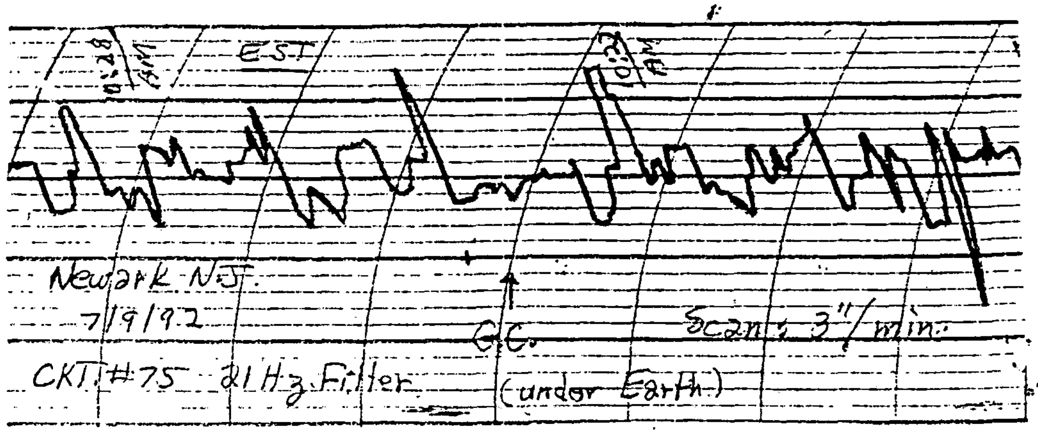
Cosmology Note

GH Labs.
Newark
7/14/92

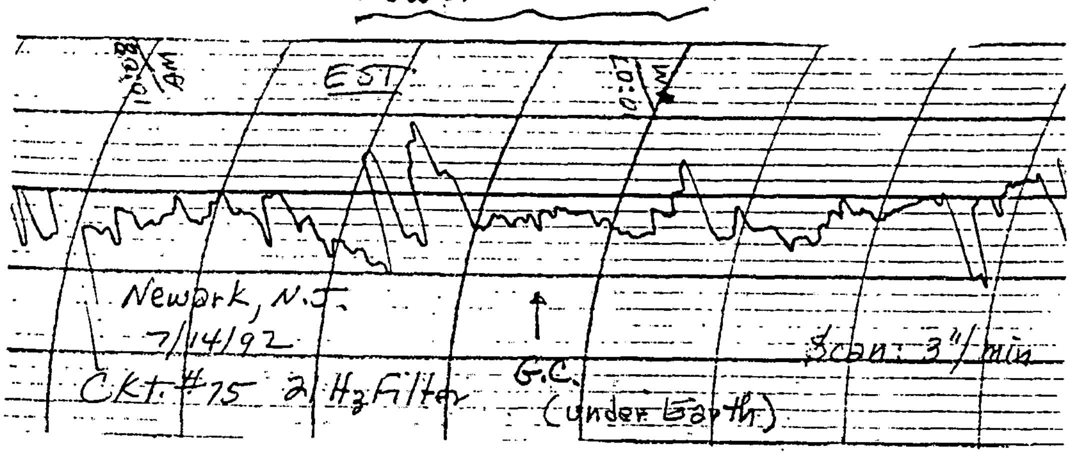
I. Scan of Galaxy Center (GC)

(To determine if a 'black hole' is being re-established there now).

Higher level scan



Lower level scan



II. Conclusion:

① The massive 'black hole' at the GC is still gone! Only a slight trace of a mass still remains there, with some 'ring' (low level) structure remaining in the area.

(400)

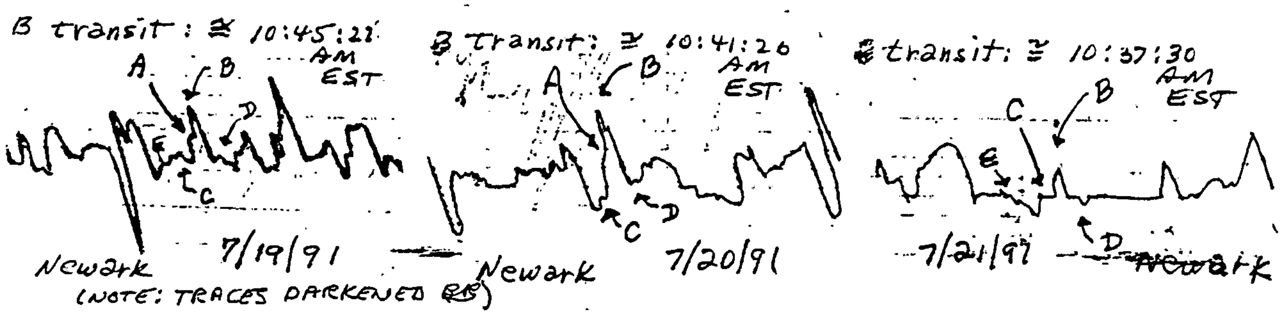
Cosmology Note

GH Labs
Newark, NJ
7/22/91
(400)

Dear Colleague: This may be of interest to you.

Subject: Shadow Scans of the Sirius Star Region.

Sirius is the brightest star in the Earth's sky. It is only about 8.5 light years away and thus could be an interesting area for study in terms of GW shadow observations. Sirius is known to have a very dense companion (a white dwarf known as Sirius B) which has an orbital period of about 50 years. There has also been conjecture that Sirius may be a triple star system and may even have planets there. Thus the writer decided on July 16th to have a closer 'look' at Sirius with his Ckt. #75 astronomical GW detector unit. Scans were made at rather low sensitivity levels with a 21 Hz LP filter in order to keep other universe responses at a minimum. The scan made on July 16th (not shown) appeared to show that there indeed was a massive star at that location with some other 'structure' also appearing. Thus three consecutive scans were made at more sensitive levels as shown below:



Since scans of a region could be 'distorted' due to the detection of shadows from anywhere along a meridian, the 3-day scans should be able to identify some repeating detections in that area. On the July 19th scan there was indication of the detection of Sirius A and B as well as some other close-in structure. A scan made on July 20th made at a somewhat more sensitive level indicated that perhaps Sirius was a triple star system (with Sirius C showing up?) and the possible presence of one (or two?) planets also. Another low level scan made on July 21st apparently did not show up Sirius A (being masked by Sirius B) but Sirius C appeared to be better defined. A fine study of the original four scans of this region seem to show that possibly two planets, D and E, may be part of this star system. More observations at different sensitivities as well as output filtering are needed to better resolve these apparent observations.

Remarks:

The Sirius system of stars (and planets?) at only about 8.5 light years away should make for an interesting study in terms of GW shadow observations. The author used the detector unit described in the January 1989 edition of R-E's Electronic Experimenter's Handbook. For best results, use 1458 IC devices which were manufactured in the 1970's. The more recent devices tend to have too much internal gain and tend to go into 'oscillation' at high gain levels. However, some recent devices do work okay! It would be nice to see more of you interested researchers more active here. Best regards to all,

-Greg Hodowanec

P.S.- Excuse the double traces. I recorded on the back side of used paper!

(401)

(401) (1)

Cosmology Note

GH Labs
Newark, NJ
7/29/91

Dear Colleague: This is for your information.
Hope it is of interest to you.

Galaxy Center Responses

I recently reported to you that it appeared that our Galaxy Center (GC) had undergone another catastrophic 'event' on June 4, 1991---- an apparent 'explosion' of the black-hole-type structure there which had developed there as the result of an 'event' on about 12/5/86.

Enclosed are just a few of the GW 'shadow' scans on which I based these conclusions. They are not the best of scans as much of it appears on poor chart paper and with poor pen recorder pen responses. However, the original recordings contain much more detail which do not reproduce well on the commercial copiers available to me.

Scans made during the month of July confirm the loss of the 'hole' at the GC, but there are now some indications of a new closer-in shock-wave ring structure and possibly the start of the re-collection of some of the debris there to form another dense object at the center. This, however, may take many years yet! At present I am only monitoring the Galaxy Center about once a month. My present plans are to look at some of the local star systems and try to determine if planets are in orbit about them. As you now know, I started with Sirius, and first tests have shown definitely a binary star system and the possibility of some planets there. Many tests will be required to eliminate occasional responses from other shadows here and to definitely determine the structure actually present in the Sirius area. Take care----

Comments:

Dear Bill:

I had to re-trace Fig. 8 since the green F.Cain pen used on the recorder did not reproduce well.

I plan to look at ε Eridani and τ Ceti (about 11 LY away) to see if they might have planets. You may recall that these were the 'targets' of Project Ozma, in terms of radio signals --- with no response noted.

Take care,

Ozy

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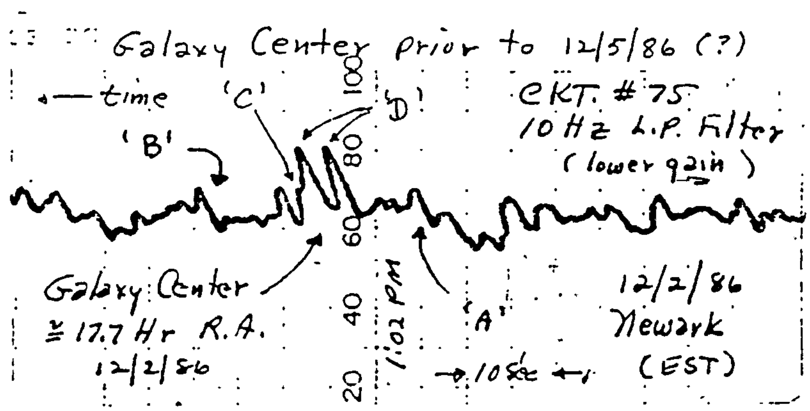
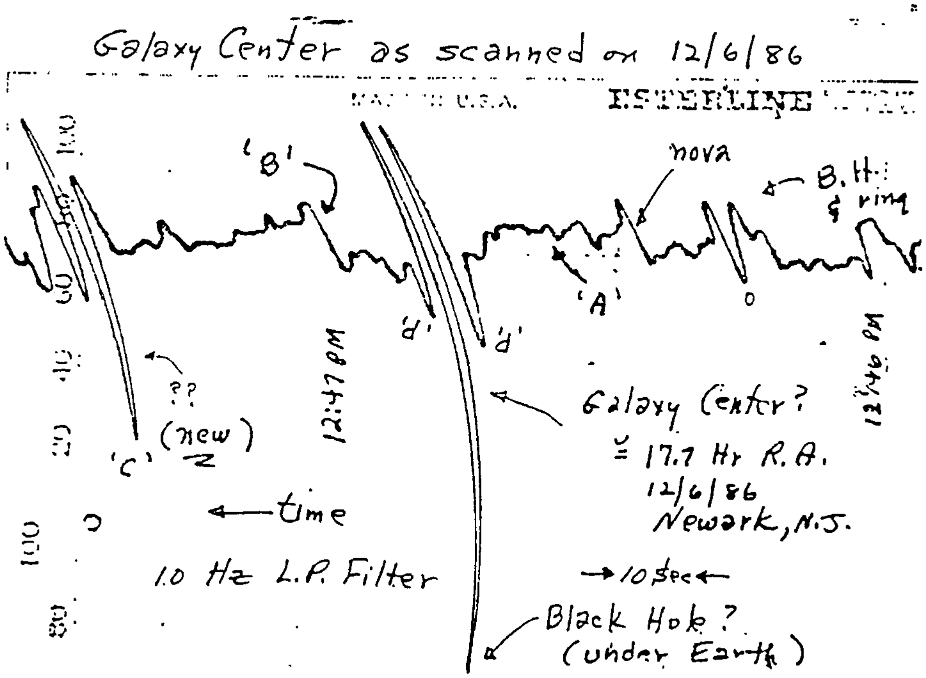
Fig. 1



This is how the Galaxy Center (GC) 'looked' in GW scans made prior to this date. The GC is in the zenith area in this scan and large masses in the zenith result in a reduced g-field and thus an up-scale reading on the strip chart. The responses A and B are believed to be a rotating shock-wave wall of material blasted from the GC. The dense masses D may be separate masses, but more likely a dense 'accretion ring' of material, with little mass in the central region. The mass C was noted in previous scans to be slowly moving toward the GC area. The capture of this mass may have precipated the catastrophic event at the GC which was noted on 12/6/86 and thereafter.

Fig. 2



This scan shows a new well-defined and very deep 'black hole' with a dense ring d now on the meridian of the GC. However, this is believed to be a more local structure and is under the Earth (possibly Betelguese, or near it), while the GC is 180° away in the zenith region yet. The supernova type event shown as C resulted in a hole-type structure as shown in the scans of Fig. 3 & 4. The 'gravity winds' from the major event caught here was expected to affect the Earth's weather and possibly geological structures. The 'winds' were very intense as heard on GW noise detector units.

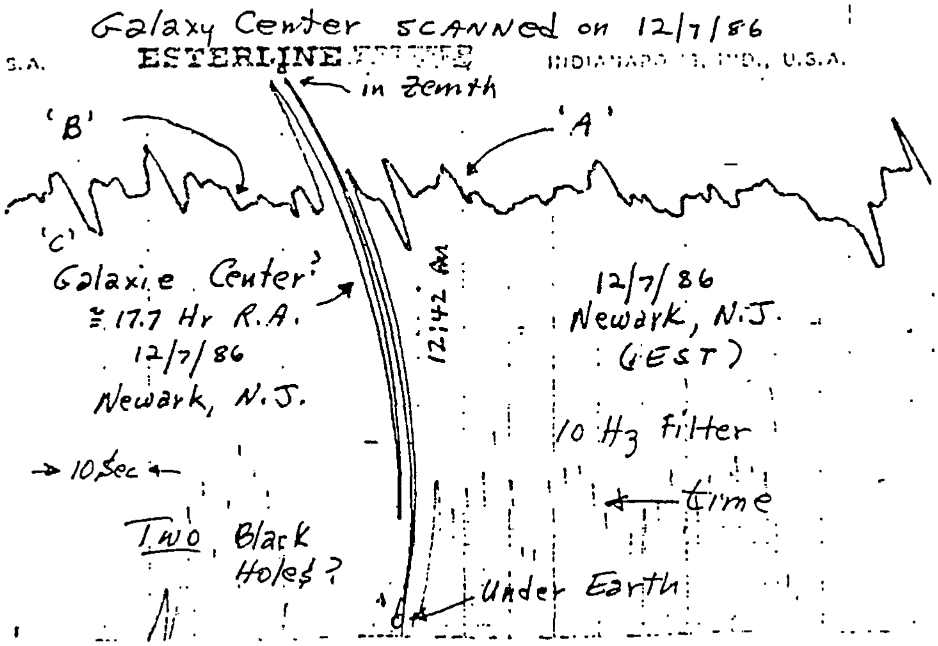


Fig. 3

This scan shows for the first time that the GC had really develop a new structure, probably a typical black hole type. Note that the supernova type event shown in Fig. 2 is now a 'hole' type structure which persisted until June 4, 1991. The double hole structure ~~seen~~ when the GC was scanned when in the zenith area also persisted until 6/4/91, but after then only the Betelguese (?) hole remained!. These two holes could be well separated by scanning the GC when it was under the Earth. In this case the holes show up as well-defined black hole and ring structures.

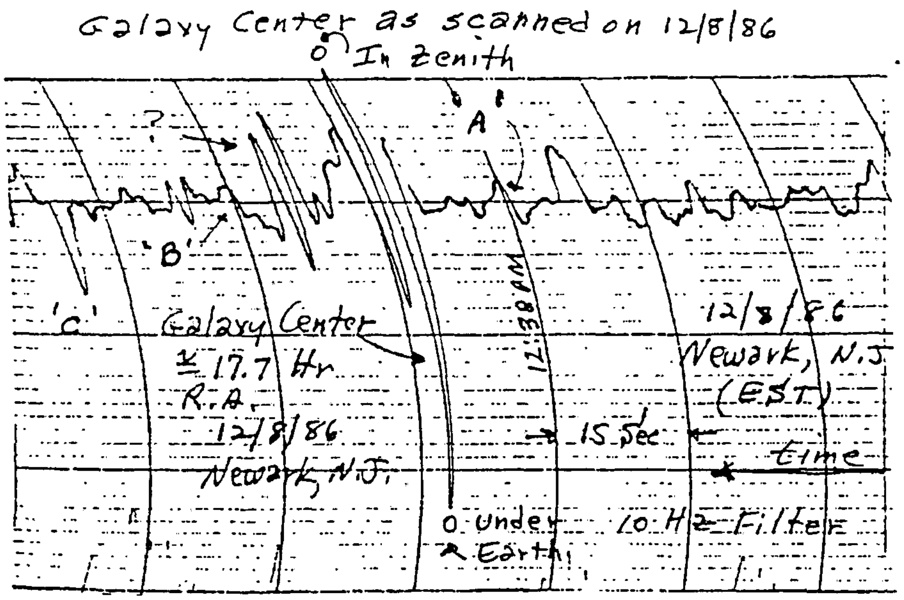
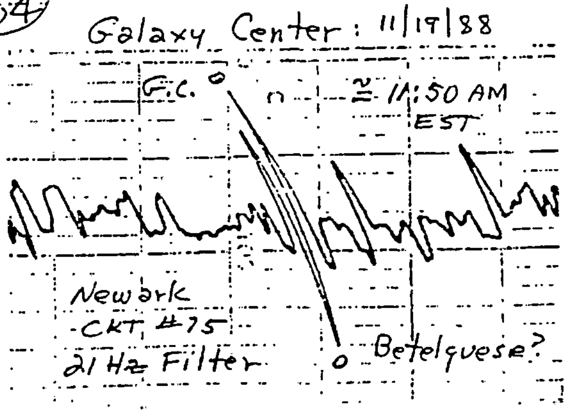


Fig. 4

This scan continues to show the double hole structure on the GC meridian when the GC is scanned when in the zenith region. The two holes are only about 2-3 seconds apart here, but can be separated by minutes when the GC is under the Earth. Of importance here, is the evidence that the shock-wave ring A & B has expanded, compared to the positions shown in Figure 1.

Fig. 5



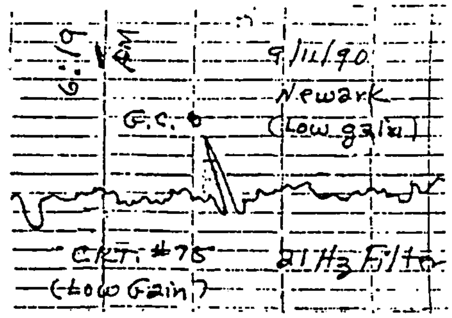
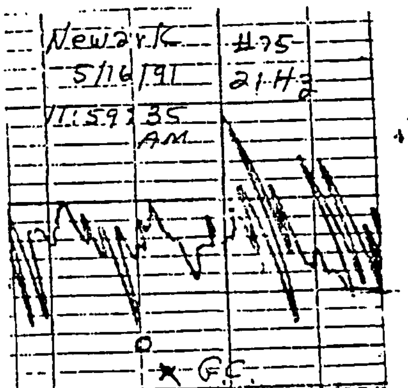


Fig. 6

Here the GC is separated from Betelguese (?) by 1 1/2 min.

Figure 5 shows a typical 2-hole response of the New GC in the firs two-three years of the GC when the GC was observed in the zenith region See Jan. 1989 R-E Experimenter Handbook for GC responses under Earth!

Fig. 7



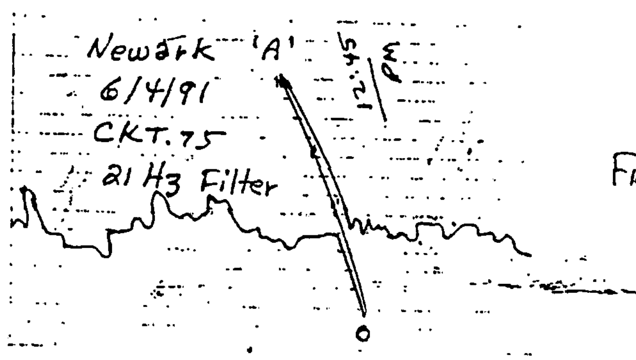
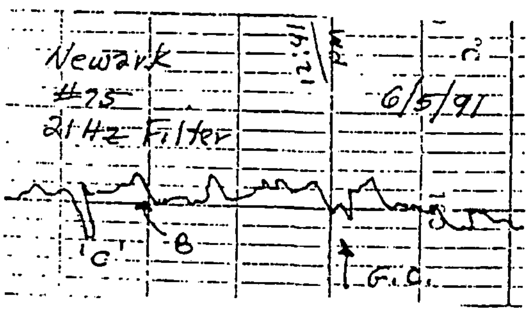


Fig. 8

Figure 7 scanned at high-level on 5/16/91 appeared to show the GC had developed a series of new rings, possibly due to minor explosions. Figure 8 scanned on 6/4/91 started to show the same ring structure, but a new explosion at A (?), occured at this very same time!

Fig. 9



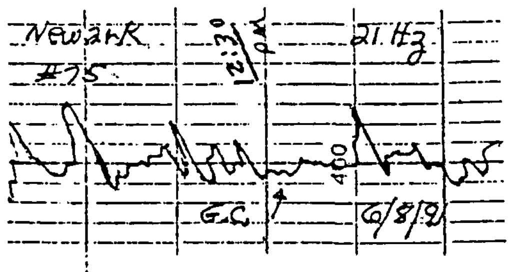
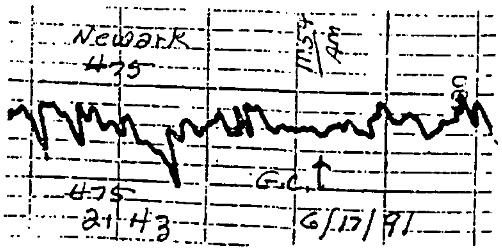


Fig.

Fig. 11



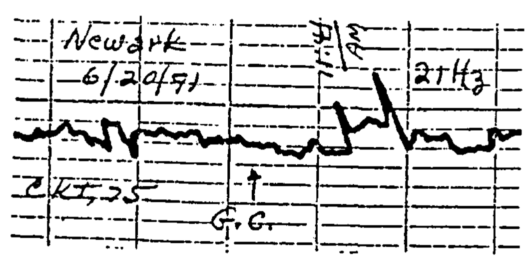


Fig.

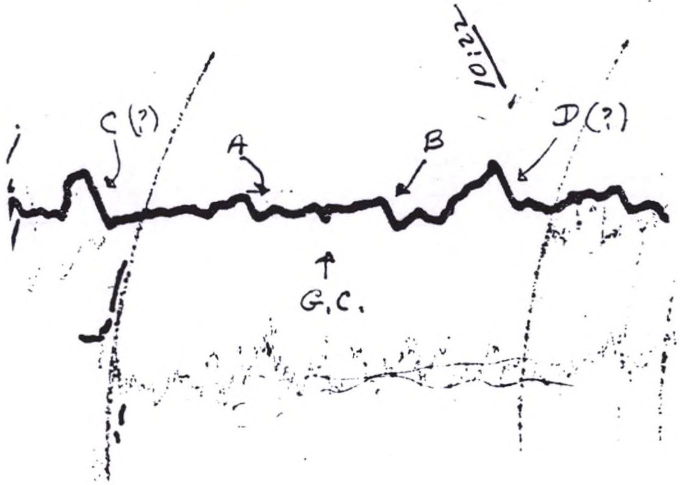
The GC scanned on 6/5/91, 6/8/91, 6/17/91, and 6/20/91 all appear to show that the deep hole and ring structure seen at the GC since about 12/6/86 have now disappeared! There also appears to be a progressive loss of detailed structure at the GC---the effect of turbulent debris?? A number of scans made in this period all showed the same type of response----no more black hole at the GC!!!!

Cosmology Note

GH Labs
Newark
8/3/91
(GH)

405

I. Galaxy Center Response: 7/10/91



II. Remarks:

1. The G.C. was scanned about 10:22:25 AM EST on 7/10/91 using Cht. 75 but with a 10 Hz LP Filter. A rather higher level gain was used as well as a heavily 'inked' Flair pen in the recorder unit; this was done to eliminate as much as possible other 'responses' on this meridean.

III Conclusions:

1. This response appears to show a remaining mass at the G.C., which may be the 're-collection' of debris there. Also seen are what could be a new shockwave ring at A and B, and also possibly (?), the original shockwave rings at C and D.

2. Monthly scans of this region will verify if these conclusions are real!

406

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Cosmology Note

Newark, NJ
11/8/91

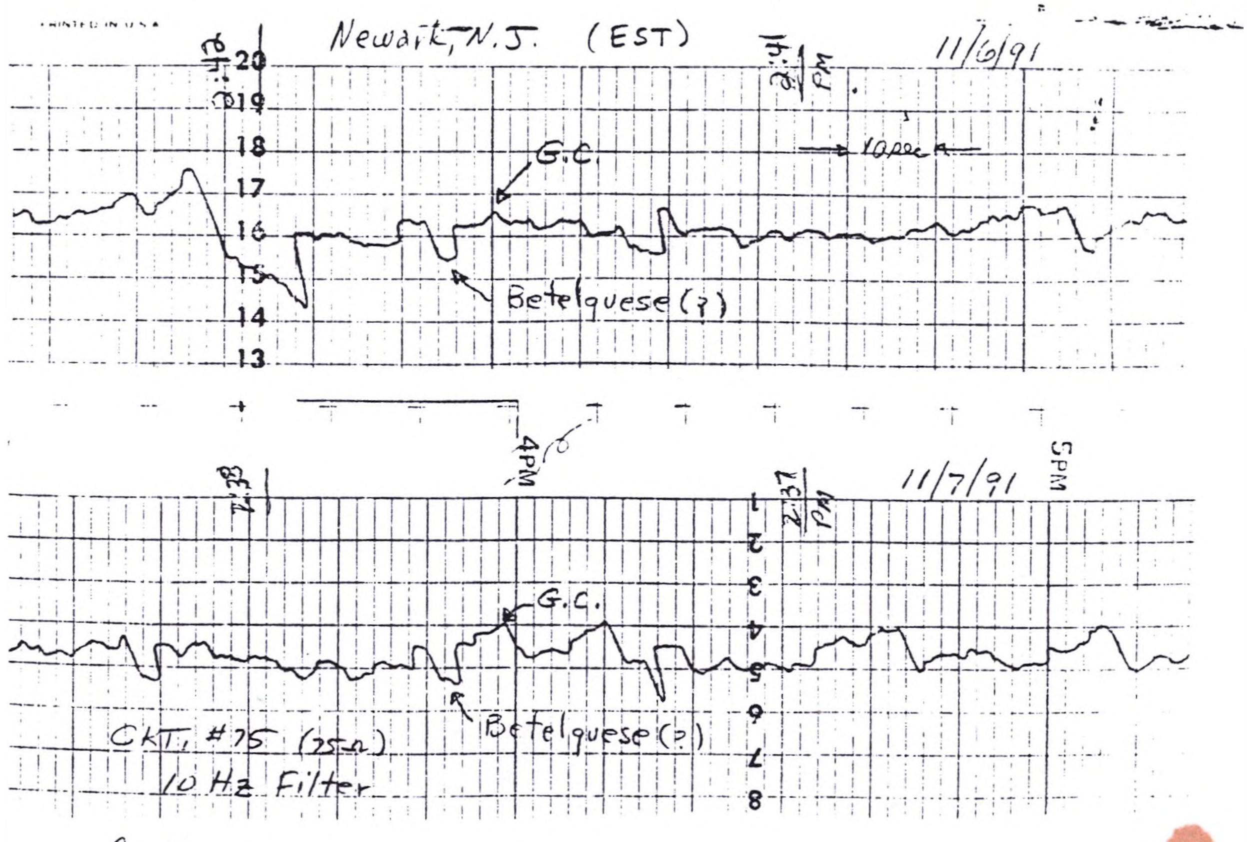
Dear Colleague: This may be of interest to you.

The Galaxy Center and Betelguese (?) Black Holes Status

On June 4, 1991, the writer had serendipitously 'observed' the final 'explosion' of the deep black hole (?) at the Galaxy Center which had developed during the G.C. event of about Dec. 6, 1986. Scans of the G.C. periodically after June 4th (until 7/10/91) had shown the black hole there had really disappeared with only a trace remaining of the deep mass which had been there. A recent scan at 10Hz (see below) continues to show but a trace of the mass that had been there! But most surprising, the deep black hole (?) which had developed at the position of Betelguese in Orion at the same time as the GC black hole, and which was unaffected by the June 4th event, appears now to have undergone a drastic change, probably only very recently (see below). It appears that the former black hole type structure there is now somewhat less dense but much increased in diameter, as if a 'gentle' explosion occured there! It also appears to possibly have a transverse velocity? Is this event responsible for the increased gravity 'winds' in recent weeks, the recent spat of solar flares, and possibly the renewed 'strange' weather in recent weeks??? Food for thought!!!

Best regards,

Greg Hodowanec



Bill I'm running a 2-day scan on the [illegible] at 10 Hz filter now --- see an interesting effect (possibly). Will report on it soon.

Greg

407

Cosmology Note

407

GH Labs
Newark, N.J.
March 15, 1992

Dear Colleague: This may be of interest to you.

New Nova noted in Cygnus

On Feb. 26th, Bob Sickels, editor of The Radio Observer, informed me of a new Nova in the constellation of Cygnus. The coordinates:

RA 20Hr : 30 min : 31 sec
Dec 52° : 31 min : 52 sec

While this nova is optically visible only on the other side of the planet at this time, it would be 'visible' as a gravity shadow any-time that it crossed the gravity detectors meridian---either in the zenith or under the earth.

A preliminary check was made (under the earth) and it appeared that indeed there was a very dense object at that location. Two scans were made and the preliminary data was sent to Bob.

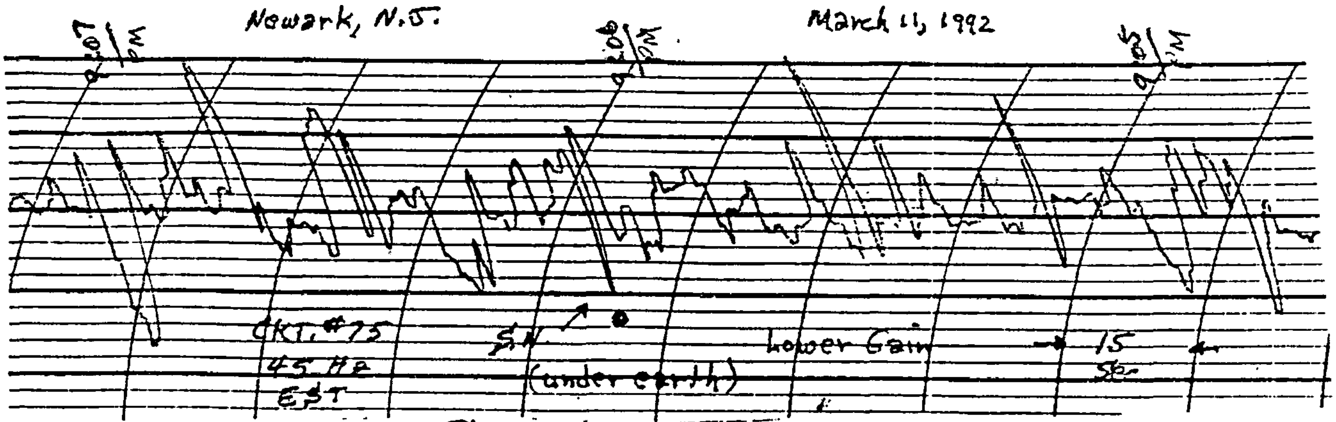
Since that time six additional 'scans' were made of that region, four were under the earth and two in the zenith. This Cygnus region is a very active section of our galaxy and thus the activity here (and elsewhere) could at times 'wipe out' the desired data. In fact, the data on two of the under earth scans were wiped out!! However, two scans under earth (shown as "A" and "B" here) and two scans in the zenith (shown as "C" and "D" here) had useful responses.

Scan "A" at low levels of gain shows a fairly well-defined dense mass, perhaps a neutron star or even a black hole, while scan "B" at a higher gain level gives a better indication of this perhaps being a black hole, and not too old, possibly only 500-1000 years old?

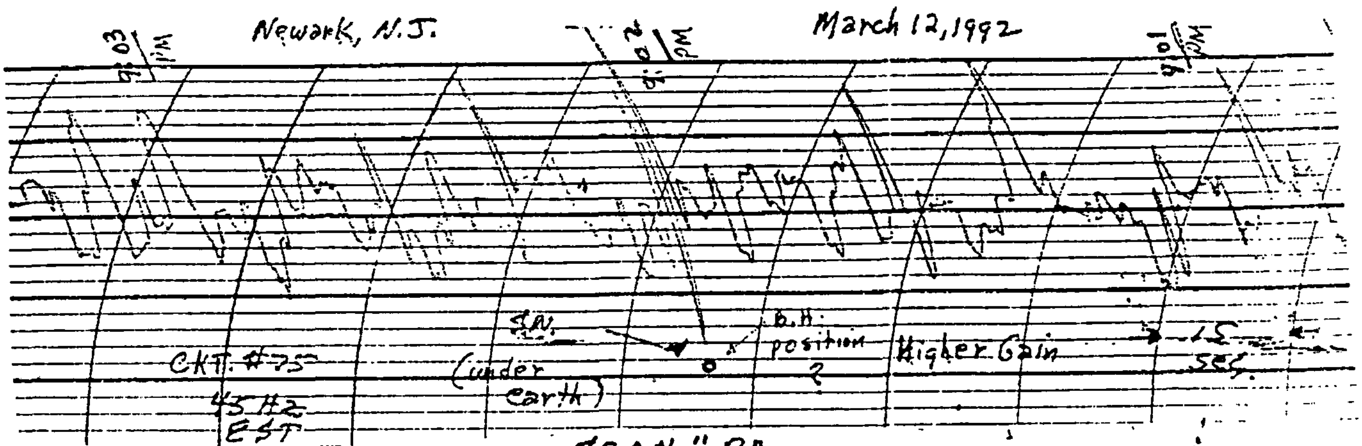
Scan "C" at very low gain levels (and a heavily inked pen) shows signs of the same structure as seen in the zenith, while scan "D", also in the zenith but at a higher gain level, reveals the pronounced black hole but the accretion ring areas have been distorted with some other gravity signals.

Conclusion: While I have yet to see any media notes on this Nova, the gravity detectors appear to confirm that there is really a dense object at the specified location. Its a shame that we do not have more observers looking at 'fast scan' gravity observations. The bottleneck here is the availability of low cost pen-type recorders which can respond to amplitude changes in terms of a fraction of a second. I have an old Esterline-Angus unit which was missing its original ink pen. I replaced it with an improvised pen made with a short section of a Flair Pen. The added writing resistance and inertia is an advantage in that it tends to limit some of the millisecond 'noise' responses which can interfere with the desired responses. Most servo-type recorders show up this 'cosmic noise'! The Rustrak units, while useful for the large-scale clustering of galaxies responses, are useless in these 'fast scan' responses. However, the enterprising researcher should be able to adapt some low cost computer units to the collection storage, and eventual retrieval of the data for display in the proper form for analysis. Good experimenting to all!

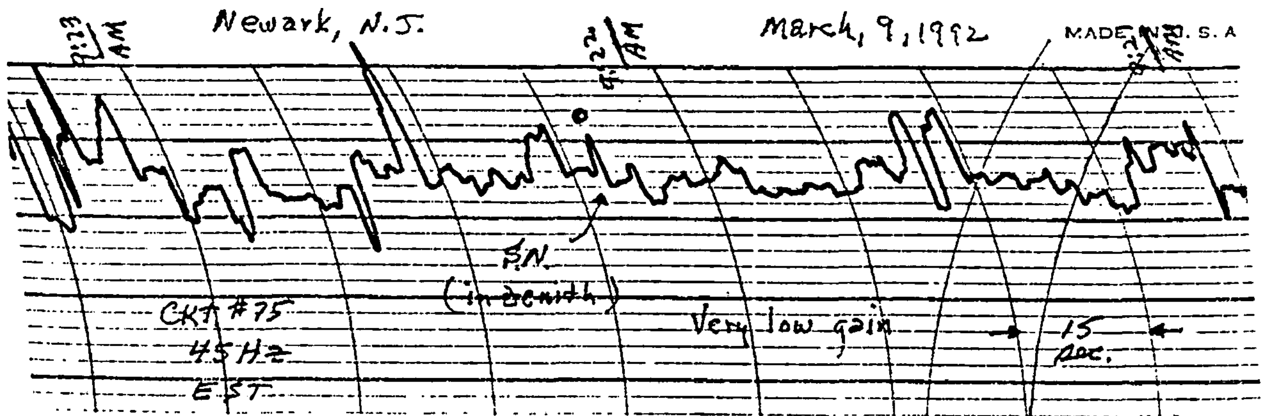
408



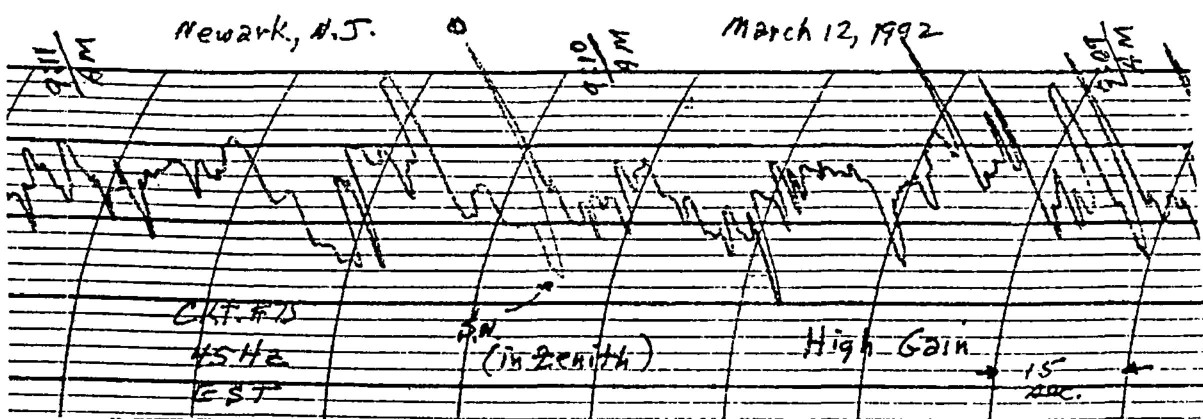
SCAN "A"



SCAN "B"



SCAN "C"



SCAN "D"

409

409

Cosmology Note

GH Labs
Newark, NJ
July 22, 1993

Dear Colleague: This may be of interest to you.

A. Follow-up on the Note of 7/19/93

To confirm the reality of the scans of Cygnus 'H' and the re-developing 'structure' at the Galaxy Center, these scans were repeated on 7/21/93. As the plots of Figure (1) attached show, these 'events' were largely duplicated. The Galaxy Center response is essentially unchanged, but Cygnus 'H' has changed somewhat----but this was expected since the Rustrak 2-D plots seemed to indicate that this 'event' was possibly 'two black holes in rapid close orbit about each other'. This investigation was begun because we speculated that perhaps some 'new' massive cosmic event might be generating fairly strong 'gravity winds' which in some way were affecting the jet stream in the northern hemisphere. There was also a possibility that the rotating 'holes' seen in the Rustrak plots were relatively close in the Cygnus area and may have had a phase relation with the Earth's rotation which could be keeping its maximum effect pointed toward a particular 40°-42° North Latitude location and which is only very slowly moving across the Earth (in this case the USA?). To further look into this, I went over some past 2-D Rustrak scans I had remaining here.

B. Past 2-D Rustrak Scans

To begin with, I went over a 2-D scan I made continously from about 2/11/92 to 2/28/92 with Ckt. #3000 A. Unfortunately, I used the latter portions of this chart as actual scan samples sent to interested colleagues. However, I did check the remaining portions of this chart to see if there was any record of Cygnus 'H' on it. I was very much surprised!! On 2/15/92, the chart appeared to indicate that there were two seperate 'black holes' in this particular region of Cygnus but were fairly far apart, about 8-10 minutes of Earth rotation time. However, on 2/16/92, these 'holes' appeared to have come closer together!! On 2/19/92 they were much closer. On 2/20/92 they were very close, just about abutting. On 2/21/92 they appeared to be coalescing!! On the morning of 2/23/92 they appeared to have coalesced, and on the evening of that day the scan appeared to show a new larger structure there with a pronounced shock wave ring present!! Unfortunately, I could not go further here as that was the end of my chart record here---the other portions are with various colleagues out there. I am retaining this section, uncut, for further study and future reference.

Conclusions

1. The Galaxy Center now appears to be developing a new B.H.!
2. Cygnus 'H' is apparently real, massive, and close by?
3. Cygnus 'H' may have developed early in 1992 and became more massive and energetic by the summer of 1992?

Remarks

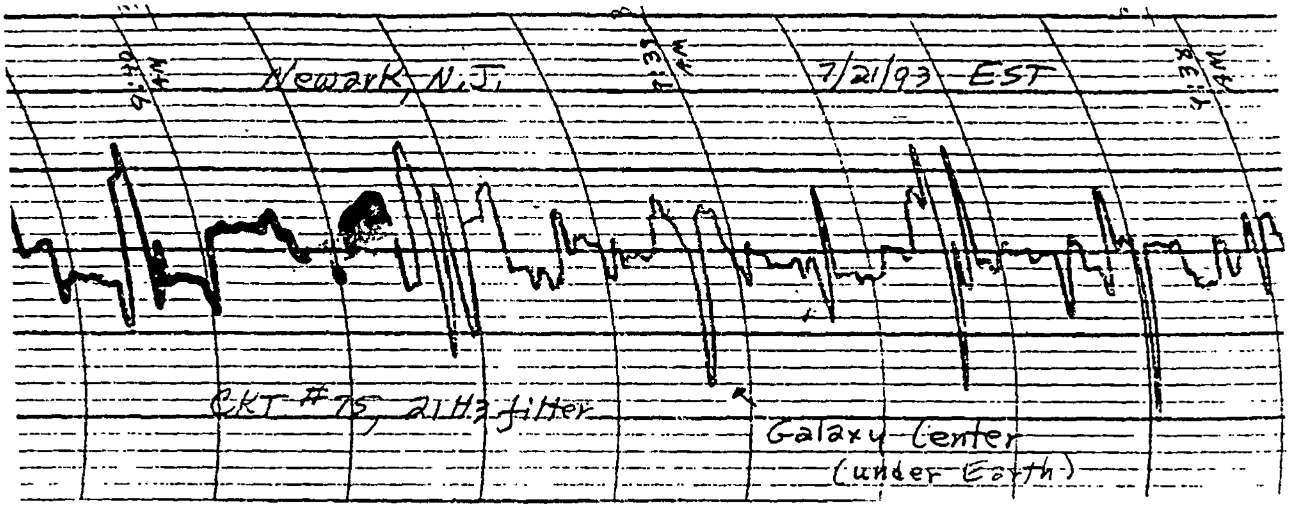
The information here is for your interest only. It may or may not be relevant to the present midwest flood problems. I will not persue this further for the present, except I may make a 2-day run on the earth g-field on the Rustrak to see if a g-field variation is now associated with Cygnus 'H'. Perhaps some of you may do more? The equipment I have used for these tests are described in the Jan. 1989 issue of RE's Electronic Experimenter. Any GW gravimeter designed to monitor fairly rapid GW signals is okay to use. Use of simple analog-type (meter type) chart recorders, such as the Esterline-Angus units, is recommended for 'fast' scans. Potentiometric or servo type recorders have fast responses and thus also record much superflous and thus annoying 'fine structure'. The inertia of the meter type recorders tend to filter out much of that excessively fine response.

Greg

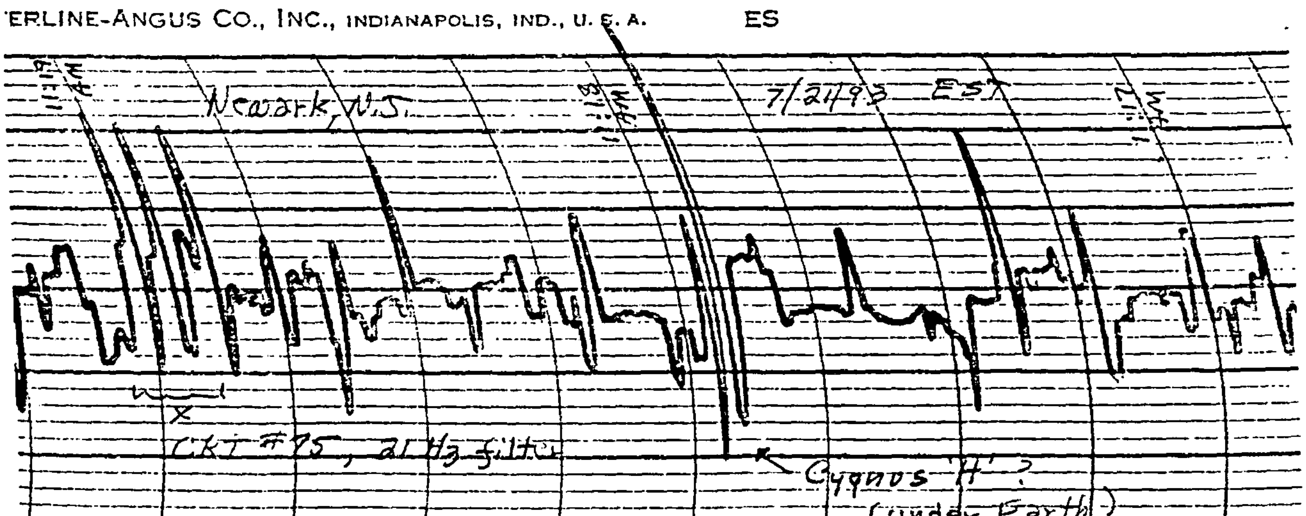
(2) (410)

(410) GH Labs
Newark
7/22/93
(90)

Figure (1): Recent 'Fast' Scans
(Esterline-Angus Recorder Used)



(a) This scan was made under the same conditions as that shown in Figure(2) of Note of 7/19/93. The dense mass now collecting at the Galaxy Center again still does not appear to qualify as a 'black hole' yet. The pen of the recorder was drying out --- an attempt to refill it resulted in the 'blotting' seen above. Also note the corrected time in this scan; the time on 7/19/93 scan was corrected for EST in the wrong direction!



(b) This scan confirms that the structure of Cygnus 'H' may be a double 'black hole' structure which is rotating fairly rapidly (possibly only several days for a complete orbit). This will show up with the variation in the peaks of the structure. Note the interesting multi-supernovae at X. This also appears to occur often!

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Cosmology Note

411

GH Labs
Newark, NJ
1/20/94

Dear Colleague: This may be of interest to you.

1. I had predicted since December 6, 1986 that the earth would be in for an extended period of very unusual weather conditions. This was based upon an observation of a catastrophic 'event' at the Milky Way Galaxy center at that time (as was 'seen' with gravity signal techniques). The strong gravity 'winds' produced by that event was expected to affect the entire Galaxy, including our solar system, and especially our own earth. This was because those gravity winds are essentially 'instantaneous' and thus are affecting our earth now, in real time, rather than at the slow speed of the velocity of light! The event of 12/6/86 apparently did affect our weather patterns in the following time period.

2. However, the event of 12/6/86 had also 'spawned' other instabilities in our Galaxy. Some of these had been noted, gravitationally, and had been reported to you in the past. All seemed to have some effect on weather patterns on earth and also on some geological aspects, eg., earthquake activity. Direct correlation was seen.

3. Recently, since about the first week of January, it was noticed that there was again a very sharp increase in both 1/f and also white noise in the QND type GW detectors. This increase in noise, probably due to a very strong gravity wind, is presently most pronounced during the morning hours at this location. The local g-field flux increases in the order of 4% for both electronic and mechanical gravimeters here in this time period. It is possible that there had been another very drastic event in the Cygnus-Lyra region, but since I have not been 'observing' recently with fast scans on recorders, or slow 2-D scans on the Rustrak, I have no record of such a possible event. However, I know that this region has been very active since 12/6/86.

4. It is conjectured at this time that very strong gravity winds may arriving from this region and affecting the northern hemisphere. The subsequent rise and fall in the earth's gravity flux might be partially responsible for the very rough January weather and also the spate of earthquakes, some minor ones occuring here in the eastern USA!!!

5. While this is speculation at the moment, past observations and their correlation with earth changes, appears to indicate that there may be a measure of truth in these speculations. What is needed is more 'observations' by more active GW researchers. I cannot do all by myself; my efforts presently are very limited. What say colleagues?

Best regards,

Greg

ON THE EXTRACTION OF ENERGY FROM THE AETHER INCLUDING CONSIDERABLE MATERIAL ON THE AUTHOR'S TESTS WITH THE WOOTEN-McCLAIN MRA (MAGNETIC RESONANCE AMPLIFIER) AND HIS OWN VARIATIONS

412

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Cosmology Notes

GH Labs
Newark, NJ
March 20, 1987

Gravitational Energy

A. Introduction

Gravitational energy is present in terrestrial space as a potential energy which may be released as kinetic energy under certain conditions. The energy content of gravitation in terrestrial space may be determined from the two so-called constants of gravity; g , the free-fall constant of the earth's gravity field, and G , the universal gravity constant. Both of these constants are derived from experimental data obtained with the use of Newton's gravity relations. The earth's gravity field energy content was calculated by the Russian physicist, Lev Landau, back in 1962, and is given by the simple relation:

$$U_G = \frac{-g^2}{8\pi G} \quad (\text{ergs/cm}^3) .$$

Using currently accepted factors of $g = 980$ cm/sec^2 , and $G = 6.67\times10^{-8}$ dyne cm^2/gm^2 , then the gravitational energy which is potentially available in terrestrial space is :

$$\begin{aligned} U_G &\cong -5.4\times10^{11} \text{ ergs/cm}^3 \\ &\cong -15 \text{ watt-hours/cm}^3 \\ &\cong -246 \text{ watt-hours/inch}^3 \\ &\cong -425 \text{ kW-hours/cu. ft.} \end{aligned}$$

The potential energy of gravitation may be converted to kinetic energy in various ways, primarily by having a mass freely interact with the gravitational field. A commonly observed interaction is seen in waterfalls, where gravitational energy is 'imparted' to the falling molecules of water and this energy is then converted usually to rotary mechanical motion by the use of water wheels or turbines. The energy may then be directly used, or further converted to electrical energy as is seen in hydroelectric plants.

The waterfall systems are essentially 'closed energy' systems in that the energy which is 'extracted' in the falling process was originally supplied by the sun in various evaporation processes. In some cases tidal action may be used to achieve a water level difference, but overall, the system would still remain a 'closed' system.

However, there are also non-mechanical methods for 'extracting' the latent energy in the earth's gravity field. These depend upon the interaction of scalar type fields. Scalar fields are simply potential fields which are conservative in nature and contain gradients which are all in one (parallel) direction. Thus such fields may be described in terms of a magnitude only. The earth's gravity field is such a scalar field in that the gravity flux is parallel and directed downward only, in general. Therefore, such scalar fields may interact (algebraically) with other locally created scalar fields of the electric type (E-fields) or magnetic type (H-fields). The scalar E- and H-fields must be of the curl-free type, ie., essentially parallel type fields. Therefore, it is possible, in principle, to have a local scalar field interact with the gravity scalar field, and thus, in effect, 'extract' energy from that gravity field. Such an energy system would be very low in cost, pollurespect to the rhysmoid, ie., the aether. Thus the returned flux is now at least two times the initial flux and thus the current re-induced in the coil is also doubled. Therefore, the power in the return cycle is at least squared or four times the initial power input, for an apparent efficiency of 400%. Experiments have shown that with proper coil configurations and switching times, the power 'extracted' from the gravity field in this type of process can be many times the energy required to initiate this interaction. This additional power comes from the inexhaustable resevoir of energy provided by the universal gravitational field. Such effects have been demonstrated by many in the past.

B. Conclusions

This very brief introduction to gravitational energy and possible energy 'extraction' processes should provide some inputs to you to induce you to become active in these investigations. More on these aspects will be provided in the future. Good luck with your experiments!

Note
Page 2 missing!
GH

(416)

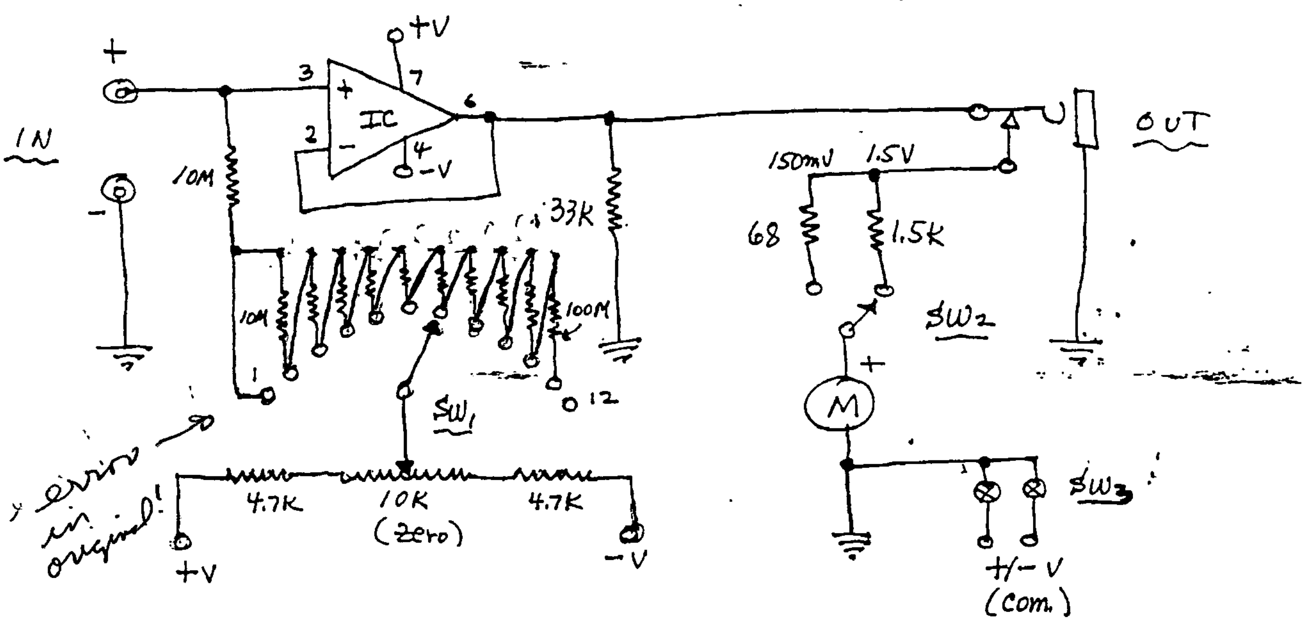
(416)

Cosmology Note

GH Labs
Newark
10/14/93
(gh)

I. Variable High Impedance Input Voltmeter

A. Schematic: (Ckt. #VM-1)



B. Parts:

IC : OP-20 (or equivalent)
SW1 : Single pole, 12 position switch (Radio Shack)
SW2 : SPDT switch (meter range)
SW3 : DPST switch (on/off)
Input loads : All 10M, except Pos. #11 is 100M.
(M) : 1 MA (85Ω); 0-15 scale (Radio Shack)

II. Remarks

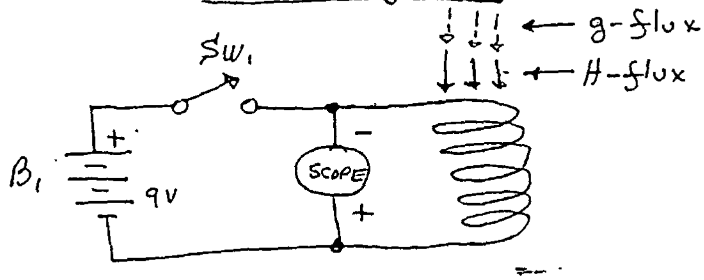
① Unit is intended to measure capacitor charging in 'free energy' experiments.
② All parts (except IC) are from Radio Shack, including Experimenter Box (largest size).
③ Unit runs on dual supply, +/− 1.5 volts.
④ Unit tested: work ok.

(417) Cosmology Note

GH Labs (417)
Newark
2/23/94
GH

I. Space Energy Test ??

A. Coil-energy test:



Scope: 500K input;
Gain set at 250V F.S.

Coil: Used winding from a 10 H choke coil; 6K Ω resistance; 1¼" square with ¾" square opening.

B. Test Procedure:

① When switch, SW_1, is closed, the current from battery, B_1, will 'flow' through coil, L_1, and set up a 'stored flux', ie., H-field in space.

② When SW_1 is opened again, The 'stored' H-field flux plus some g-field flux will sum as a return 'flow' through coil, L_1. This much higher flux will develop a higher voltage and current in the load which is the scope input impedance.

C. Test Results:

① The dc power 'consumed' in 'charging' the coil magnetic field will be largely the battery voltage driving a current in the load which will be largely the coil resistance. Thus $I \cong \frac{E}{R} \cong \frac{9}{6\times10^3} \cong 1.5\,mA$. Therefore Power $\cong EI \cong 9\times1.5\times10^{-3} \cong$ 13.5 mW

② The measured scope peak return pulse voltage was approx. full scale on the scope or 250 Volts. The pulse current is now largely limited by the scope input resistance.
Thus, $I \cong \frac{E}{R} \cong \frac{250}{5\times10^5} \cong .5\,mA$; therefore, Power $\cong 250\times.5 \cong$ 125 mW.
Therefore, the coil pulse power gain $\cong \frac{125}{13.5} \cong$ 9.3 times, assuming similar time constants for the 'charge' and 'discharge' cycles.

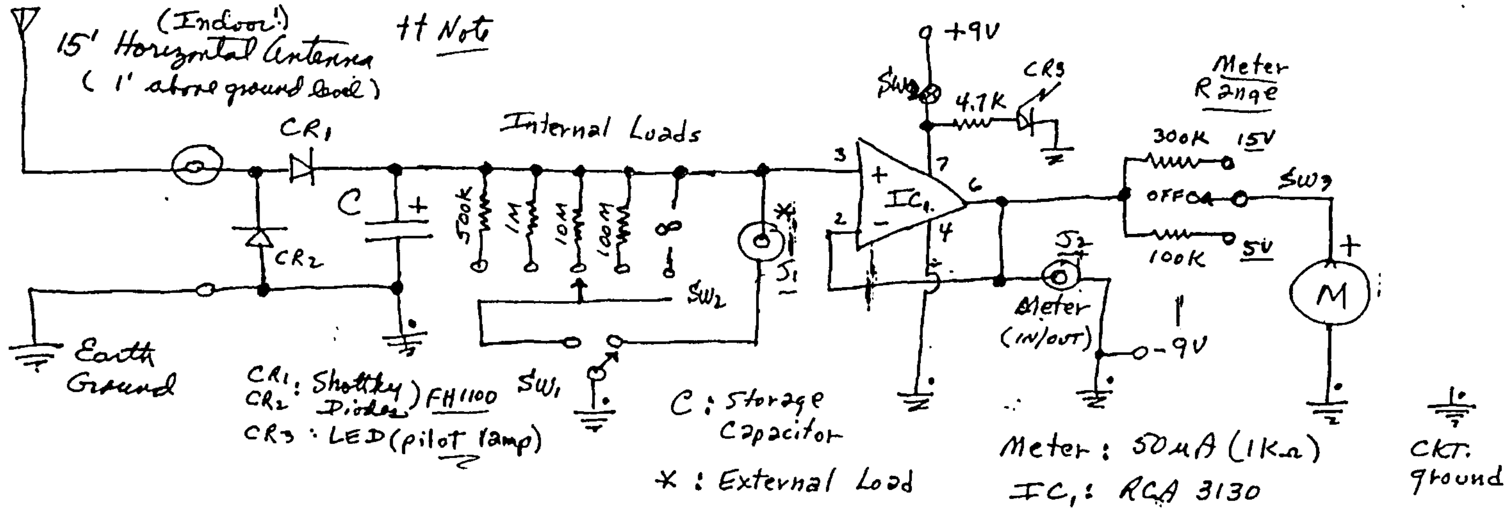
D. Conclusion:

While this is but a crude test, the indications are that coils should be able to 'extract' space energy, in this case possibly the earth's gravity field.

GH Labs
Newark, N.J.
3/10/94
(GW)
(418)

Cosmology Note

I. 'Free' Energy Test (Repeat of 11/9/86 Test)



II. Remarks:

① IC_1 is unity gain follower amp, used to present very high impedance to energy test circuit output while driving the rather low impedance voltmeter circuitry.

② The variable internal loads give some idea of the 'stored' power levels in the capacitor. The output voltage will 'drop' when the earth's energy source is insufficient to maintain the output.

③ Shottky diodes are used as 'steering' diodes and have only about a .3 volt 'barrier' loss.

④ For the set-up shown, a 10 μF (600V) oil capacitor will 'charge' to 5 volts under ∞ (open) load conditions.

†† Note:
The antenna-earth ground will pick-up radio (RF) signals, but these are in mV levels at best.
The 5V output here is due to the earth's E-field gradient and *

* gravity dependent !

(418)

(1) (419)

Cosmology Note

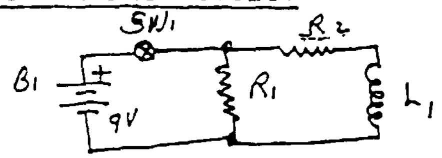
GH Labs
Newark, NJ
11/24/94 (419)

Dear Colleague: This may be of interest to you.

I. The 'Free Energy' experiment of 2/23/94 revisited.

In this simple experiment a small rectangular coil of about .5 henries (which was removed from an iron choke coil of 10 henries) was pulse 'charged' directly from a 9-volt battery. The coil was connected directly across the 500k ohm input of my vintage oscilloscope. In that rough test I assumed an approximately equal time constant for the 'charge' and 'discharge' cycles. It was pointed out by colleague Alastair Couper that the 'charge' cycle time constant would be somewhat longer than the 'discharge' cycle. While I agree with this, it really did not affect the conclusion reached in that experiment: that the energy content of the output pulse was somewhat greater than the energy needed to initiate the input pulse.

A. The 'charge' cycle:



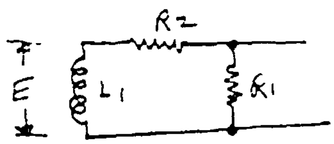
$L_1 \cong .5$ henry
$R_1 \cong 500K$ (scope input resistance)
$R_2 \cong 6K$ (resistance of L_1)
B_1 = 9-volt battery

$$T_{L1} = L_1/R_2 \cong .5/6\times10^3 \cong .083 \times 10^{-3} \cong 83\text{us}.$$

$$(\text{DC})\quad iL_1 = E_1/R_2 \cong 9/6\times10^3 \cong 1.5 \times 10^{-3} \cong 1.5\text{mA}.\ (\text{max.})$$

When SW_1 is closed, the coil L_1 will 'charge' up to about 63% of the 9-volt battery in about 80us. The maximum current in the coil will not exceed 1.5mA. While SW_1 remains closed, the maximum H-field in space is established by this maximum current of 1.5mA.

B. The 'discharge' cycle:



$$E_{out} = E = L\frac{di}{dt} \cong \frac{\Delta i}{\Delta t}L$$

The time constant cannot be given directly here by L_1/R_2 since the space magnetic flux returns to coil L_1 essentially instantaneously when SW_1 is opened. However, a time constant will still be involved since coil L_1 is loaded with both R_1 and R_2. Experimently, the time constant on 'discharge' was found to be about 1/4 the 'charge' time constant or about 20us. This was determined through the oscilloscope.

C. Flux interaction:

In orthodox EM theory, the maximum current which could be reintroduced (induced) in coil L_1 would be only the 1.5mA used to establish the original H-field in space. Thus, the peak

$$E = L\frac{di}{dt} \cong L\frac{\Delta i}{\Delta t} \cong .5 \times \frac{1.5\times10^{-3}}{20\times10^{-6}} \cong .5 \times .075 \times 10^3 \cong 37.5 \text{ volts.}$$

where Δt was that found in scope measurements. But the peak voltage as measured on the scope was found to be in the order of 250 volts, or a factor 6.7 times greater! The only possible 'error' here would be in the assumed maximum peak for Δi of 1.5mA. Now rhysmonic theory shows that the return flux could also include some additional flux which would be 'extracted' from the earth's g-field. Thus in rhysmonics, the peak Δi could be that factor of 6.7 times the initial dc current of 1.5mA or about 10mA! Now,

$$E = L\frac{di}{dt} \cong L\frac{\Delta i}{\Delta t} \cong .5 \times \frac{(10)\times10^{-3}}{20\times10^{-6}} \cong .5 \times 5 \times 10^3 \cong 250 \text{ volts}$$

which is the actual peak voltage as measured on the scope.

(420) (420)

Allowing for the differences in time constants between the 'charge' and 'discharge' cycles, the adjusted averaged current in the 'discharge' cycle may be about 10/4 only times the input current level. Therefore, the averaged current level present in coil L_1 (as developed by the return flux from space) would be about 3.75mA, which is still about 2.5 times the current provided by battery B_1 to form the original H-field in space. In rhysmonic theory, the additional return flux is believed to have been supplied by an additive scalar flux interaction with the earths g-field scalar flux. I had always speculated that the return flux would be at least two times the initial flux and that it could be much higher in special cases. There is room for much more research here.

II. Conclusions:

The simple experiment of 2/23/94 (and others at previous times) continue to show that the use of coils may be a valid technique for extracting the latent space energy, primarily from the earth's g-field in this particular case. It would be nice if more of you actually try the experiment and determine if this is real or not. Take care----

Greg

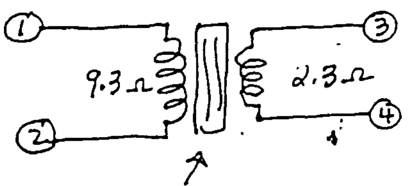
Cosmology Note

1/22/95
(JH)

Bill: This is a very crude test yet. When I am more satisfied that it may be real, I'll send you a sample of the transformer and piezo element I used. This may be what is happening in MRA test???

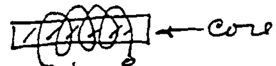
I. Ferrite Transformer Test

A. Transformer



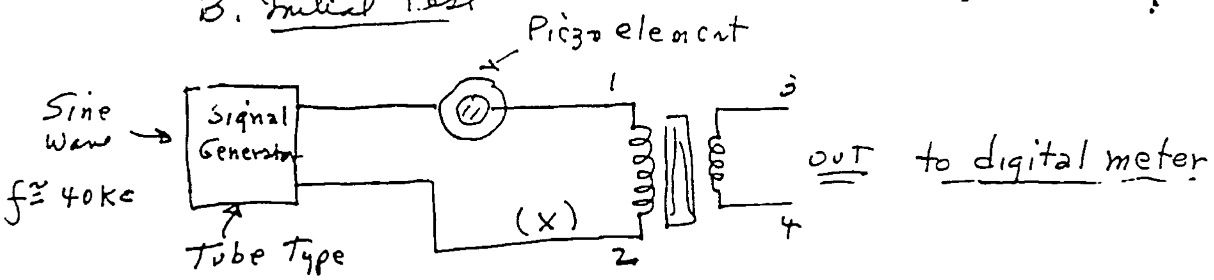
Note: The ferrite core is in the center of the module and is oriented along the 5.0 mH coil label on the module

Note:
Coils are wound on a bobbin on the ferrite core:



The 9.3 Ω winding is next to the core and the 2.3 Ω winding is the top layer. There is probably 200 ~~300 turns of about~~ #26 wire in 9.3 Ω and about 1/4 of that in the 2.3 Ω??

B. Initial Test



C. Test Made

a. Voltage across 1 and 2 (input) was measured with digital meter (10 M input). The input current was measure with digital meter by breaking line at (X).

b. The output voltage (loaded by meter only) was measured on the digital meter. The short circuit current across 3 and 4 ~~was~~ was also measured digital meter

II. Conclusions

a. With this crude test input power was in the order of 5 mW; the output (max) power was in the order of 25 mW. This is about the 5:1 ratio seen in the original MRA test.

b. There is a fairly broad resonance around 40 Kc. The performance is a function of the capacitance of the piezo element (tried capacitors here to verify that also)

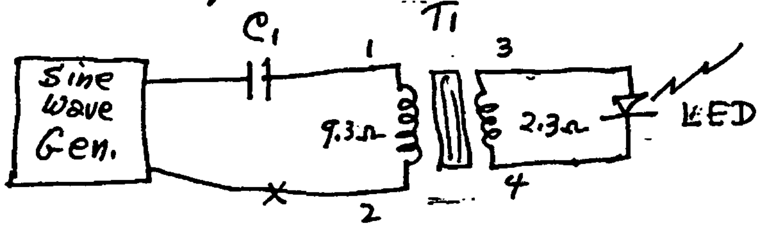
(422) (422)

Cosmology

1/26/95
Newark
(gh)

I. 'MRA' Type Test

A. Rough Test:



B. Parts:

- C_1 : 680pF @ 6KV (CRL) (I used 600pF Centralab Hikap)
- T_1 : Small potted transformer (ferrite core) marked 5.0mH 5:1 ratio.
- LED : 1.85V @ 10mA
- Gen : Old ~~tube~~ type; $f_0 \cong$ 90Kc

C. Tests:
Used Radio Shack Digital Meter

1. AC across generator $\cong$ 3.5 volts (RMS?) (10 P-P)
2. Line current at × $\cong$ .08 mA
3. Voltage across C_1 $\cong$ 9V (25P-P); across input T_1 $\cong$ 9V (AC/2) (25P-P)
4. Input power $\cong$ .3mW (max) per DVM
5. AC across LED was about 2V and line current $\cong$ 1ma. However, light output from LED was about the same as when DC energized at 1.85 @ 10 ma!!

II. Conclusions

1. The test (even with possible meter errors) seems to indicate the output power is somewhat greater than the power supplied by the generator.

2. The increased power may be extracted from the aether in some process in the ferrite core and also the ceramic (?) capacitor. The ferrite core in the transformer is not a permanent magnet.

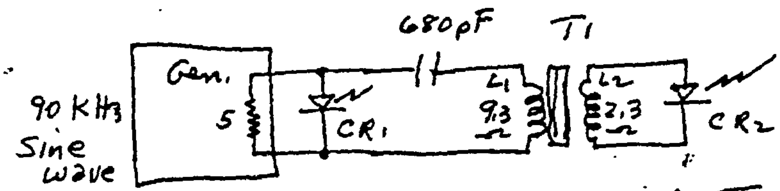
3. The so-called MRA process appears to be real, and needs further evaluations.

(423)

(423)
2/12/95
Newark

Dear Bill,

After the phone contact on this date, I went down to the lab and tried this test:



The 680pF was silver mica and T1 was the small 5mH transformer. The CR1 and CR2 were square LED's from Radio Shack, Part # 276-1655, kit of 10 rectangulars. I used two white LED's which had the same output at 1.85V at 10mA (D.C.).

Below about 60 KHz, the output LED is off and the input LED was at the 4-5 mA (DC) level ~~or so~~, as we go towards resonance the output LED starts to glow and reaches maximum brilliance* at about 70 KHz to 90 KHz, with the input LED dropping in level, going down to about a 1-2 mA (DC) light level at about 90 KHz. The output then slowly drops and was completely out at about 150 KHz, while the input LED now returns to its original level of about 4-5mA (DC) level.

This test shows roughly the relation between input and output levels, clearly indicating that there is an increase in power at or near resonance, with a comparative drop in input power! Under these conditions, it appears that the power gain is at least five times at resonance!

Maybe you can try this with your equipment?

Take care - pal

Greg

** The LED output is about 50% duty cycle since the LED is also a half-wave rectifier!

* order of 10-12mA (DC) output! **

424 P.S. – I hope that this can be made 'self-sustaining'! 424

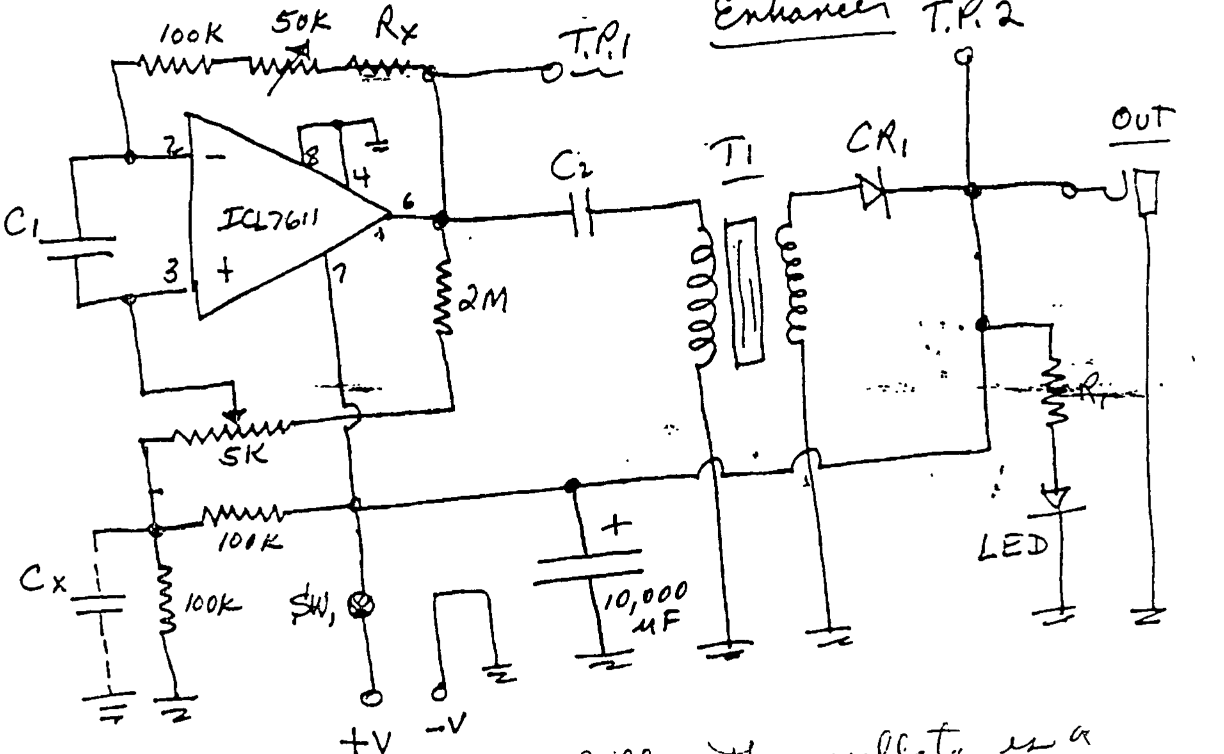
Free Energy

2/25/95

GW

GW Oscillator

A. Circuit:



B. Remarks:

① C_1, C_2, C_x : TBD

② R_1, R_x : TBD

③ T_1 : TBD

Bill: The oscillator is a GW type, but the feedback is resistive instead of a capacitor. This is being done so that the enhancer section would be independent of the oscillator. GW

C. Plan

① make Oscillator first; check with Potted T_1, decide xformer.

② make xformer; finish unit.

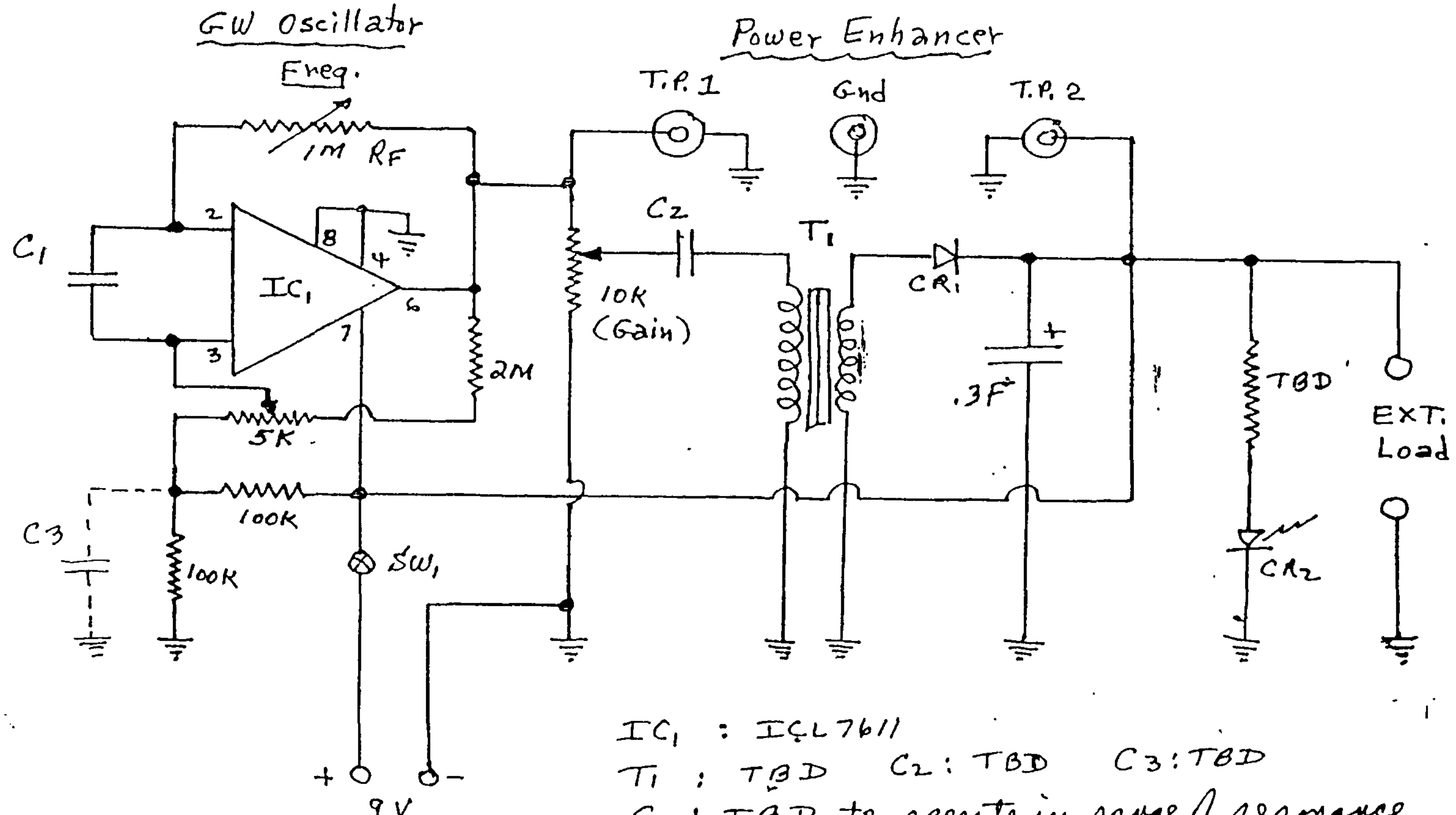
③ Evaluate this prototype.

GH Labs
Newark
2/18/95
GR

425

Cosmology Note

I. Proposed 'Free Energy' Test; Cht. # FE-6



IC1 : ICL7611
T1 : TBD C2 : TBD C3 : TBD
C1 : TBD to operate in range of resonance of C2 and T1
CR1 : Ge or Shottky type
CR2 : LED, TBD.

II. Remarks:

1. Oscillator section is established in frequency largely by C_1 and R_F, and will be independent of the resonance of C_2 and T_1.

2. Circuit is intended to show possible power gains and also self-sustained operation (no battery needed).

425

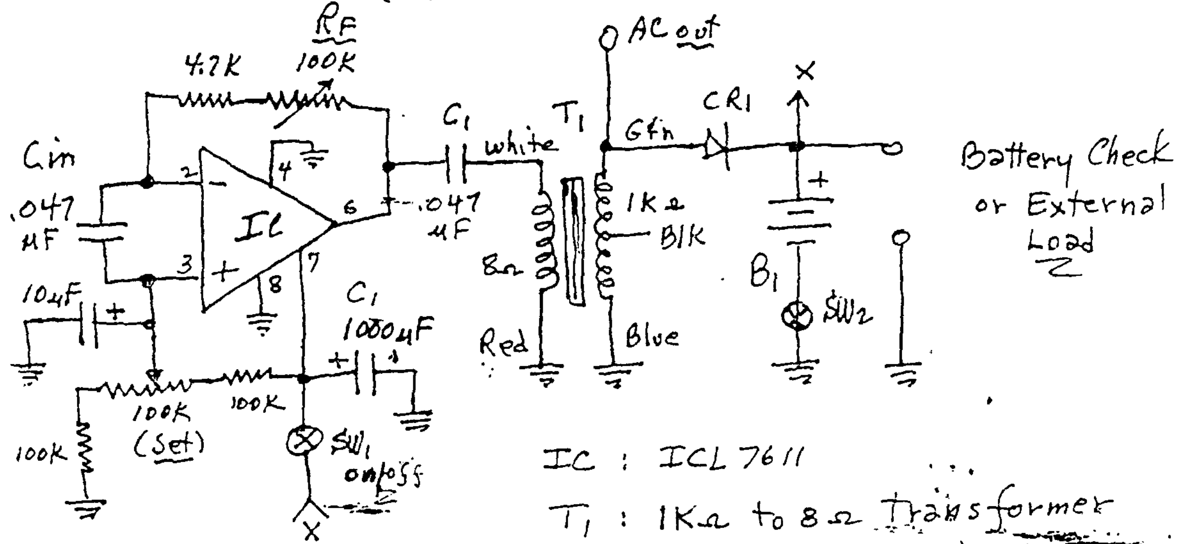
426

Cosmology Note

GH Labs 426
Newark
10/27/94

I. 'free' Energy Test (Repeat)

A. Circuit: # FE-5



IC : ICL 7611
T_1 : 1KΩ to 8Ω Transformer
B_1 : 3V (rechargeable) Nicads
CR_1 : silicon diode (Ge better?)
SW_2: normally closed push switch. (Push to check discharge time of C_1)

B. Remarks:

1. ICL7611 is operated with 1mA standby current.
2. T_1 is small output transformer. (Radio Shack 273-1380)
3. Set control is about midrange (adjust for maximum AC output).
4. Adjust R_F for best B_1 charging rate with AC RMS ≥ 2.5V.
5. Battery B_1 is 'pulse' charged with rectified AC output.
6. AC output is between 1-5 Kc.

II. Conclusions:

1. A properly adjusted test will maintain a fully charged battery with the current drain of ≅ 1 mA in the IC circuit. Not really achieved here!
2. Some fluctuations (due to GW signals) are seen in the voltage of B_1 (+/- 5mV).

(427)

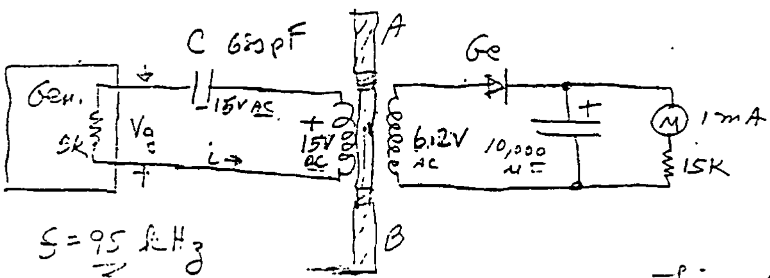
Cosmology Note

GH Labs
Newark
2/28/95 (427)

I. Special Coil Test

A. Coil: Rectangular 1/4" ID x 3/4" long
Primary: ≅ 400 turns #31 wire
Secondary: ≅ 200 Turns #30 wire
Core: ferrite screw (Tatum) 1/4" Diam x 1 1/4" long

B. Test Setup:



$f = 95$ kHz

A & B: added ferrite cores: 1/8" x 1/2" x 2"

* This appears to indicate that there is an interaction with space energy!

C. Test Results: at Resonance (95 KC)!

AC Input
V_g ≅ 2.8 volts @ .45 mA (i) ≅ 1.26 mW (AC) RMS

AC Output (unloaded)
7.5V @ 6mA ≅ 45 mW RMS

DC Output (loaded with meter)
8.6 volts at .75 mA ≅ 6.45 mW

DC Output (loaded voltage, short circuit current)
8.6 volts at 50+ mA ≅ 430 mW

Power gain ≅ $\frac{6.45\text{ mW}}{1.26\text{ mW}}$ ≅ 5X

II. Results:

1. DC output increases with added ferrites.*
2. Ge diode used to keep voltage drop at ≅ .3 volt.
3. LED diode placed across output flashes very brilliantly, then settles down to a level of output that seen with 1.85 volts at 3-4 mA ≅ 6.47 mW.

(428)

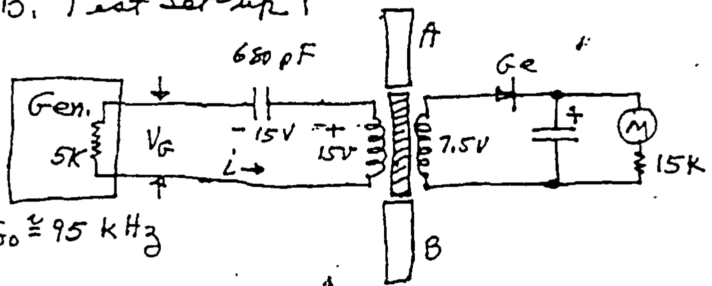
Cosmology Note

GH Labs
Newark
2/28/95
(428)

I. Another Special Coil Test

A. Coil: on rectangular 1/4" I.D. × 3/4" long form
Primary ≅ 400 turns # 31 wire -(≅ 6.5 Ω)
Secondary ≅ 220 turns # 30 wire
Core = ferrite tuning screw, 1/4" Diam. × 7/8" long.

B. Test Set-up:



f_0 ≅ 95 kHz

A & B *
ferrite bars
1/8" × 1/2" × 2"

C. Test results: at Resonance (≅ 95 kHz)
V_G ≅ 2.8 V @ .45 mA (i) ≅ 1.26 mW (RMS)
AC output ~~(unloaded)~~:
7.5 V @ 6 mA ≅ 45 mW (RMS)
DC output (loaded with meter)
9.9 V @ .66 mA ≅ 6.53 mW (DC)
DC output
9.9 V @ 50 mA+ (peak short circuit current) **

Note[1]: element Q's are approx. 5.3

Note[2]: Similar ~~type~~ performance was seen in other coils tested!

II. Remarks

1. DC output increased with added ferrites. *
This appears to indicate that there is an interaction of the coil with space-energy!
2. a Germanium diode was used to keep the voltage drop at about .3 V.
3. When the LED is also placed across the output, the LED flashes very brilliantly initially, ** then settles down to a level of that seen with 1.85 volts @ 3-4 mA, or approx. 6.5 mW (DC).
4. The dc power at the LED (at 6.5 mW) is roughly in agreement with the dc power seen by the meter (≅ 6.53 mW).
5. The circulating current (i) at resonance is roughly that due a driving voltage of 2.8 V and a primary coil resistance of about 6.5 Ω.

III. Conclusions: Tests continue to show an apparent power gain for this circuitry (here about 5.2 times)

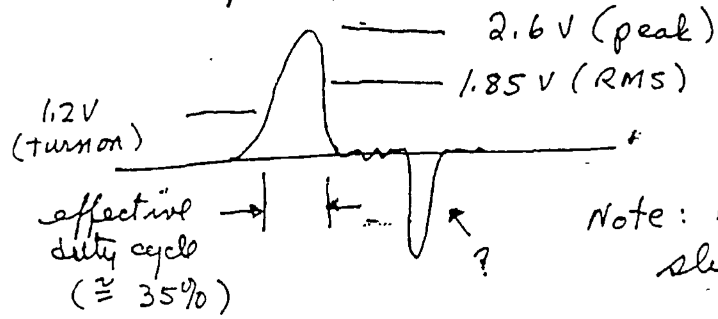
(429) (429)

Cosmology Note

G H Labs
Newark
3/4/95

I. Remarks on use of LED as load in MRA.

A. Waveform (Per Bill R.)



Note: LED load is slightly capacitive.

B. LED responses

1. Under dc conditions, the LED used draws ≅ 1.85 @ 10 mA ≅ 18.5 mW (dc).

2. At the peak, LED will draw. 2.6V @ ≅ (1.414 × 10 ≅ 14mA) ≅ 36 mW

3. But with the approx. 35% duty cycle, LED power ≅ 36 mW × .35 ≅ 12.6 mW.

C. Additional Notes

1. With careful adjustment of the drive frequency of a resistive generator source, it is possible to achieve an equivalent level of 18 mW as was seen in dc levels.
2. Since the LED load is slightly capacitive, the LC of the series resonant circuit may have to be somewhat inductive for maximum power transfer with good efficiency.

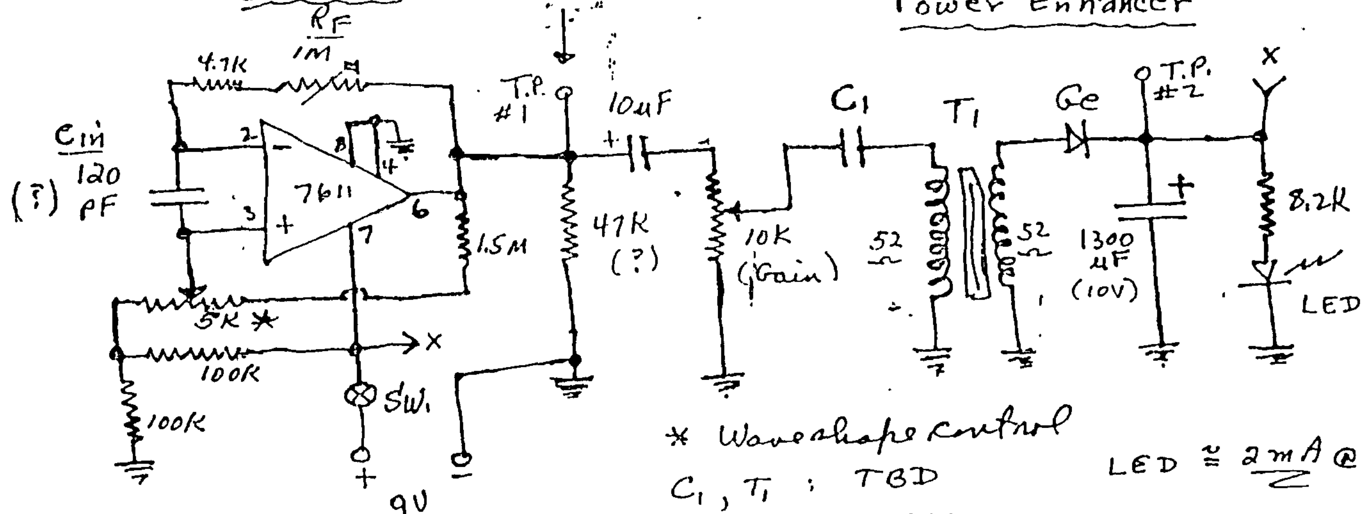
II. Conclusions

The use of an LED load in this test is for exploratory tests only. It may help in understanding the nature of this MRA-type circuit.

GH Labs
March 16, 1995
GW

Proposed F.E. # 6A Ckt.

Circuit :



* Waveshape control

C_1, T_1 : TBD

f_o : ≅ 70 KHz

LED ≅ 2mA @ 1.85V

IC : ICL7611

Remarks :

Est. { ① P_{in} ≅ 9V @ 4mA ≅ 36mW (DC)
② P_{out} ≅ 10V @ 10mA ≅ 100 mW (free running?)

Note: A unit as above has been assembled in a small experimenter box but is presently being wired and will be adjusted (as needed) for optimum performance. It has a good chance (?) of being 'free running).

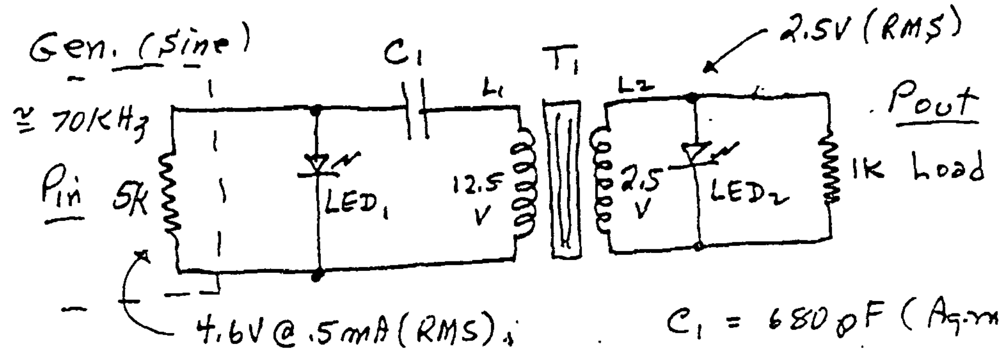
(431)

Cosmology Note

(431)
GH Labs
Newark
3/17/95
(GH)

I. Re-test of original MRA-Type Test

A. Circuit



T_1

L_1 : 500t #30
L_2 : 100t #31
Ferrite: 1/4" Diam. x 3/4 long

C_1 = 680 pF (Ag-mica)
T_1 = 5 mH (5:1)
LED = 1.85 @ 10 mA (rated)

B. Tests

1. $P_{in} = EI \cong 4.6 \times .5 \cong \underline{2.3}$ mW (RMS)
2. $Q_{L_1} \cong \frac{12.5}{4.6} \cong \underline{2.7}$
3. LED_1 power $\cong 4.6 \times .05 \cong \underline{.23}$ mW (RMS)
4. LED_2 power $\cong 2.5 \times 4 \cong \underline{10}$ mW (RMS)
5. 1K load power $\cong 2.5 \times 2.5 \cong \underline{6.3}$ mW (RMS)
6. Total load power $\cong 2.5 \times 6.5 \cong \underline{16.3}$ mW (RMS)
7. Apparent power gain $\cong \frac{16.3 \text{ mW}}{2.3 \text{ mW}} \cong \underline{7.1\text{X}}$!! (min)

II. Conclusions

1. Tests of special 5:1 transformer (5 mH) with ferrite core, continues to show power gains.

2. Power is apparently being supplied by the interaction of C_1 and T_1 with space energy, mostly g-fields??

3. This particular type of circuit has been named a power enhancer circuit.

432

Cosmology Note

GH Labs
Newark, NJ
March 27, 1995

432

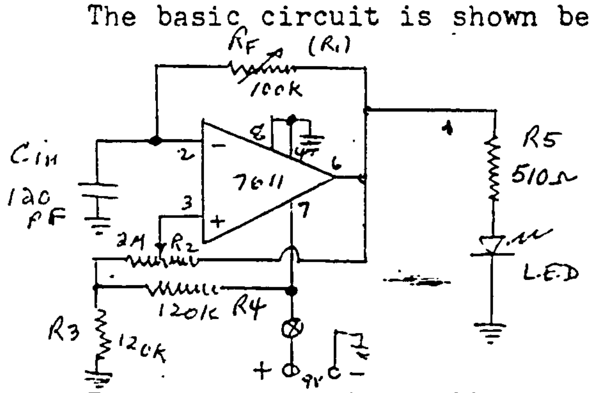
Dear Colleague: This may be of interest to you.

I. Simple Solid State Oscillator Driver for mini-MRA Test

The simple GW signal 'excited' oscillator design shown below was originally made in 1987 as a driving source for a high-level infrared LED (at 40 kHz) and reported in an article called "A Practical Infrared Intrusion Alarm" prepared for Modern Electronics magazine. When ME went out of business, the material was accepted by Modern Electronics Manual and was published by them in January 1989 as a supplement to the manual. It is a high efficiency oscillator (order of 60-80 %), and thus ideal for driving a low-level MRA-type device, such as was disclosed to you in the January 30, 1995 C-Note.

A. The Circuit:

The basic circuit is shown below:



IC: ICL7611 (also TLC271)

LED: 2000 mcd, rated at 20mA @ 1.85V (R.S. Part No. 267-057)

The circuit is basically capable of operating either in a novel GW signal 'excited' sinewave mode or also in the conventionable astable multivibrator mode---simply by adjusting the feedback resistance, R_2, to its proper operating point for each mode. The original design of the GW excited sinewave oscillator used a shunt capacitor across the output to feedback GW energy (in phase) to the input to sustain oscillations. However, in this case I wished to use a capacitive LED device as the output load, so I introduced some positive feedback via the 2M resistance, R_2.

The GW sinewave mode will be seen when about 20% (or less) of the feedback voltage (eg., when the tap of the feedback resistance is at the lower 20% of its resistance range) while the tap of the feedback resistance will be at 60% or more of its range for comparator operation and thus the 50% duty cycle square wave output mode. In the original tests, C_{in} was 180pF and R_f a 1M potentiometer. This was done to keep the output voltage high, but some devices tended to saturate under such conditions. In the present test, both C_{in} and R_f were reduced as is shown here and the units ran essentially rail-to-rail without saturating. The demo unit I have here is intended to run in the sinewave mode only and to cover the range of 60-90 kHz only, so I made R_f a 50K pot in series with a 56K resistor, and the feedback resistance, R_2, a 1.5M resistor in series with a 25K pot (next to the 120K bias point resistors. At my desired f_o of about 73 kHz, the LED can be driven to full brilliance. Reduce R_5 if you desire more light output.

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II. Conclusions:

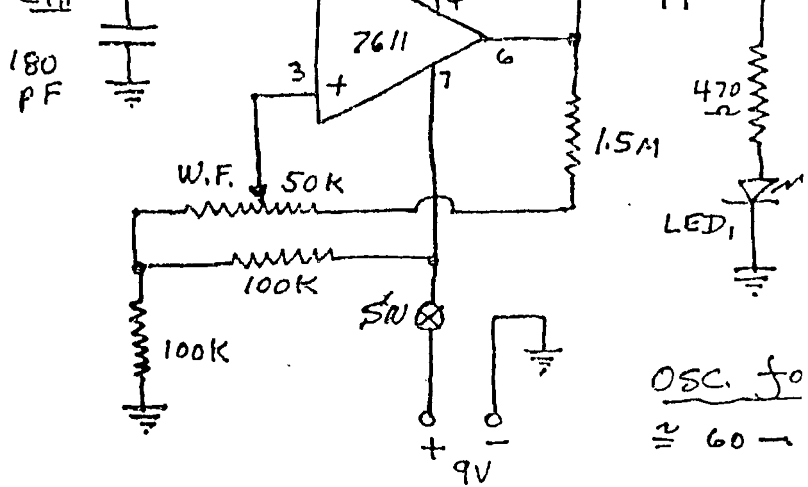
1. This simple oscillator circuit (using a nine volt battery) is not critical in parts values and can be designed for a wide range of frequencies and efficiences. It is capable of well over 100 mw of RMS drive power and thus is suitable to drive Mini-type MRA-type circuits such as that shown in the C-Note of 1/30/95.

2. It is planned to use this type of high efficiency oscillator to drive a Mini-MRA in a possible self-sustaining system. I am still looking at several versions of Mini's and will try the most promising design in a compact self contained unit. I am looking forward to be able to start operation with a battery supply, then remove the battery when the system is stabilized. We'll see---and let you know!

Regards,
Greg

Reference:

1. Published by
WEKA Publishing, Inc.
97 Indian Field Rd.
Greenwich, CT, 06830



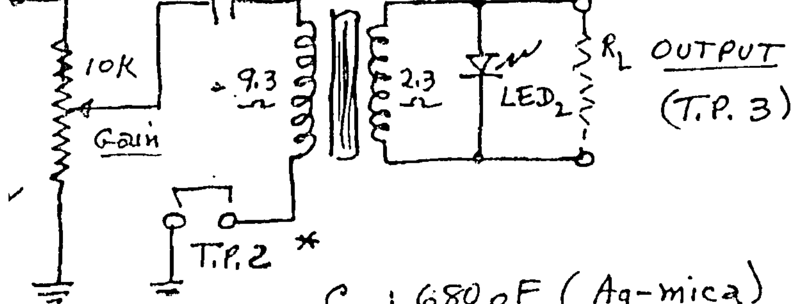
B. Remarks:

* Normally shorted; open for current measurements.

① Added $C = 10\,\mu F$ to isola
in improved power gains (

② Added TP_1 and TP_2 to
Also to demonstrate los
the primary circuit.

③ Added LED_1 to act as a
is oscillator power bein



C_1 : 680 pF (Ag-mica)

T_1 : 5 mH (5:1)

range

95 KHz

LED$_1$: Low level device (1 mA)

LED$_2$: High level device (20 mA)

te dc from oscillator. This results
lower drive powers needed).
measure drive voltage and current.
of power gain with resistance in

ilot light and also to indicate There
generated.

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(435)

(435)

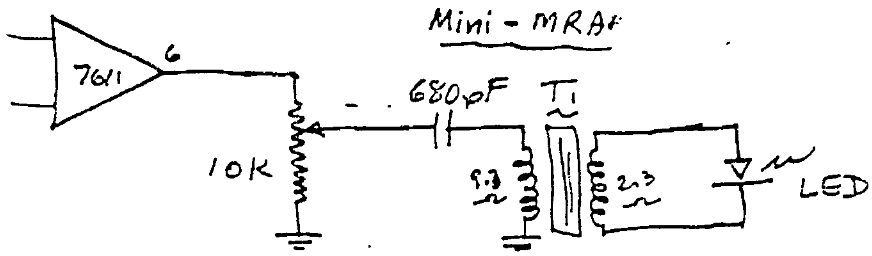
Cosmology Note

GH Labs
Newark
4/10/95
(SH)

I. Isolation Tests for OSC. Driver

A. No isolation capacitor used.

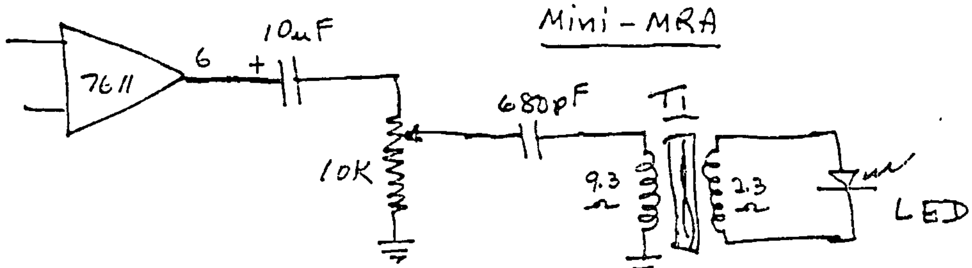
T1 : 5 mH
(5:1)



Pin (RMS)	max. Pout (RMS)
3.25V	2.25V
.6mA	2.5mA
1.95 mW	5.6 mW

P.G. ≅ 2.9 x

B. Isolating capacitor (10uF) used.



Pin (RMS)	max. Pout (RMS)
3.07 V	2.2V
.4mA	2.5mA
1.23 mW	5.5 mW

P.G. ≅ 4.47 x

II. Conclusions:

① Use of a dc blocking capacitor leads to higher power gains (lower drives) without hurting the power output.

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GH Labs
Newark, N.J.
4/18/95
gh

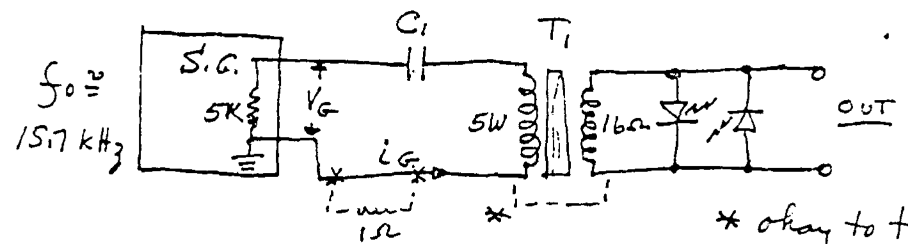
Cosmology Note

Dear Colleague: This may be of interest to you.

I. Another Mini-MRA Unit

This unit is based upon an Off-The-shelf Radio Shack 10W, 70volt line transformer, Part# 32-1031. Only the coils from This transformer are used--- The iron core has to be removed (good luck here!). The coil has several taps on input and output. Use The 5W rating for the primary coil and The 16Ω output for the secondary. I used a ferrite bar (3/16" x 1/2" x 2 3/16" long) salvaged from an old AM radio as The new core. The LED's are high output units, Radio Shack Part# 276-087.

A. Preliminary Test: (using my resistive S.G.)



C_1: 2500 pF (Ag-mica)

T_1: as above

* okay to tie grounds if you have ground loop problems.

B. Test Results: ($f_0 \cong 15.7$ kHz)

Pin

$V_G \cong 4.5V$
$i_G \cong .15mA$ } $\cong .68mW$ (RMS)

1Ω → resistor used

Diode Loaded Pout

$V_{out} \cong 1.9V$
$I_{out} \cong 16mA$ } $\cong 30mW$ (RMS)

max. possible Pout

$V \cong 3V$
$I \cong 13mA$ } 39mW (RMS)

$$P.G. \cong \frac{30}{.68} \cong \underline{44\times}$$

II. Conclusions

① Above measurements were made using my Micronta Digital Meter. The Fluke 87 generally gives better results!

② All parts (except C_1) are from Radio Shack. It may take some doing to rid the transformer of its 'shellacked' iron core, but the effort will be worth it. It appears that this simple Mini-MRA is quite effecient!

③ Good luck with your tests!

(437)

Cosmology Note

GH Labs
Newark, NJ (437)
4/18/95

I. Mini-MRA Demo Ckt. #FE-6B

This demonstration circuit is essentially a breadboard unit and may not be fully optimized, but it is capable of demonstrating over-unity (OU) operation at low milliwatt power levels. The unit is built within a 5" x 2 5/8" x 1 5/8" plastic box with an aluminum cover plate. All pertinent controls and test points are brought out to the aluminum panel for ease in evaluating the unit over a wide range of operating conditions. The novel built-in IC oscillator circuit eliminates the need for an external signal generator unit for these tests. LED_1 is a low level unit which serves as a pilot light as well as an indication that the oscillator is developing power over its design range of about 60 to 100 kHz. The oscillator is powered by a 9 volt battery which is self-contained in the box.

II. Initial Operation

1. Make sure the power switch (SW_1) is off, pointing left.
   Make sure the shorting pin is in TP2.
   Turn the waveform control (W.F.) down (CCW).
   Turn the frequency control full up (CW).
   Turn the drive control full up (CW).

2. Toggle the power switch to the right to turn on the unit. The OSC. LED_1 will light as will also the power output indicator, LED_2.

3. Turn the frequency control counter clockwise (CCW) to the point of a sudden jump in power out as indicated by LED_2. This is the start of the typical operating range. Optimum operation will require the monitoring of input and output powers (RMS).

III. Test Points

1. TP1 is used to monitor the drive RMS voltage, frequency, and waveshape. Waveshape should be essentially sinusoidal, but may require some adjustment of the W.F. control in conjunction with the frequency control.

2. TP2 is normally kept shorted, but is removed to allow insertion of an RMS current meter to determine the line current of the circuit.

3. TP3 is used to monitor the output waveform, frequency and power levels as well as to add external load resistors. Down to about 800 ohms of load resistance can be added without affecting the LED_2 load itself. If it is desired to use resistive loads alone, one leg of LED_2 can be opened up to disable it. Similarly, one leg of LED_1 can be opened up if it is desired to disable it.

IV. Conclusions

1. This simple demo unit is very versatile and can be adjusted to illustrate a wide range of power outputs and power gains.

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2. Since it is a hard-wired breadboard, it is not recommended that the perf board be pulled from its mounting posts to the aluminum panel to avoid possible breakage of some hard-wired connections.

3. The 9 volt battery is positioned at the bottom of the plastic case and the potentiometers. Be careful not to break the leads of the battery snap in changing the units battery.

V. Comments

Bill: FYI

These units #1 and #2 went to Bob T. for demo purposes. Rough checks say they are okay — 5 to 10 X power gains.
Enclosed is $10 — to further ~~defray~~ your expenses here. Bob T.'s check cleared.
Am now concentrating on trying to get a 'stand alone' unit working — some progress. Will let you know if we succeed.
Take care friend.

[illegible]

P.S. - again thanks for the 7611 - help!

Cosmology Note

GH Labs
Newark, N.J.
4/18/95
gh

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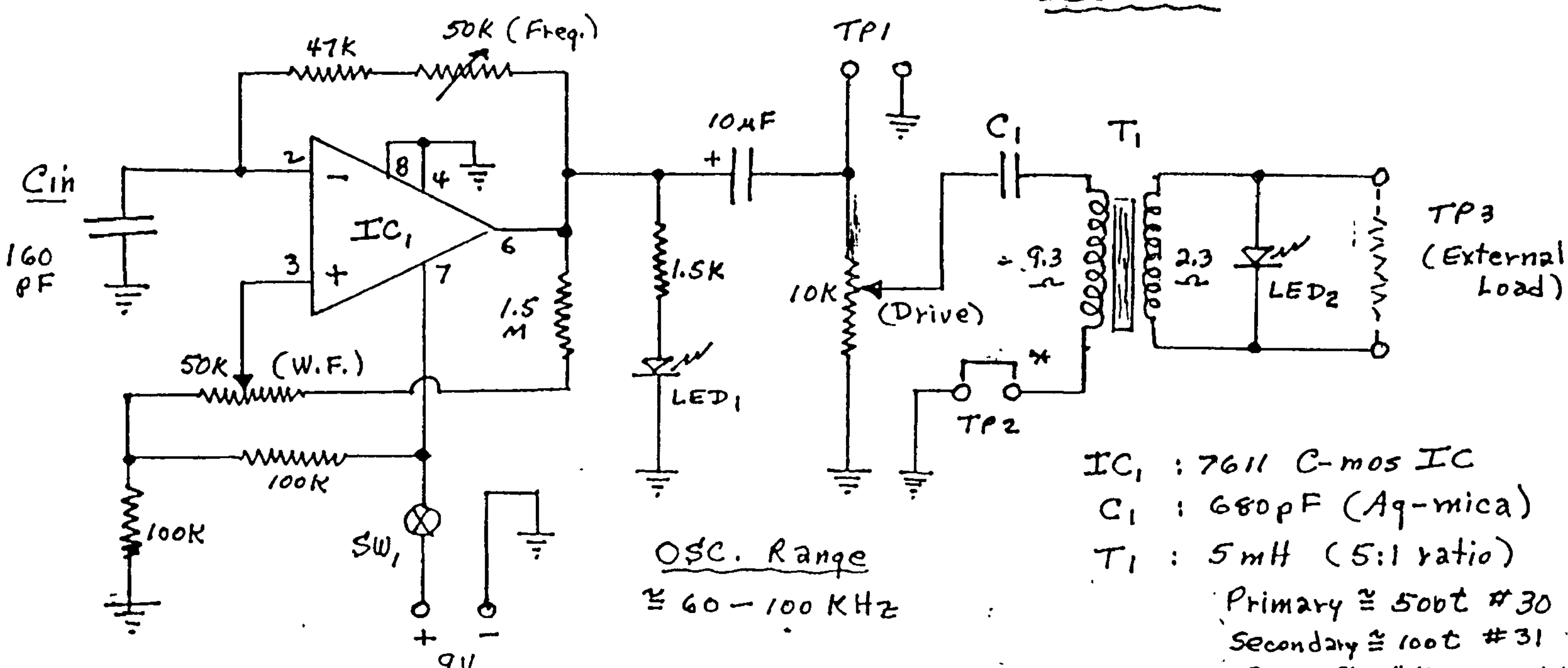
I. Mini-MRA Demo Ckt. # FE-6B (as made)

A. Schematic

OSC

Mini-MRA



IC_1 : 7611 C-mos IC
C_1 : 680pF (Ag-mica)
T_1 : 5mH (5:1 ratio)
Primary ≅ 500t #30
Secondary ≅ 100t #31
Core ≅ 1/4" diam. x 3/4" long ferrite

B. Remarks:

① LED_1 serves as pilot light and also as an indicator that oscillator is developing power out.

② Shorting pin * in TP_2 is normally kept in and removed only for line current measurements.

③ Output load LED_2 is normally kept in, but one leg can be opened for strictly resistive loads.

Note

Led_1 rated at 2ma @ 1.85V

LED_2 rated at 20 ma @ 1.85V

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(440)

Cosmology Note

(440)
G H Labs
Newark
6/2/95
(gh)

I. Some Comments on Ckt. FE-7:

This unit was originally intended for investigation of 'stand alone' operation without needing a support battery. It has since been adapted to 'self-sustaining' operation with a support battery of the rechargeable type, eg., The Rayovac Renewal or The Eveready Nicads. In this operation mode, an operating point would be reached where The Mini-MRA would develop sufficient ~~and~~ output power to keep The battery from draining below a certain level.

A. Rayovac Renewal Cells (3 AAA types):

① This cell is rated at 1.5 volts: Thus 3 cells would start off at about 4.5 volts freshly charged.

② In circuit FE-7, The three cells slowly dropped in voltage until after about 58 hours of ~~operation~~, an 'apparent' self-sustaining mode of operation was achieved, where the battery voltage appeared to settle down at about 4.3 volts for a period of 20 hours!

B. Eveready Nicads (3 AAA types).

① This cell is rated at 1.25 volts. Thus 3 cells started off at 4.2 volts freshly charged.

② In circuit FE-7, The three cells slowly dropped in voltage until after 24 hours of operation, an 'apparent' self-sustaining mode of operation was achieved, where The battery voltage appeared to settle down to about 3.93 volts. This test continues ---

C. Ckt. FE-7 remarks:

① There appears to be sufficient output from The DC levels from The mini-MRA to sustain a charge level to The batteries equal to The discharge rate. This, in view That The OSC. RMS output is more exponential in wave form Than sinusoidal!!

II. Conclusions:

① Ckt FE-7 appears to be capable of a self-sustaining mode with rechargeable batteries.

② The OSC section of FE-7 needs work to make it more sinusoidal! Work continues here.

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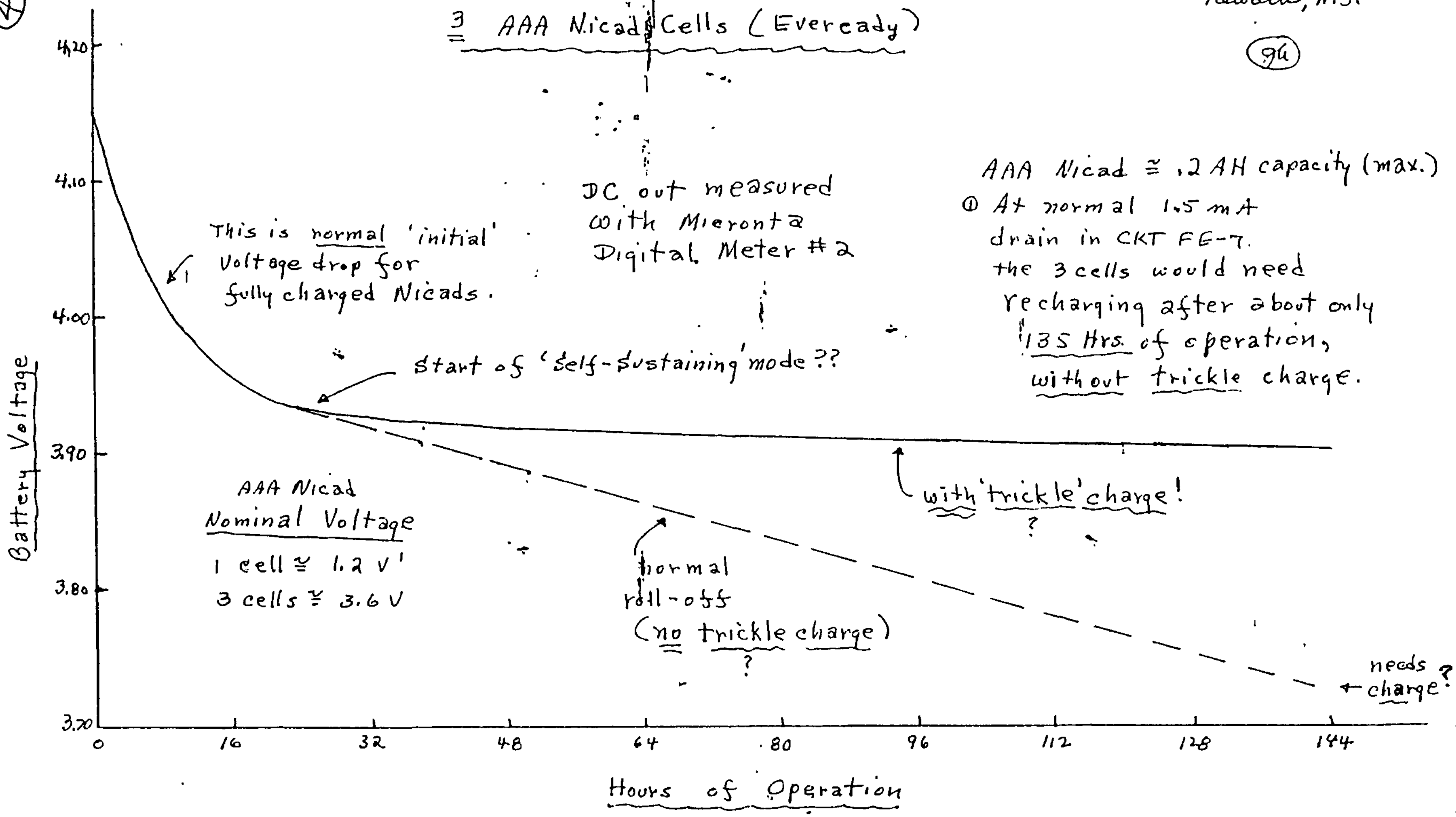
CKT # FE-7

3 AAA Nicad Cells (Eveready)

GH Labs
Newark, N.J.

96



Remarks:

① The 'trickle' charge here is only in the order of 1 mA
or less, thus not sufficient for true charging.

② The roll-off in the 'self-sustaining' mode is less than
the charge loss seen in 'storage' of Nicads. Thus it
appears that FE-7 would 'self-sustain' a minimum of 1000 hrs.

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Cosmology Note

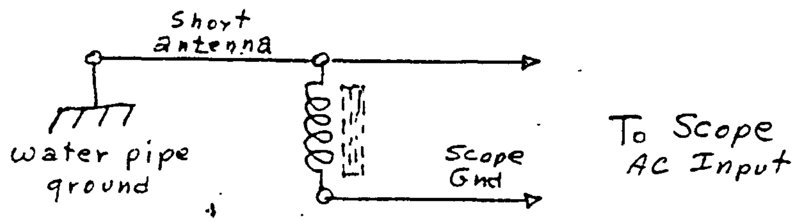
GH Labs
Newark, NJ
11/26/95

Dear Colleague: This may be of interest to you.

I. Do simple coils interact with space energy?

The simple experiment shown below shows some interesting effects which can be observed on any oscilloscope, vintage-type or modern. Some effects appear to be strong resonances which may be at the coils natural resonance frequency. The coils tested were small windings salvaged from old relays, transformers, solenoids, etc., which used many turns of rather small size wire. The coils I used ranged from about 300 to 1500 ohms of resistance. The scope was used at an AC input and generally with internal synch.

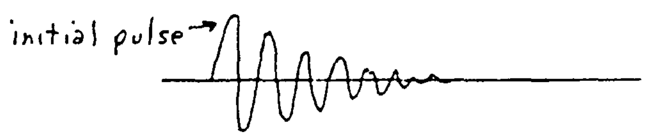
A. Circuit



The coil used alone develops low-level signals at some resonant frequency points. These types of responses were seen many times in the past and were attributed to the GW signal detection capabilities of coils. However, a short 'antenna' of 3 to 10 feet in length increased the responses substantially. Connecting the coil to the home water system pipes increased the responses to several volts peak-to-peak.

B. Responses

There are many different types of responses to be seen. The most pronounced is a possible coil resonance response (which ranged from about 5 kHz to 1 MHz, depending on the coil used) as is shown here:



This appears to be a pulse-type excitation of the coil which then decays exponentially. Some coils (and frequencies) decay much more slowly and thus look like wave packets. If the initial pulse is expanded, then varying multiple pulses are seen, suggesting that the coil excitation is from a continous process. Similar type responses were seen in doubly-shielded GW signal detectors which were known to be interacting with space gravitational impulses. Some ferrites placed in the cores of these coils increase response (and tune it), but some others actually seem to degrade the performance. Magnets seemed to have but very little effect on performance and coil orientation did not appear to be critical. Shielding of the coil in a steel 'cookie tin' appeared to have no affect.

II. Conclusions

This is a most simple experiment which can be performed by most of you. Perhaps it might be just a way to 'cohere' the aether and thus extract energy from it in a most simple way??? Perhaps from it we can

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learn the secret of many F.E. devices, including the VTA, MRA, Swiss M-L-C, and the various motor-generator devices? My present speculation is that a small amount of 'leakage' 60 Hz (with harmonics) may be 'pumping' the coils in a parametric mode and thus extracting energy from the many scalar type signals present in space; but there is a strong possibility that it may be extracting energy directly from the aether itself? There is also the possibility that the pulses are from strong LF radio stations, but I can't imagine seeing several volt signals (3 to 10 volts pk-pk) coming from radio stations at a great distance. However, I can understand the possibility that 'weak' EM signals could possibly serve as 'pumps' as speculated above. However, local AC feeder lines in a neighborhood could possibly develop such levels at low frequencies say 60 Hz and the immediate harmonics, but such higher levels at 5KHz and up seem to be out of the question at this time.

As usual, these speculations are intended to get you to look a bit further into these aspects. I look forward to your remarks. Perhaps some of you may come up with alternate explanations?

Regards,
GH

Bill 12/1/95

This is a simple experiment to try. If it really does what I am thinking it does, then we have more proof on space energy's existence.

I get your material -- thanks. I am not too busy with R&D here --- am re-doing the kitchen for Mary - slow but sure. Thus I get to relax only late at night after the TV is off and Mary has retired; but then I am also tired.

Hal Fox is getting more interested in GW and these types of tests you and I do. Am sending him Ckt. 555 to play with. Also this guy Raymond Neotoux (France) sent him 5 pages of material trying to tear down the MRA -- Hal asked me to respond (probably along with Norm & Joel). This guy is a real 'jerk', a self-appointed 'expert' - real orthodox. If I was Hal, I would ignore him!

Take care, Pal

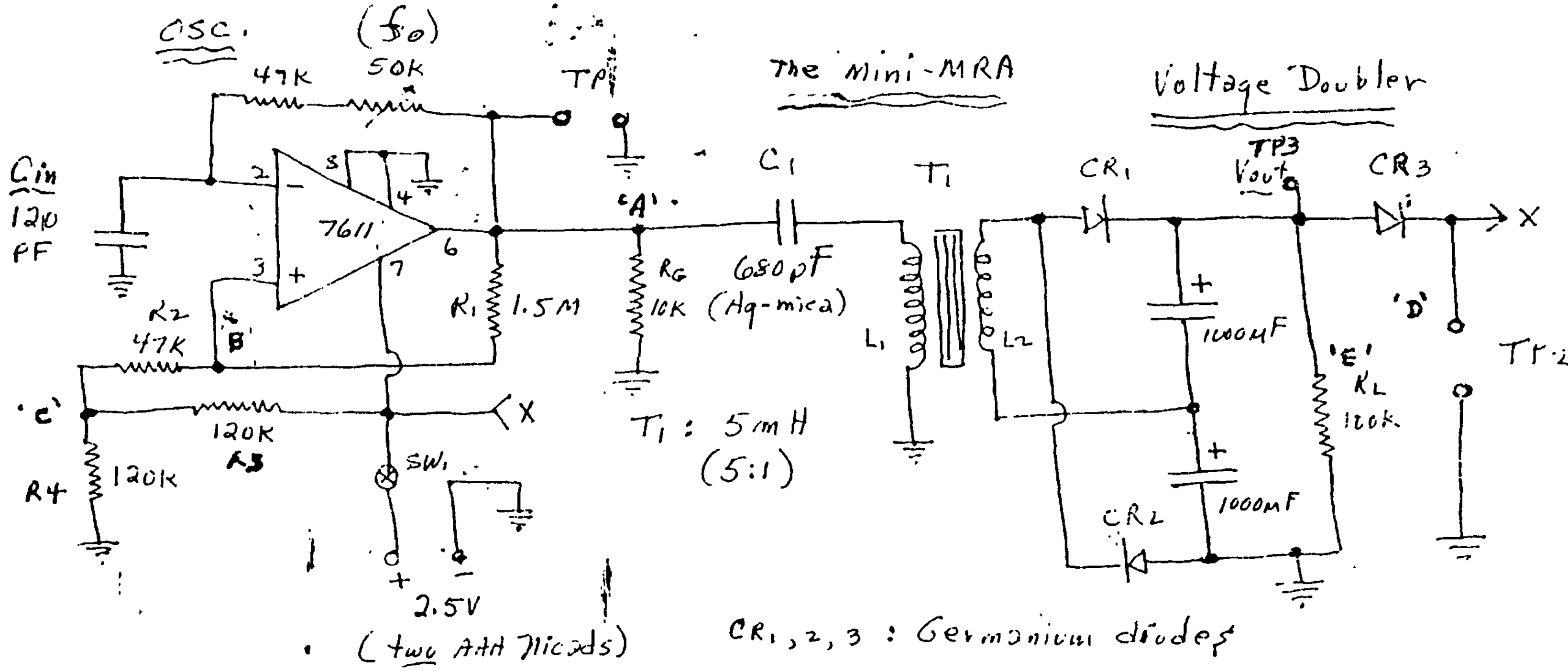
Greg H.

GH Fube
Newark
6/11/96
(GH)

(444)

Mini-MRA CKT. FE-8A

A. Circuit



(2)

B. Remarks

1. Oscillator is typical GW detector unit put into the oscillator mode by some miniature feedback (R_1 and R_2). Thus source is also resistor!
2. Oscillator is tuned normally for minimum V_G as measured at TP1.
3. Mini-MRA output is rectified in voltage-doubler and fed-back to Nicad battery supply through the 'steering diode', CR3. The battery voltage is monitored at TP2. The rectified Vout at TP3 is typically .2 volt higher than the battery. The Nicad AAA cells must be selected for similar charging and discharging rates!

(444)

445 445

August 8, 1995

New Energy News
PO Box 58639
Salt Lake City, UT, 84158

Att: Editor

Dear Hal,

Just some lines to clarify the purpose behind my Cosmology Notes, especially with regard to the MRA, and to comment on some of the remarks made by Raymond Nectoux in the August 1995 NEN letters.

My Cosmology Notes are issued to a very few (less than 8) of my colleagues who are versed in my cosmology (1), to keep them informed of my limited activity here, and (2), to try to get them to also try some of the simple experiments, which may (or may not) contribute to the New Sciences. Thank you for considering these simple experiments in NEN. Perhaps there may may have been some 'hands on' experimenters out there who actually tried these types of tests?

While my primary interests are in cosmology, I also have strong interests in gravity and gravitation, as well as in the so-called 'space energy' concepts, which are definitely a part of my cosmology. My interest in the MRA was instilled by the fact that I could see that gravitational ~~effects~~ were also probably involved ~~here. The~~ reason for the crude tests simply was that my facilities, funds, and time were severely limited. Without going into the details here, I am now convinced that gravitational effects are definitely a factor in the operation of the MRA, especially the Mini-MRA. In due time, if interest in the MRA remains in NEN, I may prepare a simple article expanding on my views?

With respect to Mr. Nectoux's many valid comments, I would like like to clarify some of them:

With respect to using digital meters, such as the Fluke 87, outside of their calibrated ranges, of course the absolute readings would be quite inaccurate. However, when measurements are made with essentially sinusoidal waveforms, and on a relative basis, where the input RMS sinusoidals are comparable to the output RMS sinusoidals, the relative power gains noted may be quite valid. This has been confirmed in tests of one of my early prototype units (similar in general to that shown as Ckt. FE-6B in the May 1995 issue of NEN) by three well-known professional labs (which I cannot name). These professionals, using sophisticated equipment and techniques, essentially verified my data which was obtained , of necessity, by more cruder ways. It should also be noted that the Radio Shack Item Mini-MRA test shown in the June 1995 issue of NEN was tested at 10KHz, well within the range of the Fluke 87, and the performance was generally quite similar to all the other cruder tests made at the higher frequencies. By the way, Mr. Nectoux is correct about the Q of that circuit---it is about 18, (I used the wrong value for V_g!).

With respect to the use of LED's ---- they are primarily power out indicators. However, the LED RMS visual output power can be corrected to be comparable to the output power seen at DC levels. Thus, on a comparative basis, the relative visual LED outputs could compare quite well with that obtained with resistive loads.

There is such a thing as reactive power, we have a term for it, var, and it is equal to VI sin phi! The Mini-MRA is generally operated

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at resonance or near resonance. With the lower Q's seen with the Mini-MRA, resonance is fairly broadband and not too critical compared to the very high Q's in the McClain-Wootan MRA. Under such resonant conditions, reactive powers are essentially lossless, but the inductive 'reactive power' can be dumped into a resistive load by transformer action. For most experiments, the RMS power can be rectified to provide a DC power out. I have looked at many such DC outputs--some being much better than others.

The 'final proof' of MRA action will be in a 'stand alone' MRA circuit of the self-contained oscillator type as shown in the May 1995 issue of NEN. One prototype unit, where the MRA output was rectified in a voltage-doubler circuit and the DC output was then fed-back (through a steering diode) to the DC battery source, resulted in a 'self-sustaining' mode of operation where the Nicad batteries (three AAA cells) were only very slowly discharged over a period of about 1000 hours. Without the feed-back, the Nicads discharged in about 150 hours. This will be the only remaining Mini-MRA test that I plan here. I have made another prototype circuit which will be operated at 2-3 volts (two AAA Nicads), and thus will draw very little oscillator power. I hope that once operation is stable, I would be able to disconnect the Nicad supply and the unit may possibly continue to operate in the 'stand alone' mode??

My final remarks are:

(1) These simple tests were primarily aimed at getting ~~the~~ 'hands on' experimenters, with limited equipment and resources, to become more involved here.

(2) I believe that much of my performance results are due to my use of essentially resistive oscillator sources to drive the Mini-MRA.

(3) I believe the MRA is for real, but needs many more inputs by many more 'hands on' experimenters. We wish them all well and good experimenting!

Respectfully yours,

(447) (447)

6/15/96

(GH)

Dear Colleague:

I was originally not going to release the material in the attached Note but decided to do so to just a few of you. First, the Note is in a too crude form (for my reference only) and second, the data was taken very briefly and not re-verified.*** However, some of the data (as noted) was 'seen' before and thus may help some of you to possibly follow-up on it. A few remarks are in order:

① For most of my Mini Circuits, the waveforms are generally very good sine waves! However, I did find some tests (transformers and capacitors) had somewhat distorted input sine waves from the particular driving source used.* The enclosed test had a slight ripple on the one peak of V_G as seen with the 25 MHz scope.**

② Generally, the line current, i_G, measures the same; whether as measured $\frac{V_G}{R_G}$; a 3-Ω resistor in this line; or a meter (MA) in the line (use lowest R on meter).

③ However, when the current sensing resistor, R_1, (in the attached sketch) is placed between the two reactances, C_1 and V_{L_1}, it appears to measure the very high reactive circulating currents!!

④ The Power Gain (P.G.) of the Mini seems to be directly related to the ratio of this reactive circulating current to the measured generator line current! This is an important observation!

⑤ Also it is to be noted that relative measurements using the Fluke 87 does not differ much from this 25 MHz scope test! Thus Fluke Tests were valid!

Good luck to you all — Regards,

Greg

* was some outputs were slightly distorted and even some developed multiple responses. More work really needed!

*** re-verified 6/18/96 ; ** ckt 'tuned' for max V_G!

Unreleased Gh Note! (448)

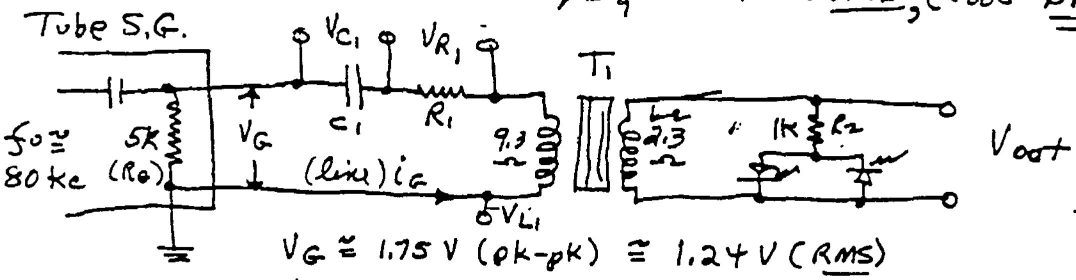
Cosmology Note

GH Labs (448)
Newark
6/10/96
(GH)

I. Re-test of Original Mini-MRA using 25MHz Scope

A. Circuit

All voltages & current is RMS, (Good Sine Waves)



$V_G \cong 1.75\,V$ (pk-pk) $\cong 1.24\,V$ (RMS)

T_1: 5 to 1 Xformer (5mH)

$V_{R_1} \cong 30\,mV$ (pk-pk) $\cong 21.2\,mV$ (RMS) : (21.2 mV)

C_1: 680 pF (mica)

$V_{C_1} \cong 31\,V$ (pk-pk) $\cong 22\,V$ (RMS)

R_1: 3.33 Ω

$V_{L_1} \cong 38\,V$ (pk-pk) $\cong 27\,V$ (RMS)

LED: 2000 mcd (20mA @ 1.8V)

$V_{R_2} \cong 2.7\,V$ (pk-pk) $\cong 1.9\,V$ (RMS)

$V_{out} \cong 6\,V$ (pk-pk) $\cong 4.2\,V$ (RMS)

$V_{diodes} \cong 3.3\,V$ (pk-pk) $\cong 2.34\,V$ (RMS) (use 2.4?)
(about 80% duty square wave)

All data with 'Hot' Temp. Sig. Generator! i.e., (stabilized)

B. Calculations

P_{in} (RMS) $= V_G \times i_G \cong 1.24\,V \times .5\,mA \cong .62\,mW$ ← note

$i_G = \frac{V_G}{R_G} \cong \frac{1.24V}{5 \times 10^3} \cong .25^{+}\,mA$ (Scope measured)

$i_G = i_{line} \cong .6^{-}\,mA$ (Fluke 87) ∴ use .5 mA (avg.)

Pout (RMS)

$P_{wr}\,R_2 = V_{R_2} \times i_{R_2} \cong 1.9V \times \frac{1.9}{1 \times 10^3}\,(mA) \cong 3.6\,mW$ (iR drop)

P_{wr} Diodes $= V_{Diode} \times i_{Diode} \cong 2.4V \times 1.9\,mA \cong 4.6\,mW$ (min)

∴ Pout $\cong 3.6\,mW + 4.6\,mW \cong 8.2\,mW$ (min.)

$P.G. \cong \frac{8.2\,mW}{.62\,mW} \cong 13\,X$ (Note: P.G. ≅ increase in $i_{circ.}$ over i_G)!!
$\cong 16.4\,X$ (with $i_G \cong .5\,mA$)

Note: $i_{circ} = \frac{V_{R_1}}{3.33} \cong \frac{21.2\,mV}{3.33\,\Omega} \cong 6.5\,mA$

∴ $i_{circ} \cong \frac{6.5}{.5} \cong 13X\; i_G$!! $\cong$ P.G. !!!

II. Conclusions

The Scope tests compare favorably with the Fluke 87 earlier measurements. Allowing for the 80% duty cycle for the diodes the P.G ≅

$\frac{.8 \times 8.2\,mW}{.62\,mW} \cong 10.6\,X$ (min) (Same as Fluke Tests)!!

(449)

(2) (449)

Cosmology Note

6/11/96 (gh)

III. Further Remarks on This Test

① In a series LC circuit the line current at resonance* is largely established by the dc resistance remaining in the circuit. This current is relatively constant.

② The reactive currents in L_1 and C_1 will build-up in an interaction with the aether** as predicted in Rhysmonic Cosmology, and these currents will also be exchanged between the two reactances. Since these currents are 90° out-of-phase with the voltages in each reactance, there is no real (dissipative) power developed here. Since the reactive voltages are 180° out-of-phase, the reactive currents will also be 180° out-of-phase and thus would not show up in the line current. However, this exchange of reactive currents would show up across the sensing resistor, R_1, and can be measured as an RMS voltage across this resistance. Tests continue to show that these reactive currents are much higher than the line currents, resulting in the much higher reactive powers seen here. The reactive power in L_1 can be 'dumped' into a resistive load across a secondary winding, L_2, and thus become a real power there.

③ As a rule of thumb, the power gains seen in this type of circuit is roughly equal to the ratio of the reactive currents to the line current. That increased power was 'extracted' from the aether through the interaction of coils and capacitors with the aether** as is expounded in Rhysmonic Cosmology.

④ A penny for your thoughts, Colleagues!

* actually the circuit is 'tuned' for minimum V_G (with good sine) and thus is usually slightly above resonance.

** or some aspect of it

450

Cosmology Note

7/15/96
450
GW

Dear Colleague: The attached may be of interest to you.

Remarks:

① The buffer-amplifier circuit of 7/4/96 may be useful with most Function Generators to serve as a drive for Mini-MRA's. The gain is quite high so that the F.G. must be used at **very** low levels. I don't have a F.G. so I was not really able to evaluate the circuit with an MRA.

② The circuitry of 7/9/96 using my tube-type of signal generator is **highly stable** and shows **very good** sinusoidal waveforms and performance.

③ The circuit of 7/12/96 is based upon the 741 IC device and readily available parts, ie., Radio-Shack. It was used to drive the original Mini-MRA circuit. The performance shown, while **lower** in power, does duplicate the tube generator performance. However, it was noticed that the circuitry was somewhat 'unstable' at resonance. There was a tendency for the oscillator to shift in frequency, and also to develop multiple responses at times. This was **not** seen with the tube generator! It is surmised here, that the MRA 'interacts' with solid state devices as was **speculated** by McClain and Wootan in their various Keelynet releases! Some previous tests have shown that a buffer stage did **not** help here! Thus the scalar-type fields being generated by the MRA capacitor and inductor may be **directly** 'interacting' with solid state devices?!

Good experimenting to all!

GW

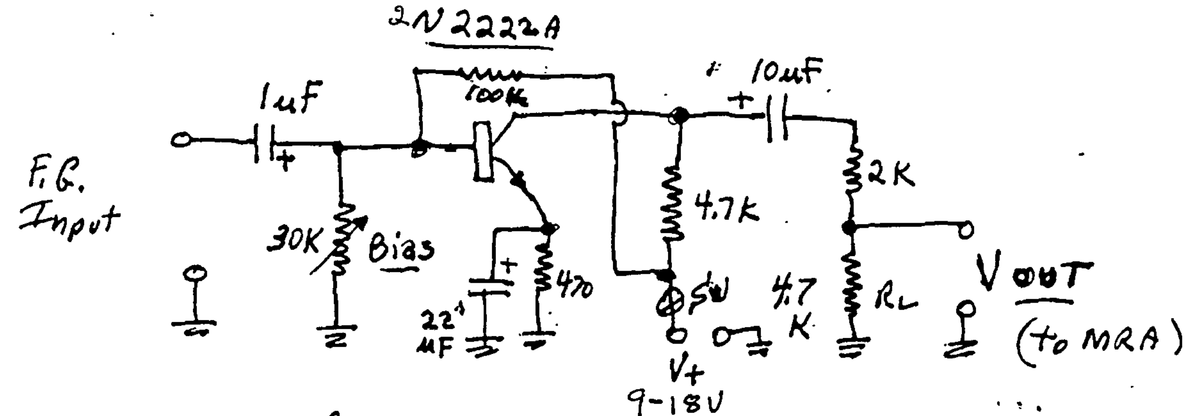
(451)

Cosmology Note

(451)
6H Labs
Newark
7/4/96
(SH)

I. Buffer Amplifier for Function Generator

A. Circuit for use with Mini-MRA



B. Remarks

① Ckt is made to be somewhat similar to my Tube S.G..

Built 7/6/96
works OK!

② Ckt is to buffer S.G. from MRA and also to develop higher power levels without introducing distortion.

③ The output RL of 4.7K will also be The source impedance of The input to The MRA. Thus a resistive source.

④ The drive on the F.G. will serve as the output power-level for The buffer-amplifier.

⑤ The output loading for The 2N2222A was made similar to The output loading of The Tube signal generator. The reason for this is That The tube output seems to be a good resistive output!

452

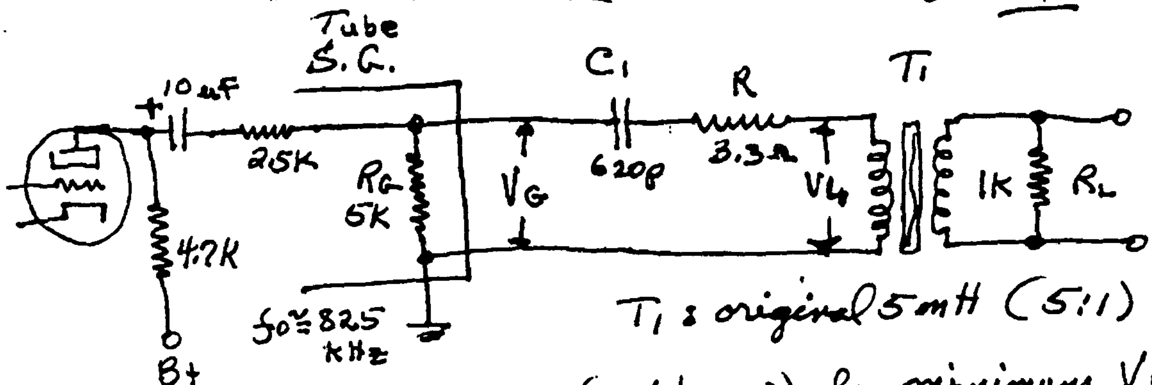
452

Cosmology Note

GH Labs
7/9/96
gh

I. One more test of the Mini-MRA

A. Circuit (Tested with 25 MHz Scope!)



T_1 = original 5 mH (5:1) Pulse Xformer

f_0 'tuned' for minimum V_G.
(S.G. is stabilized, warm)

B. Tests

$V_G = 3.0V$ (pk-pk) $\cong 2.1V$ (RMS)

$i_G = \frac{V_G}{R_G} \cong \frac{2.1}{5\times10^3} \cong .42$ mA

$\therefore P_{in} \cong 2.1 \times .42 \cong .88$ mW

$V_{out} = 4.5V$ (pk-pk) $\cong 3.2V$ (RMS)

$i_{out} = \frac{V_{out}}{1K} \cong 3.2$ mA (RMS)

$\therefore P_{out} \cong 3.2 \times 3.2 \cong 10.24$ mW

$\therefore$ P.G. $\cong \frac{P_{out}}{P_{in}} \cong \frac{10.24}{.88} \cong 11.7X$

$V_R = 23$ mV (pk-pk) $\cong 16.3$ mV (RMS)

$i_{circ.} = \frac{V_R}{3.3\Omega} \cong \frac{16.3}{3.3\Omega} \cong 4.92$ mA

$\therefore \frac{i_{circ}}{i_G} \cong \frac{4.92}{.42} \cong 11.7X$

Note!!

Note: All waveforms very good sinusoidals!

Also, $i_{circ.}$ is the reactive circulating current and thus is not dissipative (except for the small amount in R (3.3Ω); and the resistive component of L_1 ???

C. Conclusion:

The P.G. of about 11.7X appears to be related to the increase in circulating current compared to the resonant line current!

453

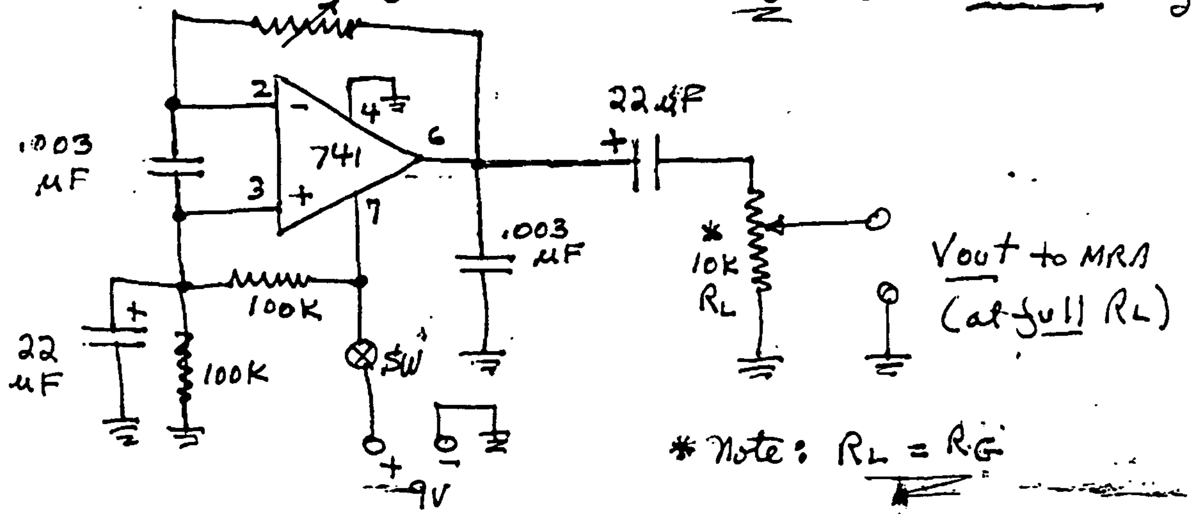
Cosmology Note

453
GH Labs
Newark
7/12/96
GH

I. Type 741 I.C. Oscillator Test

A. Schematic

Note: Useful $f_o \approx$ 60 to 105 KHz



* Note: $R_L = R_G$

B. Original Mini-MRA

C_1 = 680 pF Ag-mica $R_L \doteq 1K$ $R_S = 3.33\ \Omega$

T_1 = 5 mH (511) $R_G = 10K$ $f_o \approx 80$ KHz

C. DATA: (25 mHz Scope used)

$V_G = 3V$ (pk-pk) $\cong 2.12V$ (RMS)

$i_G = \frac{V_G}{R_G} \cong \frac{2.12}{10^4} \cong .212$ mA (RMS)

$\therefore P_{in} \cong .45$ mW

$V_{out} = 3.3V$ (pk-pk) $\cong 2.33V$ (RMS)

$i_{out} = \frac{V_{out}}{R_L} \cong \frac{2.33}{10^3} \cong 2.33$ mA (RMS)

$\therefore P_{out} \cong 5.43$ mW

$P.G. = \frac{P_{out}}{P_{in}} \cong \frac{5.43}{.45} \cong 12X$

$V_R \cong 12.2$ mV (pk-pk) $\cong 8.62$ mV (RMS)

$i_{circ} = \frac{V_R}{R} \cong \frac{8.62}{3.33} \cong 2.59$ mA

$\frac{i_{circ}}{i_G} \cong \frac{2.59}{.212} \cong 12.2X$

Note!

Note: Waveforms are sinusoidal.

454 Cosmology Note 454

Dear Colleague: This may be of interest to you.

GH Labs
Newark
7/28/96
gh

I. Some further Mini-MRA Tests and Remarks

These tests were made with the original Mini-MRA design. Basically; $f_0 \cong 80$ kHz, $T_1 = 5$ mH (5:1), $C_1 = 980$ pF (Ag-mica), $R_S \cong 3.3\,\Omega$ and $R_L = 1\,k\Omega$. The 25 mHz Scope was used in the evaluations -- all waveforms good sinusoidals. My tube signal generator was used. See previous Notes for more details.

A. Pertinent Test Data

Test	Pin	Pout	P.G.	Remarks
#1	1.61 mW	18 mW	11.2X	Tubegenerator at full drive
#2	4.5 mW	49.2 mW	10.8X	" with 2.5K shorted out
#3	9.8 mW	50.4 mW	5.2X	" driving 6AQ5 amplifier

B. 6AQ5 Tube Amplifier

The 6AQ5 was operated at a B+ of 105 volts only since that was only available from the original supply for the original pre-amplifier Phono unit. As a result of this very low B+, the 6AQ5 amplifier became distorted at one peak at drives above 10 mW. A minimum B+ of 150 volts is normally required for the 6AQ5 tube. However, Test #3 showed that there was a limitation to the small pulse transformers used which was not a dissipation limitation!

II. Remarks

1. The rough tests indicate that the power limitation of the small pulse transformer is most likely related to the magnetic saturation of the small ferrite core used here. The saturation effects start at about the 4.5 mW drive level and a 50 mW output level. At higher drive levels there is no real increase in power output and thus a proportionate drop in power gain. These tests indicate that the nature and size of the transformer core is most important and the key element in the MRA, especially the Mini-MRA. The saturation effect is believed to be due to the factor that all available domains in the core which can be 'flipped' at the resonant frequency are being flipped! These domains must be easily flippable for the MRA to be an efficient energy 'extracting' device.

2. That this may be so is indicated by the factor that if some additional ferrite is 'coupled' to the original core, there appears to be an increase in available power output with only very slightly degraded powergains. Adding a permanent magnet externally to the core appears to have no affect on the MRA performance. This would seem to indicate that the domains in the permanent magnet are fairly firmly 'locked' and thus quite difficult to 'flip'. McClain and Wootan, in their large version of the MRA, apparently were able to 'flip' the domains at higher drive levels and at certain frequencies. The domains in the mini-versions were found to be 'flippable' at all test frequencies with some being more effective than others.

3. These simple tests also appear to verify 'Sparky' Sweet's VTA as a version of the MRA device. In Sweet's case, the magnets were 'de-magnetized', (?) and also were 'conditioned' to 'flip' readily at some specific frequency, apparently 60 Hz in his case. Here, the high 60 Hz ~~leakage~~ flux (which is rampant) could possibly act as a 'pump' to flip the domains --- possibly with the help of a strong local leakage field? Once interaction is obtained with the aether, ie, the universe, the interaction could build-up and become self-sustaining! Don't rule out 'Sparky's' accomplishments just yet --- it may have been quite real!

4. As pointed out in a previous Note, the Swiss M-L device is most likely also a version of the MRA device. If permanent magnets were used in the converter unit, then perhaps operation has to be at some specific frequencies. If highly 'flippable' domain ferrite cores are used (unmagnetized) then the unit could be less frequency sensitive, possibly more effective at certain frequencies in which they have been 'conditioned', ala Sweet?

II. Conclusions

1. Simple tests (per mini-MRA considerations) could lead to better understanding of the coil interactions in free energy devices based upon coils and magnets. These understandings could then further lead

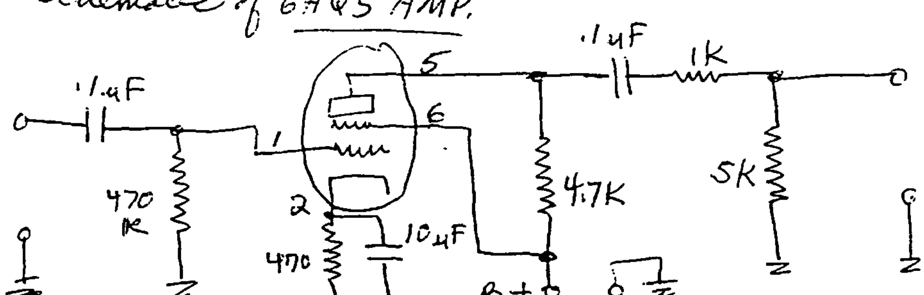
also to an understanding of the Sweet VTA device and the Swiss M-L device, both of which apparently (?) have been shown to be effective (though not without some problems still to be resolved). Perhaps, these considerations might be involved in some of the other free-energy devices using coils?

2. I have been releasing 'speculative' remarks and some experimental results in the hope that some of you will be able to follow up on this work. I am highly limited in my efforts, and while I will not yet drop these investigations, I always look forward to your thoughts as well as possible experimental results. The simplicity of these tests (with the certain precautions that I have pointed out) should enable many of you to readily investigate this phenomena and thus verify it to your satisfaction on its reality or not. I ~~very~~ strongly believe the MRA-type devices to be real; the McClain-Wootan version, the Mini version, 'Sweet's' VTA version, as well as the Swiss M-L version (and possibly some of the other versions of which I am not too aware).

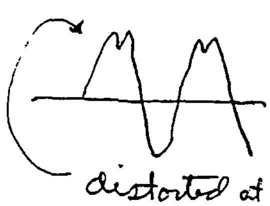
Good research and experimenting to all!

JW

Bill: Schematic of 6AQ5 AMP.
(FYI)



Heater
3, 4 (6.3V)



1. Tried adjusting Re, NG
2. Tried increasing B+, OK!

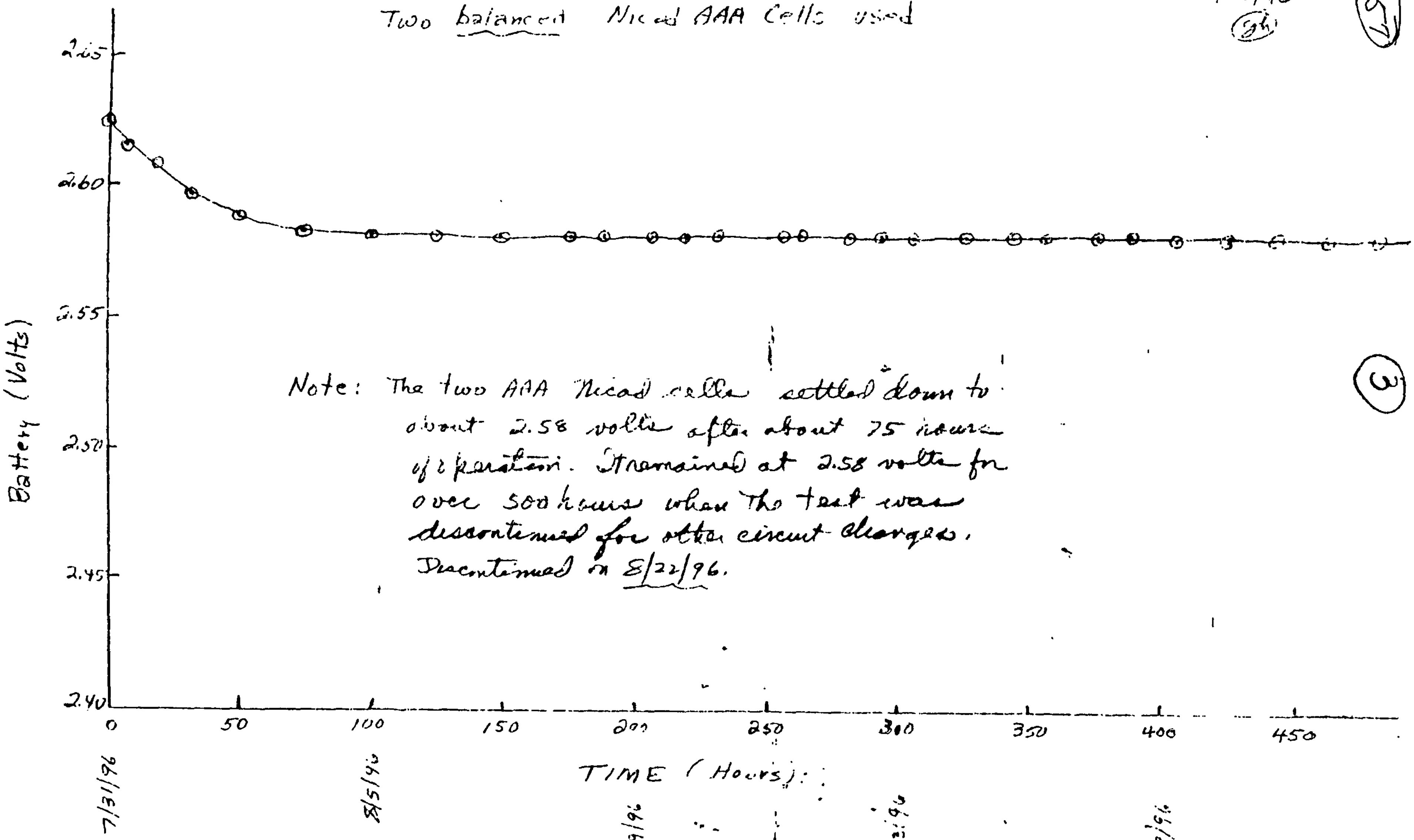
distorted at high drives (input)

C H [illegible]
[illegible]
7/31/96
[illegible]

457

CKT. # FE-811

Two balanced Nicad AAA Cells used



3

457

(458) **Cosmology Note** (458)

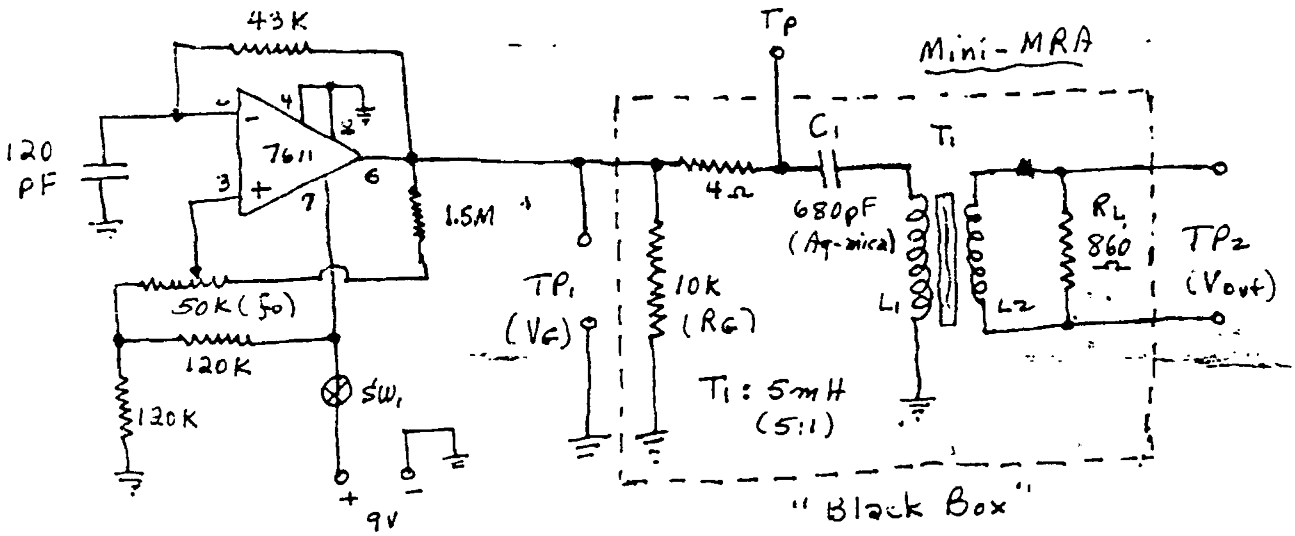
C-H Labs
Newark
8/16/96
(GH)

Dear Colleague: This may be of interest to you.

I. Original Ckt. FE-6A (as modified by McClain)

This is the circuit which was evaluated by the Three Atlanta labs. The test data shown below was made here in January 1996 using the Fluke 87 meter.

A. Schematic



B. Tests

TP1 $V_G \cong .75\,V$ (RMS); $i_G \cong \frac{.75}{10^4} \cong .075\,mA$ (RMS) } $P_{in} \cong .056\,mW$ (RMS)

TP2 $V_{out} \cong 1.0\,V$ (RMS); $i_{out} \cong \frac{1}{860} \cong 1.2\,mA$ (RMS) } $P_{out} \cong 1.2\,mW$ (RMS)

$P.G. \cong \frac{1.2}{.056} \cong 21X$ (when $f_0 \cong 100^+$ KHz)

II. Conclusions

1. Oscillator was made essentially resistive to keep all waveforms sinusoidal.
2. Relative measurements were made with sinusoidal waveforms and resistive source and load.
3. Operation was well above resonance where power out is low, but power gain is high! At resonance, P.G. ≅ 11X!
4. Tests were made under 'black box' conditions and verified by all the evaluators!

III. Some Added Notes

1. Ckt. FE-6 was originally made to 'look' into a possible 'stand alone' Mini-MRA unit. The output of the unit was 'coupled' to external rectifying circuitry to obtain a dc output which could be fed-back to the power supply of the unit. However, in a number of tests it was not possible to develop sufficient voltages from the rectifier stages used to even 'self-sustain' the unit.

2. Ckt. FE-6 was then made into a possible 'portable' demo unit by having the Mini-MRA output 'fire' a high level LED device (20 mW unit). The LED was placed directly across the output coil, L2. At resonance, it was lit very brilliantly (equivalent to about a 10-12 mW dc level).

3. This unit was sent to McClain and Wootan (who verified my data) but then modified the unit as shown on Sheet (1) in order to have the performance verified by the three Atlanta Labs, but with limited operating range! Since the unit was capable of a wide range of operating characteristics (as originally built), this was a wise move on the part of McLain and Wootan.

4. I have not seen any of the data by the three Atlanta Labs (except for the power gain being in the order of 11 to 18 X), but this was the same order of power gains seen here! So I believe all these tests were quite valid!

(460)

Cosmology Note

(460)
G H Labs
Newark
8/22/96

Dear Colleague: This may be of interest to you.

I. Some Preliminary Tests of Ckt. FE-8A

This circuit was a re-build of Ckt. FE-7 which was intended to possibly be a 'stand alone' mini-MRA unit. The unit was not able to 'stand alone' but was self sustaining, ie., it* developed sufficient output power to keep its 3 AAA Nicad cells fully charged while delivering this output power to also run the unit. There was some difficulty in obtaining self-sustaining operation with Ckt. FE-8. After many tests it was found that the Nicad cells had to have similar charge and discharge rates for the self-sustaining mode to function properly. Otherwise, one cell would not charge properly and thus the output voltage would drop and oscillator frequency would change; and the system would degrade rapidly and thus fail. Apparently, we had 3 well-matched cells in unit FE-7 (which we gave to Wootan).

To avoid this problem, we resorted to only two AAA Nicads in Unit FE-8A, and through a long process of tests and elimination, we found two AAA cells which were well-matched. This initial circuitry is shown on sheet (2). This unit ran quite well in the self-sustaining mode for over 500 hours as shown on Sheet (3). The self-sustaining mode has now been discontinued and a series of revisions will be in progress (one at a time) to possibly develop a stand alone demo unit. These changes are:

A. Adjust the oscillator load (R_a) for higher Pout?
B. Return to a variable R_2 for best waveform?
C. Bypass the dc operating point for AC signals?
D. Add a large 'storage' capacitor across battery?
E. Vary the voltage-doubler load resistor?

II. Conclusions

If stand-alone is achieved you will be informed. Wish me luck!

(461)

Cosmology Note

(461)
GH Labs
Newark
9/8/96
(GH)

Dear Colleague: This may be of interest to you.

I. Possible Resonances in The Universe

The fundamental frequency in the Universe is the rhysmmic frequency (f^*) which is equal to $1/T^*$ or $\frac{1}{5.391 \times 10^{-44} \text{sec.}} \cong \underline{1.855 \times 10^{43}}$ Hz. (per rhysmmics). Interaction with fundamental frequency under resonance conditions should result in an exchange of energy, ie., energy extraction. Some possible resonances are now considered, with remarks on possible confirmation: Without reference to powers*, the basic frequencies are now listed: * Fundamental to operating frequency ratio

Frequency	Remarks
1. 1.855 Hz	This is a Schuman resonance (?). and is also seen in Rhysmmic GW resonance ($\doteq$ 2 Hz).
2. 3.710 Hz	This is also seen in Schuman (?).
3. 7.42 Hz	This is also seen in Schuman as a more pronounced resonance.
4. 3.710 KHz 9.275 KHz 18.550 KHz 24.115 KHz 33.390 KHz 46.325 KHz 63.635 KHz 77.910 KHz 89.040 KHz 129.850 KHz	These frequencies were seen in the reported coil tests. (C-Note 3/16/96) Also many of these frequencies were seen in MRA tests, especially in Mini-MRA tests. Note: all the frequencies listed here cannot be just mere co-incidence!!

II. Conclusions: These tests appear to indicate that sub-harmonic resonances with the fundamental rhysmmic frequency of 1.855×10^{43} Hz do result in 'extraction' of energy from the 'intrinsic' energy of this Universe!

(1) 462 OK

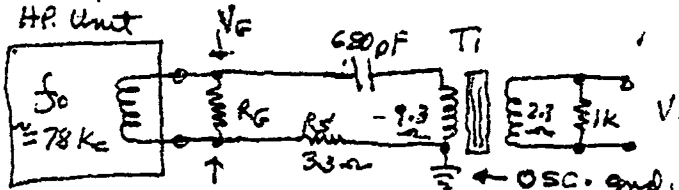
462
GH Labs
Newark
5/24/97
gh

Cosmology Note

Dear Colleague: This may be of interest to you.

I. Tests of original Mini-MRA using HP Model 200AB/ABR Audio Oscillator (as modified by Bill Ramsay to cover range of 20KHz to 200KHz). The normal 600 Ω output was used.

Note: This is a tube OSC.!



T_1 : 5mH (5:1)
R_L : 1K Ω
25Mc Scope used

A. Test #1 ($R_G \cong 5K\Omega$)

$V_G \cong 4.2V$ (pk-pk) $\cong 2.97V$ (RMS)
$i_G \cong \frac{2.97}{5\times10^3} \cong .6mA$ (RMS)
} Pin ≅ 1.8 mW (RMS)

$f_0 \cong 78Kc$

Vout ≅ 5.6V (pk-pk) ≅ 4V (RMS)
iout ≅ 4 mA (RMS)
} Pout ≅ 16 mW (RMS)

P.G. $\cong \frac{16}{1.8} \cong$ 8.9 X (Tune OSC. for dip in V_G!)

B. Test #2 ($R_G \cong 10K\Omega$)

$V_G \cong 4.5V$ (pk-pk) $\cong 3.2$ V (RMS)
$i_G \cong \frac{3.2}{10\times10^3} \cong .32mA$ (RMS)
} Pin ≅ 1mW (RMS)

$f_0 \cong 78Kc$

Vout ≅ 5.9V (pk-pk) ≅ 4.2V (RMS)
iout ≅ 4.2mA (RMS)
} Pout ≅ 17.6 mW (RMS)

P.G. ≅ 17.6 X

(See Page 2)

Remarks:

All waveforms very good sinusoidals!

most scope readings were averaged to a single decimal place.

≅78K → 77.91 Kc is a Rhysmonic subharmonic frequency!

C. Test #3 ($R_G \cong 10K\Omega$)

$V_G \cong 6.5V$ (pk-pk) $\cong 4.6V$ (RMS)
$i_G \cong \frac{4.6}{10\times10^3} \cong .46\,mA$ (RMS) } $P_{in} \cong 2.1\,mW$ (RMS)

$f_0 \cong 78Kc$ $V_{out} \cong 9V$ (pk-pk) $\cong 6.4V$ (RMS)
$i_{out} \cong 6.4\,mA$ (RMS) } $P_{out} \cong 40.7\,mW$ (RMS)

$P.G. \cong \frac{40.7}{2.1} \cong 19.4X$

D. Test #4 ($R_G \cong 10K\Omega$)

$V_G \cong 10V$ (pk-pk) $\cong 7V$ (RMS)
$i_G \cong \frac{7}{10\times10^3} \cong .7\,mA$ (RMS) } $P_{in} \cong 4.9\,mW$ (RMS)

$f_0 \cong 78Kc$ $V_{out} \cong 13.2V$ (pk-pk) $\cong 9.4V$ (RMS)
$i_{out} \cong 9.4\,mA$ (RMS) } $P_{out} \cong 86.8\,mW$ (RMS)

$P.G. \cong \frac{86.8}{4.9} \cong 17.7X$

II. Conclusions

1. HP Audio Oscillator Model 200AB/ABR (a tube unit) appears to be an effective signal source for MRA testing using the normal 600Ω outputs. When time permits, I will try some tests using the drive available at the amplitude control of the unit.

2. In general, the test results are similar to those obtained with my original (lower level) tube generator unit.

3. These tests also confirm that the original Mini-MRA transformer (5mH, 5:1) will saturate in power gain at about the 50-60 mW output level.

4. The higher drive levels (up to 1 watt) available with this H.P. unit will be useful in driving some larger transformers in the Mini-MRA mode of operation. A 10 watt output at 20X gain appears to be in reach now!

SERENDIPITOUS DISCOVERY OF POSSIBLE METHOD FOR OBTAINING 2-D (TWO DI-MENSIONAL) 'GRAVITY SHADOW' SCANS USING SOMEWHAT PRIMITIVE TECHNIQUES

464

GREGORY HODOWANEC
34 CLEVELAND AVENUE
NEWARK, NJ 07106

464

August 30, 1991

Dear Bill,

I got your letter of 8/26 on the 29th and I am rushing all this out to you so that you could have it by Sept. 3rd. Since your scan of 8/23/91 picked up M81 and the 'Flower in Virgo' (see attached paper) I am now sure that these are gravity 'shadow' scans and thus will be a most useful version of GW detections.

I was able to 'scan' the moon back in early 1986 using a mechanical scanning method with the continuous pen recorder as mentioned in the April 1986 Tesla article. However, the electrical scans and the sampling method will be much more useful and elegeant when more fully developed---as your rough scans now show!

I am enclosing a simple low cost (old unit) planisphere of the type I use (rather than the Phillips type). This is for your retention and use. While this device is very accurate for my longitude of 74.1 W you will have to add about 32 minutes to the times shown for your longitude of 82.3 W for the times as determined from the planisphere. For example, M81 arrived for me here on 8/23 at about 2:10 AM as per the chart, but arrived at your location at about 2:42 AM or 32 minutes later! See your scan of 8/23 ! I have also marked with circles the position of M81 and the Galaxy Center on your planisphere.

At present, I am trying to restir the interest of Bob Sickels, who publishes the "Radio Observer", a monthly publication for the radio astronomers (amateurs). I am now keeping Bob informed of the progress in GW techniques. I originally sent him the Ckt #275 when he was the editor of "Radio Astronomy", the Journal of the Society of Amateur Radio Astronomers, (SARA). He had some problems with 'orthodox' members on SARA's staff who didn't believe in GW techniques. So he left SARA to start his own magazine. Thus, he may soon be convinced on the reality of these GW techniques and become involved again.

Bob has about 300 or so subscribers and SARA has about the same number of members. Many are professionals, and also 'hams' as well as knowleadgeable experimenters. Many have contacted me in the past on these techniques. More important, many have Rustrak recorders, and thus are a natural to experiment here. Thus these groups would be the ideal base to further GW techniques, and thus could help to further advance this science---they would have the interest and the equipment!

As I keep mentioning to you I cannot get more involved than I am now---certinly not involved with a newsletter! I have the feeling that a simple trial article on this will get Bob to become involved again!

Keep it up, Bill---you are certainly advancing the GW art and I sure appreciate it---keep me informed! I remain,

With best regards,

Greg

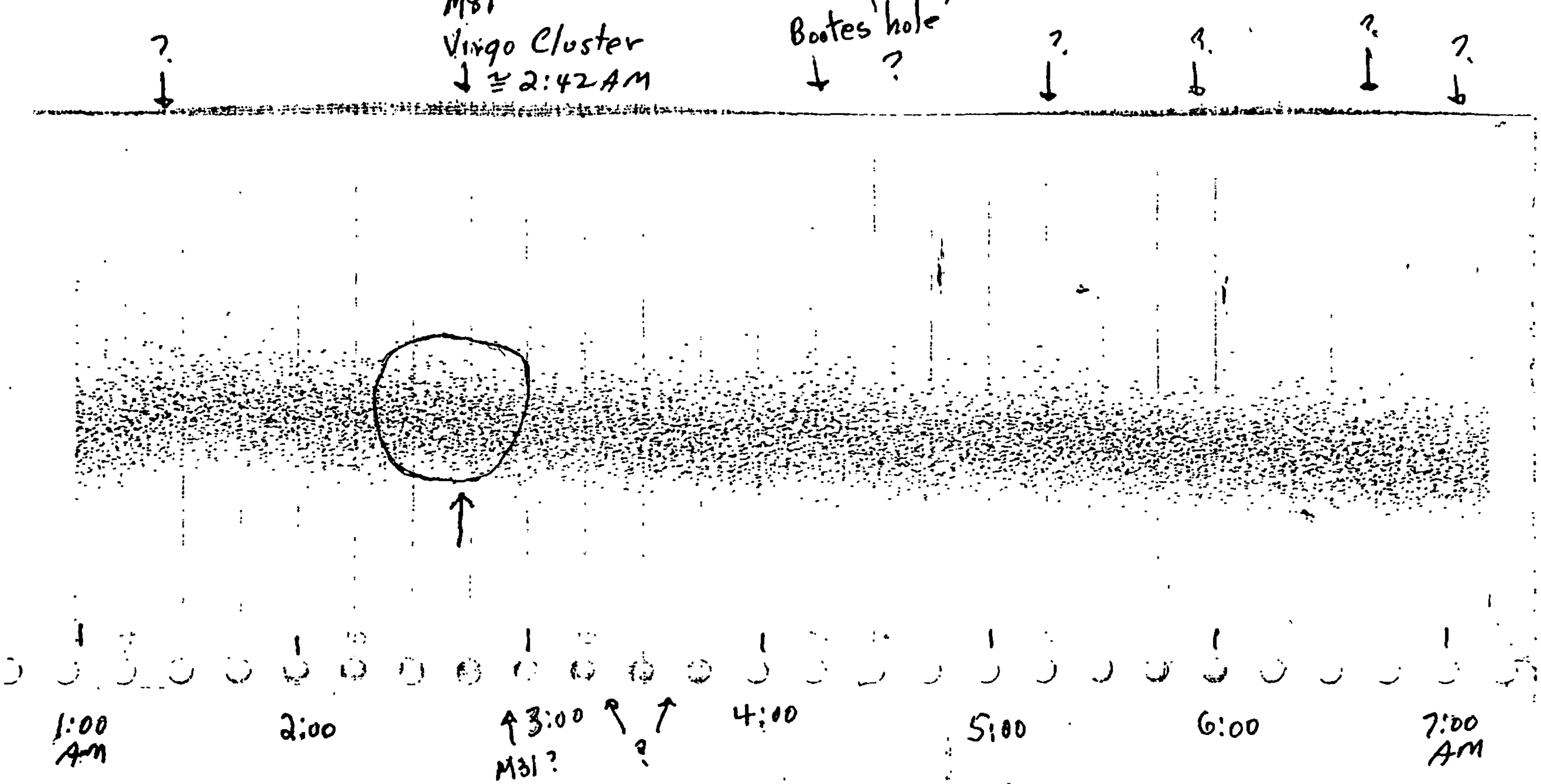
Enclosures

465

Your scan of 8/23/91

Start $1^{\underline{00}}$ AM
Stop $7^{\underline{10}}$ AM) EST

Bill: Much structure here because this is in the direction of the "Realm of Galaxies" in the northern hemisphere. Note how M87 stands out in this scan!!



Comments: Tully, et al, needed nine years to obtain a two-dimensional optical plot of the Local Supercluster! Your system 'scanned' it in less than 1/2 hour!! I see great promise in these type of scans!! (GL)

465

A Flower in Virgo

A 9-year survey has produced the first detailed maps of the Local Supercluster, providing new evidence about how the universe evolved

The northern galactic hemisphere—that portion of the sky lying to the north of the Milky Way—is rich in bright galaxies; the southern hemisphere is relatively barren. For a generation or more, astronomers have debated why. Their consensus today is that our galaxy lies at the edge of a much larger assemblage of galaxies, a structure some 60 million light-years across. They call it the Local Supercluster. The northern galactic hemisphere appears overpopulated because our own galaxy happens to lie almost face on to the supercluster core.

The core itself is a swarm of galaxies lying 50 million light-years from the earth in the direction of the constellation Virgo. Some 60 luminous galaxies and hundreds of not-so-luminous galaxies are contained there within a spherical region no more than 10 million light-years across. (A similar volume centered on the Milky Way contains just two large neighbors, the spiral galaxies in Andromeda and Triangulum.) One of the Virgo galaxies, the elliptical giant M87, ranks among the largest and most luminous such objects known; many astronomers suspect that it harbors a black hole at its center several million times more massive than the sun. The cluster as a whole is so massive that its gravity affects the motion of everything around it—including the Milky Way, which is known to be falling in the general direction of Virgo at several hundred kilometers per second.

According to new maps prepared by R. Brent Tully of the University of Hawaii and J. Richard Fisher of the National Radio Astronomy Observatory in Green Bank, West Virginia, the Virgo Cluster contains about 20 percent of the galaxies in the supercluster. A band of galaxies scattered across the sky to the north and south of Virgo contains another 40 percent. The final 40 percent lie to either side of the band in long, streaming clouds running outward from the core. When Tully and Fisher plot these galaxies as seen on the dome of the sky, the cluster, the band, and the streamers resemble nothing so much as a giant, many-petaled flower.

Tully and Fisher's maps, prepared after 9 years of measuring the positions and redshifts of some 2200 individual galaxies, are the first to show the supercluster in three dimensions. They use Hubble's law, which states that redshift is proportional to distance, to derive each galaxy's position in space. Their work will be published in the 1 June 1982 *Astrophysical Journal*. The maps reveal a surprisingly rich, convoluted structure that provides new evidence about how galaxies, clusters, and superclusters formed throughout the universe.

In the third dimension, the new Tully-Fisher maps resolve the band into a pair of sprawling, flat, irregular clouds. The one to the north they call the Canes Venatici cloud; the one to the south, the Virgo II cloud. Together with the cluster these clouds define a disk about 6 million light-years thick. The Milky Way and its neighbors (the Local Group) lie in the plane of the disk near the outer end of a filament of the Canes Venatici cloud. The "streamers" above and below the plane are thin, cigar-shaped clouds with their axes pointed toward the supercluster core in Virgo.

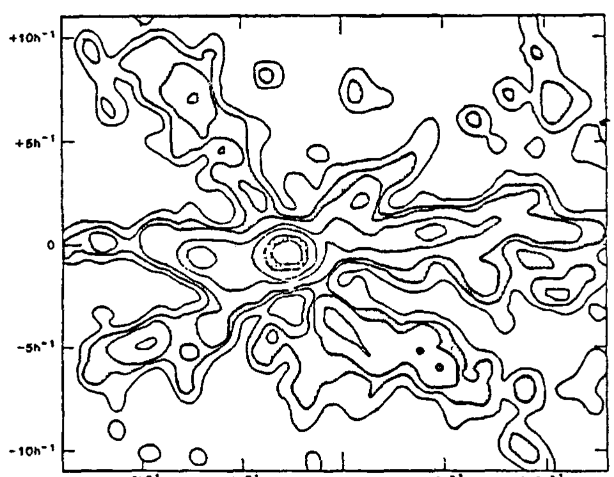
The most remarkable thing about all this, says Tully, is that so much of the supercluster is empty space: 98 percent of the luminous galaxies are contained in just 11 clouds, which together fill only 5 percent of the available volume. He is the first to admit that the three-dimensional maps may err considerably in detail—the redshift-distance proportionality (the Hubble parameter) is uncertain by as much as a factor of 2, for example, and the proper motion of the Milky Way toward Virgo biases the distance estimates by a similar factor—but the qualitative picture is incontrovertible.

It is also remarkable that the disk is quite thin, he says. The ratio of width to thickness is about 6 to 1. Moreover, the random motion of the galaxies along the line of sight seems quite small, less than 100 kilometers per second. For comparison, our own sun is orbiting the center of the Milky Way at some 220 kilometers per second.

Tully is convinced that the clouds above and below the disk were stretched into their current shape by the tidal action of the Virgo Cluster itself. The tidal forces operating today are much too weak to do that, he concedes; the clouds are tens of millions of light-years away from Virgo. But in an earlier epoch, before the universe had expanded to its present size, the clouds were much closer and the tidal forces correspondingly stronger. Tully estimates from this that the elongated clouds must have formed when the universe was about 1 billion years old. (Estimates of its current age range from 10 billion to 20 billion years.)

The existence of the supercluster disk implies one of three things, says Tully. One possibility is that the galaxies of the supercluster were much more widely scattered in the beginning, and that their current distribution in a disk is the result

Tully and Fisher here plot the density of galaxies in the supercluster as projected onto a plane that approximates the plane of the sky. The Virgo Cluster is apparent in the center. The supercluster disk, seen edge on, extends to the left and right. Distances are marked in millions of parsecs (a parsec is 3.26 light-years). The factor h^{-1} *denotes the uncertainty in the Hubble parameter; it lies between 1 and 2.*



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Almanac's Forecasts Questioned

Anyone can make a mistake forecasting the weather, even the venerable *Old Farmer's Almanac*. Its forecast of a mild mid-January this year for the East and South, when those areas suffered record cold, might be explained away as a fluky miscalculation. But the *Almanac* seems to have a consistent record of erroneous forecasts. A recent study by two weather researchers suggests that you would not do much worse by blindly guessing about the weather than by accepting the *Almanac*'s forecast.

Professional forecasters have long voiced serious doubts about the *Almanac*'s predictions. Calling for "mostly clear, turning hot" between 8 and 14 October 1982 in the Middle Atlantic states is such an absurdly detailed long-range forecast that most scientists think such prognostications useless. Even the monthly forecasts of deviations from normal temperature and precipitation seem overly ambitious. The *Almanac*'s forecasting methods are hardly conventional either. "A secret weather-forecasting formula devised by the founder of this almanac in 1792" has traditionally formed the basis of predictions, according to a statement in this year's edition. Recently the *Almanac*'s chief forecaster has come to depend primarily on "predicting the variation of solar activity and then determining the orientation of the earth relative to that activity."

Whatever the details of the forecasting method, the results for one 5-year period differ little from guessing, according to John Walsh and David Allen, who are research meteorologists at the University of Illinois in Urbana. Allen had become weary of hearing uncritical remarks from farmers about the accuracy of the *Almanac*'s forecasts, so he and Walsh compared 60 monthly forecasts from 1975 to 1980 with the actual weather.* Using the records of 32 cities to describe the weather in the *Almanac*'s 16 forecast regions, they calculated a mean correlation between predicted and actual temperatures of .016. For precipitation forecasts, the correlation was .041. If the predictions had been perfect, which the *Almanac* has never claimed, the correlations would have a value of 1.000; random guessing would produce a correlation of zero. The *Almanac* correctly predicted whether the temperature or precipitation would be above or below normal 52 percent of the time, Walsh says. A coin toss would succeed 50 percent of the time.

Contrary to the *Almanac*'s claim, long-range forecasts that are more successful are made, although they are not made so far in advance. Donald Gilman, head of the National Weather Service's long-range weather-forecasting group, reports that their monthly and seasonal forecasts of temperature are correct about 65 percent of the time in winter and about 60 percent year-round. Precipitation forecasts, on the other hand, exhibit "marginal" forecasting skill. They have a success rate of only 55 percent, he says.

Interestingly, the *Almanac* fared best in its own backyard, achieving seasonal temperature forecast correlations of .47 to .62 in the northeastern states. Even these higher correlations could result simply from a few lucky forecasts over the relatively short 5-year span, Walsh says. A longer sampling period would be needed to rule out the presence of any forecasting skill whatsoever, he notes.

Even if the *Almanac* does not measure up to the modest achievements of conventional long-range forecasting, could it be predicting some of the major weather extremes that stand out in the weather record? Walsh and Allen's comparison of a dozen periods of extreme weather with the *Almanac*'s predictions revealed only three cases in which the *Almanac* anticipated even the type of abnormal weather; in no case did its forecast approach the severity of the actual weather.

The most reliable *Almanac* forecast is the one-page, essay-style national forecast, according to Jud Hale, editor of the *Almanac*. It has been correct in a general way for the past dozen winters, he says. The rub is that, as Hale readily concedes, this forecast is too subjective to be verified statistically.

—Richard A. Kerr

*"Testing the *Farmer's Almanac*," *Weatherwise* 34, 212 (October 1981).

of random motions and mutual gravity. But such a configuration would be relatively short-lived, says Tully. He finds it difficult to believe that we just happen to be observing the supercluster at a special moment. Besides, such a model implies that the galaxies should have large velocities perpendicular to the disk, which seems inconsistent with the small random velocities observed along the line of sight, in the plane of the disk.

A second possibility is that the visible galaxies are held within the disk by the gravity of an immense plane of dark, invisible matter. This is not just science fiction. Such dark matter is found in halos around the individual galaxies (including our own) and as an all-pervasive medium within clusters of galaxies (including Virgo). But this model would tend to predict large random motions for the disk galaxies, which again seems inconsistent with the observations, says Tully.

The low random velocities along the line of sight lead Tully to support the third possibility: that the disk, like the Virgo Cluster and the streamer clouds, is nearly as old as the universe itself. It has not dissipated simply because the individual galaxies are moving too slowly to escape.

This model is also in accord with one of the major theories of the origin of structure in the universe, the "pancake" model of Ya. B. Zeldovich and his colleagues in the Soviet Union. Their idea is that the large-scale structure began to form very early in the life of the universe, long before there were galaxies. Clumps of primordial gas on the order of 10^{15} solar masses or larger—supercluster size—began to collapse by their own internal gravity. Because of random deviations from spherical symmetry, they tended to evolve into sheetlike structures, resembling pancakes. Turbulence, viscosity, and shock waves then dissipated the kinetic energy of the infalling gas and the pancakes stabilized. Only later did the galaxies form. The model thus predicts a structure very much like what is seen in the Local Supercluster, says Tully.

The observations are less favorable to a major alternative model, the gravitational clustering picture promoted in recent years by P. James E. Peebles of Princeton University, and others. Their idea is that the galaxies formed first in the early universe, and only then began to cluster. The problem is that this model has no way to dissipate kinetic energy. In the immensity of space the galaxies are very small. They almost never collide. If by chance they formed a thin sheet they would quickly move apart again. So it is difficult to see how gravitational clustering alone could have produced the kind of structure seen in the Local Supercluster, says Tully.

Testing these ideas in more distant superclusters is more difficult, he says. Outside our own neighborhood, individual galaxies cannot be located accurately enough in the line of sight to know whether they lie on the front side or the back side of their supercluster. Moreover, the dim galaxies, which actually outnumber the bright ones, are undetectable at great distances. It is only in the local supercluster that the census can be relatively-complete.

None of the models of large-scale structure is without its problems in any case, notes Tully. Most important, none of them can explain where the initial density fluctuations came from. So in an ultimate sense, no one really knows why the Local Supercluster exists. But at least, he says, we are learning how to formulate the questions that address the problem.—M. MITCHELL WALDROP

Gene Transfer Yields Cancer Clues

Some cancer cells carry genes that transform cultured cells. Researchers are beginning to isolate and clone the transforming genes

Using gene transfer techniques, investigators have recently shown that cultured cancer cells derived from human and animal tumors often carry transforming genes that cause normal cells to acquire cancerous characteristics. The experiments provide direct support for what everyone has thought all along, namely that gene changes contribute to the development of many cancers. But they do more than that. For the first time, researchers are gaining the ability to isolate, clone, and study in detail transforming genes from cancers that have arisen spontaneously or been induced by chemicals.

Substantial progress has already been made in identifying the transforming genes carried by many of the viruses that cause cancers in animals. Studies of these genes, which are called *onc* (for oncogenic) genes, are providing much information about the biochemical basis of viral transformation, and possibly about transformation in general. Nevertheless, the applicability of the viral results to the problem of human cancer remains to be proven.

As Robert Weinberg of the Massachusetts Institute of Technology (MIT) points out, "Hopes of finding viral agents that cause human cancers have largely been frustrated." Even though viruses have been implicated as the cause of some, mostly rare, forms of cancer, Weinberg continues, "In general, it is likely to be the case that the cancers common in this country are not going to have a viral etiology. If it is not a viral agent, then what kinds of changes in the cell are causing cancer?"

The evidence suggesting that they are gene changes includes demonstrations by Bruce Ames of the University of California at Berkeley and others that radiation and chemicals that are carcinogenic are usually mutagenic, effecting alterations in DNA. In the past, investigators were not able to identify the affected genes because they lacked probes that could pick them out from among the many tens of thousands present in a mammalian cell.

With the normal road to gene isolation blocked, investigators, including Weinberg and Geoffrey Cooper of the Sidney Farber Cancer Institute and Harvard Medical School, turned in the late 1970's to "transfection" methods, gene transfer techniques that have developed rapidly in recent years (*Science*, 19 December 1980, p. 1334). As long as the transferred gene confers some detectable new property on the recipient cells, the methods provide an assay for its presence that can be used in lieu of a more conventional probe. Acquisition of a transforming gene, for example, should alter the growth pattern and shape of the recipient cells in a characteristic fashion.

In an early series of experiments, Chiaho Shih of MIT and Weinberg transferred DNA prepared from each of 15 different lines of mouse cells that had been transformed with chemical carcinogens to mouse cells (fibroblasts) of the NIH3T3 line. The results suggested that some of the lines carried a transmissible transforming gene. Shih, Weinberg, and their collaborators found that DNA from five of them, all transformed by 3-methylcholanthrene, caused the recipient cells to be transformed at a frequency 10 times higher than the frequency of transformation by DNA from normal cells. Weinberg says, "The DNA from transformed cells functioned differently from the DNA of normal cells. It carried transforming sequences."

The transforming trait appeared to be carried on a single fragment of DNA. "The behavior of the DNA suggested that the transforming activity was located in a single discrete segment," Weinberg explains. "It was incompatible with a series of genes scattered through the genome acting together to create this phenotype." Even in the best cases, the efficiency of gene transfer is low; only about one in 100,000 cells successfully acquiring a new gene. Since the probability of transferring one gene is low, it is mathematically unlikely that two or more unlinked genes will be transferred.

In more recent experiments, DNA's from a variety of cell lines derived from human cancers have been found to transform NIH3T3 cells. Weinberg's group found this to be the case for lines derived from colon and bladder carcinoma cells and from promyelocytic leukemia cells. Cooper and Theodore Krontiris of the Sidney Farber Cancer Institute obtained transformation with DNA's from two lines of bladder carcinoma cells. In collaboration with Mary-Ann Lane, who is also at Sidney Farber, Cooper transformed NIH3T3 cells with DNA from a line of mammary carcinoma cells, as well as with DNA's from a number of kinds of malignant human lymphocytes. And Michael Wigler and Manuel Perucho of the Cold Spring Harbor Laboratory obtained similar results with DNA's from two lines of lung carcinoma cells and one line each of bladder, colon carcinoma, and neuroblastoma cells.

Explaining transformation might have been simplified if all these cell types turned out to have the same transforming gene. That did not happen, although cancers of a particular cell type may be traceable to the activation of a specific transforming gene. According to Weinberg, "The hypothesis, which is becoming increasingly validated, is that each given type of tissue will have a characteristic activated oncogene." Investiga-

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Cosmology Note

GH Labs
Newark, NJ
Aug. 28, 1991

Dear Colleague: This may be of interest to you.

Are These Two-Dimensional Gravity 'Shadow' Plots ??

Bill Ramsay, an avid GW signal experimenter recently ran some unfiltered GW signal scans using his copy of my CKT #175, but with a 27 ohm resister in series with each leg of the 2200 uF input detector capacitance. This enables higher system gains and sensitivity with stability when using many recent vintage ICs. His recorder unit is a Rustrak unit having a 10 uA movement at 5k ohms and has a 2 second sampling rate. The chart speed was one inch per hour. This should normally only show a random noise type scatter plot. However, Bill noted much 'imbedded structure' in these scatter plots which appeared to him to be either cosmic signals, possibly intelligence, or ???

Looking over his many scans and his recording method, I am of the opinion (at this time) that perhaps Bill has inadvertently obtained two-dimensional plots of GW 'shadow' responses. This has been proposed as possible by the writer in some papers and communications in the past. The Rustrak unit, without filtering and at a slow scan speed would respond to the many 'dynamic' GW signals in the universe as a sort of 'sweep frequency' such as is used in scopes or the TV. Under the 2 second sampling rate of the Rustrak, the response would be a scatter plot of the signals, but should not show structure. A continous pen recorder would show only a filled in chart response. However, the presence of GW shadows would change the scan rates, ie., show an increase or decrease in meter movement (voltage) and thus should leave gaps or holes in the scatter plot which would be related to the density of the shadow masses which were being scanned. Thus we may have a sort of 'picture' of these dense masses as seen from the observers position. The dynamic GW signals are providing the sweep frequency for these scans. Some of the 'imbedded structures are shown marked by the writer on an enclosed scan obtained by Bill. Much other structure can be seen---many apparent galaxies or even black holes?

These crude early scans seem to show a potential for a new type of response for these detectors. The method can be further developed with other sweep methods and sampling methods. Bill has apparently showed possible feasibility here---it is up to you researchers to help further develop these techniques--Good experimenting to all!

Best regards,

Greg

Enclosure

Comments:

Bill: This note sent to but a few known serious GW Researchers.

GH

MUCH IMBEDDED 'FORM HERE

Scan obtained by
Bill Ramsay (S. Carolina)
on 8/7/91 (EST).

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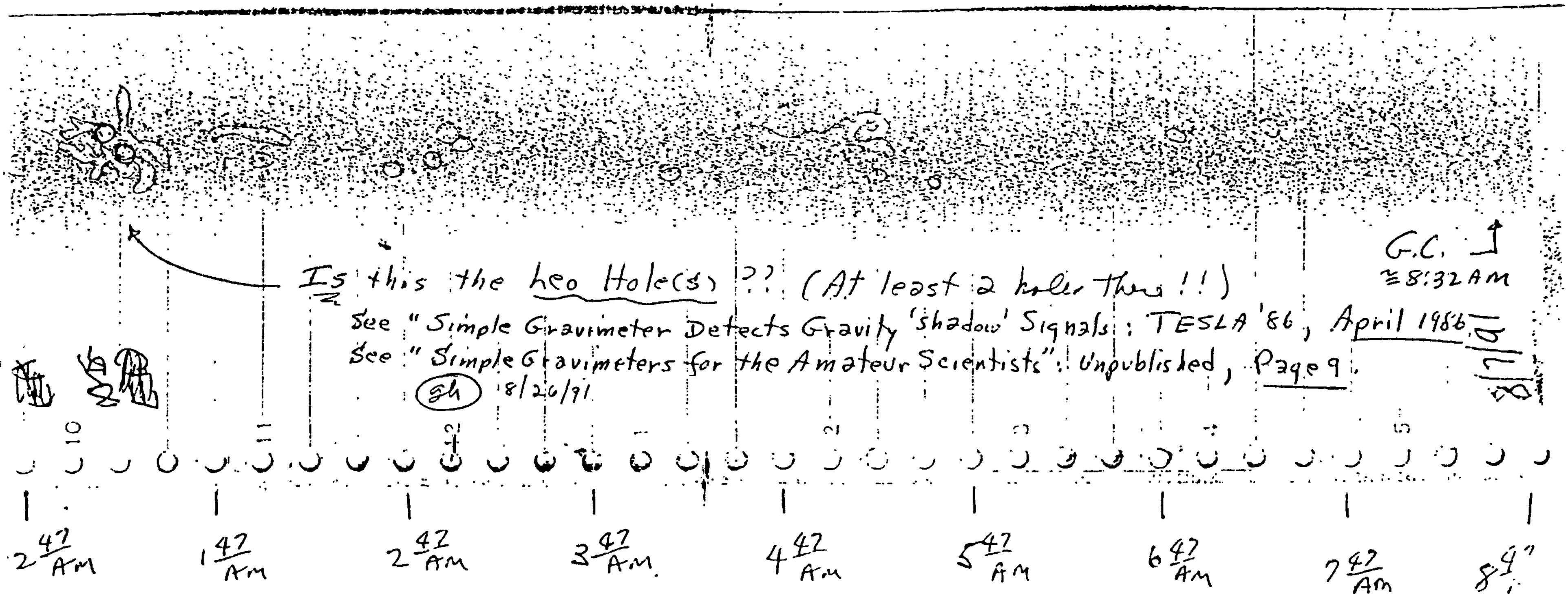
WHAT KIND OF FORM IS THIS?

LOOKS LIKE SOMETHING FROM AN INDIAN RITUAL/FORM

SPIRAL!?



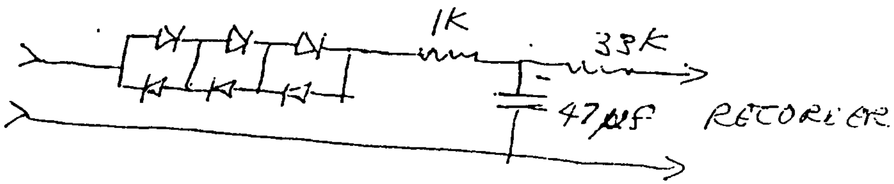
Is this the Leo Hole(s)?? (At least 2 holes there!!)

See "Simple Gravimeter Detects Gravity 'shadow' Signals": TESLA '86, April 1986

See "Simple Gravimeters for the Amateur Scientists": Unpublished, Page 9.

gh 8/26/91

CKT #175 (MY COPY)



Note: ① Remarks on the chart paper are by gh. Other remarks are on original scan by Bill.
② The Rustrack chart paper was expanded by the copier.

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Cosmology Note

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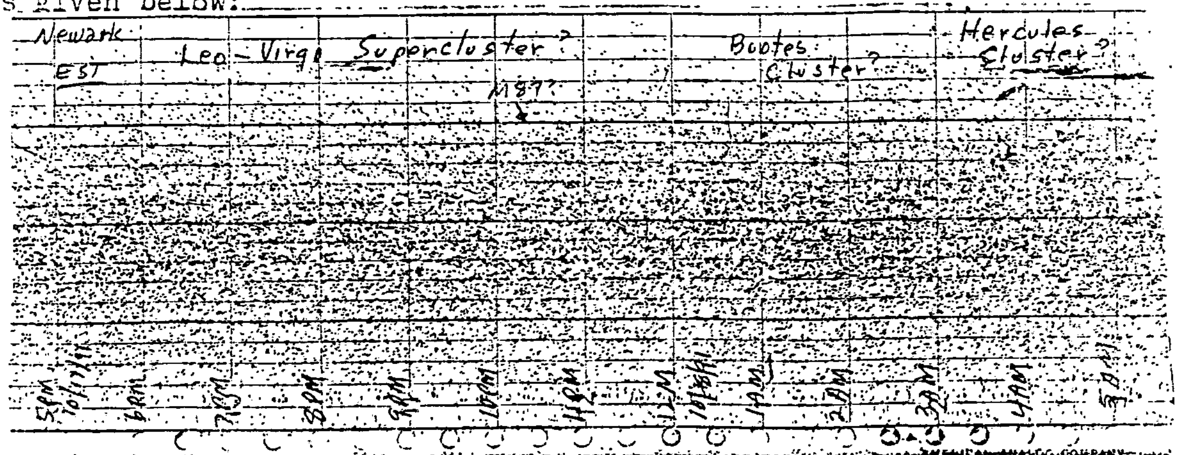
GH Labs
Newark, NJ
10/20/91

Dear Colleague: This may be of interest to you.

Are these two-dimensional gravity plots of galaxy superclusters ???

Bill Ramsay of South Carolina reported to me that on 8/6/91 he had connected his GW detector #175 through a 3-diode off-set and a 21 Hz LP filter to a Rustrak 288 strip chart recorder unit. The slow scan rate of 1 inch/hour and the 2-second sampling rate of the Rustrak appeared to be developing many 'imbedded forms' in the scatter plot as made by this system. Bill surmized that these might be some sort of cosmic signals. To this writer they appeared to be similar to some of the large scale clustering of galaxies as plotted by some of the optical astronomers.

Recently, the writer obtained a 1 mA Rustrak 288 recorder unit (thanks to Bill Pendergast of Tennessee) and was able to confirm the 'imbedded forms' seen by Bill Ramsay. To further confirm that these forms could possibly be two-dimensional plots obtained as gravity shadows by this system and thus were 'pictures' of the superclustering of galaxies in this universe, the writer made a continous nine-day scan with this system. He used his stabilized GW detector #75, a two-section diode offset, and a 10 Hz LP filter driving the 288 Rustrak unit directly as a 100 mV meter. A 12 hour scan (at 1/2 inch/hour) is given below:



Conclusions: The scatter plots obtained over the nine day period continued to show the 'imbedded forms'. These appeared to correlate (and largely repeat) with many of the known superclusters of galaxies, as well as many unknown structures. Some of the more pronounced structures such as the Andromeda Galaxy and the possible black holes ?? in M-87, the Leo region, the Cygnus region, and the Gemina region, also seemed to have a high order of repeatability. This investigation is still in its early stages and it would be nice to have more of you independant researchers look into this also. At present, I am aware of only the two Bills (above) and myself looking into this aspect of GW research. Bill Ramsay has much data on these aspects and is most active in these researches but we need more to get involved here. If these are really gravitational shadow 'pictures' of the universe, the possibilities here are awesome!

Best regards,

Greg Hodowanec

(472)

Rustrak GW Responses

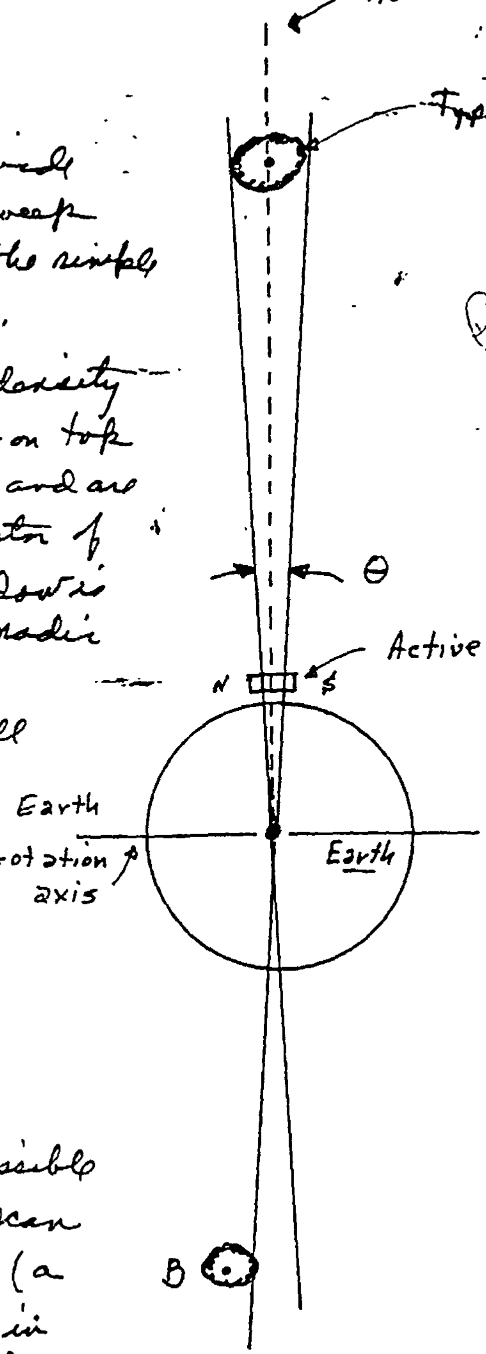
(472)
GH Labs
11/11/91
(gW)

Remarks:

① Supernovae provide the 'scanning' sweep frequencies for the simple detection system.

② 'Shadows' or density variations exist on top of these 'scans' and are related to the factor of whether the shadow is in the zenith or nadir regions.

③ The 'pictures' will thus have a sector width depending on the angle θ formed by the active portion of the detector element and the center of the earth.



Preliminary!

Note: ① Earth is rotating on this axis!

Note: ② Sensor (observer) is shown in zenith (A) position. However, sensor will also respond to masses in nadir position (B),

Note ③: The angle of sensitivity, θ, will depend on active portion of sensor. If a capacitor is used, keep active region along a north-south line for a broader response.

Conclusion:

① It should be possible to 'mechanically' scan the detector element (a small volume unit) in a north-south direction and use steering diodes to allow only the density variations to 'modulate' the meter movement.

② There is room for much more experimental development here!

Cosmology Note

GH Labs
11/11/91

Recent 'Gravity Wind' activity??

For about the past two weeks, it was noticed that there was an increase in 1/f type 'noise' as well as more solar flare activity, and a return of very 'strange' weather patterns. On Nov. 6th and 7th, the Galaxy Center (and the Betelguese) regions were scanned again, using the linear mode on the Esterline-Angus chart recorder to see if activity here was responsible for the above effects. It was confirmed that the former black hole type structure at the GC was 'gone', but the black hole type structure in the Betelguese region had undergone a drastic change also! See the Note of 11/8/91. It was then decided to look at the GC and Betelguese regions with the Rustrak technique on Nov. 7th. This is shown as Scan #1 on the attached sheet. The large-scale variations at the GC showed up very well at the 10 Hz filter used. However, in this scan, another effect showed up---an apparent increase in the earth's g-field levels in the periods of roughly 7-9 PM (A) and 7-9 AM (B). This increase in g-field levels was also noted on solar flare detectors, #8000A and #8000B!

To further verify that the increase in g-fields was real, a Rustrak scan was made with a 1 Hz filter on Nov. 8th. The increase in the g-field, shown as B in scan #2, also correlated with an increase in my apparent weight on a spring scale system ie., a Hooke's Law scale, from a nominal weight of 177 pounds to 186 pounds, an apparent increase of about 5% also! ~~During~~ this same period, the flare ~~detectors were~~ off-scale at over 100 mV! A final Rustrak scan (Scan #3) was made on Nov. 10th and 11th. Again the increases A and B showed up, confirmed by my weight increase, the Flare detectors, and the general 1/f noise.

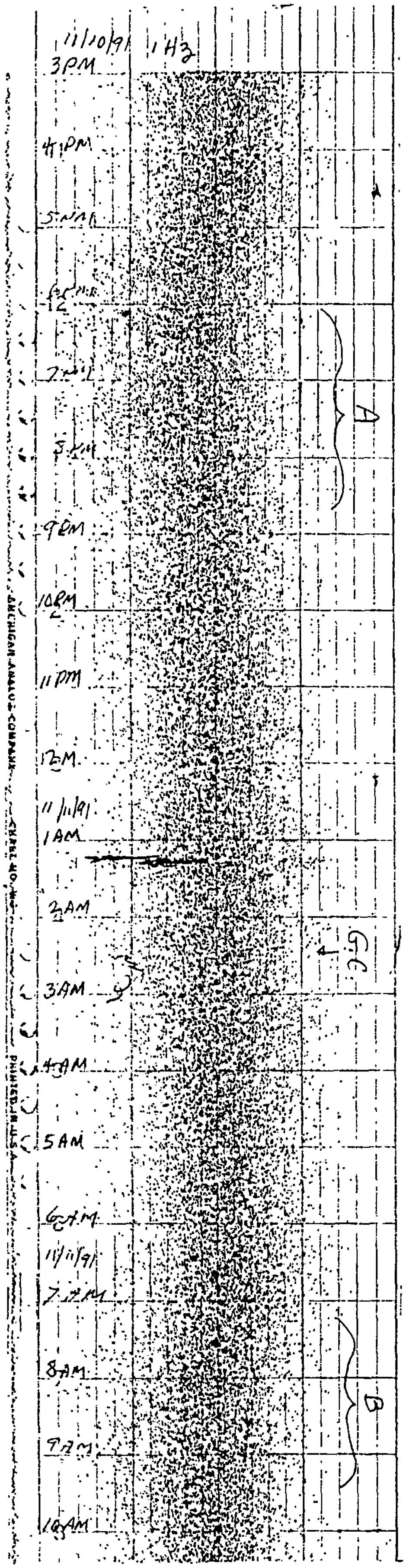
Conclusions:

Although I could not associate any particular mass to be responsible for these 'effects', I am surmising:

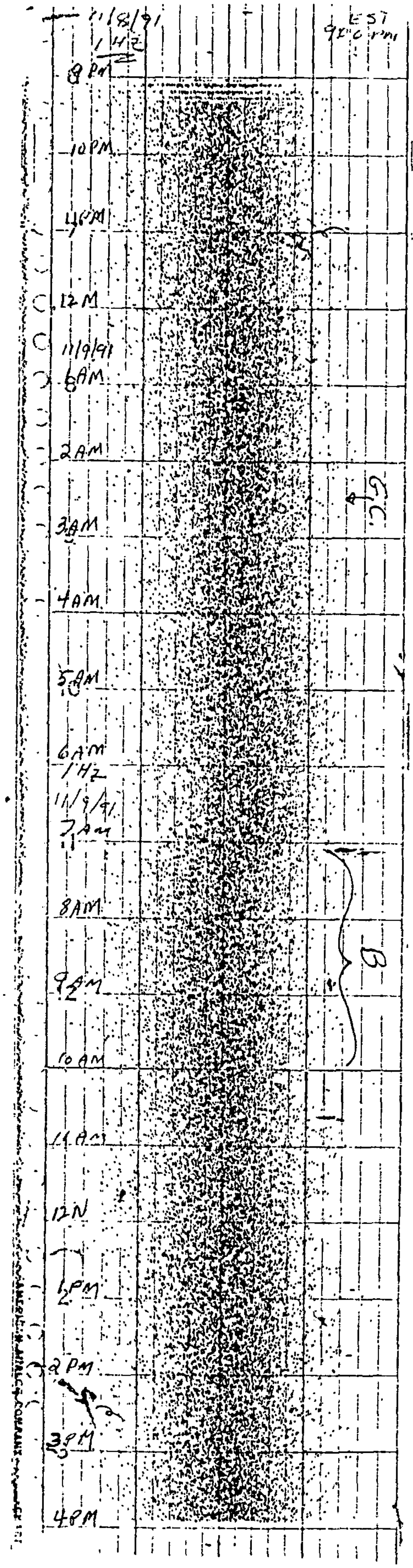
1. The effect may be associated with a massive 'event' in the Universe Center, in the general Leo region?
2. Since the effect is broad, covering 2-3 hours of scan time, the only possible explanation I have at this time is that it is due to severe 'gravity winds' from the event at the universe center. This is somewhat supported by the fact that there is an increase in g-fields whether the suspected source is in the zenith or nadir regions!
3. Such severe variations in the g-field over a sustained period of 2-3 hours, could affect our weather patterns. It could also be responsible for the increased flare activity, and it may eventually result in increased geological activity.

The Universe has been quite active in recent years. There is much activity which can be evaluated with GW signal techniques. Now is the time for many of you researchers to get more active also. Yes??? Note that the GC showed up better at the 21 and 10 Hz filters than the 1 Hz range. I would expect that since the GC is a minor structure compared to the massive large-scale systems seen with the Rustrak!

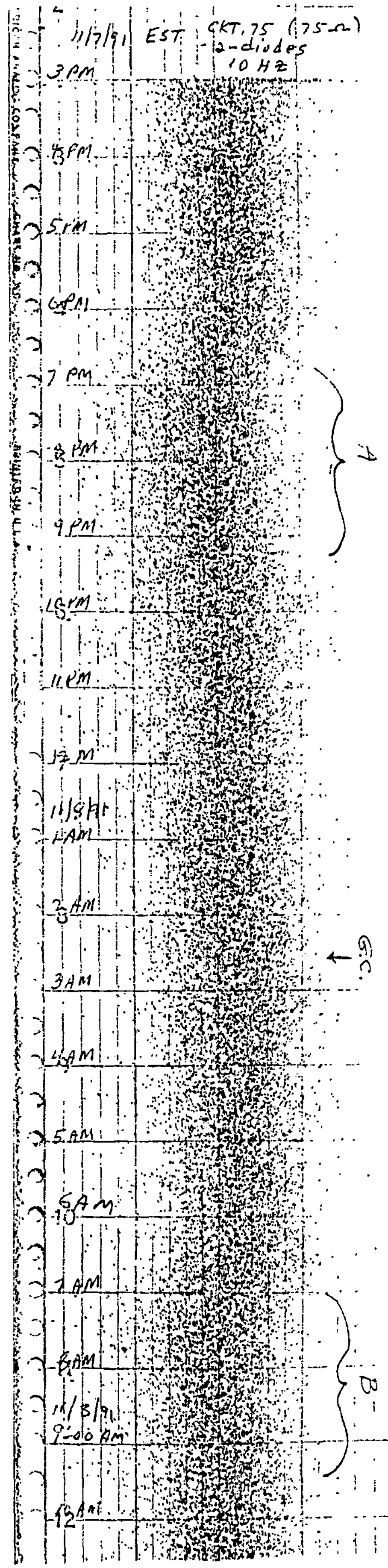
411 Scan #3



Scan #2



Scan #1 (474)



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Cosmology Note

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GH Labs, Inc.
December 1, 1991
Newark, NJ

Dear Colleague: This may be of interest to you.

Gravity Signal Astronomy with the Rustrak 288

Introduction: The basic GW detector unit, #75, as described in the Jan. 1989 issue of R-E's Electronic Experimenter Handbook, is generally used in a linear mode of operation, with a rather fast moving chart recorder speed on a typical pen-type strip chart recorder. In this gravimeter mode, the various cosmic signals, eg., the density 'shadows' of distant masses, or the 'impulses' of the more dynamic cosmic events, show up as 'modulations' of the earth gravity field as measured at the site of the detection unit. On the moving chart paper these signals would appear as 'wiggles' above and below the average value of the g-field and thus as variations in the dc levels of the detector output. These responses reveal the presence of novae, supernovae, galaxy structures, black holes, etc., as is described in the many simple articles by the writer.

Bill Ramsay, a new researcher to GW techniques reported to me in August that in a special experiment he undertook where he coupled a type #75 detector to a Rustrak 288 recorder unit, he serendipitously noticed many 'imbedded forms' in the scatter plot of the data points as recorded by the general system shown in Figure (1). The writer has since obtained a Rustrak 288 unit (courtesy of Bill Pendergast) and was able to verify the imbedded forms seen by Bill Ramsay. To this writer, however, the forms appeared to be very similar to the images of the large and superclusters of galaxies as was noted by the optical astronomers. Therefore, ~~an~~ attempt was made to understand how ~~the system~~ of Figure (1) could result in what appeared to be very much a two-dimensional image of a small sector of our universe as 'drift scanned' by the rotation of the earth. This Note will report on some of these thoughts.

The Rustrak 288 Chart Recorder: These rugged little units are relatively low cost and had served many monitoring applications in the past. Thus many units are still available at small cost ($20-40) in some surplus outlets. Many are used by amateurs in radio astronomy applications. They are also useful in this application---at least for the early stages of the development.

The typical Rustrak unit is simply a 1 mA meter movement in which the needle pointer is free to move as in any other D'Arsonval meter movement. There is no friction as seen in some pen-type recorder units. The typical Rustrak unit has a chart speed of 1/2" or 1 " per hour, a very slow chart speed. The chart drive motor also drives a nylon gear which keeps a spring-loaded bar mechanism off the meter pointer and the chart paper until after a 2-second delay, and then allows the spring-loaded bar to 'slam' the needle against a roller-backed pressure-sensitive chart paper so as to create a dot (or data point) on the chart paper. The needle position at that moment is dependent on the analog output signal from the detector section. The typical #75 GW detection circuit, using a bipolar IC, has an output in the order of 1 to 3 volts, depending upon the sensitivity and gain levels. However, a diode offset section can be used to eliminate most of this dc level and thus one can look at only the dc variations, which could be in the order of 0 to 100 mV. The Rustrak meter (1 mA at 200 ohms) is used directly as a 0 - 100 mV meter, no multiplying resistor is needed. The detector gain control may be used to center the response on the chart paper. Thus, as the chart paper moves, say at 1/2" per hour, the meter output is sampled at the 2-second rate. This creates a 'scatter plot' of some 1800 data points per hour. Under these conditions there is much correlation between the GW 'shadow' densities and the scatter plot of data points, giving rise to the 'forms' seen in these scans. Since dense masses will tend to appear as 'holes' or bare spots in the scatter plot, ie., the images are negative, that is, the chart records high density mass as white, and low density mass as black.

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Two-dimensional Detection Process: To understand just how the Rustrak detection system may be operating, we need to review the GW detection system itself. Basically, the GW detector (the input capacitor in the #75 unit) is a scalar field detection unit. Its basic response is to the earth's g-field at the zenith-nadir line location of the capacitor. If there were no other scalar fields present in this line other than the earth g-field, the unit would develop a constant output voltage if the g-field remained constant. However, the universe is replete with many scalar signals due to such cosmic events such as novae, supernovae, as well as gravity 'shadows', ie., density variations due to the presence of massive structures in the universe. Scalar signals which are completely parallel, ie., in a direct line with each other, will interact algebraically, eg., increase or decrease the scalar potential, depending upon the polarity of the potentials. In rhysmonic cosmology, the universe is basically Euclidian in structure, thus the scalar vectors are essentially straight line vectors over the entire range of a finite universe. Thus those vectors which are in line with the g-field will interact. In turn, the g-field vectors will interact with the electron-ion structure of the dielectric of the detector capacitance, mainly with the ionic portion. Therefore, the variations in the g-field will result in variations in the E-field of the capacitor, and thus could be coupled out as current variations in the circuitry. In theory, this interaction would be between one g-field vector and one electron-ion pair in the capacitor. Thus the interaction 'beam diameter' is basically only in the order of an atomic dimension or so, a very fine resolution, indeed. In practice, the interaction will be between many g-field vectors and many electron-ion pairs, thus the 'beam size' will be due to a finite area and volume of the capacitor dielectric, but still a very, very small size. While some VLA type radio astronomy 'telescopes' may be able to resolve, say a dime, at a distance of 50 miles or so, the GW 'telescope' should be able to resolve less than a pin-point at even twice this distance! Thus GW techniques may have much potential as a 'new window' to the universe. The sketches of Figures (2) and (3) should make these points clearer.

A simplified view of the capacitor detector is given in Figure (2). The detector capacitor here is a 2200 uF (10volt) electrolytic capacitor having a rolled section of about .5" in diameter and .75" length. Experiments have shown that only the center portions of these capacitors are 'active' in these detections, in this case about a .25" portion. Normally, in the linear type detections, the capacitor orientations are disregarded. However, in the Rustrak application, the capacitor is oriented with its long axis in the North-South direction. The reason for this is that the Rustrak application will not only respond to the zenith-nadir line, but also to the small angle formed by the active portion of the capacitor along the meridian position. We do not have to worry about responses along the latitude line, ie. the east-west line, at the observing position since the earth's rotation will effectively cancel out such responses. This will be explained in a future Note. Figure (2) is largely self-explanatory, while Figure (3) tries to give you an idea of the GW response 'sector width' of the two-dimensional plots seen with this Rustrak system.

Early Rustrak System Tests: Many scans of the universe have been obtained by Bill Ramsay and the writer in the recent past. However, shown in Figure (4) are some scans made by the writer for this particular Note. Since they were exploratory tests, they may not be the ideal tests, but they should be able to illustrate some of the points noted here.

477 The scan shown in Figure (4a) was made with the system as seen in Figure (1). Back-to-back diode pairs are generally used in the diode off-sets since the detectors are usually biased with dual power supply voltages and thus could have plus and minus output polarities. If the output is only a single polarity, single diodes of the proper polarity could just as well be used. In this particular test, a three diode (pair) section was used to enable an increased signal output which could be still recorded on the chart paper. The responses were with a 10 Hz LP filter and will be considered in the next section. 477

The scans shown in Figures (4b) and (4c) were made with a MOS-type detector unit which operated at +/- 1.5 volts. This unit had an input jack which enabled insertion of other detection capacitors (or devices) for special tests. In these two tests, a 15,000 uF (25 volt) electrolytic capacitor was used as the detection device in order to check out the theory that the 'sector width' in the Rustrak system was dependent upon the length of the active portion of the detector capacitance. The 15,000 uF capacitor was approx. 1" in diameter and 2.25" in length---giving an active length in the order of .75" or three times that seen with the 2200 uF capacitor. In Figure (4b), a two-section diode off-set pair was used as well as a 10 Hz LP filter. In Figure (4c), the two-section diode off-set was eliminated and a X2 inverting gain stage was added to drive the output levels to fill the Rustrak chart paper with responses. The LP filter was changed to 1 Hz to limit these responses to the more local clusters of galaxies. These responses are also considered next.

Rustrak System Responses: The responses shown in Figure (4) lead to certain conclusions.

1. The resolution of the Rustrak system, eg., the size of the 'imbedded forms' or the universe 'structures' is independent of the scan 'sweep' frequencies or amplitudes, and even the chart speed, but is dependent upon the LP filtering used. As the LP filter cutoff frequency is increased, the unit will respond to the more distant universe structures, and thus show up more structures and finer details in the larger structures. However, the overall resolution is also limited by the slow sampling time of 2 seconds and the finite size of data points, the size of the Rustrak 'dot'.

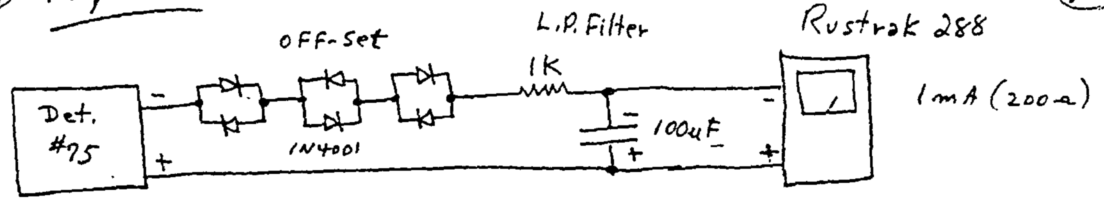
2. The larger capacitor does show a wider 'sector view' of the universe due to the larger active section of the capacitor, but to take advantage of this, the system gain should be able to expand this sector over the entire chart range. The scan of Figure (4b) has the wide sector width of the 15,000 uF capacitor, but the low system gain and the use of a 10 Hz filter has 'compressed' all this data in but a small section of the chart. Thus the scan is very much like an overexposed photograph---much of the data (dots) are overlapped, leading to an essentially over-scanned data plot. In Figure (4c) the sweep amplitude was increased to somewhat over the Rustrak chart size (it was preset correctly, but the amplitude increased in some way when the actual run was made). However, even here, the use of a 1 Hz LP filter illustrates very well, the somewhat larger structure sizes expected to be seen with the more 'local' superclusters!

Conclusions: While this is a somewhat longer Cosmology Note, the writer wished to present the fact that while these investigations are in their early stages, and crude at best, the potential for improvement here is enormous. While the Rustrak technique will also be much improved in the future, the writer will in the near future present some thoughts on a mechanical scanned two-dimensional system which could be adapted to an oscilloscope as a sort of 'live TV' presentation. What is required now is to get more of you independent researchers also involved here, as well as more amateur and professional optical and radio astronomers. Much is yet to be learned! Good luck!

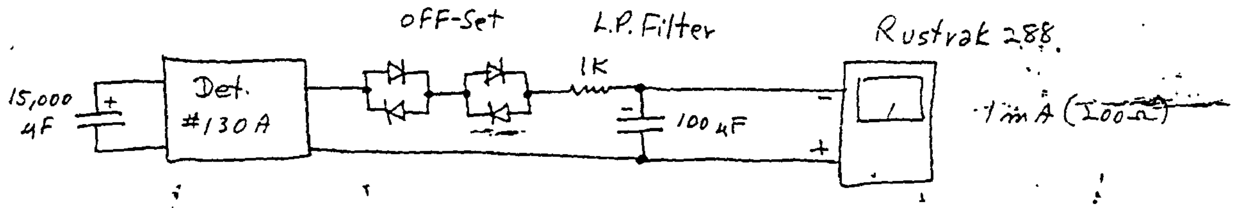
Greg

GH Laba 12/1/91 478 gh

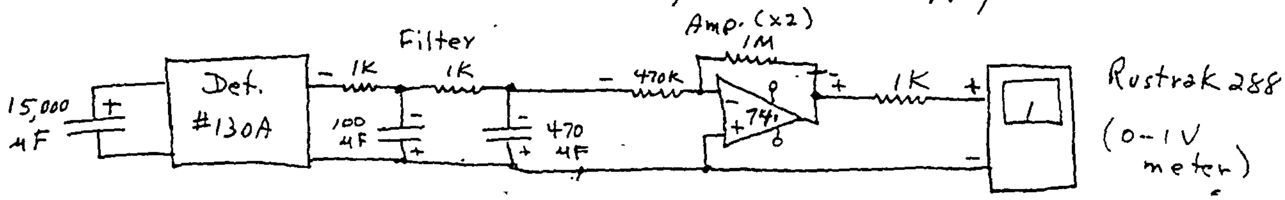
478 Figure (1)



I. Basic system used for scan of Figure 4(a). For this test, Rin in the #75 GW detector was set to 0 ohms. The LP Filter has a cut-off ≅ 10 Hz. The Rustrak 288 is essentially a 0-100 mV meter. The GW # 75 uses a bipolar transistor (1458) with a +/- 9 volt supply.



II. Basic system used for the scan of Figure 4 (b). For this test, Rin in #130A GW detector was 75 ohms. The L.P. Filter was cutoff at ≅ 10 Hz. The Rustrak 288 remains a 0-100 mV meter. The IC in the GW #130A was an ICL 7621 with a +/- 1.5 volt supply.



III. Basic system used for scan of Figure 4(c). For this test Rin remained 75Ω. The L.P. Filter is two-stage with cut-off less than 1 Hz. The Rustrak is a 0-1 V meter now. The system is now responding to more 'Local' super-clusters ??

Figure (1): Detection Systems Used

Cosmology

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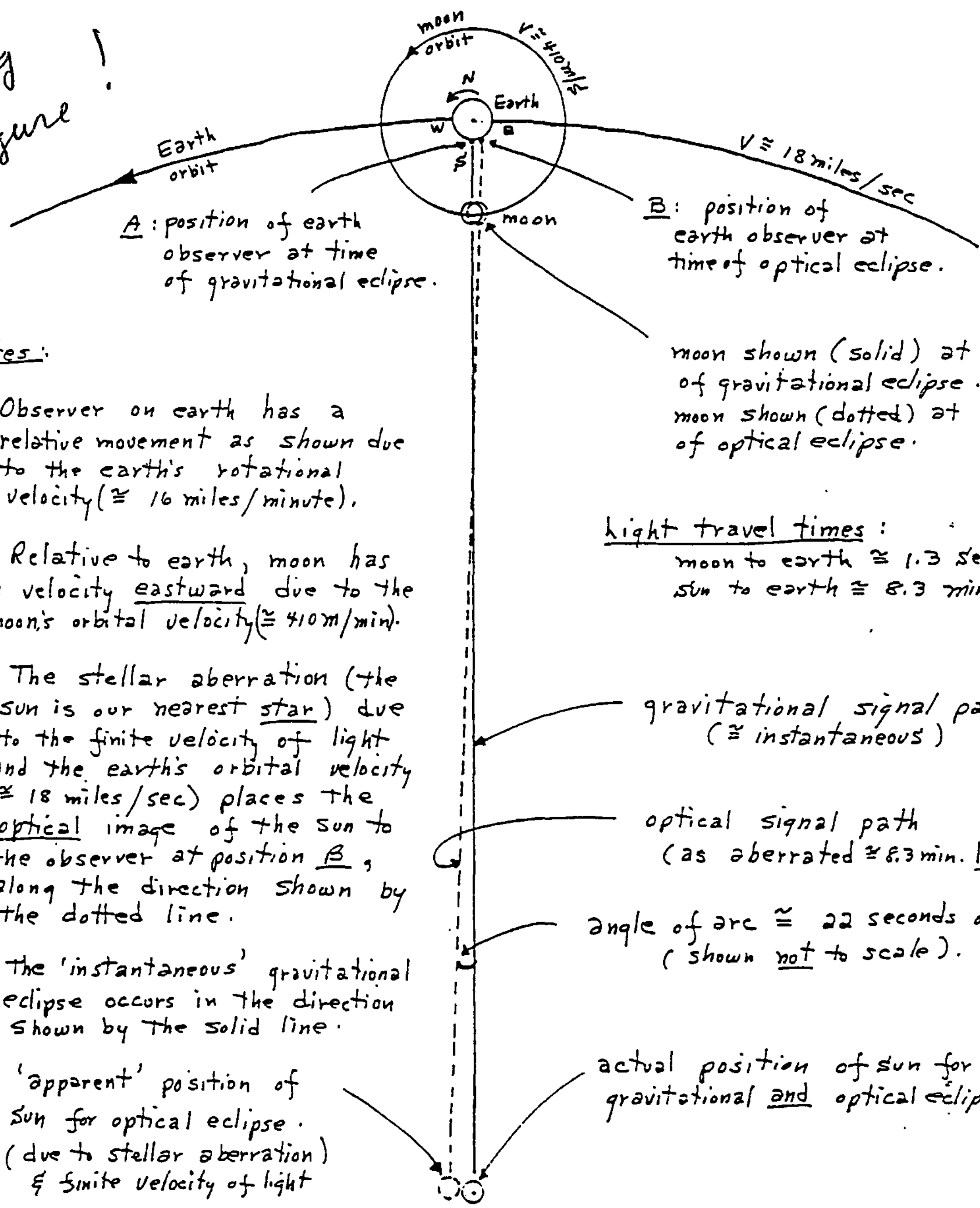
Newark, N.J.
3/15/86
GH

I. Gravitational vs. Optical Eclipse of Sun by Moon (per Rhysmonic Cosmology).

wrong figure!



Notes:

(1) Observer on earth has a relative movement as shown due to the earth's rotational velocity (≅ 16 miles/minute).

(2) Relative to earth, moon has a velocity eastward due to the moon's orbital velocity (≅ 410 m/min).

(3) The stellar aberration (the sun is our nearest star) due to the finite velocity of light and the earth's orbital velocity (≅ 18 miles/sec) places the optical image of the sun to the observer at position B, along the direction shown by the dotted line.

(4) The 'instantaneous' gravitational eclipse occurs in the direction shown by the solid line.

Light travel times:
moon to earth ≅ 1.3 sec.
sun to earth ≅ 8.3 min.

Conclusion: Optical eclipses of the sun by the moon will follow the gravitational eclipse by about 8.3 min. due to stellar aberration and the relative movements of the earth and moon. This has been confirmed in the experiment of May 30, 1984. Gravity signals are essentially 'instantaneous' signals!

GH FURTHER CONFIRMATIONS BY THE AUTHOR AND OTHERS DURING SEVERAL ECLIPSES SINCE. SEEMS LIKELY THERE ARE MANY MORE 'EMBEDDED' IN EM ECLIPSE RECORDS (?)

480 Figure (3)

480
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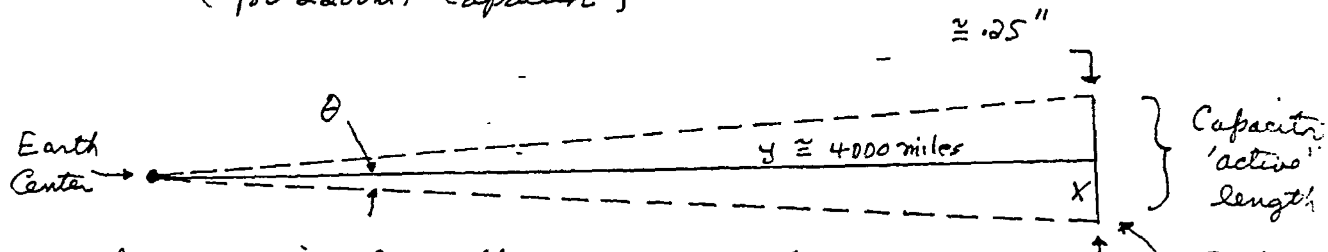
Newark
12/2/91
(gh)

I. Estimates of the Rustrak (Scan Sector)
(for 2200uF Capacitor)



A. From simple math:

$$\tan\theta = \frac{X}{y} \cong \frac{.12''}{4000\ mi.} \cong \frac{.12''}{2.5\times10^{8}\ ''} \cong 4.8\times10^{-10}$$

$\therefore\ \theta \cong 2.75\times10^{-8}$ degrees!

B. Thus: $X = \tan\theta\, y$

1. For distance to sun:

$X = \tan\theta\, y \cong 4.8\times10^{-8} \times 9.3\times10^{7}$ miles

$\cong 44.6\times10^{-1}$ miles $\cong 4.46$ miles

$\therefore$ Sector $\cong 2X \cong 8.92$ miles

2. For distance to Galaxy Center:

$X = \tan\theta\, y \cong 4.8\times10^{-8} \times 27{,}000$ L.Y.

$\cong 1.3\times10^{-3}$ L.Y.

$\therefore$ Sector $\cong 2X \cong 2.6\times10^{-3}$ L.Y.

3. For distance to Andromeda Galaxy:

$X = \tan\theta\, y \cong 4.8\times10^{-8}\times(2\times10^{6}$ L.Y.$)$

$\cong 9.6\times10^{-2}$ L.Y. $\cong .096$ L.Y.

II. Conclusions:

1. Use similar math for distances further out in the universe.
2. While the 'active' section of the 2200 uF capacitor may be somewhat larger than the assumed .25", the sectors scanned in these experiments are very narrow! This would explain why the daily scans are so much different! The earth's movement in the cosmos would result in monitoring different sections of the universe on a daily basis and only the very dense structures may 'repeat' daily. 'Most structures 'seen' are very deep in space. There is room for much research here in terms of detector geometry and sampling techniques!

Figure (3) – Something at the Rustrak Scan Sector'

481 Figure (4)

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GH Labs, 12/4/91

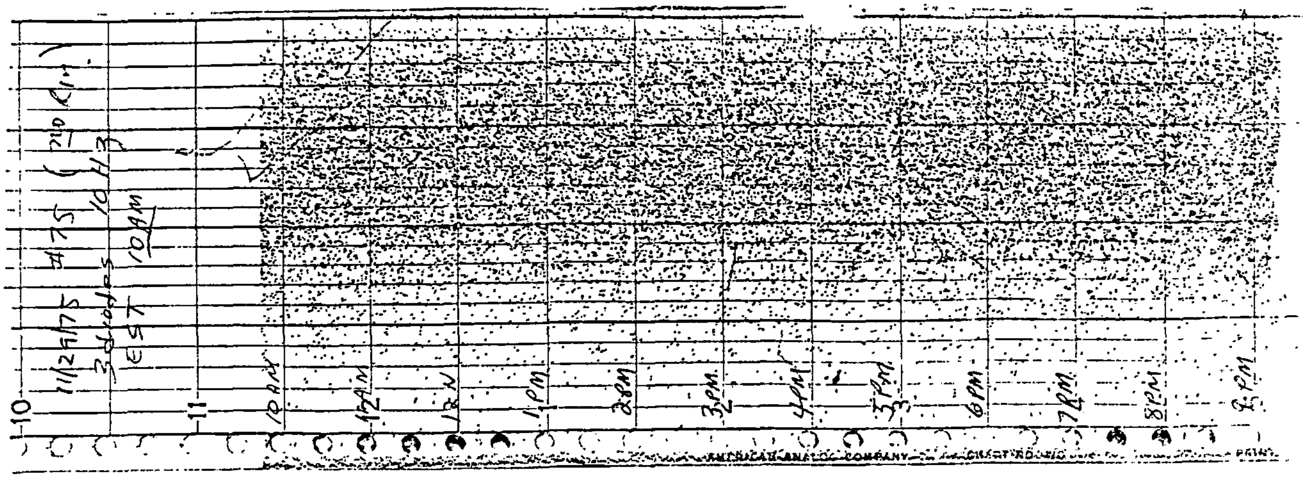


Figure (4a): Exploratory scan as determined with standard GW detector #75 and system shown in Figure (1).

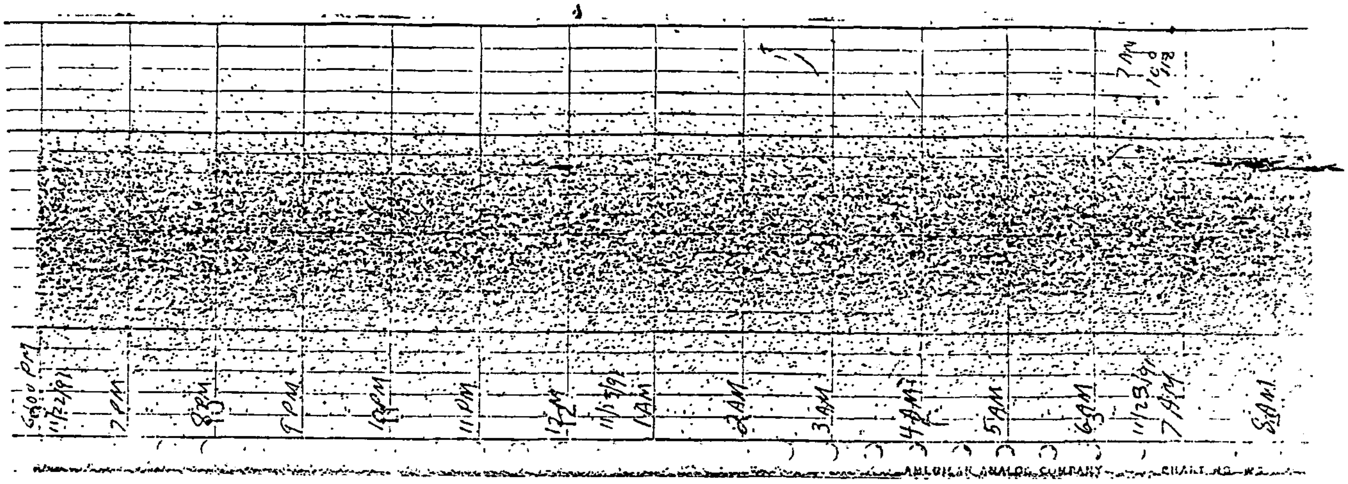


Figure (4b): Exploratory scan as determined with MOS GW detector #130A and system shown in Figure (1).

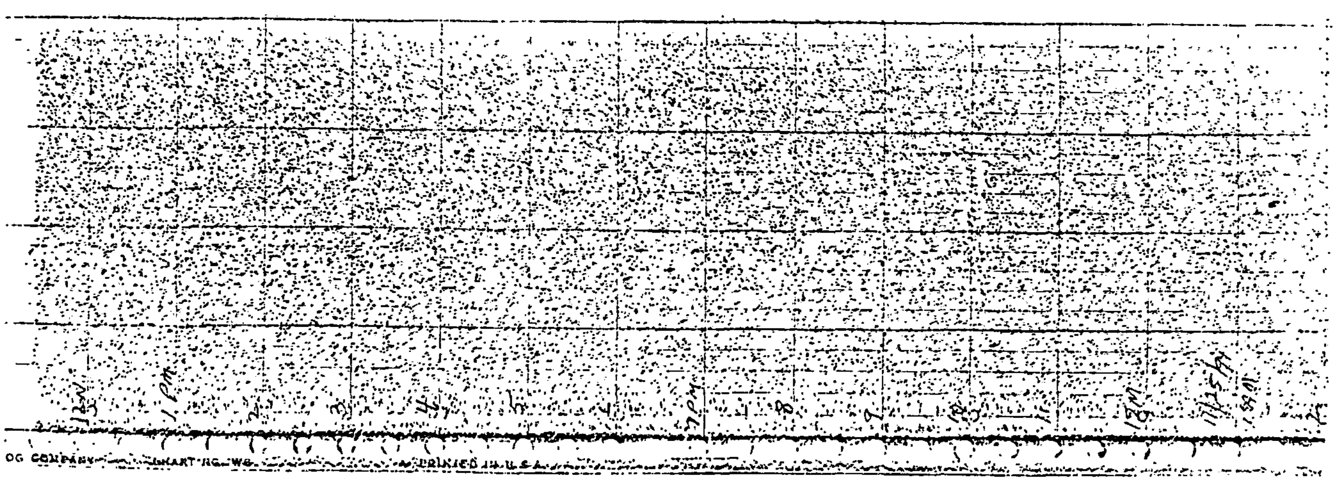


Figure (4c): Exploratory scan as determined with MOS GW detector #130A and system shown in Figure (1).

482 Cosmology Note GH Labs 482
2/1/92
Newark, NJ

Dear Colleague: This may be of interest to you.

Demo Unit for 2-D Gravity 'Shadow' Scans

While there has been much interest expressed in the 'images' seen in the Rustrak 288 recorder 'scatter plots' (when connected to GW shadow detectors) some have expressed interest in running these tests with an ac power supply rather than with batteries. Therefore, the writer has modified a GW signal gravimeter unit (Circuit #3000) to operate as a 2-D shadow detector in conjunction with a Rustrak 288 chart recorder---but with an external plug-type ac adapter power unit, such as are provided for various calculators and other consumer units. Schematic circuits for this detector unit and an interface for the Rustrak recorder unit are enclosed.

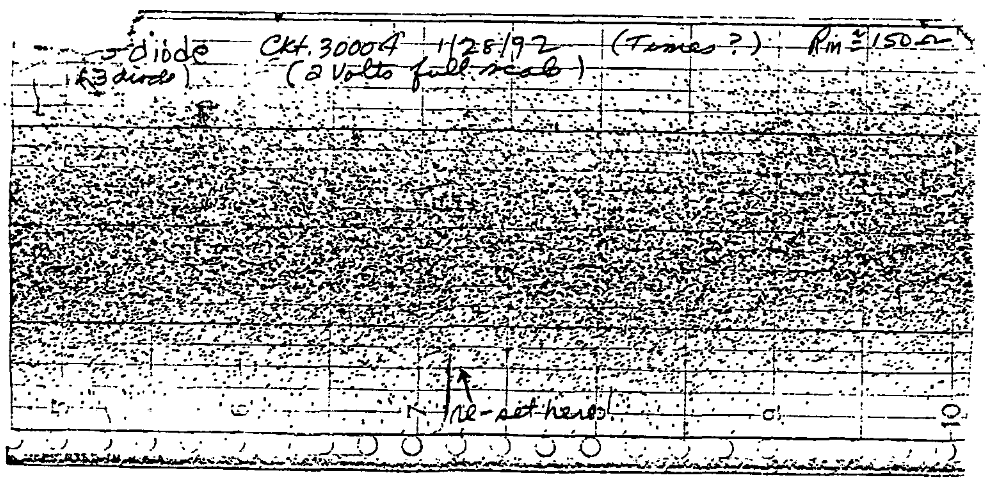
The circuitry includes several variable controls to adjust the circuit parameters for various desired 'observation' criteria. The unit is intended primarily as a demo unit---to aid would-be researchers get started in these experiments---and thus has only limited adjustment controls. The internal LP filter is fixed at about 10 Hz, but can easily be changed with a change in the value of the shunt capacitance. Since many ac adapters are not highly filtered, additional power supply filtering was incorporated within the unit. To increase the circuit stability, buffer sections were also included. An R_{in} of 1k ohms (variable) was also included to help stabilize some detector IC devices. Therefore, with prudent adjustment of these parameters, the experimenter could 'observe' a wide range of cosmic shadows, within the limits of the resolution of the Rustrak recorder unit. You are referred to the earlier Notes for more data on these topics.

I hope that this material remains of interest to you and it helps you in your own experiments in these areas. Take care---

Enclosures

Greg

Remarks:



Cosmology Note

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Newark
1/28/92
gh

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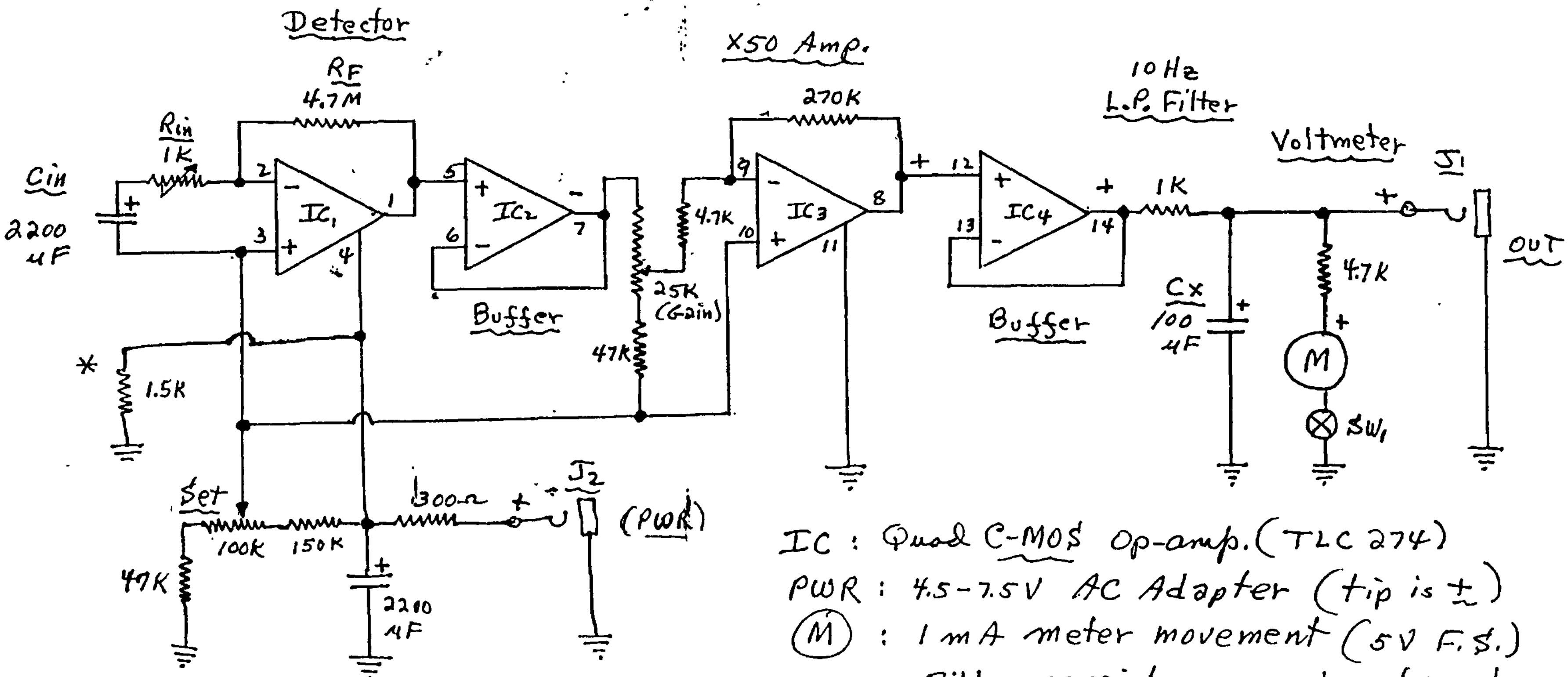
I. Demo Unit for 2-D Gravity 'Shadow' Scans

A. Circuit #3000A :



IC : Quad C-MOS Op-amp. (TLC 274)
PWR : 4.5-7.5V AC Adapter (tip is ±)
(M) : 1 mA meter movement (5V F.S.)
Cx : Filter capacitor may be changed in value to change 'space depth'.

B. Remarks:

* Optional load for adapter power supply.

① The power supply was made external to enable use of commonly available AC adapters. (9V battery can be used also).
② While unit is primarily a demo unit, it has sufficient internal adjustments to cover a wide range of 'observation' ameters.

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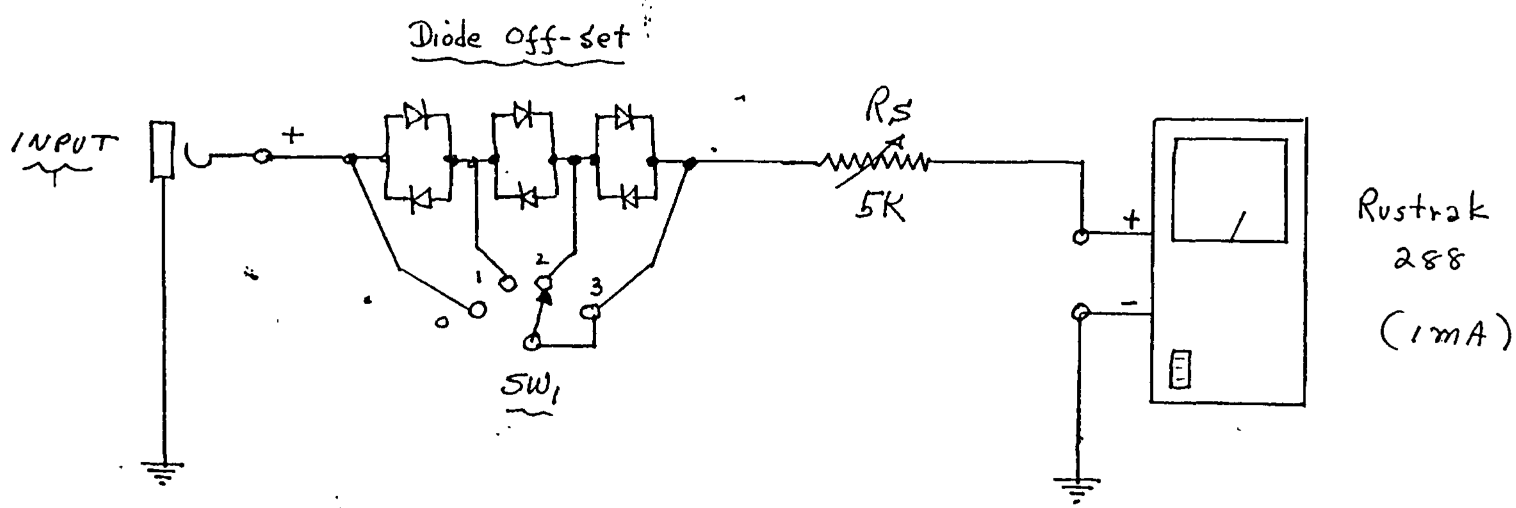
I. Experimental Interface for Rustrak 288 Unit



II. Remarks:

① A 3 diode 'pair' off-set is included --- which is switcheable: no diode, 1-diode, 2 diodes, or 3 diodes. Each diode pair introduces about .7 volts of off-set. Pairs are used in case polarity reversal occurs in some tests.

② The 5K series resistor, Rs, is used to establish a volt meter range between .5 and 5 volts, adjustable as needed for the GW circuit parameters used.

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Cosmology Note

(485)
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3/23/92
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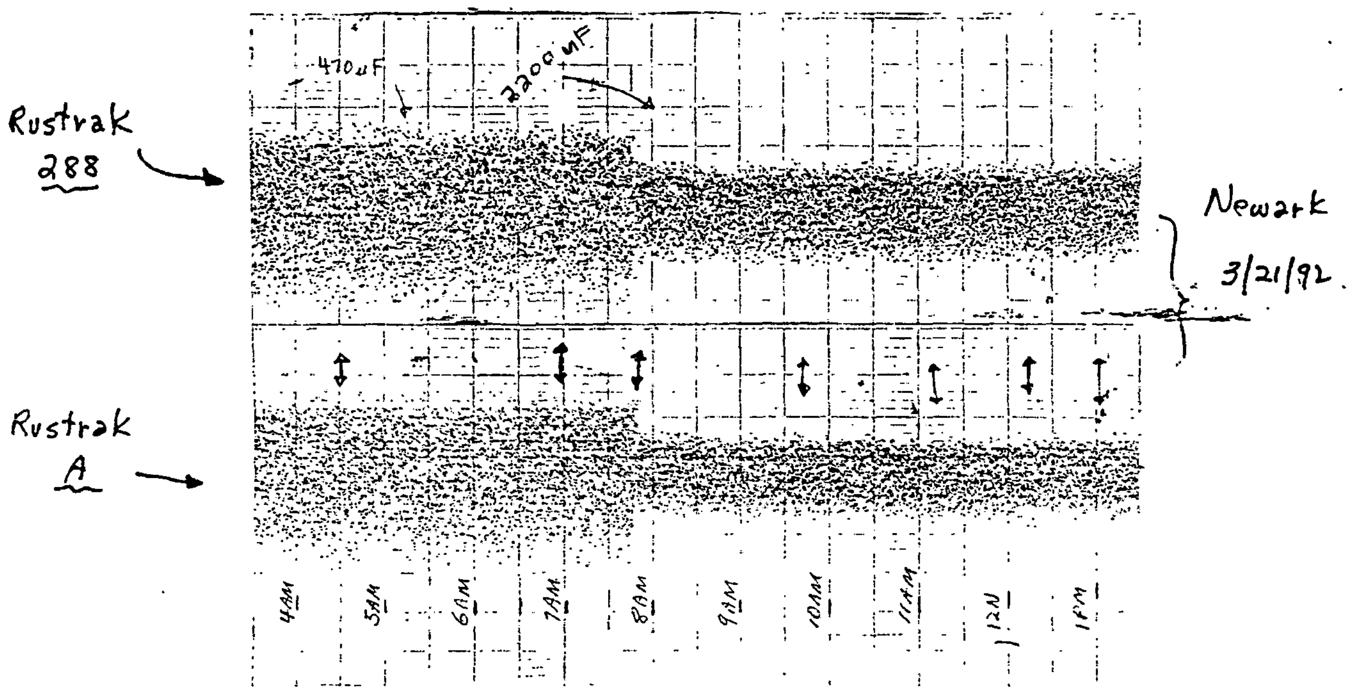
I. Correlation Tests

This test was made with Ckt. # 1400B, using a 4.5 Volt DC Adapter Plug Power Supply. The unit has a built-in 5 Hz L.P. Filter. However, in this particular test, an additional 470 uF and 2200 uF capacitor were added to reduce the filter cut-off to approx. 2 Hz and .2 Hz. The Rustraks were connected in parallel and were approx. 1 volt F.S.



II. Conclusions

① Best correlation was seen at L.P. Filter cut-offs of approx. 2 Hz and .2 Hz --- which probably limited the system response to our Local Supercluster ???

② Best correlation was seen when the two Rustrak units 'strike' simultaneously -- rather difficult to adjust!! However, the double arrows above point to some obvious correlation areas, especially the region around 8:00 AM, where it was noticed that the Rustrak 'timing' was fairly close!

③ The Rustrak Model A apparently was more than 1 mA!

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(486)

GH Labs
Newark, N.J.
3/27/92

Cosmology Note

Dear Colleague: This may be of interest to you.

I. GW Circuit #1400B:

The schematic for this circuit is attached. It is somewhat similar to Ckt. #3000A, but does not have 'buffers'. It was built in a Radio Shack plastic box with aluminum panel and primarily operates from an AC Wall Plug dc supply of about a rated 4.5 volts. It can also operate with an internal 9V battery. Since it is primarily a demo unit, an internal 5 Hz L.P. filter is used to 'pick up' and resolve the gravity 'structures' in relatively 'near-by' superclusters?

The test sample below was with the following parameters:

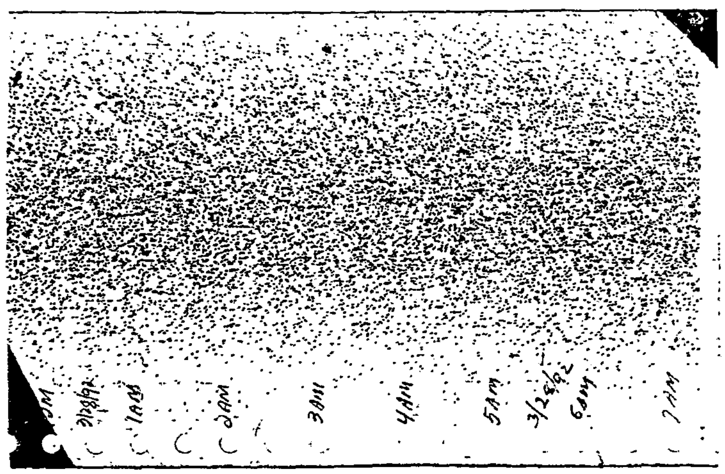
1. Amp. Gain = X100
2. Set and fine gain controls were adjusted to display 2-D responses in top 2/3 of chart paper.
3. Rx ≅ 100Ω and Rs ≅ 1K (1 Volt F.S. on Rustrak)
4. One diode pair was also used in off-set.

II. Conclusions:

Ckt. #1400B 'shows' the 2-D responses quite effectively. It is simple and readily constructable!

SAMPLE SCAN

Bill:
While this shows much 'structure' it would have been better [illegible] a little lower gain level.
I am presently making another similar but fully shielded unit.
[illegible]



Cosmology Note

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3/18/92
gh

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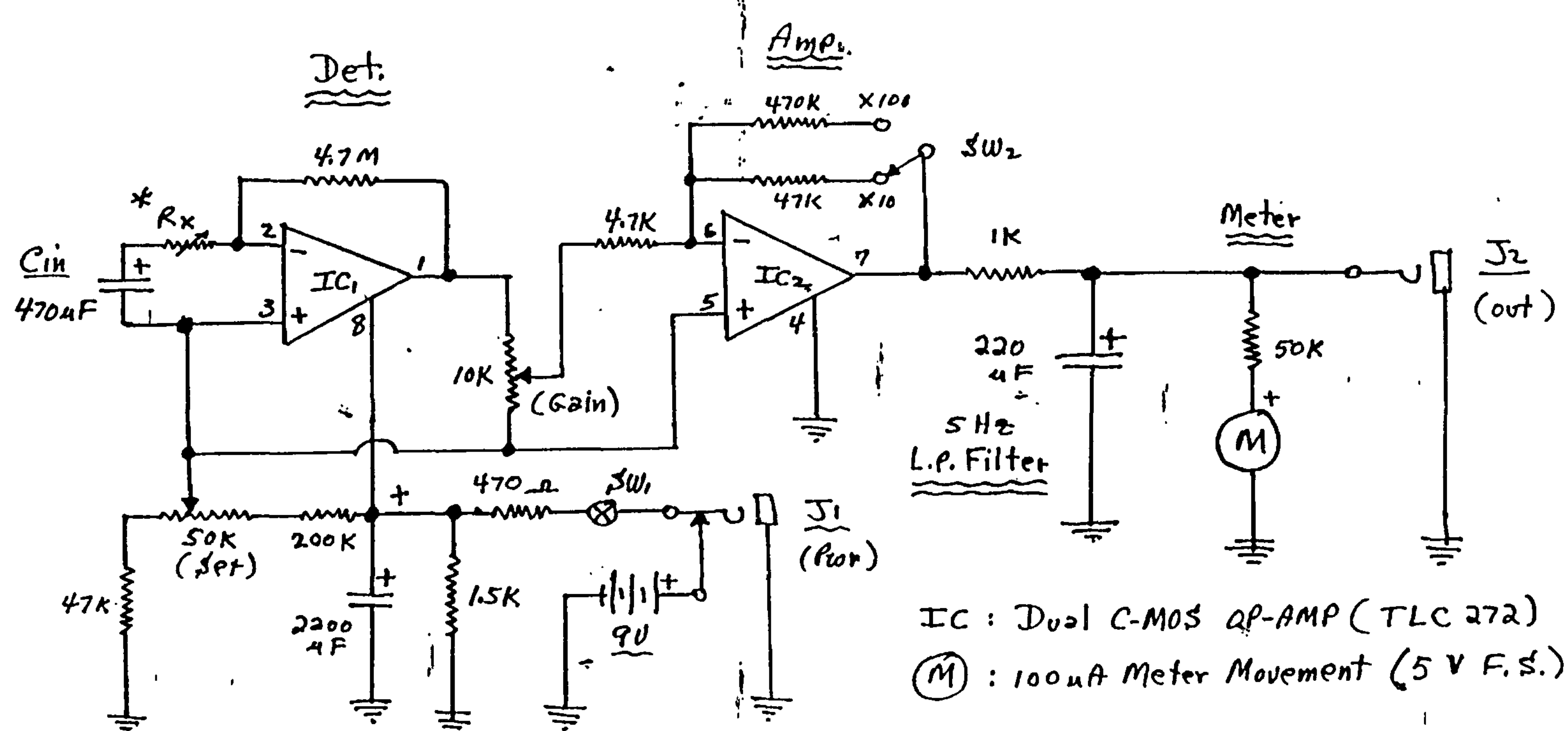
I. GW Circuit #1400B:



IC : Dual C-MOS OP-AMP (TLC 272)

(M) : 100uA Meter Movement (5 V F.S.)

II. Remarks:

① J_1 is used for external 4.5V dc Plug-Adapter-Type Power Supply.
SW_1 is power on/off switch.

② J_2 is for external filter capacitor, meter, and/or strip chart recorder.

③ Use Amp. gain = x10 for simple earth g-field measurement.
Use Amp. gain = x100 for observing rapid g-field fluctuations.

④ * Add $R_x \cong$ 27-75 Ω if ELF oscillations are a problem.

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Cosmology Note

GH Labs
Newark, NJ
6/15/92

488

Dear Colleague: This may be of interest to you.

Some Recent Experiments:

Bill Ramsay of South Carolina issued a brief on 5/30/92 on some of his most recent experiments. These experiments concerned directly driving a Rustrak chart recorder with a ELF function generator. Best results were obtained with a triangular waveform. Some interesting effects were seen at .25 Hz and some other effects were noted at 3 Hz. At 3 Hz Bill noted a strange 'dip' in response which repeated at another time also. A very similar type 'dip' was also noted by the writer as is seen in the gravimeter response shown in Figure (1).

The typical 'structures' seen when a gravity detector unit is coupled to the Rustrak ~~chart~~ recorder unit is shown in Figure (2). In this case, the 'random' sweep frequency to the recorder unit is provided by nova and supernova detections as developed in the detector. Therefore, there is not much possibility for 'artifact type' responses to develop due to sweep timing and the Rustrak sampling timing. Thus, the unit will respond mainly to the gravity variations as seen by this detection unit.

However, with a function generator providing the sweep frequency and the Rustrak proving the sampling times, the possibility of seeing artifacts developed are greatly increased. These will be ~~somewhat similar~~ to the Lissajou's patterns seen on the oscilloscope. The writer made a test run with a .8 Hz triangular waveform and the response is shown in Figure (3). The 'patterns' are quite evident. However, the possibility still exists that the special D'Arsonval meter structure used in the Rustrak unit might also be responding directly to some scalar signals. This is conjectured since some of the responses seen may not be 'artifacts', for example the response seen at A in Figure (3).

Again, as Bill remarks, these investigations get more interesting all the time---we need more of you to get involved here also.

Best Regard,

Greg

Remarks:

Dear Bill,

This is but a preliminary report to get some others possibly interested. When I get some time, I will look into this further. Presently I am revising my 966 oscillator to operate from a wall-plug AC adapter so as not to see battery slumps as was seen in Figure (3). Also I will operate at somewhat higher voltages. Good Experimenting!

Regards,

Greg

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Figure - 1
Gravimeter Response with Ckt. # 8000A

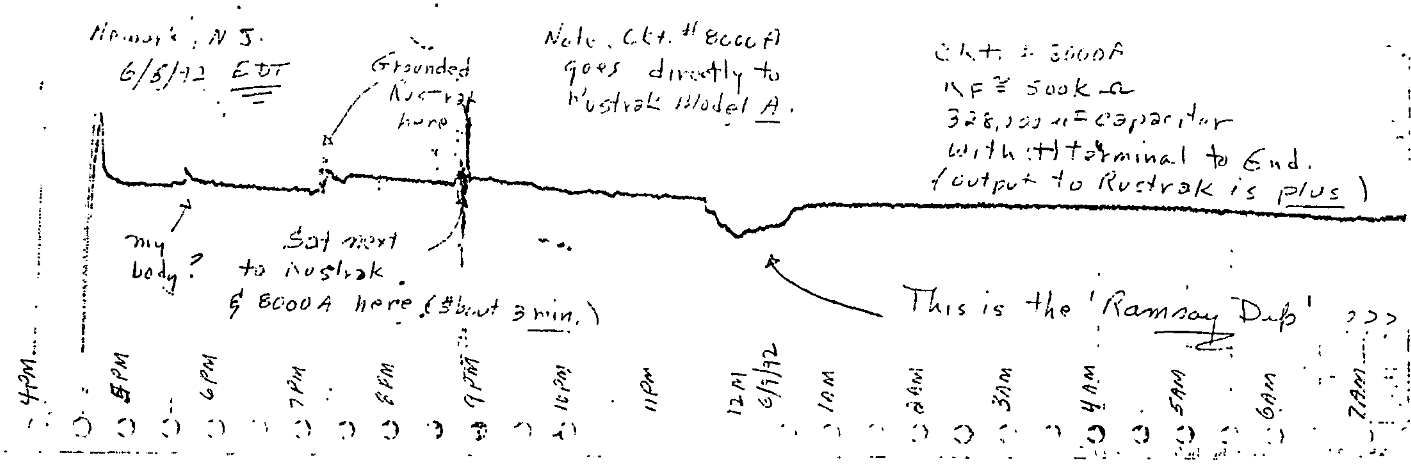


Figure: 2
G.W. detector on Rustrak

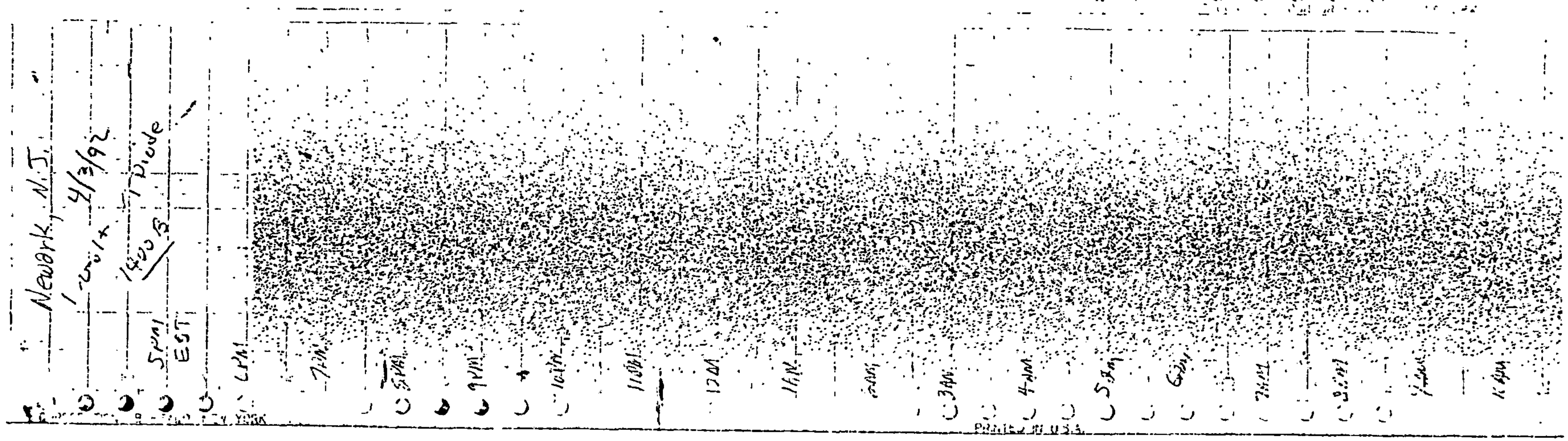
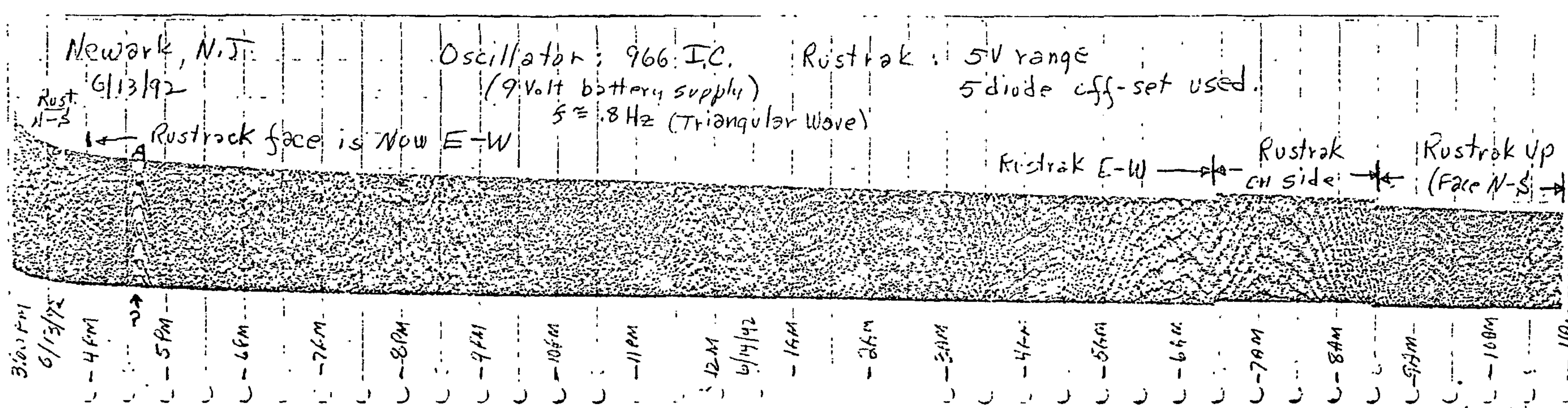


Figure: 3 See notes
Figure 3 (See Note)



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(490)

Cosmology Note

GH Labs
Newark
7/19/92

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(gu)

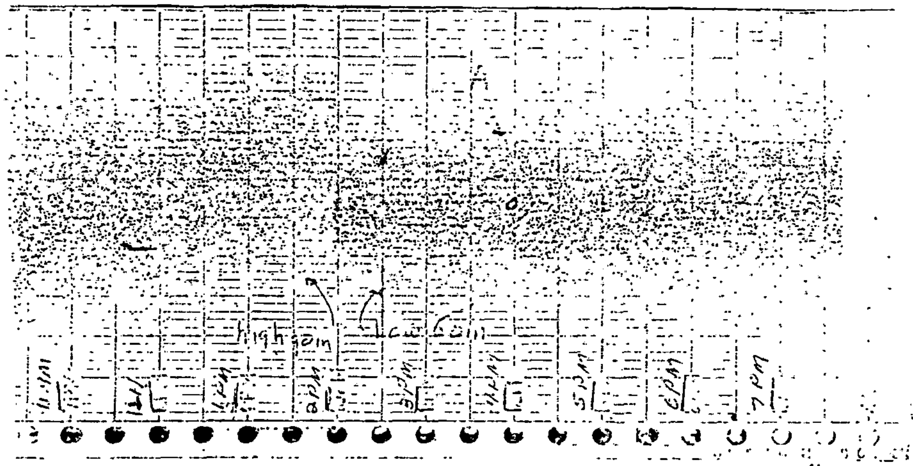
I. 2-D Scan: Ckt # 130 A with Amp. A-12

Objective: To see if additional amplifiers affect the response of GW detectors.

Rustrak 'A' used.
no diode off-set
Rustrak: 100 mV

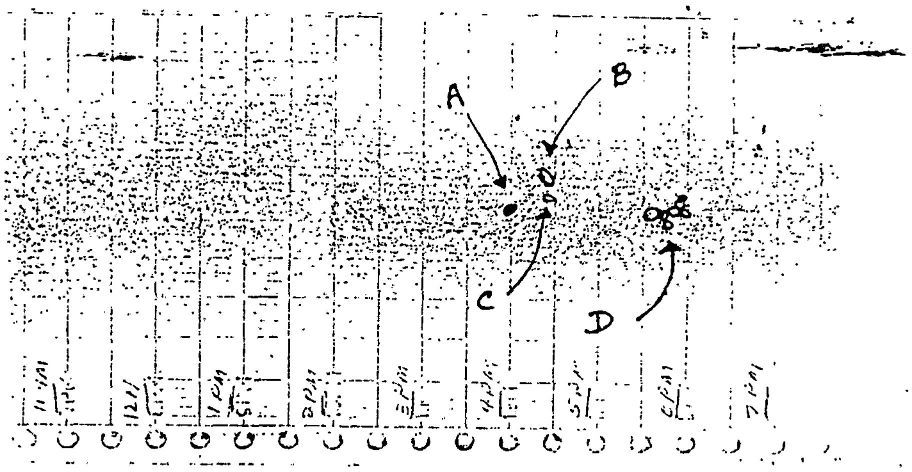
Test Run: 7/18/92
All EST.

original
SCAN



Note

Original scans show much more detail than can be reproduced by Zerox.



II. Remarks:

① The structure shown as A is a very dense object which appears on most every scan made.

② The structure shown as B may be the M-87 cluster and also appears quite often.

③ The structure shown as C may be the Andromeda Galaxy.

④ The dense structures shown at D appears to be in The Bootes region and could be the 'Great Attractor'.

III. Conclusion: Use of additional gain stages do not appear to add or detract from scan details.

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Cosmology Note

GH Labs 491
Newark, NJ
7/19/93

Dear Colleague: This may be of interest to you.

A. Recent GW Signal Scans:

The recent spate of bad weather in the USA and elsewhere is quite unexplained in conventional science. In the past we had associated some 'strange' weather with unusual GW signal responses. We decided to look into this a bit since we noted:

1. A noticeable increase in the 1/f background noise on the various GW detector units in recent months. This was also accompanied by some unusual variations in the averaged earth g-fields.

2. It was also noticed that the unusual weather patterns and the earthquake in Japan appeared to be centered around the 40° to 42° N. Latitudes. This is also in the general area of the Cygnus region of the sky----a known very active region optically and gravitationally!

B. Initial 'Look':

We began our 'look' by running a continous 5-day 2-D scan of our meridian with Ckt. #75 coupled to a Rustrak recorder. The purpose of this test was to see if we could 'see' any obvious repeating 'structures' in this scan period. Since each scan covers a slightly different region of the universe each day, only very strongly repeating structures were liable to repeat. Such a repeating structure seemed to occur at about RA of 19 hours and 20 minutes, and since it was always in the center of our scan sector, the probability was that it was in our zenith, ie., in the Cygnus region! With the 2-second sampling rate of the Rustrak recorder, it is at best crude, but a definite structure appeared at ~~t~~this location on each approximately ~~midnight~~ scan, where this region was in our zenith! It is hard to see this structure, but when the chart is held at the correct distance it can stand out as a dark center with a white ring around it. It presently appears to possibly be two black holes (?) in orbit about each other, as the scans seem to change relative angles each day. Two scans from this test are shown in Figure (1).

This same region was also 'fast' scanned with the Esterline-Angus recorder unit, using the same experimental set-up. This is also shown in Figure (1). Here it also appears to be possibly two black holes in close orbit? We have termed this structure Cygnus 'H' and will follow it further as time permits.

C. Retest of the Galaxy Center:

The last 'look' we made of the Galaxy Center using the 'fast' scan was better than a year ago. At that time, the GC 'hole' had apparently 'evaporated' and only showed a very faint trace of its once magnificent 'depth'. Shown in Figure (2) is the most recent scan of this region. It seems to show that mass is recollecting there but it is far from being a black hole yet. We will rescan again in about six months.

D. Retest of Geminga:

There has been some reference to a soft gamma pulsar in Gemini. We had observed a black hole structure in this region for the past several years. However, our structure appeared at an RA of around 7 hours and 20 minutes, and the recent scan of this area shows our Geminga to be alive and well!

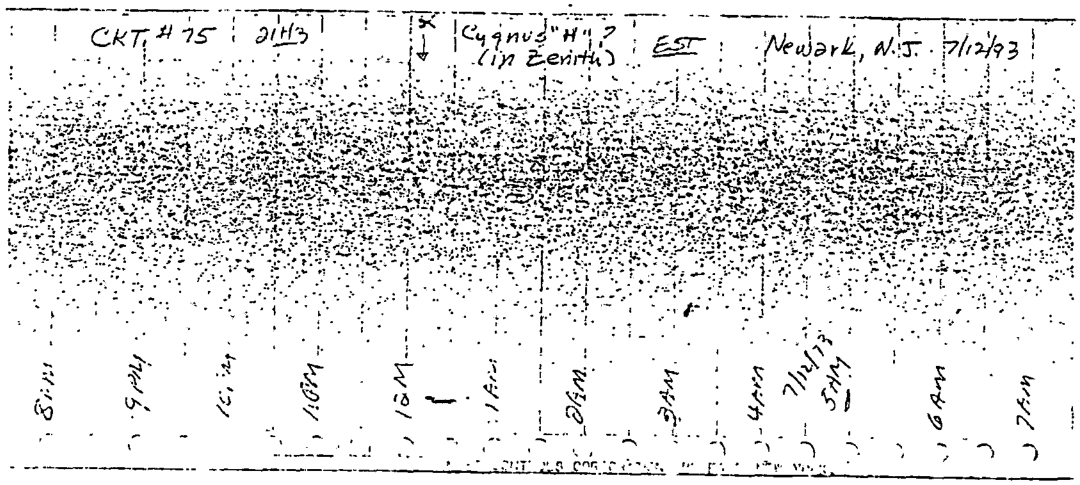
E. Conclusions:

The preliminary tests given here appear to show that GW signal astronomy techniques are alive and well also, and it is sad that they are not being more aggressively used----we could learn more about our universe, and also, note that these signals are now, in real time, and are affecting our Earth as well as the universe in ways which are not explainable in conventional science. If these affects are responsible for our midwest floods, there is little we can do about it, but at least we may know why!!!

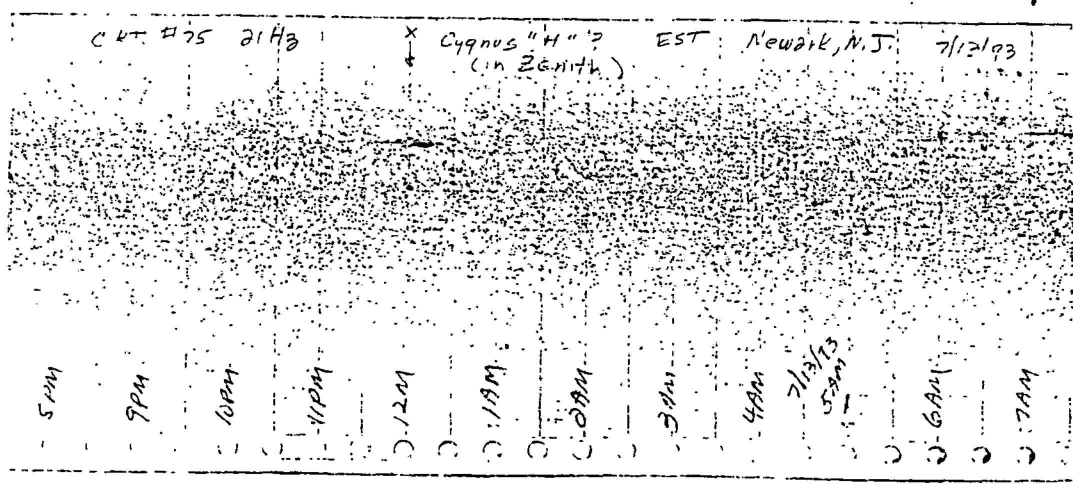
Greg

Figure (1) : Cygnus "H" ?

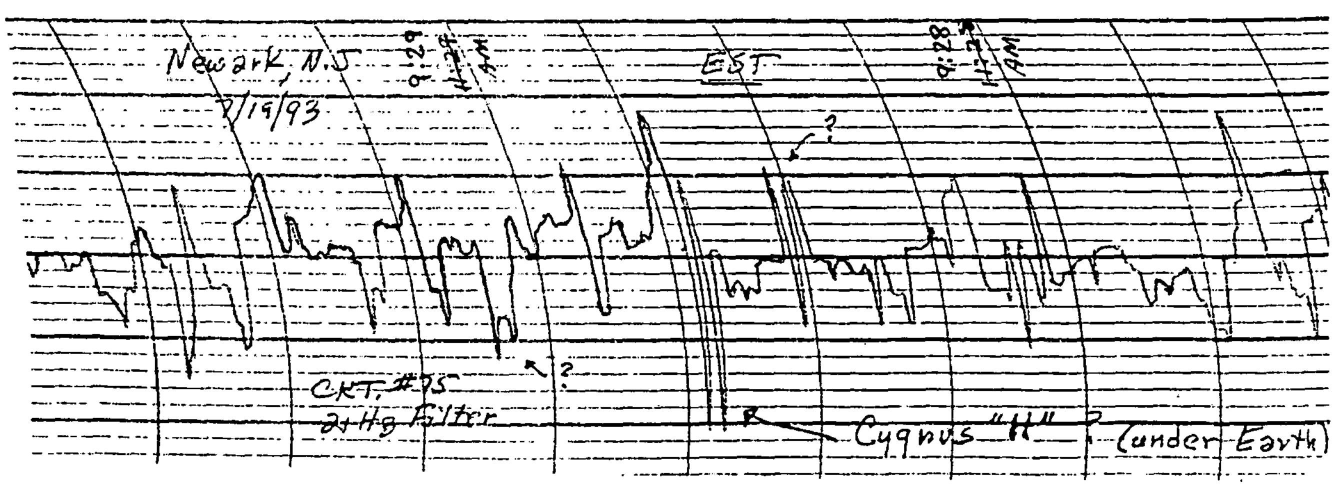
7/19/93



(a) Rustrak 2-D Plot (7/12/93)



(b) Rustrak 2-D Plot (7/13/93)

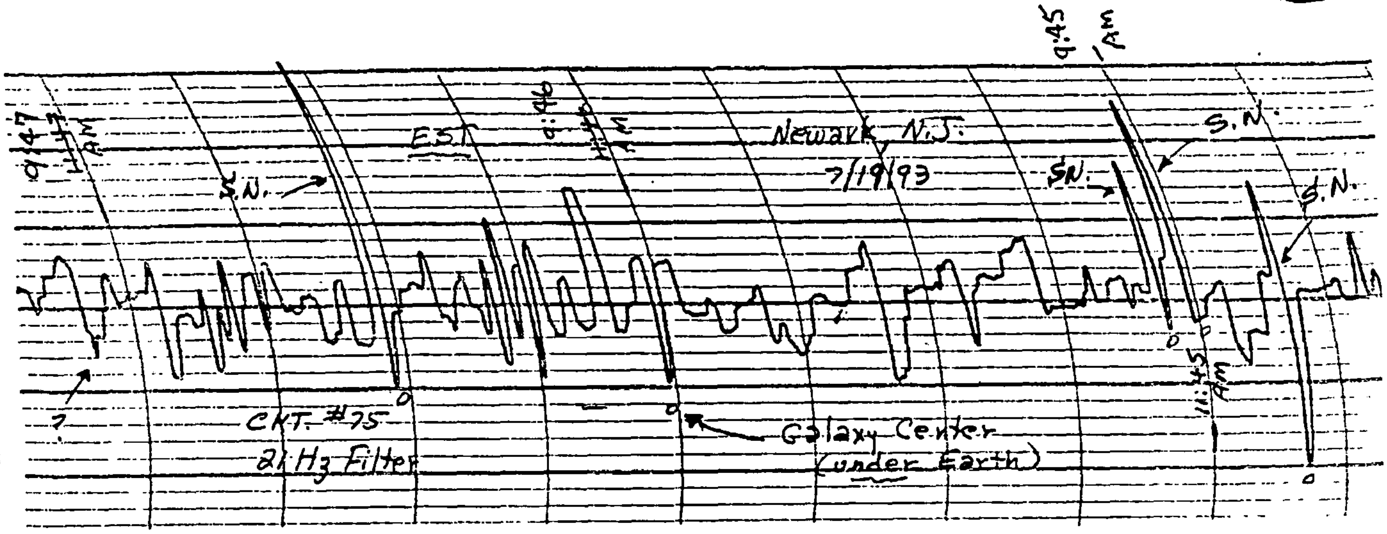


(c) Esterline-Angus 'Fast' Scan (7/19/93)

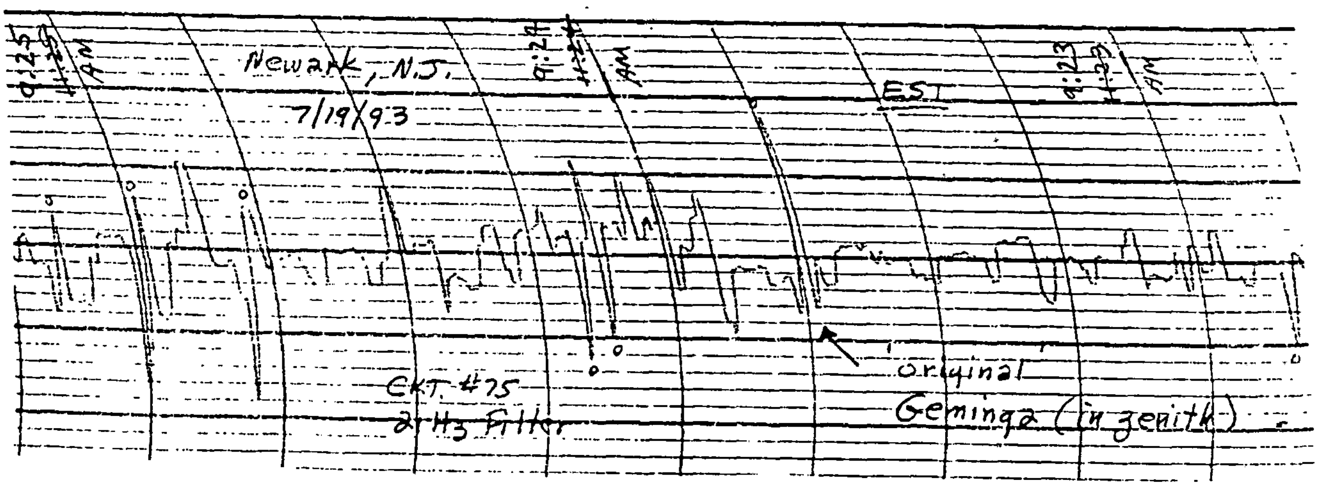
493

493
7/19/93
9h

Figure (2) <u>Recent Re-scans</u>



(a) Fast 'scan' of the Galaxy Center (GC) as seen <u>under Earth</u> on the morning of 7/19/93. The GC seems to be recollecting mass but ~~does~~ not be to a 'black hole' yet. As usual, many supernovae (S.N.) are 'caught' in this region.



(b) Fast 'scan' of the original 'Geminga' in Gemini. This 'black hole' has been 'seen' with no apparent change for at least the past five years. When time permits, we will see if we can spot the "hole" which may be responsible for the soft gamma ray 'pulsar' reported in Gemini!

8/3/92

II. Remarks:

Bill, Ran your 'Pipe' unit again to see if that 1-5 AM 'dip' would appear again - As you can see, it did! (See A). Also, the smaller 'dip' B, seen in the last scan made also appeared again. A new 'dip' is at C ??

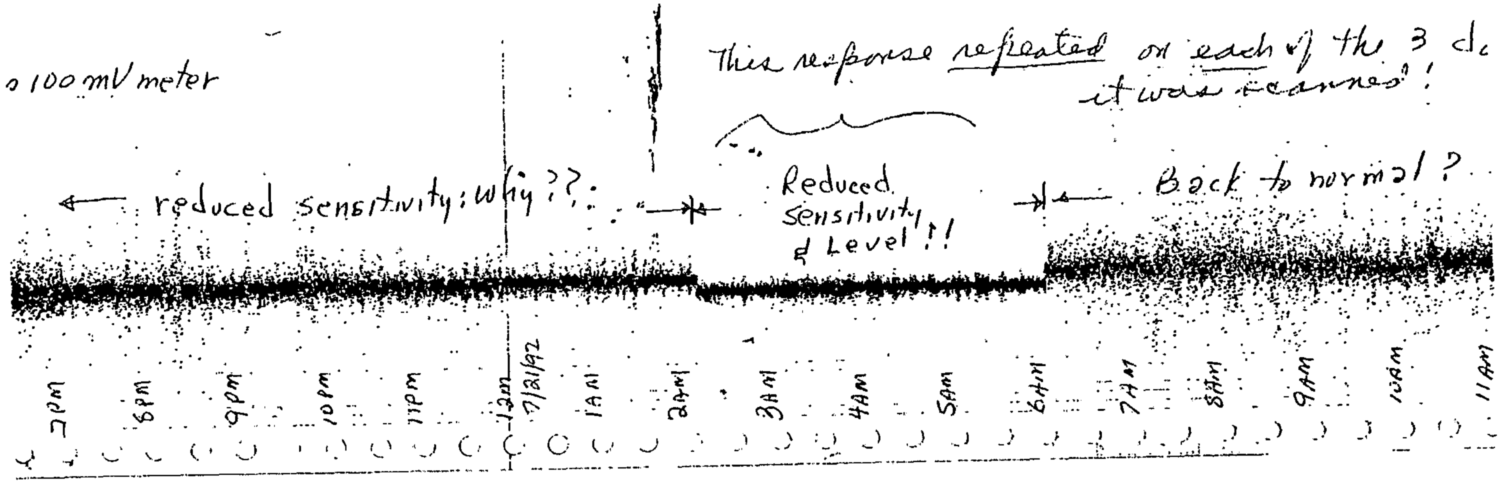
These 'dips' and loss of sensitivity do not appear to be related to sidereal time, but only earth time (solar time). Thus, I would seem to conclude that the 'responses' may be due to something in the earth core regions, perhaps, a heavy mass is 'sloshing' around in the molten core?? Your guess is as good as any.

Best regards,

Greg

NOTE: THE 'PIPE CAPACITOR' CONSISTS OF 81-25MFD ELECTROLYTIC (MATCHED) *CAPACITORS (TOTAL CAP. 2,025MFD) CAREFULLY ALIGNED IN A ROW AND ENCLOSED IN A CAPPED COPPER PIPE FOR SHIELDING. IN USE THIS IS HUNG FROM A CEILING HOOK WITH A WEIGHT ON THE BOTTOM TO INSURE ITS BEING PERPENDICULAR TO THE EARTH. THE OBJECTIVE IS TO NARROW THE 'WINDOW' OF GRAVITY WAVE RESPONSIVENESS. BR

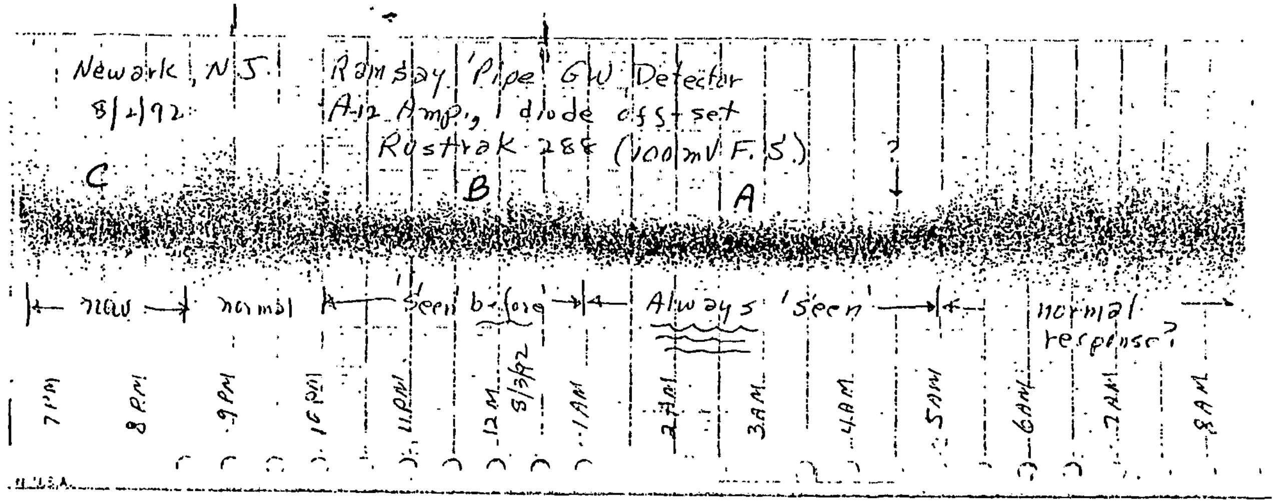
* ALL CAPS. WIRED IN PARALLEL.



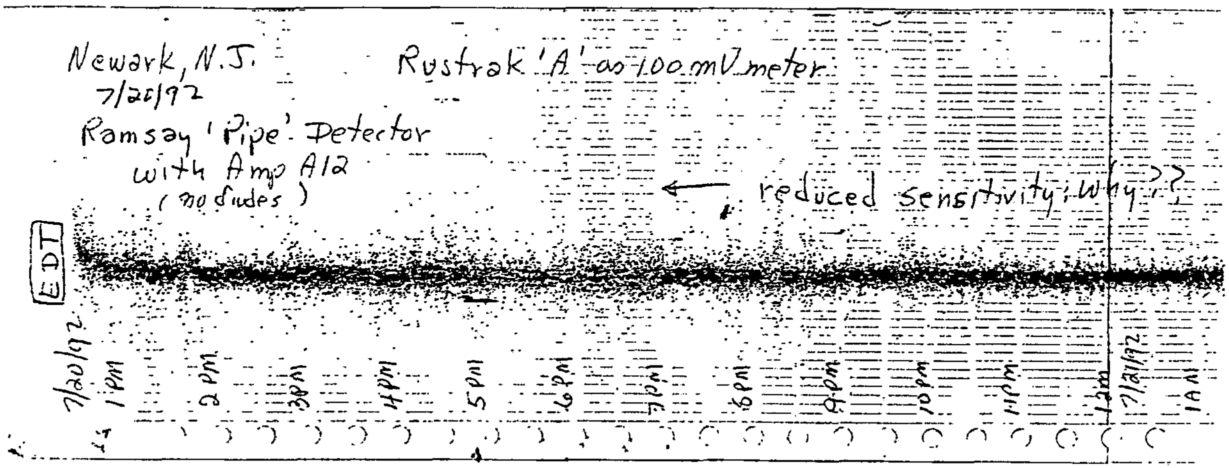
Cosmology Note

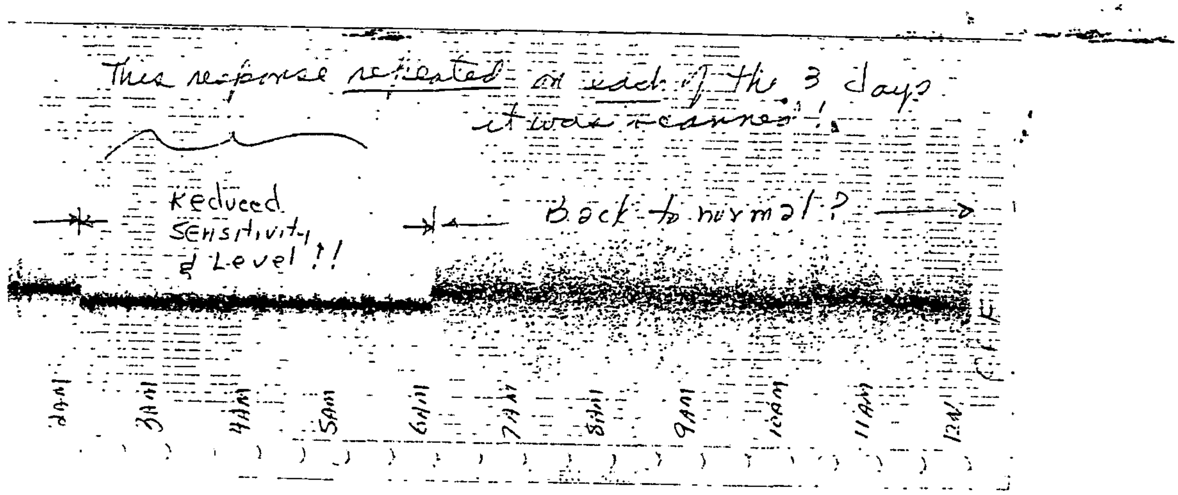
GH Labs
Newark
8/3/92
GH

I. Recent Test with Ramay's 'Pipe' Detector



496





ADDITIONAL SCANS ADDED TO NOTE (BY BILL RAMSAY)

(497) Cosmology Note (497) GH Labs
8/13/93

Dear Colleague: This may be of interest to you.

A. Further follow-up on Notes of 7/19/93 and 7/22/93.

On 7/23/93 and 7/24/93 the earth G-field measuring gravimeter, Ckt. 1400C, was used to look at the overall changes in the g-field using a highly dampened gravimeter. Ckt. 1400C is a two stage unit designed around the TLC272 device and is powered by four C-cells in series. The detection device is a 470uF electrolytic capacitor. The LP filter has a cut-off around 3 Hz. The response was recorded on the Rustrak recorder and was essentially a line-type response which showed the typical +/- 3% sine/cosine curve in g-gield response in a 24 hour period due to the earth's rotation with respect to the rest of the universe. However, bits of 'scruff' show up in this response. Some sparse scruff appears when the detector nadir position is in the direction away from the plane of our Galaxy, but this was expected. Yet, more defined 'scruff' was seen whenever the Lyra-Cygnus area or the Bootes area was in-line with the units nadir line. It was decided to look further in this with the 'gravity wind' detector unit, Ckt. 8000B.

B. Ckt. 8000B response

Preliminary tests appeared to show that strong 'gravity winds' show up on unit 8000B, both in terms of output voltage and in audio 'surf' sounds, whenever the Lyra-Cygnus or Bootes regions are on the units nadir line or nearly so. These same regions also show a possible 2-3% decrease in earth gravity as measured on a mechanical gravimeter, a sensitive postal scale, when they are under the earth, and a similar increase when they are in the zenith region. This appears to show that vertical components of 'gravity winds' (due to rapidly moving masses in these regions?) are affecting gravity as measured here! It is conjectured that the horizontal components from some such 'events' may be much higher, and thus could have affected jet streams and thus weather patterns on earth. It is also conjectured that such 'winds' may have 'diluted' the fine cometary material which was expected to result in a spectacular August meteor shower this year?

C. 2-D tests with the Rustrak

Further tests of these regions are being made with the so-called two-dimensional scans using sensitive rapid-scan gravimeter units in conjunction with the Rustrak chart recorder unit. These tests are still in progress. Some preliminary results are summarized: The Lyra-Cygnus and the Bootes areas continue to show much structure, with some of it quite repeatable. Some of the structures 'seen' in these scans are quite interesting and agree to some extent with some of those speculated upon by the optical and radio astronomers. However, I will only summarize these results in the future; the actual chart records will be kept intact for further study and future reference. Those of you who have Rustrak recorders can construct the simple circuitry and run similar tests. You may be surprised on what you may 'see'.

Conclusions

This will be the last Note of this series. An analysis of the information gained in the many 2-D scans now going on may be presented in a future Note. We need more active researchers here. It will be up to you experimenters and amateur scientists to lead the way until the 'professional' with their huge fundings get involved. Go to it!

Bill: Am running several weeks 2-D Tests under a couple of conditions. Will let you know what if anything I learn. Take care –

Greg

498

Cosmology Note

498

GH Labs
Newark, NJ
Aug. 25, 1993

Dear Colleague: This may be of interest to you.

I. Recent 2-D Type GW Observations

During the past month a number of tests were made on two Rustrak chart recorders using several GW signal detectors and under various test conditions. Some tests were highly filtered and thus only showed highly averaged g-field variations. Others, less highly filtered, not only showed much g-fleld level variations, but also some 2-D (two-dimensional) sector scans. Still others were adjusted to show only the 2-D type scans. The Rustrak chart records (covering days in scan periods) are now being more carefully analyzed, and will be retained as complete records, ie., uncut. However, some tentative conclusions can be made from these records and are reported here.

II. Conclusions

1. The highly filtered GW signal tests showed only the typical sine/cosine response in a 24 hour period, but some 'scruff' was seen at various time periods. These scruff regions were associated with known active regions in the zenith-nadir line at this location.
2. Reduced sensitivity, but expanded scale, 2-D type plots on the Rustrak units continued to show much structure of types known to exist in optical and radio astronomy, as well as some only speculated upon by these observers. There were also many structures which are only 'seen' in these gravitational signal plots and thus unknown as yet to the optical and radio astronomers! It is concluded (with about a ~~95%~~ confidence level) that these are truly gravitational 'views' of our universe and thus are 'new windows' to the universe.
3. The most interesting Rustrak observations were made at the more nominally filtered GW signal levels which not only showed much 2-D type structure, but also responded to 'local' variations in the earth's g-field (due to a number of variables, both cosmic and nearby). The rough analysis made thus far appears to indicate that these are variations in earth's g-field which seem to be due to cosmic effects, mainly 'gravity winds' which are also quite apparent in the audio responses of these signals. It was also noted that a local (cyclonic) type storm had a very strong effect on local gravity. For example, the localized storm of early August, which dumped 4-8 inches of rain in the metropolitan area of New York City, sharply increased the gravity in the author's lab area about 5% when it approached, and it only slowly recovered from this level several hours after the storm had passed! While some may say that this was due to the many falling rain drops (no lightning was seen) ,but it may have been more likely related to the tremendous energy content of this storm cell?
4. As has been observed in the past, the L.P. filtering used in these tests tend to limit the system response out to definite distance ranges in space. Very long time constants tend to limit responses to events which are more 'local', say out to a few million light years away. However, reduced time constants will follow the more rapidly changing GW signals as the detector 'beam' sweeps the more distant events more rapidly. The obvious next step here would be to design a low-Q adjustable bandpass (B.P.) filter which would thus 'scan' a very definite distant segment out there in space.
5. The B.P. filter technique should make it possible to obtain a 3-D (three-dimensional) gravitational picture of our universe. Such scans, made over a period of years, should be able to gravitationally 'map' our universe in great detail. Rather than using the random scan-

(499) (499)

ning by nova and supernova 'events', which is believed to be our present technique, it should be possible to use other random techniques, coupled with computer plotting and analysis, to obtain even more refined 'views' of our gravitational universe. Present gravitational observations appear to correlate with much of our present optical and radio observations, if allowance is made for the great time differences in the two techniques.

Comments

It may be sometime before I will be able to really go over the many weeks of data I now have. Presently, the tests are halted. My time, facilities, and funds for this are quite limited. Thus I hope that some of the tentative remarks made in the Note may spur some additional interest and effort in these observations. As you all know, I strongly feel that these results are real and I'm sad to note that very little effort is being expended here. Bill Ramsay has been active here, but his time and funds are also quite limited. We need many new 'observers' here. For those of you who have Rustrak units, the circuits are simple and low-cost, while the Rustrak can do the 'observing' with really no attention needed by you. Since the 'beam size' is so narrow and the earth is always looking at a slightly different portion of our universe, the plots are always seeing something 'new'. However, at the same filter setting, the unit appears to see massive structures on a more or less repetitive basis. Good luck with your tests!

Best regards,

Greg Hodowanec

500

Cosmology Note

GH Labs
Newark, NJ
Nov. 30, 1993

Dear Colleague: This may be of interest to you.

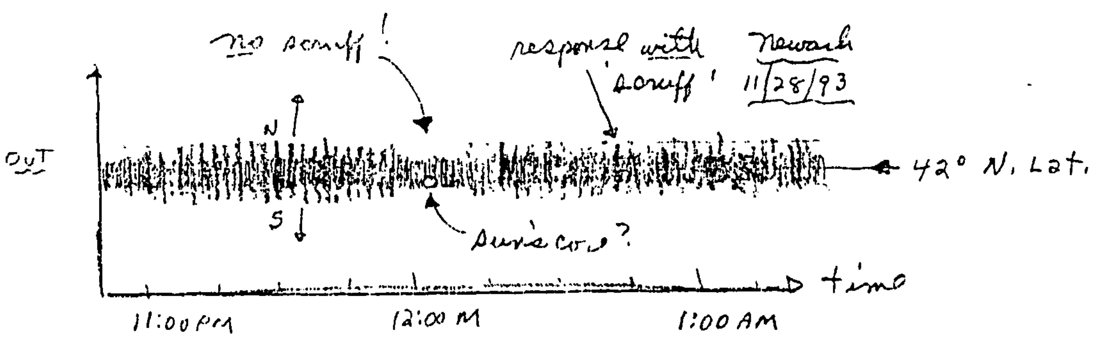
I. The Lunar Eclipse of November 28, 1993.

A. The lunar eclipse of 11/28/93 was visible here at Newark, NJ from about 11:40 PM to 2:50 AM, with totality occuring from about 1:02 AM to 1:50 AM. Since our GW detectors 'look' at but a small N-S segment at our zenith with the rotation of the earth, then at about 12:00 midnite we would be only seeing a small portion of a partial eclipse in terms of gravitational effects. There would not be much change in the earth's g-field since the moon and sun would be at the opposite sides of our position on earth and thus gravity effects would largely be nullified. However, past experience has shown that 'near' masses such as the earth, moon, and sun would have a 'filtering' effect on GW signal responses, ~~ie.~~, they tend to 'smooth out' some of the fluctuations seen in the GW responses. Thus, a scan was made during this eclipse with the hope of at least 'seeing' this smoothing effect.

B. An estimate was made for the time the real sun would be on our zenith-nadir meridian line during this eclipse period. The mean sun, of course, is supposed to be on this line at 12:00 midnite (for my longitude). However, we must correct for the equation of time (at this time of year) which puts the real sun on this line at about 12:13 AM. Again, correcting for the sun's light travel time of about 8.3 minutes, we would expect the real sun to actually be on our meridian ~~at about~~ 12:04 to 12:05 AM. Based upon the optical eclipse, a small portion of the moon is also on this earth-sun alignment. Thus, during the time period of 12:04-12:05 AM we should expect to see some gravitational effects, eg., some smoothing of GW signals.

C. To observe this possible effect, I used Ckt. #300B at the x10 range with low gain, a 4-diode offset, and a 1 Hz LP filter. The observations were recorded on a Rustrak chart recorder at a speed of 1/2 inch per hour. At this low gain level, the chart response was about a 1/16" thick trace with possibly 1/64" of scruff appearing above and below this more or less solid trace. The system was run overnite and the chart was inspected in the morning.

D. Chart Responses: An expanded portional 'view' of the recorded chart response is redrawn here. A copy of the actual chart does not always reveal the details seen in the originals. I am retaining the original for future reference.



501

II. Conclusions

1. Eclipses in terms of these GW detectors are 'seen' only when the moon-sun-earth are all on the observer's meridian line. This eclipse was observed only as a very partial eclipse and thus only as a 'smoothing out of scruff' with this partial alignment on this meridian. Even if better alignment was had, it would not be as impressive as a solar eclipse would have been.

2. The gravitational interaction period appears to be only from about 11:58 PM to 12:10 AM.

3. A small white dot (indicating a dense mass) was also seen at about 12:04-12:05 AM , somewhat south of my zenith-nadir line here. This could possibly be the sun's core, which could have been enhanced since it appears under the earth!

12/1/93

Bill

Made this test although I did not have too much confidence I would see anything since the full eclipse was too far west of me. Was surprised to see what I did though.

The opto-isolator test was made to [illegible] [illegible] reservation. He doesn't run any safety (series resistance) in turning up the LED, thus he damages the junction site. [illegible] 10 minutes [illegible] the [illegible] However, up to that point he has a good scalar detector. I [illegible] (in [illegible] 1985) and [illegible] it up again verifying that the LED [illegible] its own 1/f noise. Since [illegible] current limiting its junction doesn't degrade.

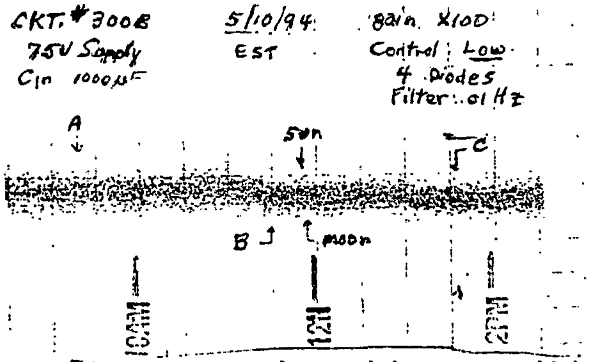
Regards,

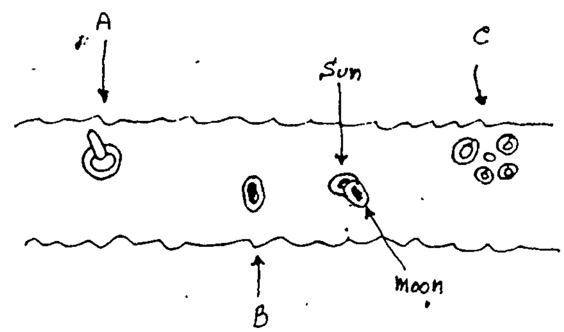
[illegible]

(502) Cosmology Note GH Labs (502)
Newark, NJ
May 12, 1994

I. Eclipse of May 10, 1994

A two-dimensional scan (2D) of the zenith-nadir area was made during the time of the 5/10/94 solar eclipse of the sun by the moon. Ckt.#300B was used with 21 Hz LP filtering and a 4-diode off-set to drive the Rustrak 288 chart recorder. The output level was kept low to limit the scan width to about 1/4 inch only. The scan period was unattended and shut off when I returned home about 3:30 PM EDT. The results are given below, the actual scan and an enlarged portrayal of what could be seen in the scan, since it is difficult to reproduce by a copier the details in the original.





It appears that this scan did pick up a 2-dimensional view of the eclipse as it passed through our meridian here. The sun transited our meridian here about 11:54:24 EST, corrected for the equation of time and the 8.3 minutes of EM transit time. This was roughly in agreement with the actual scan times seen above. The sun's 'shadow' is more circular and smaller than the moon's here since the moon was moving more rapidly than the sun. This also resulted in a more elongated response for the moon's shadow. Since both the sun and moon were in our zenith area, there was a reduction in gravity here, resulting in the 'darker' response for the sun and moon compared to the general background response. The reason for a 'white ring' around this dark spot is unknown at present. Several other responses were noted here. The response shown at B appears to also be possibly in our solar system and perhaps another planet, but I do not have any knowledge of a planet being in this area at present. The collection of responses seen at C may be extragalactic, under earth, and in the general direction of Auriga. Such collections are often seen in these scans and are in repeatable areas. The interesting response seen at A also appears to be extragalactic, under earth, and in the general area of the constellation Virgo. It is pretty much on the meridian of the large galaxy M-87 as seen today but this response is now and not the many eons ago as seen in the EM responses! This structure has been 'seen' here before and some similar type responses were seen in the past in other areas.

Conclusions

1. Gravitational 2-D detection techniques appear to have detected the solar eclipse of May 10, 1994 as it crossed the meridian here.

2. While the sensitivity of the detector may have been set too low, the response indicated some other structures which were also noted in the past.

3. It appears that this technique is a viable new window to the structure of our universe. It is a shame that there is still very limited activity in these efforts.

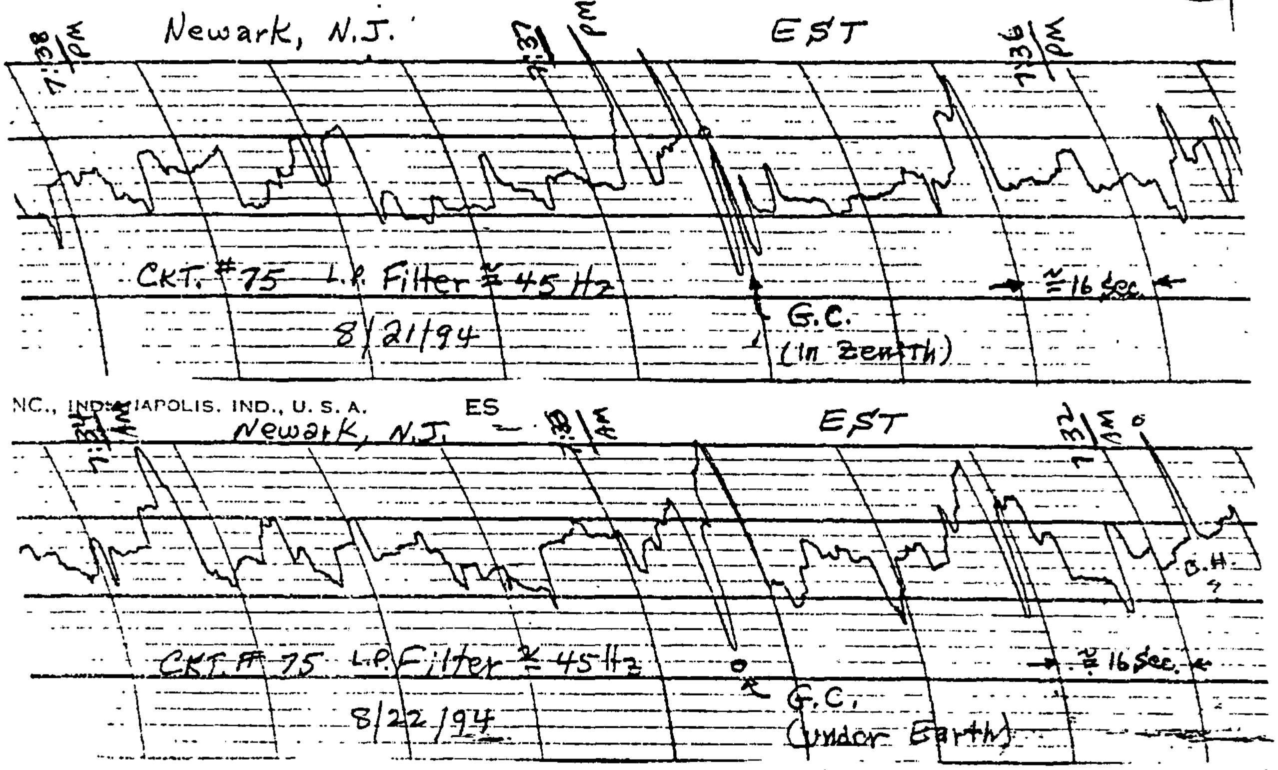
Greg Hodowanec

(503)

Cosmology Note

Newark
8/23/94
(503)

Dear Colleague: This may be of interest to you.



It had been reported to you in past Cosmology Notes that the Galaxy Center, which had a rather small dense mass previously noted there (a small black hole ?) had 'captured' a close-by large mass to develop a more massive black hole (?) structure there. This occured on about December 6, 1986. This structure remained fairly stable until June 4th, 1991, when this structure was serendipitiously caught 'exploding' and thus eventually 'disappearing' in terms of GW signals! A GW scan made on 8/3/91 (and some subsequent ones) showed only a 'trace' of the former deep 'hole' at this location, with signs of several strong shock wave fronts proceeding from this location. These shock wave fronts would certainly have affected other structures in the Galaxy, and as I surmized, our weather patterns here on Earth! Thus, as I reported to you, I expected even more 'disturbances' to be present here on Earth!

The Galaxy Center was not 'fast scanned' again, until 7/19/93 and 7/23/93 as had been reported to you in C-Notes. These scans, which were made when the GC was under the earth, indicated that the GC was again re-collecting mass there. The structure there is quite massive, but far from being a black hole structure yet.

A follow up scan was made of the GC recently, with the results as shown above. Again, the Galaxy Center appears to be still re-collecting mass there, and will probably become a black hole (?) in the long future.

Conclusions: Since these gravity scans also respond to many other 'events' seen on the observer's meridian, it may take many scans of this region to more accurately determine the true structure there without the 'swamping' effects of the other events which may also be inadvertently caught. The writer is unable to do all this alone! Thus, there may be much information being lost here which could be of great use to mankind. We need more interest here!!!!

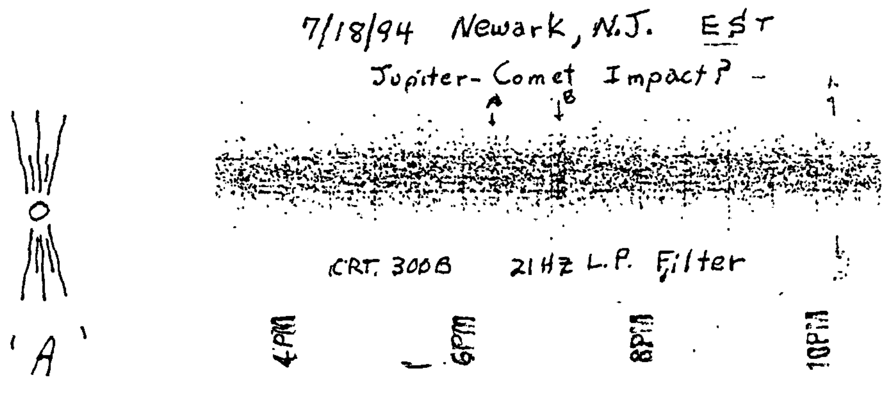
Best regards,

Greg

(504) Cosmology Note GHLabs Newark, NJ 9/9/94 (504)

Dear Colleague: This may be of interest you.

Jupiter-Comet Collisions



A 2-D scan of the writer's meridian area was made from about 1:00 PM EST on 8/18/94 to about 4:00 PM on 8/22/94. The intent here was to see if there would be a possible interaction of the collisions show up here. The scans were made late only after the optical ob-ervations showed that the 'hits' were proceeding on schedule and were quite pronounced. With the availability of much Jupiter-Comet data provided the writer by Bill Ramsay, the writer was able to go over his recorded scan data and noticed that only one possible interaction appeared in this data and that is reproduced above. Since the Rustak scan data does not reproduce well, the details seen in the original is given in sidebars above.

The resolution of the Rustrak 2-D scans is fairly crude, but some observations and speculations are presented here:

1. Jupiter during this time period was reported to be at approx. RA = 14 Hr 13m and a Dec. of -12° 10' . This would place Jupiter on 8/18/94 on my meridian at approx. 6:23 PM EST according to my relatively accurate planosphere chart.

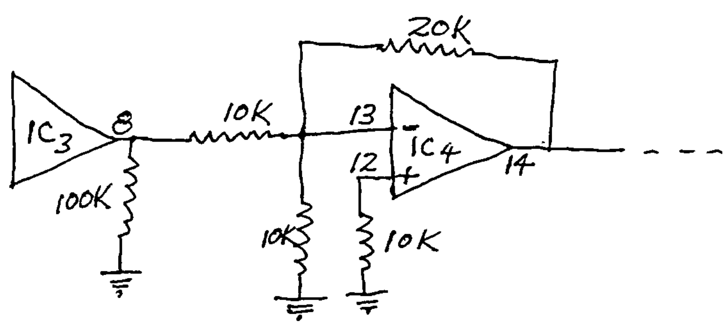
2. According to astronomical data (supplied by Bill) the optical response for Comet Fragment F=16 could be expected also to arrive at my meridian at approx. 7:06 PM EST.

3. Allowing for the light travel time of approx. 43 minutes for Jupiter's distance from Earth at this time, it is now speculated that the response seen at 'A' above is the 'instantaneous' GW signal seen from this Impact, while the response seen at 'B' is possibly a Quadrapole 'Einstein' GW signal response from this same event. It has always been suspected that my GW detectors would not only respond to Newtonian impulse type GW signals, but also to 'fast' quadrapole type GW signals as well. There were hints of this in the past. Perhaps, these responses seen above are quite real and verification of both of these responses??? More work is needed here than what I can do alone!

 505

DETAILS ON 'GRAVIMETER' UNIT, MODEL 900B, CONSTRUCTED BY THE AUTHOR AND SENT TO BILL RAMSAY FOR DEMONSTRATION PURPOSES AT THE 74th ANNUAL MEETING OF THE "AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE" (SWARM DIVISION) HELD AT MESA STATE COLLEGE MAY 17-21, 1998, IN GRAND JUNCTION, COLORADO.

<u>NOTE</u>: THIS UNIT AS CURRENTLY CONFIGURED SHOWS INCREASES IN GRAVITY IN A DOWN SCALE DIRECTION. BELOW ARE MODIFICATIONS TO THE CIRCUIT WHICH <u>SHOULD</u> INVERT THIS AND THEREFORE SHOW SUCH INCREASES AS INCREASES IN THE NOMINAL 32 FT/SEC/SEC FREE-FALL RATE FOR WHICH THE METER SCALE WILL BE CALIBRATED AND WHICH IS WHAT WAS INTENDED. BR



THIS HAS NOT YET BEEN TRIED BUT OUGHT TO WORK. <u>NOTE</u>: 2 - AAA BATTERIES INSTALLED BY THE AUTHOR 7/15/97 STILL SHOW $\simeq$ 1.4VDC EACH <u>AFTER</u> CONTINUOUS OPERATION. SINCE THIS IC WILL OPERATE PROPERLY WITH $\simeq$ 1.25 VDC PER BATTERY, IT IS LIKELY A SINGLE SET (AKALINE) WILL LAST A YEAR <u>OR</u> <u>LONGER</u> IN <u>CONTINUOUS</u> OPERATION. BR

Cosmology Note

GH Labs (506)
Newark
7/12/97
(gh)

Dear Colleague: This may be of interest to you.

I. Gravimeter Circuit # 900 B

A. Introduction

Ckt. #900 B is a modification of an original circuit, #900, which was designed around the TLC 274 and TL084 IC devices. The TLC 274 device worked fine but the TL084 did not do as well. When I ran out of TLC 274 devices, I revised the unit for the ICL 7641 device (as Ckt. 900A). The circuit worked quite well but required some Rs in the input (almost 100 ohms) for stability. When I ran out of ICL 7641 devices, I tried the ICL 7642 device (which had an I_Q of but 10 uA). For some reason I was unable to stabilize the ICL 7642 device in this circuit. The unit was then again revised for use with the Maxim (MAX 419 CDP) device (which had an I_Q only in the order of 1.2 uA) but it proved to be highly stable in this circuitry -- no Rs needed! The following Notes apply to this Maxim device in the circuitry shown attached.

B. Circuit 900 B

The Max 419 CDP is a quad IC device which can operate quite well at voltages as low as +/- 1.25 V with a 'constant' current (I_Q) of about 1.2 uA per device at any rated voltage. As the attached circuitry shows, one section of the quad is used as the detector element, another as the amplifier stage, while the two remaining sections were used as 'buffers' to isolate the main sections of detection, amplification and the output filter/meter circuit. While the 500 ohm variable Rs of circuit 900 A is still in the unit, it is not used (Kept at 0 ohms). A .002 uF capacitor across the 270 K ohms feedback resistor in the amplifier stage was included to limit higher frequency response. The input capacitor was kept at 1000 uF and the variable feedback resistor, f_0, was also kept at 1.5 M ohms. The L.P. filter capacitor (P) for the pulse 'excursions' of the unit was kept at 100 uF, while the gravimeter capacitor (earth's g-field mode) G, was increased to .047 F to better follow the slow changes in the earth's g-field variations. The meter calibration variable resistor was reduced to 5K ohms from the original 30K ohms to more closely follow the lower voltages output levels of the MAX 419 CDP IC device. All these revisions are included in the attached circuitry shown for the model Ckt. # 900 B GW unit.

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C. Operation Notes

Unit #900B was primarily designed to be a sensitive earth g-field measuring device, either in the field or lab. The L.P. filter is set to the G position for this mode of operation. The meter calibration has been pre-set, and the fo and gain controls were specially marked for operation as an earth g-field gravimeter. This calibration was checked against a simple postal scale gravimeter unit. One difference: The electronic gravimeter (Ckt. 900B) will read inverse since an inverting-type amplifier stage was used. For example, with a nominal reading of 32 ft./sec.^{2} (32 uA on the meter scale), a low reading of 30 uA on the scale is actually a high g-field of about 34 ft/sec^2, and vice versa. My experience with non-inverting amplifiers has led to some problems which did not exist with the inverting-type amplifiers. Perhaps, the experimenter might want to convert the output 'buffer' device to a unity gain 'inverter' stage to correct this? For me, however, this does not present a problem --- if the output is monitored on a chart recorder unit, the chart can correct for this. In general, the Ckt. 900B response will remain normally around +/- 1% of the nominal 32 uA point on the meter scale. But there can be slow g-field fluctuations up to about +/- 7% due to various 'cosmic' factors or other terrestrial effects, such as the changes in earth's ionosphere, or even barometric pressure changes. While I have not tried it, I expect the unit to show up the cosine function in a 24-hour response. It could be an interesting project for the experimenter to try to correlate these various fluctuations to the actual source! It should be noted, however, that the changes 'seen' will be at the location of the unit, primarily the meridian (or longitude) as well as the latitude, since they will be modulations on the g-fields at that location.

Operation of this unit in the P position for the low pass filter will enable operations in the 'fast response' mode for these same cosmic impulses which are highly filtered out in the gravity or G mode of operation. Since this is a low power unit, the output voltage levels are only in the order of 0 to 50 mV or so. Thus the 'rapid' responses are also in this same order and are effectively displayed on the meter scale. Since the actual f_o for this unit is very much subaudio, the f_o control is now also very much a gain or sensitivity control, and thus can be used in conjunction with the main gain control of the unit.

The unit may be used to drive a sensitive chart recorder unit, in both the 'fast scan' modes, or the 2-D mode (using a Rustrak recorder) or a computer system. An interesting observation will be seen when this unit's output is connected (at high gain) to a low impedance audio amplifier. You will note that the 'stoccatto' type pulse responses heard will sound very much like the responses heard with a Geiger Counter unit! In fact, I have speculated that it is these 'cosmic' impulses which are initiating the decay in unstable radio-active samples. Perhaps, an artificial 'strong' scalar impulse field generator (similar to nature's 'impulses') would enable a more rapid decay for radio-active materials?

II. Conclusions

① Ckt. 900B is an effective g-field measuring unit. It has very low power consumption and thus can be used continuously to monitor the earth g-field at the location of the unit. The variations can be quite substantial at times.

② The 'pulse' mode of this unit can vividly display the g-field variations due to many 'cosmic' events as well as 'terrestrial' events. These effects are best displayed on chart recorder units or properly interfaced computer units.

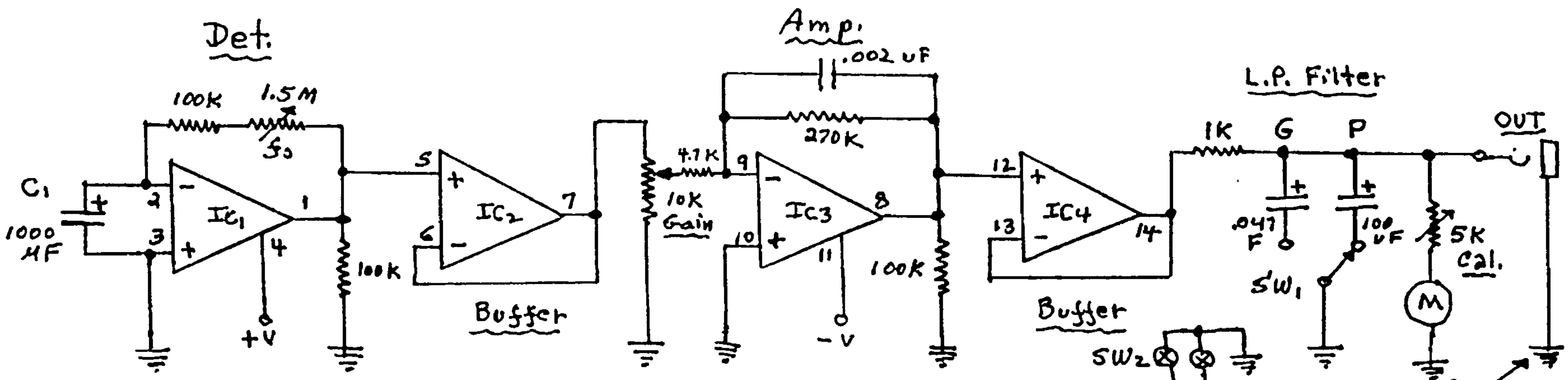
③ Ckt. 900B is, in my opinion, a very interesting GW detector unit and should prove most interesting to the inquisitive and knowledgeable experimenter! Have fun!

Greg Hodowanec

Cosmology Note

G H Labs
Newark
7/5/97
GH

I. Portable Gravimeter (Model 900 B)



$IC_1 - IC_4$: MAX 419 CDP

(M) : 50 µA (1kΩ)

V : 1.5 V

G : Gravimeter
P : Cosmic 'pulses'

II. Remarks :

① Ckt. 900B is a revised GW detector unit constructed in former Ckt. 900A. It is intended for field use as well as bench use.

② While Ckt. 900 B was made to primarily monitor the earth's g-field, (32 ft/sec²), it has sufficient sensitivity to 'fast scan' as well as to 2-D scan 'cosmic events', using appropriate strip chart recorder units.

③ Use of the microPower Quad IC (MAX 419 CDP) enables continuous monitoring of the earth's g-field. The writer's unit was 'calibrated' against a postal-scale type gravimeter, making judisious use of the f_o, gain, and calibration controls. After calibration, the 32 µA point on the meter is used as the g-field reference of 32 ft/sec². Note: how G reads up-scale!

A MORE ELABORATE GRAVITY-WAVE DEMONSTRATION UNIT (MODEL 800 A) WHICH IS THE PREDECESSER TO THE MODEL 800 B JUST DESCRIBED IN PRECEEDING SECTION

1 (510)

Cosmology Note

GH Labs (510)
Newark
4/10/97

Dear Colleague: This may be of interest to you.

I. GW Signal Detector Unit (Demo Ckt. A)

This demo unit was intended to illustrate some of the many possible responses to be noted with the basic GW signal detection system. To facilitate the obtaining of electronic parts by many amateur scientists and electronic experimenters, the unit was designed around readily available Radio Shack parts. As a result, there are some limitations to this unit, but it will still serve as an introduction to the many GW-type observations possible. No attempt was made to carefully layout the proposed design (see attached schematic) and the breadboard prototype unit was quickly hard-wire fabricated inside a 5¼" x 3" x 2⅛" aluminum P-Box available from Radio Shack. A more detailed operation procedure will be supplied after the prototype unit has been more carefully evaluated. For those who may wish to try fabricating this unit (or portions of it) from this account alone, some brief remarks on its operation will be given here:

1. The unit has a built-in .22 uF mylar printed circuit type capacitor as the primary sensor device. However, provisions were made for insertion of other external detection devices. The internal sensor device may be used in both QND* and the GRAVIMETER modes of operation, selectable by a panel switch, SW_3. You are referred to my many previous articles and notes for more information on these modes of operation. For the QND mode of operation the gain control is kept at about the ½ level (or less) position only to keep from over-driving the x20 internal amplifier stage. The QND output is connected to an external audio speaker amplifier unit, preferably with a low impedance input (order of 5K to 25K ohms). In the QND mode the unit will respond to the numerous supernova 'bursts' in the Universe which will 'ring' the detector in

* Quantum-Non-Demolition

(2)(511) the range of about 400 to 800 Hz, depending on the setting of control, S_0. If the OSC. switch, SW_2, is closed in this QND mode, the unit will become a gravity-signal-sustained sine wave oscillator over this same frequency range. If the x 20 amplifier stage is driven hard with the gain control, the sine waves will 'clip' and thus a useful square wave type output will become available. These responses may also be seen with an oscilloscope connected to the QND output jack. Much more details on the QND mode of operation will be given in the proposed Operating Procedures for Ckt. A.

2. In the gravimeter mode of operation, the 1.5 volt meter scale is normally used (with the L.P. filter at the 1 Hz position). Since some 1458 IC devices might go into oscillation at high drive levels, the gain drive level should initially be kept at 3/4 of maximum. The oscillation may be due to the IC device itself or to excessive electrical and/or gravitational feedback from the circuitry also. A simple correction for such possible oscillation problems will be included in the proposed Operating Procedures. The meter output levels should be kept between about 1.1 volts and 1.5 volts for the gravity signal induced 'excursions' seen in this mode of operation. These 'excursions' are both active responses such as detected novae and supernovae, as well as passive responses due to 'shadow' responses caused by the presence of large dense masses on the detector's meridian position. Such detected responses are best displayed on chart recorders. Best positioning of these responses between 1.1 and 1.5 volts will require a compromise between the set control and gain control positions. The set control will generally be near its center position. SW_5 can be switched to the 150 mV range for an expanded view of these same excursions. Changing the L.P. filter switch to the 10 Hz position will allow the unit to respond to gravity variations arriving from deeper in space and thus result in 'faster' burst rates and shadows being detected. More details on these operations will be given in the proposed Operating Procedures.

(3) (512)

II. Applications for Ckt. 'A'

With the more detailed Operation Procedures for Demo Ckt. A, the unit, in essence, will demonstrate:

1. QND responses and the QND oscillator mode. also the 1/f nature of the QND responses, eg; 1/f noise.
2. Gravimeter type responses:
   a. Earth g-field levels (gravity meter)
   b. Fast astronomical responses (with Esterline-Angus recorder)
   c. 2-D astronomical responses (with Rustrak recorder)
3. Repeating Universe excitations.
4. .25 cm microwave background response.
5. Pendulum tests (GW communications?)
6. Deep space aural responses (ET's?)

Again, these experiments will be given in detail in the proposed Operating Procedure Notes for Ckt. A.

III. Conclusions

The purpose of this particular demo unit is primarily to illustrate some of the many aspects of GW signal detection systems. Ckt. A was designed around Radio Shack parts and thus is not an optimum design. However, it does serve to demonstrate many GW signal techniques for the inquisitive and knowledgeable newcomer researcher to this field. The layout and wiring is not overly critical, but it is suggested that the main sections of detection, amplifier, L.P. filter and metering circuitry be kept integral and separate as much as possible to avoid possible interaction between the circuitry.

See my ~~many~~ past Monograph, Articles, and Notes for more information on this subject. Have fun and good experimenting!

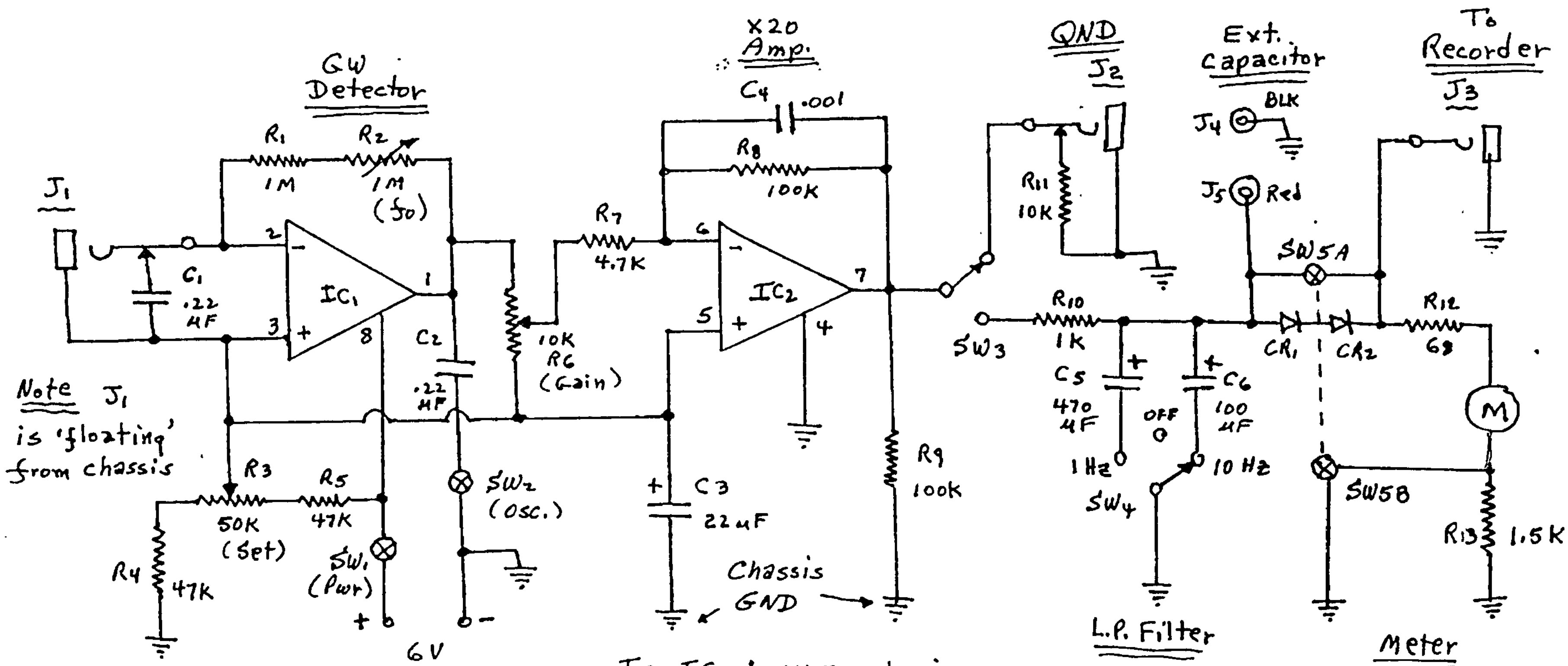
Best regards to all,

Greg

GW Signal Detection Demo Unit
(Experimental Model A)

GH Labs
Newark
4/8/97

573



IC_1, IC_2 : 1458 device
CR_1 CR_2 : 1N914 Type diodes
(M) : 1 mA (0–15 scale)

Note: When SW5A is closed, SW5B is open and vice versa. This will switch between 1.5V and 150mV scales. (DPDT switch used)

Remarks :

① All parts are available from Radio Shack! J_1, J_2 and J_3 are 1/8" panel mount jacks. J_4, J_5 are panel mount banana jacks.

② Unit (breadboard) was assembled in 5 1/4" x 3" x 2 1/8" Alum. P-box.

③ Four AA cells are internal to the unit.

④ SW_3 is QND/GR4V. switch. J_1 is external sensor input.

All resistors 1/4W, 5%

All electrolytic capacitors can be 10V units.

573

(514) Cosmology Note

GH Labs (514)
Newark
4/25/97

Dear Colleague: This may be of interest to you.

I. Some Operating Procedure Notes on GW Demo Ckt. 'A'

A. Introduction

GW Demo Ckt. Model 'A' is meant to introduce the amateur scientist and electronic experimenter to gravitational 'wave' signal detection techniques. To facilitate this introduction the unit was designed around Radio Shack available parts which would be accessable to many of the experimenters. However, there is a price to be paid for such an approach and this is in some limitations in performance. For example, the use of the 1458 bipolar IC device in the detector and amplifier stages of the unit at a supply voltage of but six volts (to accomodate the use of a 1 ma meter (panel) with a 0-15 scale which was available at Radio Shack) will result in an actual +/- 3 volt operation of the 1458 device. This will result in a useful operating range of but about 1.0 volt to 1.6 volts in the actual system. If the experimenter has access to MOS devices such as the ICL 7621 and TLC 272 devices the operating range could be the entire range of 0-3 volts. Also, recent Radio Shack 1458 devices appear to have lower gains and higher device noise figures. Perhaps some experimenters may have access to better prime 1458 devices and may even consider using separate 741 IC devices (or equivalents) instead. This could result in better isolation between the detector and amplifier stages.

While Ckt. 'A' is essentially an evaluation unit and thus not an optimum design, the experimenter has many leeways in the design. For example, the input sensors (capacitors) can be mounted internally and switched, and thus would be all shielded against possible EM detection problems. Again, access to higher-scale panel meters would enable operation at higher supply voltages and thus improved performance. A small trimpot of 100 or 200 ohms in series with the detector capacitor would also stabilize somewhat unstable IC devices at the higher gain levels.

The experimenter is referenced to the many articles and Notes issued in the past for more information. However, as an aid to the experimenter, additional information on the operation of Ckt. 'A' will be considered here in more detail.

II. QND-type Operation Notes

QND (Quantum-Non-Demolition) operation is a term 'coined' by astrophysicists with regard to gravitational 'wave' detection. In essence, it simply means that the detection system will faithfully reproduce the gravity impulses being generated by the masses in the universe. Gravity signal detector Ckt. 'A' has this very characteristic! This system is generally used as is given in Figure (1), and thus has good low frequency responses. Radio Shack 1W amplifier-speaker unit # 32-2040 is also useful here. Perhaps the experimenter already has an audio amplifier unit which may be suitable here? However, The Operating Notes as given here will apply in particular to the setup of Figure (1).

A. Detection of Supernovae 'Bursts'

Ckt. 'A' is initially setup for the QND mode of operation as follows:

Place switch, SW_3, into the QND position. Place the set control to its mid-position. Place fo in its mid-position. Keep the OSC. switch, SW_2 in its off position. Place the Ckt. 'A' gain in its mid-position, or even somewhat less.

Connect the QND output of Ckt. 'A' to an external audio amplifier system (such as shown in Figure (1)) but keep its gain control at about 1/4 level initially.

Turn on Ckt. 'A' with switch, SW_1. The detector should immediately start responding to the numerous supernovae in the universe (the internal .22 uF sensor being used). The supernovae 'bursts' will 'ring' the detection circuit with Gaussian-type impulses which reflect the 'implosion' of the star to its dense nuclear core. The rings should be clean but a low-level background 1/f type noise will remain. Should a particular 'noisy' 1458 device be used, this background noise may be excessively increased. Try to find a lower noise 1458 device. The system noise should be generated in the sensor capacitor primarily. If the signals sound distorted, you may be over-driving the Ckt. 'A' gain stage -- reduce it a bit. The 'ringing' frequency of the 'bursts' will range between about 400 Hz to 800 Hz, depending upon the fo control position. Note that there may be an optimum response seen somewhere around 600-700 Hz.

Switch SW_2 to the OSC. position. The circuit should now strongly oscillate as a fairly clean sinewave (if distorted, Ckt. 'A' gain level may be too high). The oscillator frequency will vary over 400 Hz to 800 Hz with the fo control position. Turn up the unit gain control and the sinewave oscillations will become 'clipped' with over-drive and thus the unit will develop a form of square wave. These responses are best seen on an oscilloscope connected to the QND output of the demo circuit.

B. Some 1/f Noise-Type Experiments

Using the same setup as given in Figure(1), adjust the set control, fo control, and unit gain control to their mid-positions. Insert a well-formed 500-2000 ~~5000-10000~~ uF electrolytic capacitor (or use the 1500 ~~6800~~ uF capacitor and short cable provided with this demo unit) into the sensor jack input, J_1. Turn on Ckt. 'A' and allow a few minutes for the sensor capacitor to stabilize in charge. Turn up the volume on the external amplifier unit until a fairly loud level of 1/f noise is heard. The Ckt. 'A' is still in the QND mode of operation but the 'ring' frequency is very low or even non-existent. You may be able to check on this by increasing fo and possibly noting a very low frequency ringing. Some simple experiments can be tried with this particular setup:

revision

1. .25 cm Background 'Standing Wave' Pattern

Slowly move a mass, any mass, this could even be your arm, and note that there are seen slight changes in noise level every .25 cm or so. This is a very subtle response and apparently not every person may be capable of hearing it! It is pretty much like a 'picket fence' response. To remove any doubt that it may be a real response, set in motion an 8 oz or so pendulum in motion several feet away. As the pendulum swings the detector will respond to a 'modulation' due to this .25 cm structure in the aether as a 'picket fence' effect. With more careful listening you may be able to note that there is a slight change in pitch as the pendulum swings to and fro!

2. Repeating' Universe Background Responses

Using this same setup, use your arm again as the pendulum. Swing it in about 2 foot arcs at about a 1.8 Hz to 2.0 Hz rate. Do this until you hear a very definite 'modulation' at this rate in the 1/f noise background. Then stop the swing at some maximum point. Repeat this action one or two minutes later. You may now note that this modulation will repeat at this one or two minute rate for some time after you ceased your 'excitations' -- sometimes for hours! It is possible to 'cancel' these excitations to some extent by repeating the excitation but then reducing the arc lengths slowly to zero levels. But a word of caution here: the unit may also be responding to the experimenter's own beating heart and sometimes that will take over! Also, other mass movements in the area such as a washing machine with its rotary and reciprocating mass motions could also affect the detector response.

3. GW Signal Communications?

The experimental effects described above will, in terms of Rhysmonic Theory, be universe wide! In experiment (2) above it was suggested that the 'repeating' nature of these disturbances in the aether could be somewhat negated by reducing the 'excitations' slowly down to zero. To be able to use this modulation mechanism in simple code transmissions would require that the repeating function be defeated. Thus the signal source should slowly 'build-up' and then also slowly 'decay' if this repeating function is to be avoided. In the past I had looked into several techniques to do this.

(5) (518)

One technique turned out to be quite effective! It was a simple dc toy motor! Motors, in general, require some start up time to spin and also some decay time to stop. The spinning rotor will easily setup a .25 cm disturbance in the aether, the 'picket fence' effect. In some practical tests I used a well-made double-shielded tape recorder motor ~~as~~ at 9 volts dc. I used the system of Figure (1) but coupled the output to a tape recorder unit instead of the speaker. This was done so that I could run remote 'motor signal' tests but would have the detector system responses recorded on tape during my ~~absence~~ absence. This experiment worked quite well! Initial tests were made only in the general lab area and then in the neighborhood -- all with good results. To identify my 'motor generated' signals I used Morse Code modulations. Namely, I sent the message 'Greg Radio' (with distance) simply by starting and stopping the motor at the required Morse Code intervals! I was able to recognize this signal in the general universe background noise signals at 500 ft away, 1/2 mile away, 3 miles away, and even 5 miles (and more) away! These tests were done back in 1984-1985 and reported to only a very few colleagues. At that time I was not sure if these tests were real (without outside confirmation) and thus I did not want the aether to be 'cluttered up' with such signals like the radio spectrum was in early days of radio! I never got positive responses from my colleagues so I put this on the back burner. However, some brief local tests with Ckt. 'A' appears to confirm my previous experiences!

4. Search For Extra-Terrestrial Intelligence (SETI)

The experimental setup of this section also responds to the general universe noise background. Perhaps if ET is really out there, ET is surely using the instantaneous GW techniques in communication and not the passe EM techniques now being used. Careful listening to the 1/f noise levels reveals some interesting responses which appear to be arriving from definite regions of space. Some are unusual 'repeating' simple bars of music (?)

and other repeating 'tones' which could be natural in origin but are very suggestive of possible ET alerting signals? That these were most likely gravitational signals was proven in a test where the detector (which was constructed in an aluminum box) was placed in a steel container and that assembly was placed in a heavy steel cabinet --- the signals persisted, whereas EM signals would have been completely eliminated. There is fertile ground for much more research here which should be of interest to all you SETI fans!

III. Gravimeter-Type Operation Notes

This mode of operation will use the Ckt. 'A' L.P. Filter and metering circuits. The external audio amplifier is cut out and thus not needed for these experiments. Some typical gravimeter responses will be considered here as well as some more specialized chart recorder type tests.

A. Simple Gravimeter Tests

All these tests will, in general, be monitoring the fluctuations seen in the earth's g-field at the meridian location of the detector. These fluctuations are largely due to various cosmic 'events', but some may be terrestrial in nature due to fluctuations in the earth's ionosphere, for example, or even some fluctuations due to mass changes or movements within the earth itself. There is much more to be learned here yet.

1. Earth g-field Monitoring

For most of these tests the internal .22 μF capacitor sensor is used. Ckt. 'A' is set to the gravimeter mode (GRAV) with switch, SW3. The meter is set to the 1.5 volt scale with switch, SW5. The L.P. Filter is set to 1 Hz with switch, SW4. Start with the SET control, the GAIN control, and the fo control at mid-range each. When Ckt. 'A' is turned on, there may be some fluctuations seen on the meter scale. However, it may be necessary to adjust the SET control in conjunction with the GAIN control to place the meter pointer at about 1.3 volts (average). If no fluctuations are seen, increase the gain and re-adjust the set control to keep the fluctuations centered around 1.3 volts or so. It may take a little experimentations to keep the meter 'excursions' in the range of about 1.1 to 1.5 volts. The excursions will increase with circuit gain but do not go higher in gain than about 3/4 full gain (unless you have included some small resistance in series with the sensor capacitor) to avoid possible oscillations in your detector circuit. Oscillations will tend to 'peg' the meter either at the 1.0 volt or 1.5 volt points. Reduce the gain if instability occurs. For the demo Ckt. 'A' and the 1458 device used, about 5 ohms was required to stabilize the unit. This resistance is not included in the breadboard unit! If the unit is stabilized, the meter may be switched to the 150 mV range to see these fluctuations in expanded form. It may be necessary to slightly re-adjust the SET control, however.

To monitor the earth's g-field average level, reduce the gain until the fluctuations (on the 150 mV range) are in the order of +/- 20% or so of the chosen reference, say 130 mV. This is about the order of the earth's normal gravity field variation at the present time. As an experiment, try bending over the detector to introduce your body mass over the unit. Careful observation may indicate to you that the average response may increase (a reduced g-field for this unit) in the meter scale in the order of another .5-1.0%! This is sometimes difficult to observe, depending upon the amount of cosmic fluctuations and your circuit sensitivity at that time.

After you are quite familiar with these adjustments, try using the 6800 uF capacitor (external sensor). The larger sensor device may prove a bit more sensitive. Try changing fo and observe any changes with frequency.

2. 1/f Noise Responses

Re-adjust Ckt. 'A' at the highest fo (fully CW) and best sensitivity. Keep the average response near 130 mV. Use either 1 Hz or 10 Hz on the L.P. Filter. You will notice that the fluctuations may occur quite often but the amplitudes will be quite small. Slowly reduce fo with a (CCW) turning of the control. Note that as the frequency of response is being reduced, the fluctuations are increasing in amplitude. Although the circuit gain is also a function of fo, the excursions will increase in amplitude much faster than the circuit gain increases. This behaviour is the so-called 1/f noise effect and it is related to the fact that the unit is responding to fewer but more massive supernovae (i.e. increasing amplitudes) as the circuit response frequency is reduced. Again, this effect will require proper adjustments for observance.

(521)

B. Some Chart Recorder Tests

The tests given here were made with D'Arsonal-meter type chart recorders; first, because those are the units I have, and second, the large inertia of these coil movements tend to 'smooth' out the GW signal responses, Thus eliminating much of the 'annoying' fine structures to be seen. The rapid response time of The potentiometric-type recorders will include too much fine structure and thus the traces are very 'noisy'. The general system used in these tests of Ckt. 'A' is given in Figure (2). For the so-called 'fast' scans I used an old Esterline-Angus spring-driven Model 424-A unit, while the so-called 2-D responses were obtained with a Rustrak Model 288.

1. Fast scans with the Esterline-Angus recorder

Ckt. 'A' is used here in the gravimeter mode with the L.P. Filter in the 10 Hz position, the SET control about mid-range, the meter at 1.5 volt scale, The GAIN at full range, and the fo control set at mid-range, initially. The gravimeter output is coupled through a single double-diode off-set to the Esterline-Angus recorder (running at 3" per minute) as shown in Figure (2). Using techniques as given in section A (above), adjust the fo control (in conjunction with SET) to obtain maximum excursions on the Esterline-Angus unit. Since Ckt. 'A' is operating at low-levels for the 1458 bipolar device, the responses on the recorder will be quite limited (only about +/- .5 inch maximum) and thus will not show much interesting responses. This is because the large meter coil in the Esterline-Angus recorder requires a higher voltage output to be effective. For the experimenter interested in further persuing these 'rapid' astronomical responses, it is recommended that detector Ckt. #75 as described in The January 1989 edition of The Radio-

Electronics Experimenters Handbook be used instead. The writer normally uses that circuit in his 'fast' astronomical signal observations. That circuit will easily resolve 'structures' in the Milky Way Galaxy, such as nearby star systems as well as 'black holes', supernovae, and other interesting structures. It will also 'see' structures very deep in space. Optical and radio astronomers take note! All in real time, too!

2. Two-dimensional (2-D) scans with the Rustrak 288

The adjustments as given above in section (1) are also generally used for the 2-D responses except that Ckt. 'A' is coupled to the Rustrak 288 recorder unit running at 1/2" per hour. Again, adjust fo and SET controls for maximum excursions on the Rustrak unit. Thus, fo will generally be somewhere in the 600-700 Hz range. In the tests of Ckt. 'A' made here, there was much deep space structure seen in the scan width of about 1/2 inch. Again, those truly interested in this type of astronomical observation would have better results using Ckt. # 75 or any of the other gravimeters previously published. Ckt. 'A', while effective in this application, is also limited in output level responses.

IV. Conclusions

Ckt. 'A' does serve as an introduction to GW signal detection techniques but as already mentioned, it has some limitations. For those interested in these techniques a number of articles and notes are available from Rex Research Archives, the International Tesla Society, Radio-Electronics, and Untapped Technology in Review. A list of such references will be prepared in the future.

Good luck and experimenting to all!

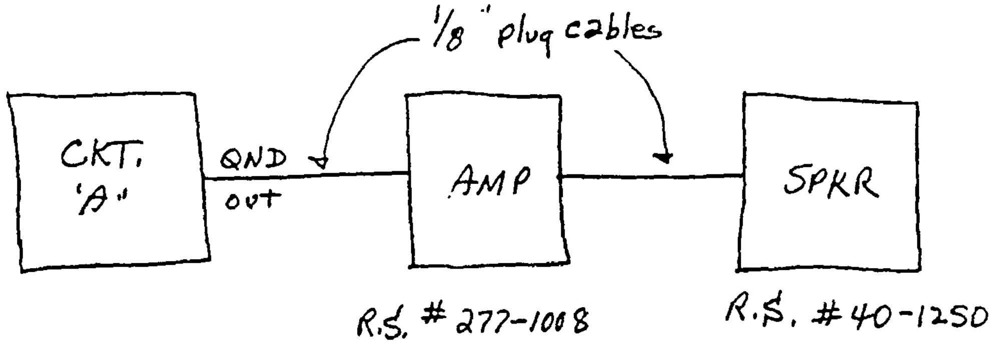


Figure (1) : QND Tests

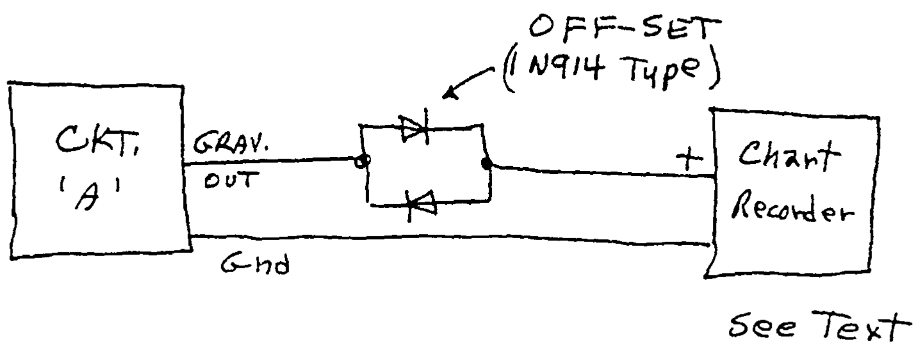


Figure (2) : GRAV Tests

MORE ON THE EXTRACTION OF ENERGY FROM THE AETHER

524

Cosmology Note

GH Labs
Newark, NJ
4/4/96

524

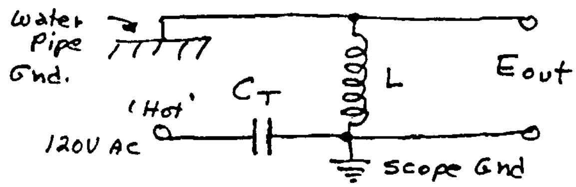
Dear Colleague: This may be of interest to you.

I. Still more on the simple coil test.

A. Basic coil test:

As per my C-Note of 3/30/96, it appears that my coil test performances might be related to the use of power transformer-type HV power supplies in both of my scopes? With the use of un-bypassed primaries, there is a large voltage 'spike' of very low current which couples across the capacitance which exists between the primary and secondary windings? This appears to be the 'source' of my 'leakage' pulses!

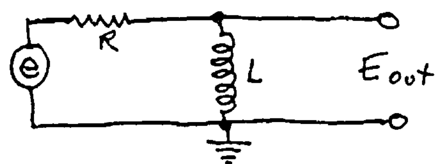
B. Circuit as analyzed:



Assume:
L = 1h
C_T = 300pF (leakage capacitance)

Reactance $\begin{cases} L = 2\pi fL \cong 377 \text{ ohms} \quad (f=60 \text{ Hz}) \\ C_T = \dfrac{1}{2\pi fC} \approx 9 \times 10^6 \text{ ohms} \cong R \end{cases}$

C. Simplified equivalent circuit:



Note; The input e will be high in voltage but only microamperes in current!

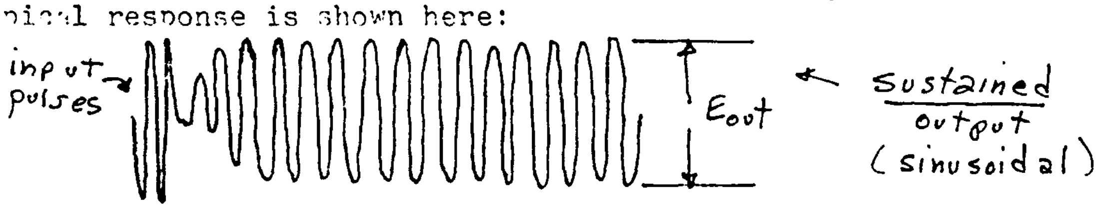
At 60Hz, this circuit will be basically a high-pass filter with a time constant $T_C = L/R \cong \dfrac{1}{9 \times 10^6} \approx 1.1 \times 10^{-7}$ seconds.

Since e is much greater than Eout, the network is also a differentiator as well (when L is small and R is large).

II. Conclusions:

1. When the coil, L , is driven by e , the input pulses will 'ring' the coil but this ring will decay as per normal theory.

2. However, in terms of rhysmonic theory, the input pulses will not only 'ring' the coil, but the coil will also 'ring' the Universe (or at least the earth-ionosphere complex) and thus it will build-up into a self-sustaining 'ring' as was speculated many times before! A typical response is shown here:

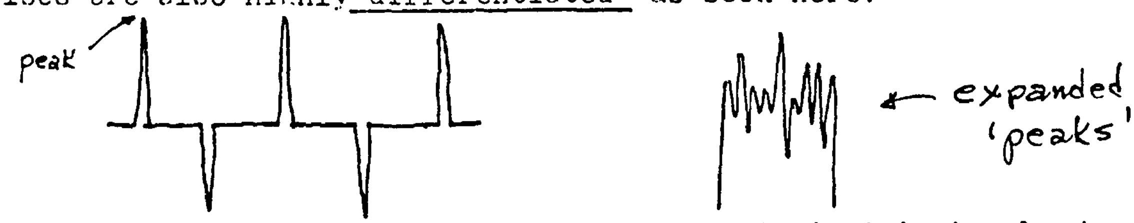


This type of output is verified here in tests when no ferrite was used in the coil. With the use of a ferrite insert (a normal tuning screw ferrite), the output is much enhanced and the response is quite sinusoidal when resonant conditions are achieved. For this sustained condition, the circuit must be 'extracting' some additional energy, either from the aether or a scalar field condition in the earth-ionosphere complex? Thus, such mechanisms might be involved in the MRA, VTA, and the Swiss M-L-C device? Room for much more research here!

(Continued next sheet)

III. Some further thoughts:

The simple capacitor-diode circuitry as shown in the G-Note of 3/28/96 (using Dr. Faile's circuit and my version of it) might also be activated by 'space' or 'leakage' fields of some sort. In my case, this was provided by my scope system as discussed above. The input pulses are also highly differentiated as seen here:



and are occuring at the 60 Hz rate, but no 'ringing' is involved. This circuit is also a low-pass filter and an integrator so that there is summing of the output pulses involved. However, expansion of the pulses show that there appears to be an interaction with some other energies (as random HF pulses atop the pulse peaks) so that even this simple circuit might also show some power gains! Also much room for further research here!

IV. Final comments:

I apologize for the crudeness of these tests and reports. They are being done very quickly and sporadically here due to some circumstances here. However, I strongly feel that there may be more here than appears so far; but I must rely more on your efforts to determine just how real these speculations may be; but I will continue to 'look' into such 'research' as much as I can. Good experimenting to all!

gh

4/8/96

Bill:

As you will note (in the attached) that Hal Fox remains interested in my efforts (even published ~~the~~ my theory behind the gravitational constant, G!

Still can't do too much -- have to get back to many 'repairs' around the house!

Still owe you some back copies -- need to do that slowly to keep the peace here!

I am getting your material okay, thanks.

Take care —

Greg

(526)

Cosmology Note

Newark (526)
7/18/96
(9h)

Dear Colleague: This may be of interest to you.

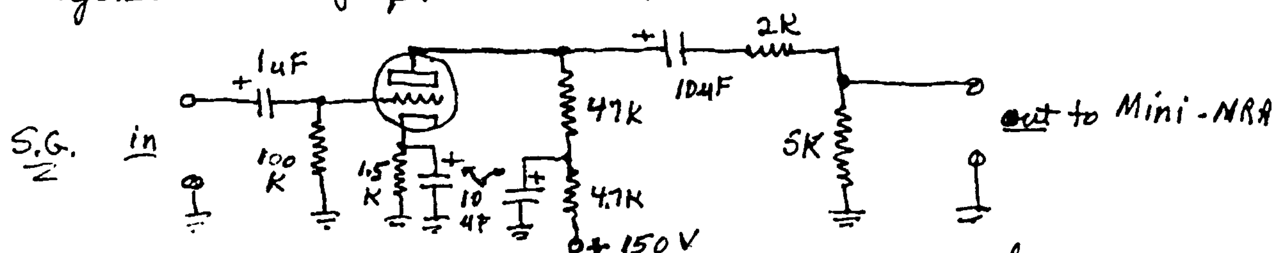
I. Some additional remarks on the Mini-MRA

A. More careful measurements

As the attached data shows, there definitely appears to be a relation between mini-MRA power gains and the increased circulating reactive currents compared to the source current needed to sustain this mode of operation. Since there are no appreciable losses in the series circuit, the series circuit does not need to be massive to develop substantial reactive voltages which then can be used to develop much real power in the secondary of the transformer. Thus, even the small original 5 mH (5:1) pulse transformer used in these tests should be capable of handling possibly up to 100 Watts of real power in the load, with less than 10 watts of drive power needed! However, due to the interaction of solid state devices with the scalar-type signals developed by the reactive elements here, the drive source would best be a vacuum tube device (or an electrostatic generator) which appear to be rather insensitive to such scalar fields.

B. Proposed higher-level mini-MRA test

To verify these premises, a vacuum tube amplifier will be built for use with my vacuum tube signal generator. The proposed circuit:



The actual components are subject to modifications.
It is expected that a 1 Watt drive would develop a minimum of 10 Watts of real power in the load of the MRA.

II. Conclusions:

① Tests by McClain and Wootan and myself have shown that solid state generator units are highly subject to failure in MRA circuits, especially if the MRA load is 'opened' up and the reactive powers are 'reflected' back to the source. This problem does not appear to exist with vacuum tube devices. Also the reactive components themselves are not hurt.

② It is expected that the Mini-MRA principles can be extended to systems involving many, many kilo-watts; as evidenced in the Swiss M-L units!!

527 **Cosmology Note** GH Labs Newark 7/18/96 527

I. Re-tests of Original Minis with 25 MHz Scope

A. Original Mini - MRA #1

$C = 680\,pF$ $R_G = 5K$ $T = 5mH\,(581)$ $R_S \cong 3.3\,\Omega$ $R_L = 1K$ $f_0 \cong 80\,kHz$

Generator: Tube type (hot and stabilized)

Tune for min V_G

Data:

$V_G = 4V\,(pk\text{-}pk) \cong 2.83V\,(RMS)$

$i_G = \frac{2.83}{5\times10^3} \cong .57\,mA\,(RMS)$ $\therefore P_{in} \cong 1.61\,mW$

$V_R = 30mV \cong 21.2\,mV\,(RMS)$

$V_{out} = 6V\,(pk\text{-}pk) \cong 4.24V\,(RMS)$

$i_{out} \cong 4.24\,mA\,(RMS)$ $\therefore P_{out} \cong 18\,mW$

$i_{circ} = \frac{21.2}{3.3} \cong 6.42\,mA$

$\left.\begin{array}{l} \frac{i_{circ}}{i_G} \cong \frac{6.42}{.57} \cong 11.3\times \\ P.G. \cong \frac{18}{1.61} \cong 11.2\times \end{array}\right\}$ note!

Power gain is roughly equal to ratio $\frac{i_{circ}}{i_G}$!

B. Original Mini MRA #2

Same as #1, but $C \cong 620\,pF$; $f_0 \cong 83\,kHz$

Data:

$V_G = 4.8V\,(pk\text{-}pk) \cong 3.4V\,(RMS)$

$i_G = \frac{3.4}{5\times10^3} \cong .68\,mA\,(RMS)$ $\therefore P_{in} \cong 2.3\,mW$

$V_R = 35\,mV\,(p\text{-}p) \cong 24.7\,mV\,(RMS)$

$V_{out} = 7V\,(pk\text{-}pk) \cong 4.95V\,(RMS)$ $\therefore P_{out} \cong 24.5\,mW.$

$i_{out} \cong 4.95\,mA\,(RMS)$

$i_{circ} \cong \frac{24.7}{3.33} \cong 7.42\,mA$

$\left.\begin{array}{l} \frac{i_{circ}}{i_G} \cong \frac{7.42}{.68} \cong 10.9\times \\ P.G. \cong \frac{24.5}{2.3} \cong 10.7\times \end{array}\right\}$ note!

Power gain is roughly equal to ratio $\frac{i_{circ}}{i_G}$!

C. All waveforms ~~good~~ sinusoidals!

528

Cosmology Note

GH Labs 528
Newark
7/20/96
GH

Dear Colleague: This may be of interest to you.

I. Special Tube Signal Generator Test

The 2.5KΩ series resistor with the 5K gain control was shorted out in order to increase the output of the generator. The S.G. was stabilized for this test.

A. Test with Mini Ckt #1: all waveforms sinusoidal!

$T_1 = 5mH\ (5:1)$ $R_L = 1K\Omega$
$C_1 = 680pF$ $R_S \cong 3.3\ \Omega$
$R_G \cong 5K$ $f_0 \cong 80\ KHz$

Ckt 'tuned' for min. V_G

25MHz Scope Used!

B. Test Data

$V_G = 6.7V(pk\text{-}pk) \cong 4.74V\ (RMS)$

$i_G \cong \frac{4.74}{5\times10^3} \cong .95\,mA\ (RMS)$ $\therefore P_{in} \cong 4.5\,mW$

$V_{out} = 9.93V(pk\text{-}pk) \cong 7.02V(RMS)$

$i_{out} = \frac{7.02V}{1K} \cong 7.02\,mA\ (RMS)$ $\therefore P_{out} \cong 49.2\,mW$

$P.G. = \frac{P_{out}}{P_{in}} \cong \frac{49.2}{4.5} \cong 10.9X$

$V_R = 48mV \cong 33.9\,mV\ (RMS)$

$i_{circ} = \frac{V_R}{R_S} = \frac{33.9}{3.3} \cong 10.3\,mA$

$\frac{i_{circ}}{i_G} \cong \frac{10.3}{.95} \cong 10.8X$

Note!

II. Conclusions

1. A power gain in the order of 11X is still maintained with increased drive power for the Mini!
2. Since resistive sources and loads are maintained, the powers are true RMS.
3. With the proposed tube power amplifier, it is expected that:

Drive	Pout
10mW	108mW
50mW	540mW
100mW	1.1 watts
500mW	5.4 watts

This is the expected range with the proposed power amplifier!

(529)

Cosmology Note

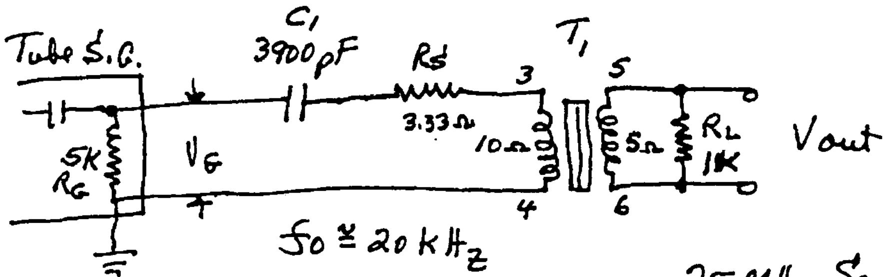
GH Labs
Newark
7/20/96
(529)
(Jh)

Dear Colleague: This may interest you.

I. Brief Test of another Pulse Transformer

A. Western Electric Pulse Transformer GS 59138 (T_1)
($\cong$ 2:1 ratio)

Circuit Used:



25 MHz Scope Used
all waveforms sinusoidal!

B. Test Data

$V_G = 6.6V\,(pk\text{-}pk) \cong 4.67V\,(RMS)$

$i_G \cong \frac{4.67}{5\times10^3} \cong .93\,mA\,(RMS)$

$\therefore P_{in} \cong 4.34\,mW\,(RMS)$

$V_{out} = 6.6V\,(pk\text{-}pk) \cong 4.67V\,(RMS)$

$i_{out} \cong 4.67\,mA\,(RMS)$

$\therefore P_{out} \cong 21.8\,mW\,(RMS)$

$P.G. \cong \frac{P_{out}}{P_{in}} \cong \frac{21.8}{4.34} \cong 5.03\times$

$V_R = 22\,mV\,(pk\text{-}pk) \cong 15.6\,mV\,(RMS)$

$i_{circ} \cong \frac{15.6}{3.33} \cong 4.68\,mA$

$\frac{i_{circ}}{i_G} \cong \frac{4.68}{.93} \cong 5.03\times$

Note!

Note: ckt was 'tuned' for min. V_G.

II. Conclusions

1. Only a brief test was made here, thus the circuit may not be fully optimized. However, even this surplus Pulse Transformer shows over-unity power gains! There are many others out there to try! Thanks to Bill Ramsay for a sample unit.

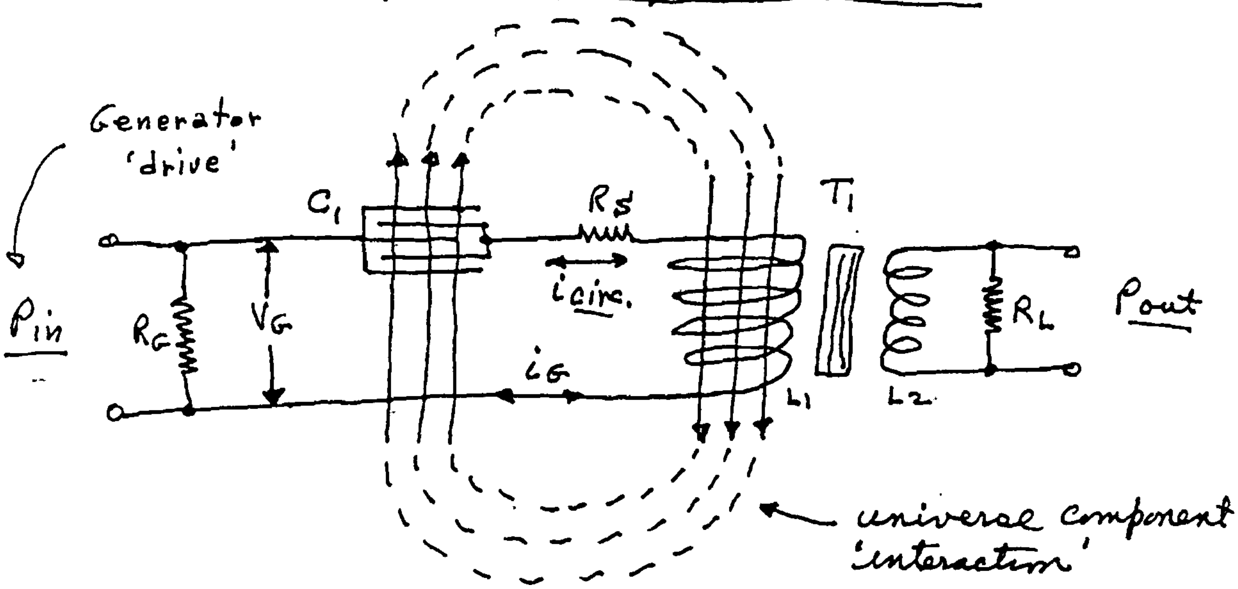
① (530) Cosmology Note 7/22/96 (gh) (530)

Dear Colleague: This may be of interest to you.

I. Some more speculations on the Mini-MRA

Even though I was only able to apply very limited effort on the Mini-MRA device, I have released to you many thoughts and experiments, some of which could be quite significant for an understanding of the operation of this device. The viewpoints are from Rhyomnic Cosmology and those of you who are quite familiar with some of its premises should be able to understand the following discussions:

A. Simplified sketch of the Mini-MRA



Shown above is a very simple depiction of the peak one-half cycle of the 'flow' of scalar flux in the Mini-MRA. In normal theory, one considers that when energy is being 'stored' in the capacitor's 'field', energy is being 'returned' from the inductor's 'field'. Rhyomnic Theory goes well beyond that simple statement and speculates that the capacitor 'flux' is 'exciting' the universe (or some component of it) and that the inductor 'flux' is also 'exciting' the universe. That this is so has been reported to you in many simple experiments and some Notes and papers in the past. However, as depicted above, these two flux components are 180° out-of-phase and also a function of the resonant frequency. It is also emphasized that good sinusoidal waveforms and resistive sources and loads must be used!

(531) 7/22/96 (531)

B. Further remarks on this operation

1. While the intrinsic rhysmnic flux of the universe is 'instantaneous' and 'omni-directional', there are also many other 'directed' fluxes due to various universe and terrestrial factors. A few common terrestrial factors are the earth's g-field, E-field, magnetic field, as well as the many components in the ionosphere and near-earth, due to emissions from the sun, and possibly other cosmic emissions. Thus, the universe is a vast source of energy, both intrinsic and also 'converted'. The converted energies are presently being utilized, much of it being rapidly exhausted and much of it polluting the earth.

2. The scalar-type 'flux' being developed by the reactances through the action of the driving source, ie., the generator, will be as shown by the solid lines in the depiction above, while the interactions possible in the universe will be simply depicted by the dotted lines. While the orientation of the reactances possibly could be directed for enhanced interactions (say, with the earth's g- or E-fields), the positioning, in general, will be immaterial, since there always will be a substantial component of rhysmnic flux in any direction. The 'driven' reactances will 'pump' the universe (or some component of it). Many past rhysmnic experiments have shown this to be the case and such 'pumping' was found to 'magnify' the energy levels in possible 'resonances' in these interactions. The higher the drive level of the 'pump', ie., the drive, the higher the level of interactions. Also, the longer the 'pump' acts, the greater the level of interaction up to some limiting level. This has also been proven in other simple rhysmnic experiments, many of which have been released in the past, and some which were not! Since most of these experiments are so simple, one only needs to perform them (which I find many are reluctant to do so -- since they are unconventional!)

3 532 3. Due to the nature of some of the 'directed' 7/22/96 532

rhysmonic fluxes, the performance of the Mini-MRA could vary with the rotation of the earth, ie., the time of day; but, in general, the interaction is found to be relatively constant. The interaction is essentially between parallel scalar field components and thus one of simple superposition of fields (potential) and thus only simple algebraic addition of flux is required. While certain 'resonant' frequencies could enhance the interaction with certain directed flux components, the long time constant of these circuits compared to the very high basic rhysmonic (intrinsic) frequencies will ensure at least a measure of interaction at all the frequencies of operation (provided resonance occurs).

4. The flux interaction in the universe (depicted by the dotted lines in the sketch) is repetitive at the resonant frequency and thus should also complete the reactive circuit (perhaps no line return may be needed?). Therefore, the sensing resistor, R_S, could directly determine this reactive 'circulating' current. With the proper design of the reactive elements and a proper frequency of operation, this reactive current could be made many, many times greater than the generator line current needed to sustain this mode of operation. The reactive voltage across L_1 would be $i_{circ} \times X_{L_1}$, and could be very large. However, due to the 90° phase difference between the reactive voltages and reactive currents, no appreciable dissipation losses will be sustained in this reactive 'circulating loop'. The high reactive voltage in L_1 can be transformer coupled to L_2, where this high voltage could now drive a large real current (in phase with the voltage) and thus develop large real powers in the load, R_L. This has been confirmed in many Mini-MRA tests, but again I must caution you that solid state sources can react to the scalar fluxes being developed here and thus distort the drive input and even destroy the source!

II. Conclusions

As usual, the above speculative remarks on the possible operation of the Mini-MRA are primarily aimed at getting more of you more actively involved in these simple tests. All indications are that the MRA is for real and possibly a great new source of space energy which will be both inexhaustable and also non-polluting. While these exploratory tests are yet at low levels, there is every reason to believe that very high levels will be achieved with this technique, witness the Swiss M-L results, which, to me, appears to be but a Super MRA device!!

Rhysmonic cosmology is basically used in these discussions --- it is a real science --- and many experiments have shown it to be so much has been released to you in past Notes, and papers, both published and unpublished. Also, there is much that has not yet been released --- to use the Swiss M-L group's phrase "mankind may not be ready for it yet". In any case, I wish you all well and continued good experimenting.

My best regards,

Greg

P.S. - Please excuse the crudeness of this handwritten Note. My time for this is very limited and its faster for me this way,

(534)

Newark (534)
7/25/96
(Sh)

Bill : FYI

The enclosed material gives me some confidence that perhaps I could get at least 5-10 watts out of that little red transformer. I have an old (110V powered) 12AX7 tube preamplifier originally made as a tape-phono pre-amplifier. I will modify it to a 500mW to 1 watt power amplifier and use it to drive the mini-MRA. If I get 10 Watts out at 1W drive, then that would mean to me that the MRA will scale up in power.

The March NEN enclosed is an extra copy. It contains Ben Iverson's letter which 'ticked off' Nestroux (2½ pages in NEN!). I enclosed the reference which ticked him off (and what appears to be 'nice' reference to me?).

Got your Barkhausen paper --- I am sure that unit is detecting scalar pulses (GW) and I can add it to my list of such pulse effects (I think I may have sent you a copy?). It included radio-activity and many other effects, all activated by GW signal!

My daughter will be visiting 1st week of August, so I will be busy then. Still see much HAARP stuff(?) Haven't gotten July NEN yet so don't know what's in it yet. Told Mary here that the 'toys' I am working with is essentially a machine in which I put \$1 and get out \$10 (not in money, but energy). That interested her so that is the reason for a little more activity here! Take care —

and my best regards, Gary

535 535

Cosmology Note

GH Labs
Newark
9/8/96
GH

Dear Colleague: This may be of interest to you.

I. Possible Resonances in The Universe

The fundamental frequency in the Universe is the rhysmmic frequency (f^*) which is equal to $1/t^*$ or $\frac{1}{5.391 \times 10^{-44}\,sec.} \cong 1.855 \times 10^{43}$ Hz. (per rhysmmics). Interaction with fundamental frequency under resonance conditions should result in an exchange of energy, ie., energy extraction. Some possible resonances are now considered, with remarks on possible confirmation: Without reference to powers*, the basic frequencies are now listed: * Fundamental to operating frequency ratios

	Frequency	Remarks
1.	1.855 Hz	This is a Schuman resonance (?). and is also seen in Rhysmmic GW resonance ($\cong$ 2 Hz).
2.	3.710 Hz	This is also seen in Schuman (?).
3.	7.42 Hz	This is also seen in Schuman as a more pronounced resonance.
4.	3.710 KHz 9.275 KHz 18.550 KHz 24.115 KHz 33.390 KHz 46.375 KHz 68.635 KHz 77.910 KHz 89.040 KHz 129.850 KHz	These frequencies were seen in the reported coil tests. (C-Note 3/16/96) also many of these frequencies were seen in MRA tests, especially in Mini-MRA tests. Note: all the frequencies listed here cannot be just mere co-incidence!!

II. Conclusions:

These tests appear to indicate that sub-harmonic resonances with the fundamental rhysmmic frequency of 1.855×10^{43} Hz do result in 'extraction' of energy from the 'intrinsic' energy of this Universe!

536 536

Gregory Hodowanec
34 Cleveland Ave
Newark NJ 07106-3515

2/11/97
gh

Dear Bill,

Thank you for your call of 2/10. Sorry that we couldn't chat too long. I was in the process of calling our oil burner contract service when you called. We're having another cold spell so I wanted to be sure that the heat was working. It turned out the electric motor 'seized' due to a lack of oil on the bearings! The service technician was able to temporarily 'free' the bearing with oil, and the motor is to be replaced today.

I am not doing too much here (same old problem) but from time to time I get some work and ideas in. In general, I am re-running some old tests and verifying previous data and observing what the variables are. In a nutshell, The Mini-MRA is best run at resonance at one of the natural subharmonics of the Rhysmonic frequency of about 1.855×10^{43} Hz! The higher your resonance point, the more the efficiency! For example, your W.E. transformer (at 2:1) and ≅20 Kc, will develop about 30 mW at about 5X powergain. The original mini transformer (5:1) at ≅78 Kc will develop the same 30 mW (or more) at about 12X powergain! So systems at high resonant frequencies should develop high powers! The Swiss ran their system at about 3 Kc and the Toronto people suggested (?) they were in the MHz range! They claim Kw powers are easily obtained, while they have seen powers in the Mw range! I still havent gotten any details from them — perhaps they may be using a Rhysmonic explanation but may yet be cautious in releasing that as yet?? They are a company with millions of $#'s!

We are fairly well here — hoping for an early Spring. 2-D tracking shows many new responses in our latitude, but have no time to try to correlate the data with weather patterns (jet streams) yet. Bill, take care of you and yours — best regards, pal —

Greg

P.S. — FE-9 tests are okay when the oscillator is kept away from the Mini! In a box the two can interact and distort!
The space energy article is roughly only 1/4 complete — no time for it!

537 537

2/21/97
gle

Bill:

Thanks for the sample X-formers. I was only able to make a quick test so far (some problems here) and the rough data is attached. Will do more refined tests when things clear up here.

Got the February issue of NEN today. See some reference to you in the Dec. issue of Space Energy Journal (as reported in NEN). Hal keeps on using material from me — The Feb. issue contains the cover letter I sent with that old 2-D article I sent him. As mentioned on the phone, I will still try to complete a 'true' stand alone mini test and complete the Note of "Energy Extraction Directly from the Aether"!

With regard to your Note on the X-former:

1. I believe that both the nature of the ferrite and 'space' conditions are involved in the minis. The 'space' is, of course, the resonance relations to the fundamental Rhysmic frequency of about 1.855×10^{43} Hz. The ferrite involves a range where the 'domains' are capable of being easily 'flippable'.

2. I do not rule out that ferrites may have other characteristics which also could be involved.

3. I believe that 'tighter' coupling between the input and output coils is needed. In this case, the coupling is between the ferrite 'flux' in the core only, perhaps? That may be the reason for the low gain.

4. I will also try using a 'trimmer' cap (of the compression mica type) to adjust C, more readily.

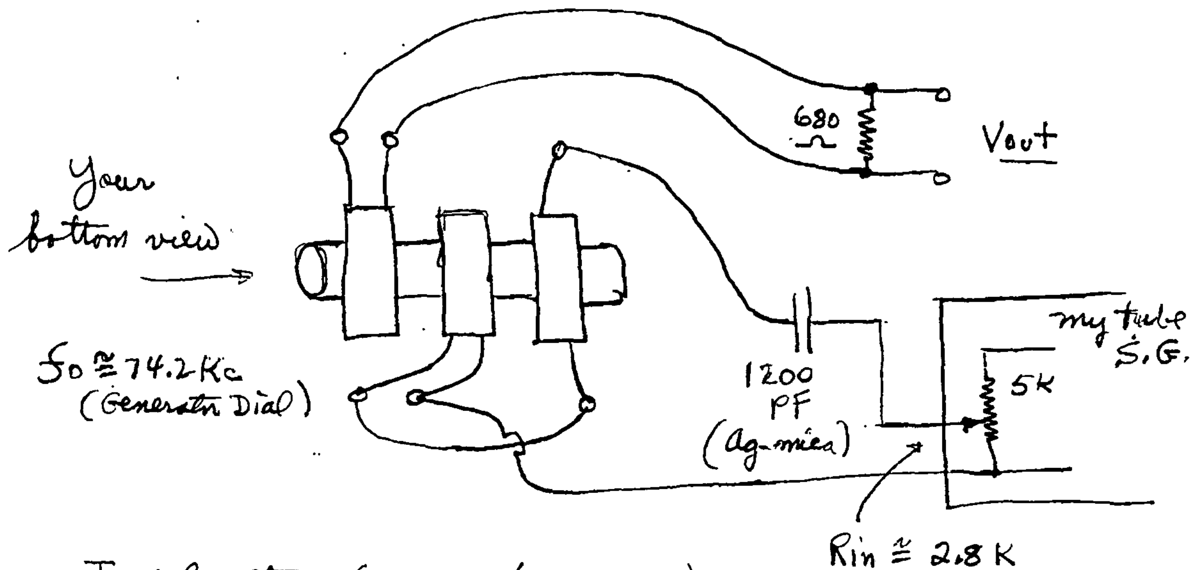
Bill, bear with me for a while yet. I am okay, but some other family problems have arisen which takes much of my time. Best regards, friend.

Greg

P.S. – I like the analysis in your note – you are a true 'scientist' and experimenter!

538 538

Bill: Rough test of your 'little' red X-former. 2/20/97



Test Results (25 Mc Scope Used)

$V_G \cong 5V$ (pk-pk) ← very good sine waves! (V_G set at min.)

$\cong 3.53\ V$ (RMS)

$i_G \cong \frac{3.53}{2.8 \times 10^3} \cong 1.26\ mA$ (RMS)

$\therefore P_{in} \cong 3.53 \times 1.26 \cong 4.45\ mW$ (RMS)

$V_{out} \cong 3.6\ V$ (pk-pk) ← very good sine wave!

$\cong 2.55\ V$ (RMS)

$i_{out} \cong \frac{2.55}{.68 \times 10^3} \cong 3.74\ mA$ (RMS)

$\therefore P_{out} \cong 2.55 \times 3.74 \cong 9.54\ mW$ (RMS)

$P.G. \cong \frac{9.54}{4.45} \cong \underline{2.14X}$

Remarks: The power gain is but 2.14X, but I am sure that this test is far from optimized. However, it is not in your 'optimum voltage transfer range ~~and~~ but the f_o is a 'resonance' point. Perhaps, if the coils were concentric, the results would have been better?

Mr. Gregory Hodowanec
34 Cleveland Ave.
Newark, NJ 07106-3615

2/28/97
Newark
gh

Bill:

Ran a test on the 1 mH (x3) transformer at a somewhat higher level and 70.5 KHz. The test data is as shown:

$f_0 \cong 70.5\,Kc$, $R_G \cong 3.5\,K\Omega$, $C_1 \cong 1360\,pF$

$V_G \cong 6.3\,V$ (pk-pk).
$\cong 4.45\,V$ (RMS)

$i_G \cong \dfrac{4.45}{3.5 \times 10^3} \cong 1.27\,mA$ (RMS)

$P_{in} \cong \underline{4.45} \times \underline{1.27} \cong \underline{5.66\,mW}$ (RMS)

$V_{out} \cong 5\,V$ (pk-pk) $\qquad R_L \cong 680\,\Omega$
$\cong 3.53\,V$ (RMS)

$i_{out} \cong \dfrac{3.53}{.68 \times 10^3} \cong 5.2\,mA$ (RMS)

$P_{out} \cong \underline{3.53} \times \underline{5.2} \cong 18.4\,mW$ (RMS)

$\therefore$ P.G. $\cong \dfrac{18.4}{5.66} \cong \underline{3.24\,\times}$

When I get a chance, I'll try 10 mW drive. We'll probably see increase in power out with drive until saturation sets in. I don't think I'll see good power gains since the coil coupling is only through the ferrite.

Things here are still not quite settled. Thus only very limited research is being done.

Take care —
Best regards, Bill —
Greg

(1) (540)

Cosmology Note

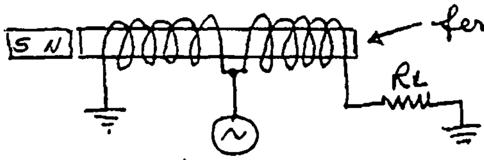
GH Labs (540)
Newark
3/8/97
gh

Dear Colleague: This may be of interest to you.

I. An early Sweet VTA test:

A. It was reported in the March 1995 issue of NEN (p. 8) that a simple Sweet VTA circuit was claimed to have over-unity power gain. Briefly, the circuit was as follows:

Magnets used at times →

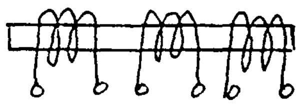


← ferrite rod

Low power Sine S.G.

Reported P.G. ≅ 1.5 X

B. Bill Ramsay sent me a sample 3-coil transformer as follows:

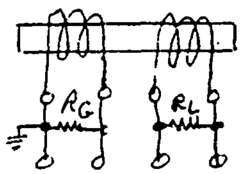


← ferrite rod

coils ≅ 1 mH each (each seperate)

I had previously roughly tested this transformer in the Mini-MRA mode and saw P.G. ≅ 5X or so. To explore the test of A (above) I ran the following test:

Note: Circuit was broadly resonant at about 128 KHz, which is a sub-harmonic of the universal Rhysmonic frequency!



← ferrite (3rd coil not used)

$R_G \cong 2.5K$ $\quad f_0 \cong 128$ KHz
$R_L \cong 680\,\Omega$

Fluke 87 used (P.G. would be valid but powers would read low!)

Test Data:

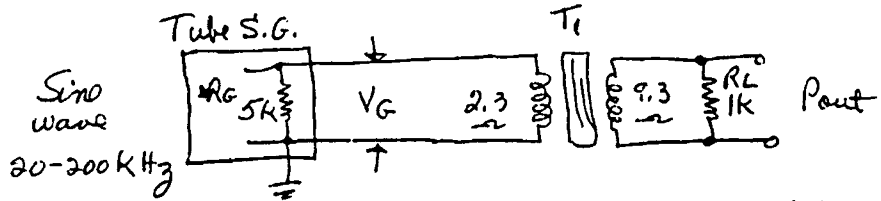
S.G. $\left\{ \begin{array}{l} V_G \cong .98\,V\,(RMS) \\ i_G \cong \dfrac{.98}{2.5\times10^3} \cong .39\,mA\,(RMS) \end{array} \right\} P_{in} \cong .98\times.39 \cong .38\,mW\,(RMS)$

Output $\left\{ \begin{array}{l} V_{out} \cong .98\,V\,(RMS) \\ i_{out} \cong \dfrac{.98}{.68\times10^3} \cong 1.44\,mA\,(RMS) \end{array} \right\} P_{out} \cong .98\times1.44 \cong 1.41\,mW\,(RMS)$

Therefore, $P.G. \cong \dfrac{1.44}{.38} \cong \underline{3.7\,X}$ $\qquad$ Waveforms: Sinusoidal

C. Retest of original Rod Mini-Transformer

In view of the above results, it was decided to retest the 5:1 mini transformer as shown below:



This test was first performed on 4/2/95, with the output rectified to dc power using a simple diode-filter to a 15K load. The initial circuit developed about 4 mW of dc power at about 190 KHz, with apparently high power gains. Since I did not have a calibrated Scope at that time, I was not able to determine the true input power. The data was sent to McClain and Wootan for verification but there was no response.

The test as shown above was repeated on 3/8/97, using the 25 MHz scope. The data is given here ($f_0 \cong 185.5$ KHz):

$$\left.\begin{aligned} V_G &\cong .8V(pk\text{-}pk) \cong .56V(RMS) \\ i_G &\cong \frac{.56}{5\times10^3} \cong .11\ mA\ (RMS) \end{aligned}\right\} P_{in} \cong \underline{.06}\ mW\ (RMS)$$

$$\left.\begin{aligned} V_{out} &\cong 2.8V\ (pk\text{-}pk) \cong 1.98V\ (RMS) \\ i_{out} &\cong \frac{1.98}{10^3} \cong 1.98\ mA(RMS) \end{aligned}\right\} P_{out} \cong \underline{3.9}\ mW\ (RMS)$$

$$\text{Therefore, } P.G. \cong \frac{3.9}{.06} \cong \underline{65X}\ !$$

Waveforms: Good sinusoidals

II. Conclusions

1. The NEN reported VTA tests was probably valid and is supported by the two tests made here (as above).

2. The tests also support the Rhysmonic contention that some purely reactive elements can interact 'directly' with the ever-present fundamental Rhysmonic frequency of about 1.855 $\times 10^{43}$ Hz and 'amplify' to a point where that 'reactive' power can be dumped into a resistive load. Under the reactive conditions, there is no power dissipation, so that heating losses are very minimal (remember Moray's test?). It is the writer's view that the Universe is the sole source of energy (what we use now is the many conversions possible) and that at last we are seeing how to 'extract' this energy more directly. These simple tests will show the way!!

Bill: FYI

(542)

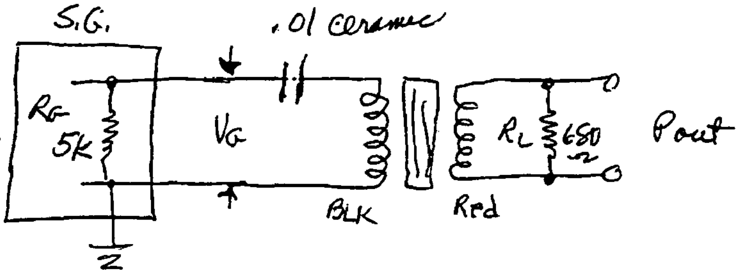
(542)
GH Labs
Newark
3/11/97

Cosmology Note

I. Initial Test of Ramsay Tri-coil Xformer

A. Ckt.

$f_0 \cong 26$ Kc (subharmonic "Rhyparnic" Frequency)



$f_0 \cong$ 26 Kc

$C_1 = .01 \mu F$ ceramic

$R_G \cong 5K$

$R_L \cong 680 \Omega$

B. Data

$V_G \cong 4.4V$ (pk-pk)

$\cong 3.1\,V$ (rms)

$i_G \cong \frac{3.1}{5\times10^3} \cong .62$ mA (rms)

} $P_{in} \cong$ 1.9 mW (rms)

$V_{out} \cong 5V$ (pk-pk)

$\cong 3.5V$ (rms)

$i_{out} \cong \frac{3.5}{.68\times10^3} \cong 5.2$ mA (rms

} $P_{out} \cong 18.2$ mW (rms)

$\therefore$ P.G. $\cong \frac{18.2}{1.9} \cong 9.6\times$

C. Conclusions

1. This initial (not really optimized) tests shows:
   a. typical P.G. seen
   b. resonance at subharmonic (RHf)
   c. Broad resonance curve centered at 26 Kc
   d. .1 watt drive could give 1.0 watts (?) if core does not saturate.
   e. The low f_0 makes use of DVM possible.

543 543

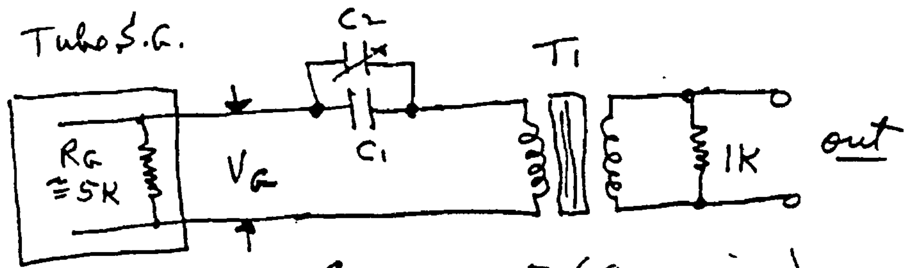
Cosmology Note

Gh labs
3/15/97
80

I. Original Mini Test (with variable Compression mica cap)

A. Circuit

$f_0 \cong$ 85.35 Kc



T_1: 5 mH (5:1)

$C_1 = 220$ pF (Ag-mica)
$C_2 \cong$ 10 plate small compression mica (T51917-2) ?

B. Tests (high Q with compression mica!)

25 MHz Scope used

$V_G \cong 5.3$V (pk-pk)
$\cong 3.74$V (RMS)
$i_G \cong \frac{3.74}{5\times10^3} \cong .75$ mA (RMS)

$P_{in} \cong 2.8$ mW (RMS)

$V_{out} \cong 8$V (pk-pk)
$\cong 5.65$V (RMS)
$i_{out} \cong 5.65$ mA (RMS)

$P_{out} \cong 32$ mW (RMS)

$P.G. \cong \frac{32}{2.8} \cong 11.4$X

Waveforms: good sinusoidals

II. Remarks

1. Compression mica input capacitor results in better power and Q.
2. P.G. is typical for T_1
3. multi-layer mica cap is also effective in "extracting" aether energy

(544) (544)

Cosmology Note

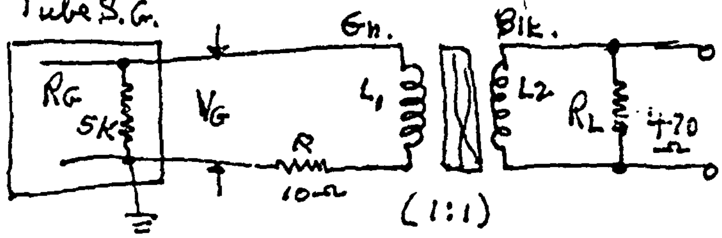
G-H Labs
Newark
3/22/97
(gh)

I. Test of Special 3-coil Transformer

This coil was fabricated by Bill Ramsay, a knowledgeable researcher and a highly adept experimenter. The three coils were wound on top of each other of #30 AWG enamel wire. The coils had an inductance of about 5 mH (1Kc) and a resistance of 5.5 ohms.* The coils were roughly evaluated in the reactive mode as given below:

A. Test #1 $f_0 \cong 53.8$ KHz

$f_0 \cong$ 53.8 Kc



25 MHz Scope used (good sinusoidals)

$V_G \cong 5V$ (pk-pk) $\cong 3.53V$ (RMS)
$i_G \cong \dfrac{3.53}{5 \times 10^3} \cong .71$ mA (RMS) (i_{line})
} $P_{in} \cong 2.5$ mW (RMS)

$V_{out} \cong 5V$ (pk-pk) $\cong 3.53V$ (RMS)
$i_{out} \cong \dfrac{3.53}{.47 \times 10^3} \cong 7.51$ mA (RMS)
} $P_{out} \cong 26.5$ mW (RMS)

R = 10Ω: $V_R \cong 105$ mV $\cong 74.2$ mV (RMS)
$i_R = i_{circ.} \cong \dfrac{74.2}{10} \cong 7.42$ mA (RMS)

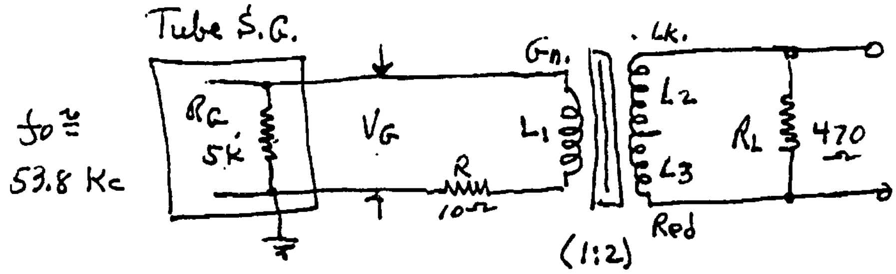
$P.G. = \dfrac{P_{out}}{P_{in}} \cong \dfrac{26.5}{2.5} \cong 10.6\times$
also $P.G. = \dfrac{i_{circ.}}{i_{line}} \cong \dfrac{7.42}{.71} \cong 10.5\times$
} note

Reactive Pwr $L_1 \cong V_G \times i_{circ} \cong 3.53 \times 7.42 \cong 26.2$ mW (Same as Pout!)

* the ferrite core was approx. 5/16" Diam × 1 3/4" length

 545

B. Test #2 $f_o \cong 53.8$ KHz



This test is similar to #1 except that two coils (adding) were used in the output.

Test Data:

$V_G \cong 1.6\,V(pk\text{-}pk) \cong 1.13\,V(RMS)$

$i_G \cong \frac{1.13}{5\times10^3} \cong .23\,mA(RMS)$ (i line)

} $P_{in} \cong .26\,mW\,(RMS)$

$V_{out} \cong 3\,V\,(pk\text{-}pk) \cong 2.12\,V(RMS)$

$i_{out} \cong \frac{2.12}{.47\times10^3} \cong 4.5\,mA\,(RMS)$

} $P_{out} \cong 9.54\,mW(RMS)$

$R = 10\Omega$: $V_R \cong 125\,mV(pk\text{-}pk) \cong 88.4\,mV\,(RMS)$

$i_R = i_{circ.} \cong \frac{88.4}{10} \cong 8.84\,mA\,(RMS)$

$P.G. = \frac{P_{out}}{P_{in}} \cong \frac{9.54}{.26} \cong 36.7\times$

also $P.G. \cong \frac{i_{circ}}{i_{line}} \cong \frac{8.84}{.23} \cong 38.4\times$

} note

Reactive Pwr $L_1 \cong V_G \times i_{circ.} \cong 1.13\times 8.84 \cong 10\,mW\,(RMS)$

(same as Pout!)

II. Conclusions:

These results appear to be quite similar to Sweet's early VTA tests?

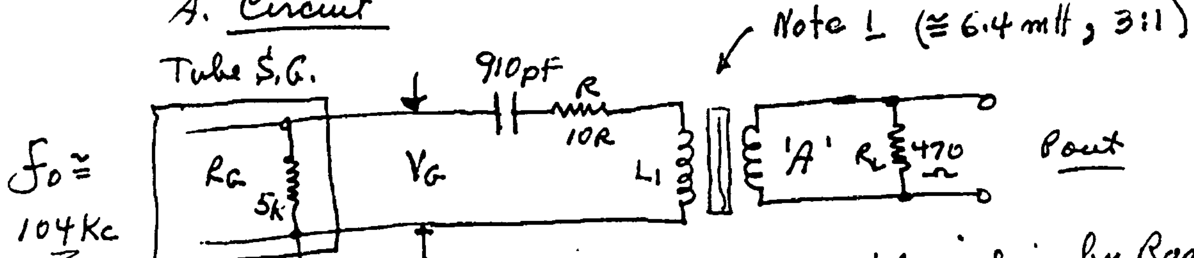
(546)

Cosmology Note

Gl labs
Newark
3/29/97
(546)

I. Initial Test of Ramsay Fly-back Coil

A. Circuit



$L_1 \cong$ Special winding by Ramsay

$V_R \cong 85$ mW (pk) $\cong$ 60mV (RMS)

B. Tests

$V_G \cong 9$ V (pk-pk)
$\cong 6.4$V (RMS)
$i_G \cong \frac{6.4}{5\times10^3} \cong 1.3$ mA (RMS) (line)
} $P_{in} \cong$ 8.1 mW (RMS)

$V_{out} \cong 6.0$ V (pk-pk)
$\cong 4.2$V (RMS)
$i_{out} \cong \frac{4.2}{.47\times10^3} \cong 8.9$ mA (RMS)
} $P_{out} \cong$ 37.5 mW (RMS)

$i_{line} = i_G \cong 1.3$ mA (above)

$i_{circ.} \cong \frac{V_R}{100} \cong \frac{60}{10} = 6.0$ mA (RMS)

∴ Reactive Pwr $L_1 \cong V_G \times i_{circ.}$
$\cong 6.4 \times 6 \cong$ 38.4 mW (same order Pout)

$P.G. \cong \frac{P_{out}}{P_{in}} \cong \frac{37.5}{8.1} \cong 4.6\times$

also $P.G. \cong \frac{i_{circ.}}{i_{line}} \cong \frac{6}{1.3} \cong 4.6\times$

} — note!

Note 1: The core in this transformer is a 'fly-back' type with L_1 on one leg and 'A' an original winding on the other leg. The closed 'loop' is broken by a small air-gap in the ferrite — (in center of each leg.)

II. Conclusion

It appears that in the 'closed' core, the interaction may be taking place in the 'air gaps' ???

(547)

Cosmology Note

Th. labs (547)
Newark
4/2/97

Dear Colleague: This may be of interest to you.

I. More on the Mini-MRA

With conventional transformer theory a source impedance is 'matched' to a desired load impedance through the turns ratio of transformer windings. Thus, while there could be an optimum turns ratio for the Mini-MRA transformer it will not be to transform maximum power from source to load! This would only result in 50% power efficiency as the power must be evenly divided between the source and load.

The Mini-MRA operates on an entirely different principle. The source (generator) must supply only an 'exciting' voltage (at minimum power levels) to resonate the inductor in its reactive mode. The input power will be determined by the generator line current needed to develop the required voltage across the generator resistance, (as connected to the reactive elements). Thus conventional transformer theory will not be involved here. The optimum transformer turns ratio will be best determined by experiment at this stage of the game. This is because, while there still will be some 'reflected' resistive impedances involved here, the interaction of the coil reactances with the 'aether' will complicate the analysis. Some other factors will also be involved, such as the frequency of operation as well as the nature and size (geometry) of the reactive core material. Much more work needed here!

II. Conclusions

New design approaches are required with the Mini-MRA. To try to design Mini-MRA's on the basis of conventional theory (transformer) will only negate the esoteric interaction with the aether and thus result in the conventional 50% transformer efficiencies; ie., no power gains!

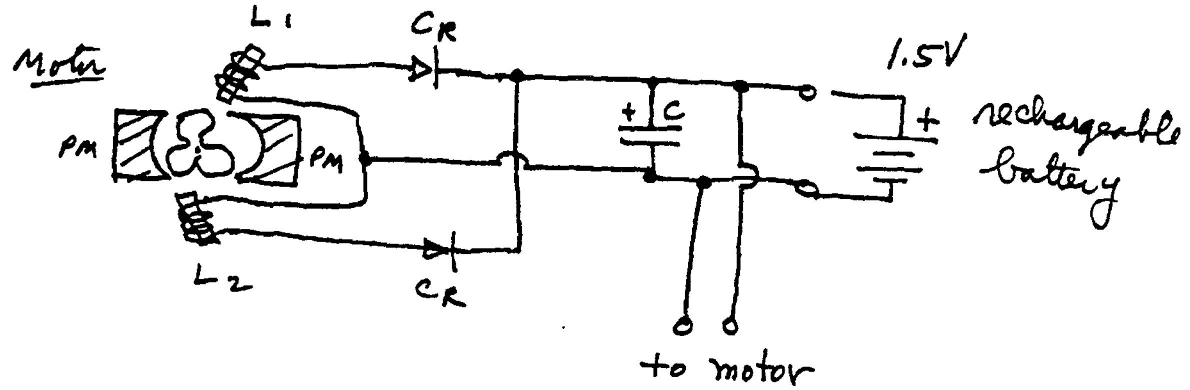
Cosmology Note

GH Labs
Newark
5/4/94
GW

I Motor-Generator Test

Redrawn 5/1/94, couldn't find original!

A. Schematic:



B. Remarks:

① Pick-up coils are placed very close rotor-pole piece gap: adjust for maximum peaks as seen on oscilloscope. Do same for each coil.

② Use Shottky diodes for CR (lower voltage drop) or even Germanium (Silicon has .7 volt drop).

③ Motor should be 1-1.5 volt type with exposed pole piece-rotor gaps. (I used a shaver motor)

④ Capacitor, C, has to be able to take peak pulses with low losses. (I used a good electrolytic about 500-1000 uF, I think)

note: Pick-up coils were telephone pick-up units (removed from case).

C. Operation Principles (?)

① There is a leakage flux in the region of the pick-up coils. This flux will then return to the coil, along with g-field flux (scalar) so that the return flux is enhanced. Two coils give multiple pulses (you may have to switch connections to optimize. Very touchy - but efficient when set!

549

Mr. Gregory Hodowanec
34 Cleveland Ave.
Newark, NJ 07106-3615

549

Newark
May 8, 1997

Dear Bill,

Just a few lines to say Hello again. I have completed a very rough Note on some Operating Procedures for demo Ckt. 'A' (enclosed). Initially, I was going to give Hal Fox first 'crack' at looking at this unit, but he is so busy --- so I will send it to you first for your evaluation and comments. It is not the best, but it does use Radio Shack parts!

I lost another brother about 2 weeks ago. This impressed on me that our time on Earth is limited --- thus I will try to complete the 'Aether Energy' article and then somewhat organize my works here and have my daughter ensure that it is not just discarded (if I am no longer around).

I got a feeling that Hal Fox may (?) have published (or will publish) that introductory part on Ckt. 'A', but I won't be sure until I see it in NEN. I have some other brief Notes in mind also of possible interest to NEN.

With the warm weather returning (I hope) I will have to get back to some more home ~~repairs~~ repairs long overdue, as well as some re-decorating. Thus my time will be even more limited.

I don't see anymore HARP signals (?) on the coil test in recent weeks. If it was HARP, did the powers that be on that program get a guilty-conscience perhaps, with all that terrible and 'strange' weather in recent months? Here, I see a definite connection between high and low barametric pressures and high and low g-fields! I also see that the morning and evening coil fluctuation levels (not HAARP signals) have increased recently, possibly due to some cosmic effects?

There is much to be learned here, but so little time for it! Best regards, my friend -- Take care,

Greg

Enclosures

P.S.- Just received your package with the two coils. Will look at it when I have some time.

(550)

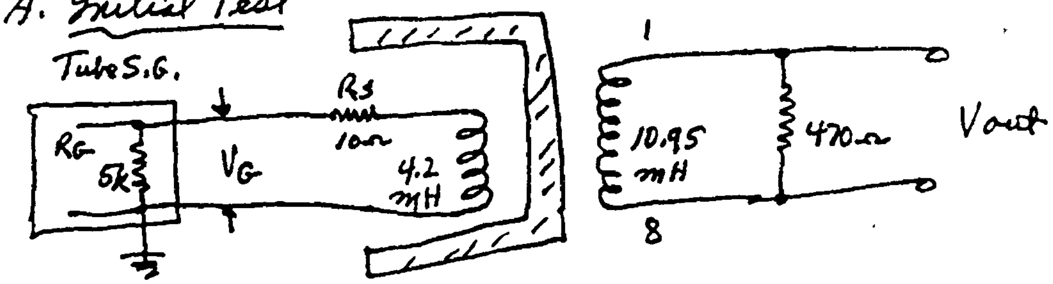
Cosmology Note

Newcombe (550)
5/14/97
(JLN)

I. Ramsay Special Flyback Core Coil

A. Initial Test

$f_0 \cong$ 42.7 Kc



B. Data

Input: $V_G \cong 3.2V$ (pk-pk)
$\cong 2.26V$ (RMS)

$i_G \cong \frac{2.26}{5 \times 10^3} \cong .45 mA$ (RMS)

$P_{in} \cong 2.26 \times .45$
$\cong 1 mW$ (RMS)

Output: $V_{out} \cong 3.2V$ (pk-pk)
$\cong 2.26V$ (RMS)

$i_{out} \cong \frac{2.26}{.47 \times 10^3} \cong 4.8 mA$ (RMS)

$P_{out} \cong 2.26 \times 4.8$
$\cong 10.85 mW$ (RMS)

$V_{Rs} \cong 120 mV$ (pk-pk)
$\cong 84.8 mV$ (RMS)

$i_{Rs} \cong i_{circ.} \cong \frac{84.8}{10} \cong 8.48 mA$

$P.G. \cong \frac{P_{out}}{P_{in}} \cong \frac{10.85}{1} \cong 10.85\times$

$P.G. \cong \frac{i_{circ}}{i_G} \cong \frac{8.48}{.45} \cong 18.8\times$

Note!!

II. Conclusions:

1. Measured Pout is $\cong$ 10.9 mW, but i circulating says it should be about 19 mW!! There appears to be a loss mechanism here? Could it be that almost half of the available power is short-circuited by the yoke structure? Or shunted away? ???

551

Cosmology Note

GH Labs
Newark
5/25/97
(GH)

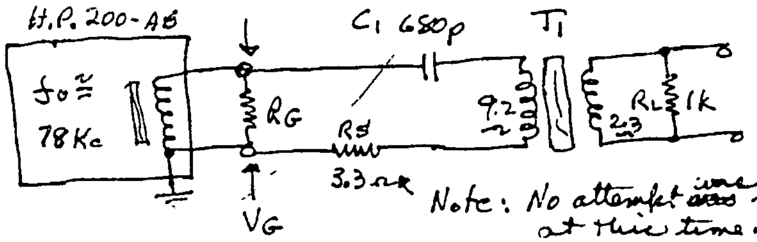
551

Dear Colleague: This may be of interest to you.

I. Continued Tests of original Mini-MRA using the HP Model 200-AB Audio Oscillator as a Source.

A. This oscillator is a tube type unit which is rather insensitive to local scalar-type fields and thus will not interact with the MRA device. It was modified by Bill Ramsay to cover the range of 20 to 200 KHz. For these particular tests the 600Ω (normal) output was used. This test was made to ascertain the effects of different loads on the oscillator (now the source resistance, R_G, for the Mini) since it was always believed that the Mini required only voltage to 'excite' the Mini at some resonant frequency. These tests were made rather quickly -- thus there may be some variations in the measurements.

B. The basic test setup used:



T_1 : 5mH (5:1)
C_1 : Ag-mica
25 MHz Scope Used

Note: No attempt was made to monitor i_{circ} at this time.

C. Some Test Results: All at $f_0 \cong 78$ KHz

Test #1 ($R_G \cong 50K$)

$V_G \cong 4V\,(pk\text{-}pk) \cong 2.8V(RMS)$
$i_G \cong \frac{2.8}{50\times10^3} \cong .056\ mA\,(RMS)$
} $P_{in} \cong .16\ mW\ (RMS)$

$V_{out} \cong 5.2V(pk\text{-}pk) \cong 3.7V(RMS)$
$i_{out} \cong 3.7mA(RMS)$
} $P_{out} \cong 13.7\ mW\ (RMS)$

$P.G. \cong \frac{13.7}{.16} \cong 86X$

This test was made to check out the system and then to verify that P.G. should improve with each increase in R_G (i.e., the generator load resistance). It is to be understood that these are only preliminary tests. More careful testing to follow.

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Test #2 ($R_G \cong 50K$)

$V_G \cong 10V$ (pk-pk) $\cong 7V$ (RMS)
$i_G \cong \frac{7}{50 \times 10^3} \cong .14\,mA$ (RMS)
} Pin $\cong$ .98 mW (RMS)

$V_{out} \cong 12.8V$ (pk-pk) $\cong 9V$ (RMS)
$i_{out} \cong 9\,mA$ (RMS)
} Pout $\cong$ 81 mW (RMS)

$P.G. \cong \frac{81}{.98} \cong 83X$

This test shows that the Mini-MRA core is saturated.

Test #3 ($R_G \cong 100K$)

$V_G \cong 8V$ (pk-pk) $\cong 5.6V$ (RMS)
$i_G \cong \frac{5.6}{100 \times 10^3} \cong .056\,mA$ (RMS)
} Pin $\cong$ .31 mW (RMS)

$V_{out} \cong 10V$ (pk-pk) $\cong 7V$ (RMS)
$i_{out} \cong 7\,mA$ (RMS)
} Pout $\cong$ 49 mW (RMS)

$P.G. \cong \frac{49}{.31} \cong 158X$

This test shows that the mini core is not saturated at this drive voltage level.

Test #4 ($R_G \cong 500K$)

$V_G \cong 8V$ (pk-pk) $\cong 5.6V$ (RMS)
$i_G \cong \frac{5.6}{500 \times 10^3} \cong .01\,mA$ (RMS)
} Pin $\cong$ .056 mW (RMS)

$V_{out} \cong 10.8V$ (pk-pk) $\cong 7.6V$ (RMS)
$i_{out} \cong 7.6\,mA$ (RMS)
} Pout $\cong$ 58 mW (RMS)

$P.G. \cong \frac{58}{.056} \cong 1036X$

This test shows that while Pout does not change very much, there is a sharp increase in P.G. with an increase in R_G. The input waveform shows some distortion due to the light loading of the generator.

Test #5 ($R_G \cong 1M$)

$V_G \cong 8V(pk\text{-}pk) \cong 5.6V(RMS)$

$i_G \cong \frac{5.6}{1000 \times 10^3} \cong .0056\,mA(RMS)$ } $P_{in} \cong .03\,mW(RMS)$

$V_{out} \cong 10.4V(pk\text{-}pk) \cong 7.4V(RMS)$

$i_{out} \cong 7.4\,mA(RMS)$ } $P_{out} \cong 55\,mW(RMS)$

$P.G. \cong \frac{55}{.03} \cong 1833\times$

This test also shows a sharp increase in P.G. with a minor change in Pout.

Test #6 ($R_G \cong 17M$)

$V_G \cong 8V(pk\text{-}pk) \cong 5.6V(RMS)$

$i_G \cong \frac{5.6}{17000 \times 10^3} \cong .0003\,mA(RMS)$ } $P_{in} \cong .0018\,mW(RMS)$

$V_{out} \cong 10V(pk\text{-}pk) \cong 7V(RMS)$

$i_{out} \cong 7\,mA(RMS)$ } $P_{out} \cong 49\,mW(RMS)$

$P.G. \cong \frac{49}{.0018} \cong 27{,}222\times$

This test also shows that even microwatts of input voltage drive is able to 'excite' the Mini to almost full output power. Waveforms: Input some distortion; Output good.

II. Conclusions

1. It is confirmed that the original Mini-MRA transformer core is saturated at 50-60 mW output level.

2. It is confirmed that the Mini-MRA needs only a voltage source (at minimal power) to ~~'exite'~~ 'excite' the circuit to its optimum power gain and output level.

3. It is speculated that this is the mode of operation for all MRA-type devices, including Sweet's VTA, the Swiss M-L, and many other coil-ferrite systems which may be interacting directly with the aether!

III. Added Test # 7 ($R_G \cong 1M$)

This test was a more careful repeat of Test # 5 but with the R_S sampled to measure $i_{circ.}$

$$V_G \cong 8V\ pk\text{-}pk \cong 5.6V\ (RMS)$$
$$i_G \cong \frac{5.6}{1000 \times 10^3} \cong .0056\ mA\ (RMS)$$
$\}$ Pin $\cong .031$ mW (RMS)

$$V_{out} \cong 10V\ (pk\text{-}pk) \cong 7V\ (RMS)$$
$$i_{out} \cong 7mA\ (RMS)$$
$\}$ Pout $\cong 49$ mW (RMS)

$$R_S \cong 3.3\ \Omega$$
$$V_R \cong 41\ mV\ (pk\text{-}pk) \cong 29\ mV\ (RMS)$$
$$i_{circ.} \cong \frac{29}{3.3} \cong 8.8\ mA\ (RMS)$$

$$P.G. \cong \frac{49}{.031} \cong 1580 \times$$
$$P.G. \cong \frac{8.8}{.0056} \cong 1571 \times$$
$\}$ Note!

This test confirms that P.G. is also related to the ratio $\frac{i_{circ.}}{i_G}$!, (even for the H.P. Generator).

IV. Overall Conclusions:

① Continued tests appear to support the Rhysmonic Theory of MRA (and allied) over-unity system behaviours

②. Tube type generators are effective in these tests since they are relatively insensitive to scalar field effects. Solid state generators are strongly affected by local scalar fields (distorted)

③. Since only voltage is required by the input source to start and sustain the MRA type devices, perhaps a low-level tube oscillator could provide the necessary voltage for a high-level MRA-type unit and thus lead to a trouble-free 'stand alone' unit?

① (555) Cosmology Note 5/31/97 (gh) (555)

I. More tests with H-P Audio Oscillator Model 200-AB

Tests were made using the normal 600Ω output (transformer) and also the resistive output at the amplitude control. The tests were made at 77.91 KHz (a Rhysmonic subharmonic), $R_G \cong 25K$, and $R_S \cong 3.3\Omega$. The original Mini-MRA was used with 1KΩ R_L.

A. Test with H-P 600Ω output

$V_G \cong 3.5V(pk\text{-}pk) \cong 2.47V(RMS)$
$i_G \cong \frac{2.47}{25\times10^3} \cong .1\,mA(RMS)$ } $P_{in} \cong .247\,mW\,(RMS)$

$V_{out} \cong 4.6V(pk\text{-}pk) \cong 3.25V(RMS)$
$i_{out} \cong 3.25\,mA(RMS)$ } $P_{out} \cong 10.6\,mW\,(RMS)$

$V_{R_S} \cong 20mV(pk\text{-}pk) \cong 14.1\,mV(RMS)$
$i_{circ.} \cong \frac{14.1}{3.3} \cong 4.3\,mA(RMS)$

Note 25 MHz Scope used!

$P.G. \cong \frac{10.6}{.247} \cong 42.9\times$
$P.G. \cong \frac{4.3}{.1} \cong 43\times$ } note!

B. Test with H-P amplitude control output (on full)

$V_G \cong 3.5V(pk\text{-}pk) \cong 2.47V(RMS)$
$i_G \cong \frac{2.47}{25\times10^3} \cong .1\,mA(RMS)$ } $P_{in} \cong .247\,mW(RMS)$

$V_{out} \cong 4.6V(pk\text{-}pk) \cong 3.25V(RMS)$
$i_{out} \cong 3.25\,mA(RMS)$ } $P_{out} \cong 10.6\,mW(RMS)$

$V_{R_S} \cong 20mV(pk\text{-}pk) \cong 14.1\,mV(RMS)$
$i_{circ.} \cong \frac{14.1}{3.3} \cong 4.3\,mA(RMS)$

25 MHz Scope used!

$P.G. \cong \frac{10.6}{.247} \cong 42.9\times$
$P.G. \cong \frac{4.3}{.1} \cong 43\times$ } note!

II. Conclusions

1. Note that test results were essentially identical whether the 600Ω output or the resistive output was used! This means that the Mini is utilizing only the voltage 'drop' across R_G! The input waveform in the resistive test had a slight 'dip' on one peak; all other waveforms were good sinusoidals!

Cosmology Note

G H Labs
Newark
6/11/97

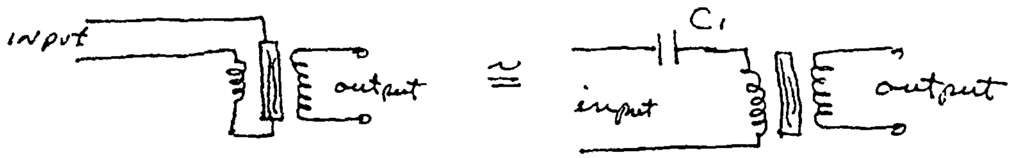
Dear Colleague: This may be of interest to you.

I. Another Simple MRA-type Device?

Bill Ramsay brought to my attention that some ferrites will also act as capacitors. I had accidently also noticed this in measuring some tuning screws for resistance using the Fluke 87 meter. I accidently 'toggled' the meter to the capacitance mode and noticed a reading! Checking my literature on ferrites and ceramic capacitors, I learned that this 'effect' was known a long time ago. I suspect that Coler and Moray may have used it to advantage? Bill is running some interesting evaluations at present.

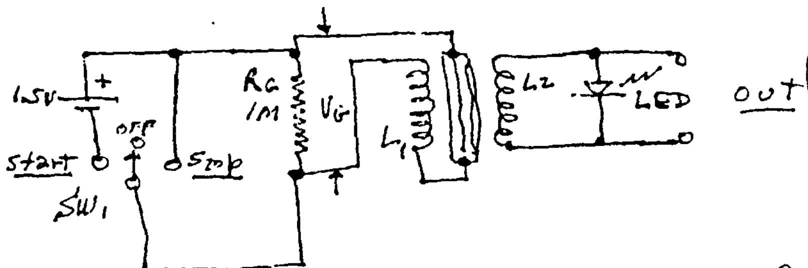
II. Another Simple MRA-type Device?

Perhaps, with a wise choice of cores and coils, it may be possible to use such cores in a very simple MRA mode? To wit:



where C_1 is provided by the core.

III. Possible Test Ckt.



Note: This has not been tried yet!

1. SW_1 in start position will charge C_1 (tuning screw).
2. Opening SW_1 (OFF) will discharge C_1 into L_1 and possibly start an oscillation if C_1 and L_1 oscillate at a rhysmmic sub-harmonic. Interaction of the reactive elements with the aether may build up the oscillation to a level which could be transformed by L_2 to a resistive load, LED?
3. To cease the oscillation, placing SW_1 in the stop position would short-circuit the input (no more V_G).

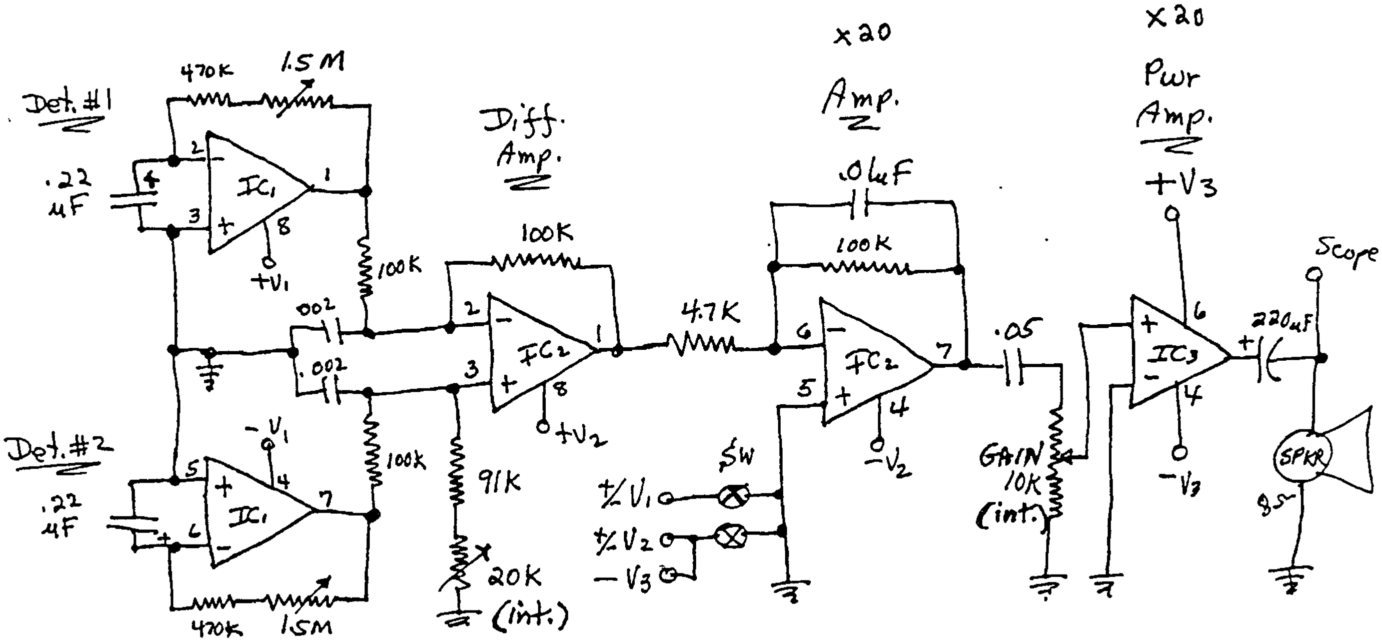
OTHER MATERIAL, MOSTLY THE AUTHOR'S "COSMOLOGY NOTES," ARRANGED MORE OR LESS IN SEQUENCE BY DATES

Cosmology

GH Labs
Newark
6/27/85
gh
557

I. GW Detector #18 (Made 6/5/85)

A. (Dual unit for co-incidence tests)

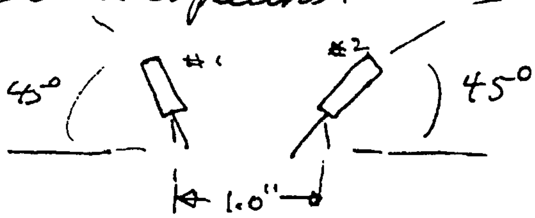


B. Remarks:

(1) Original co-incidence Test.

(2) Demonstrates 1/f response characteristics.

(3) Detector capacitors:



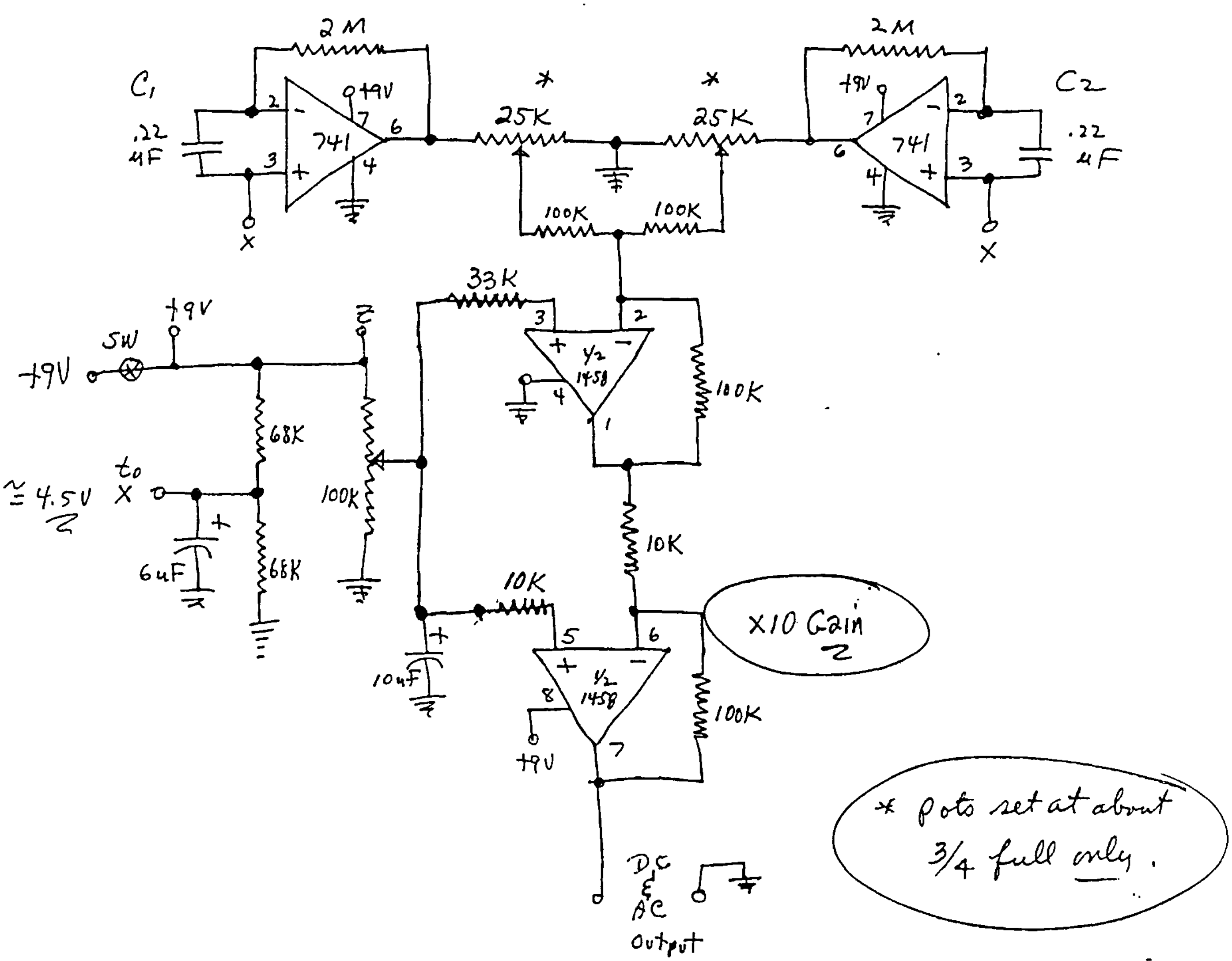
(4) Due to ③ above, balance is incomplete.

(5) More signal 'leakage' than Ckt. #20.

558 Cosmology GH Labs Newark 5/2/86 GH 558

I. Twin 'Summing' Amplifier (Ckt. # 90)

A. Circuit (Single 9 Volt Supply!)



B. Remarks

(1) Detector elements, C, and C2, are in-line and thus respond essentially to same 'bursts'. Summation is therefore good and resolution is good.

(2) Detector elements 'lock' in to same resonant frequency and display same 'bursts'.

(3) 741 operates @ +/- 4.5 volts only.

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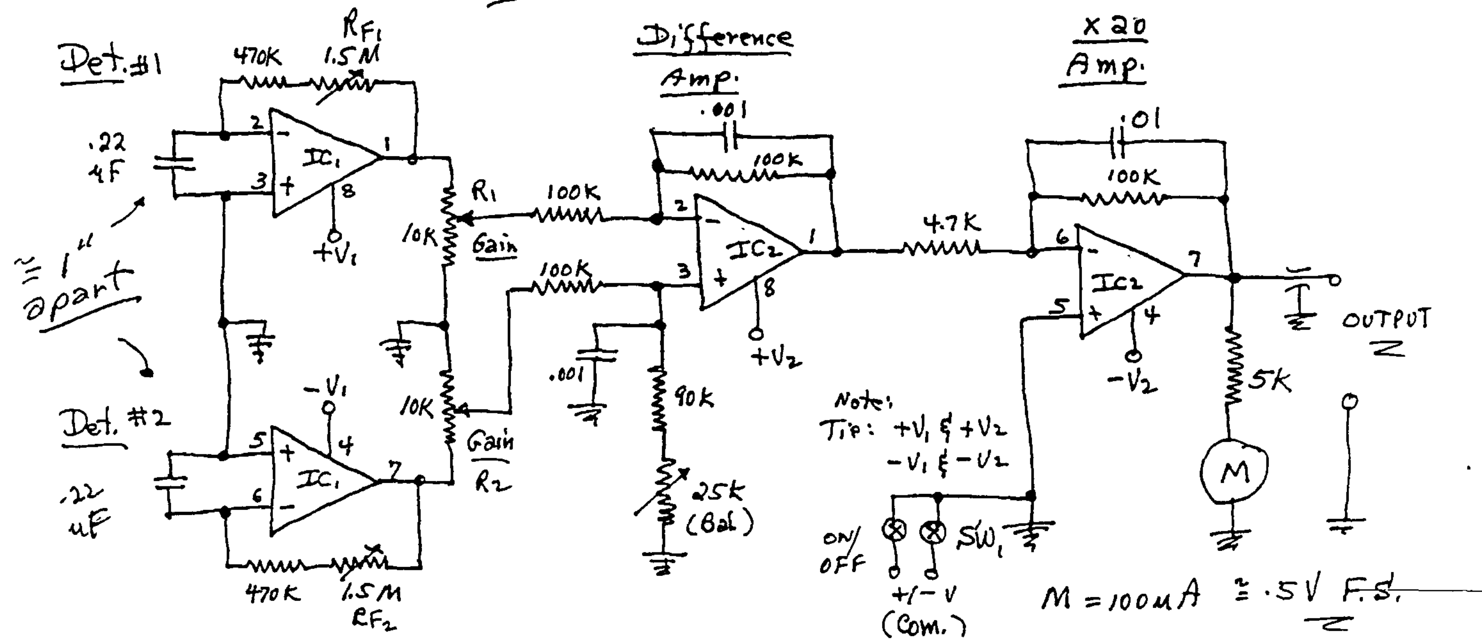
Cosmology

GH Labs
Newark 559
6/27/86
gh

I. GW Detector #20 (made 6/15/85)

A. Circuit: Dual Detector with difference amplifier for coincidence tests.
(1458 IC's)

Dual 9 Volt supply!!



B. Remarks:

(1) Set Balance control in difference amplifier for minimum off-set.

(2) Set feedback resistances RF_1 & RF_2 for equal resonant or 'ring' frequencies.

(3) Adjust gain controls R_1 & R_2 for equal output levels at each detector.

(4) When (1), (2), and (3) above are satisfied, the audio and dc level outputs from unit will be minimal. DC will be zero volts, but: ac output will show some slight leakage outputs of 'rings'.

C. Conclusions:

(1) Units demonstrate independence of each circuit with respect to 'ring' frequency and detector output levels.
(2) Units tend to 'lock' in 'ring' frequency when near the same value.
(3) Units verify coincidence of signals in closely spaced detector units.

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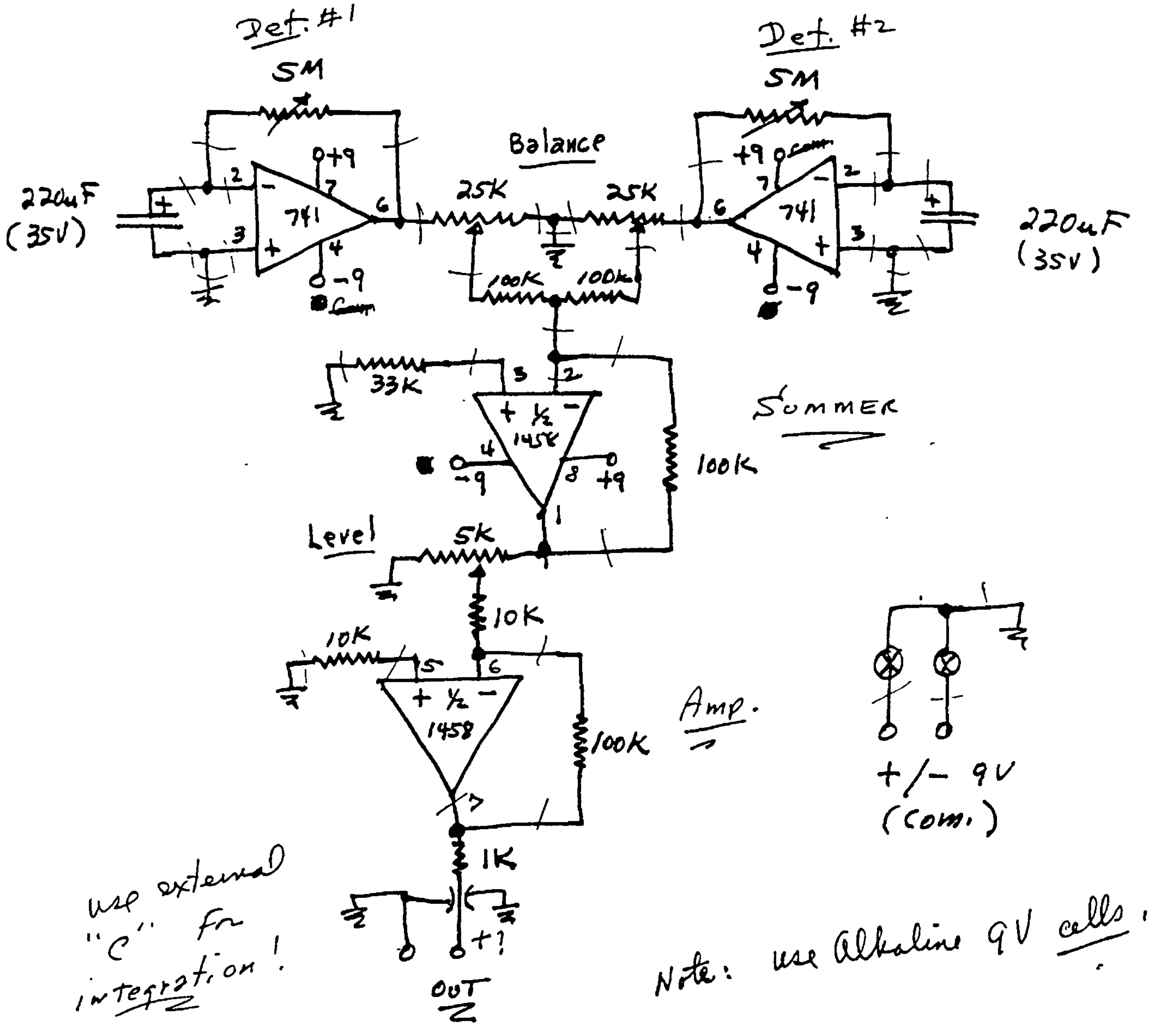
Cosmology

GH Labs
Newark
4/17/87
GH

560

I. GW 'Telescope' # 1

A. Follow Ckt. #90 in part.



use external "C" for integration!

Note: use Alkaline 9V cells.

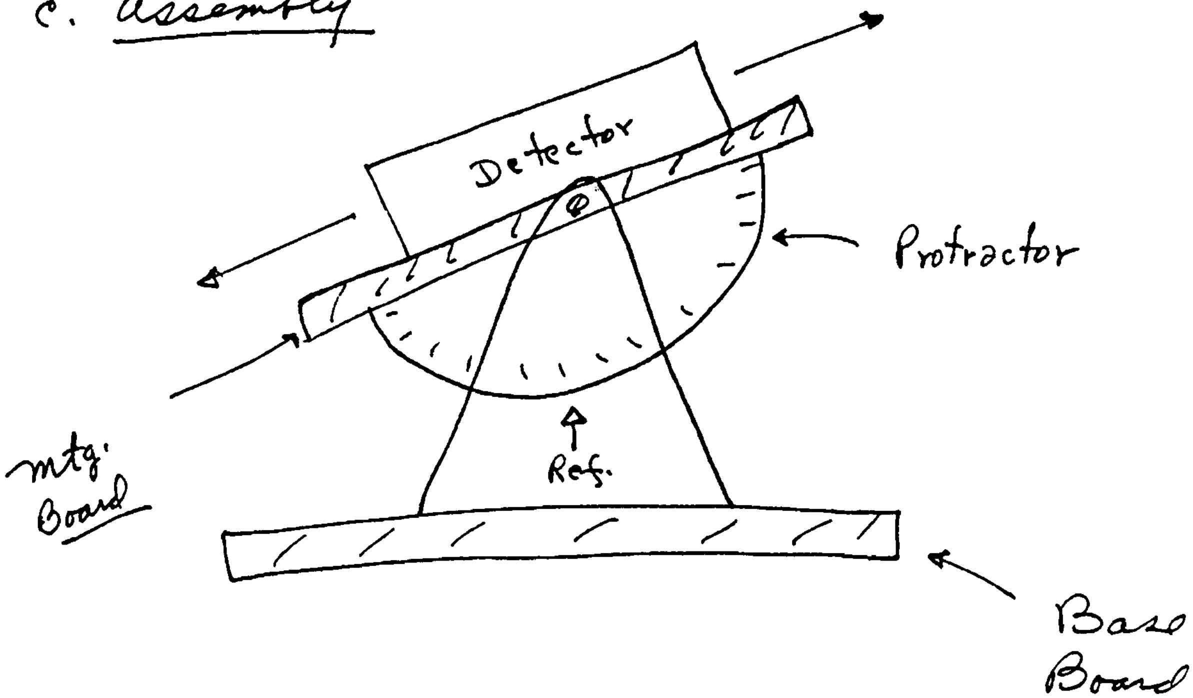
B. Make in approx:
2" x 2" x 5" Al Box.

(made in 2"x3"x5" R.S. al. box.)

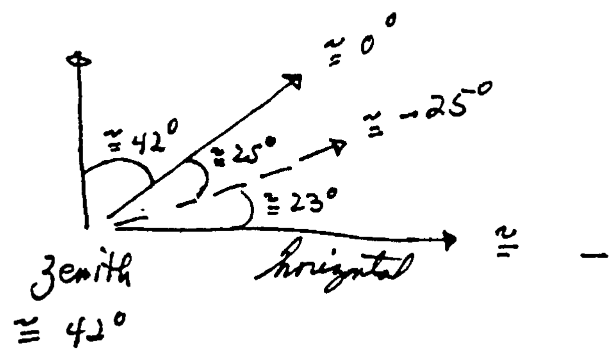
561

2

C. Assembly



D. Orientation



(1) To orient towards the 19:30 RA (−25°) object, set Detector alignment

a. 67° from vertical
b. 23° from horizontal

(2) Set axis on N-S line

③ 562

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E. Check-out

① Balance each detector with R_F for equal 'rings'.

② Balance each detector for equal outputs (use scope).

③ Use level control to set output.

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GH Labs
4/1/88 563
98

Rhysmonic Structure

The rhysmoid is formed of many individual rhysmons which are interlocked as a matrix-type structure in a three-dimensional configuration. It is difficult to visualize this active structure except in an 'instant' of time, where the rhysmon's 'position' can be considered to be momentarily 'frozen' in time. Consider a single rhysmon in a planar 'orbit' as depicted in Figure (1). This rhysmon is depicted in six momemtary positions, separated in time at each position by the Planck Time, T^* , of about 5.4×10^{-44} seconds. At each of these 'instants' in time, the rhysmonic vector may be considered as a 'force' directed tangentially to the radius of the orbit path at that particular instantaneous position. It should be remembered that when the entire rhysmonic matrix structure is considered, each of the instantaneous rhysmon positions shown in Figure (1) would actually be occupied by a different separate individual rhysmon of the matrix structure. Therefore, the instantaneous forces as depicted there would construct the typical hexagonal force structure normally depicted in this rhysmonic cosmology. When the other rhysmons in an extended volume are also considered, the forces present in each of the unit cell structures will 'intermesh' with the other cell structures and thus will build-up to make the rhysmoid, ie., the vacuum substratum, or aether, of this universe.

Rhysmonic Forces

As depicted in Figure (1), the dynamic energy vectors of each individual rhysmon will be directed in all possible directions in the plane of their orbits as a function of each instantaneous time period, but each individual rhysmon will return to its original vector direction after a time period of $6T^*$. Moreover, in the case of the three-dimensional configuration of a basic matrix cell structure, as shown in Figure (4) in the Monograph for a particular instant of time, the dynamic energy vectors will be directed over every conceivable possible direction in space during the course of the instantaneous positions of each individual rhysmon in that same time period of $6T^*$ • These impulse forces in space will thus be a function of and related to Planck's Constant, h .

For an extended planar rhysmonic structure, or an extended three-dimensional rhysmonic structure, the rhysmonic energy vectors will also 'interlock' to form universe-wide similarly directed (when not disturbed) energy vectors in the universe. These, when aligned, will be those instantaneous straight-line Euclidian-type vectors in free space which are fundamental to the phenomena of gravity. However, any changes in the energy density for the rhysmonic matrix structure will introduce what will now be recognized as mass (matter) and fields (forces) by man and his instrumentation. However, the undisturbed rhysmoid would be 'unobservable' since it exists as a perfectfully balanced energy system where all vectors are 'cancelled' and thus can present no outward effects.

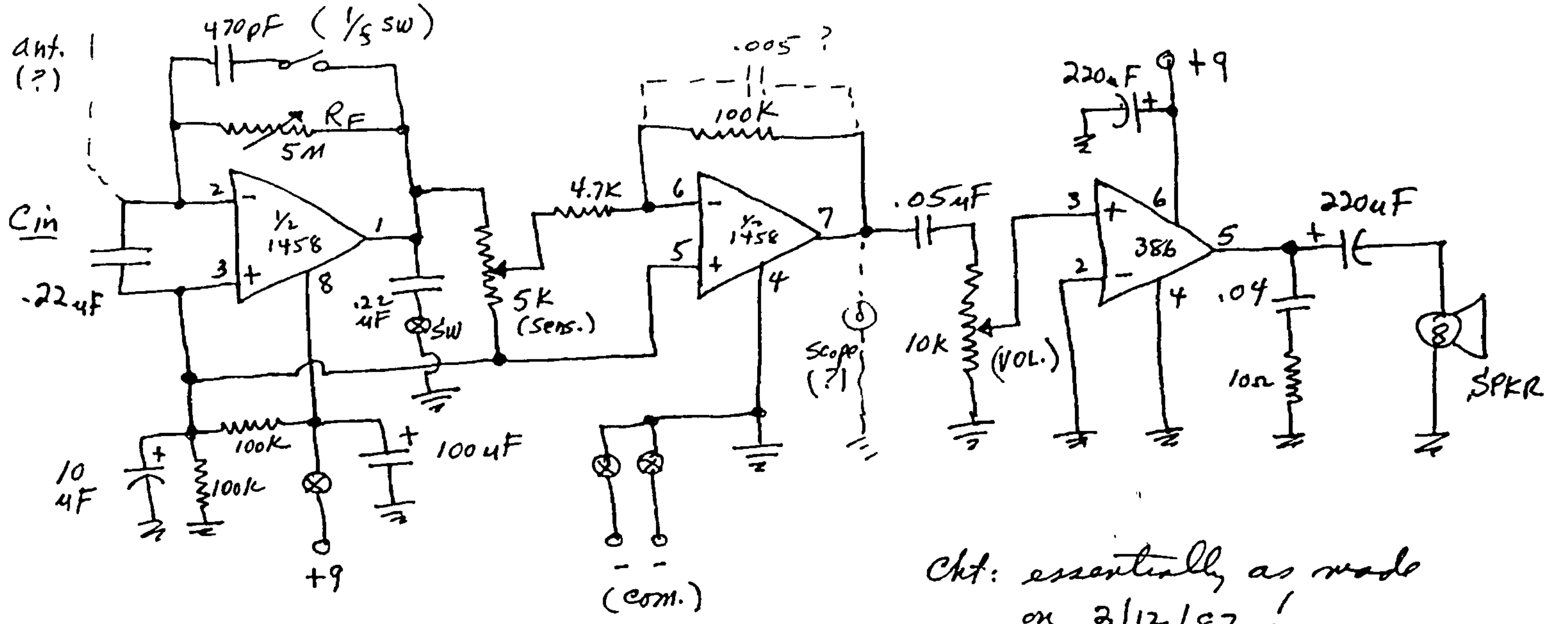
What are Rhysmons?

What rhysmons may be or not be will be even more conjecture than the present theory and thus that aspect will not be extensively considered here. It is difficult enough to describe the rhysmoid (or aether) without introducing more questions right now. Perhaps, the rhysmon may

GW Demo Unit (Ckt. #135)

11/8/89
GHlabs
565

A. Circuit (unshielded 1458 device)



Ckt: essentially as made on 3/12/87!

B. Remarks

1. Ckt. to demonstrate: "Bursts", Oscillation, 1/f noise, and radar.
2. Separate 9V supplies to detector and audio amplifier.
3. 1/f noise 'switch' is internal solder on-off switch.
4. Single supply detector: AC mode with voltage divider to pin 3.

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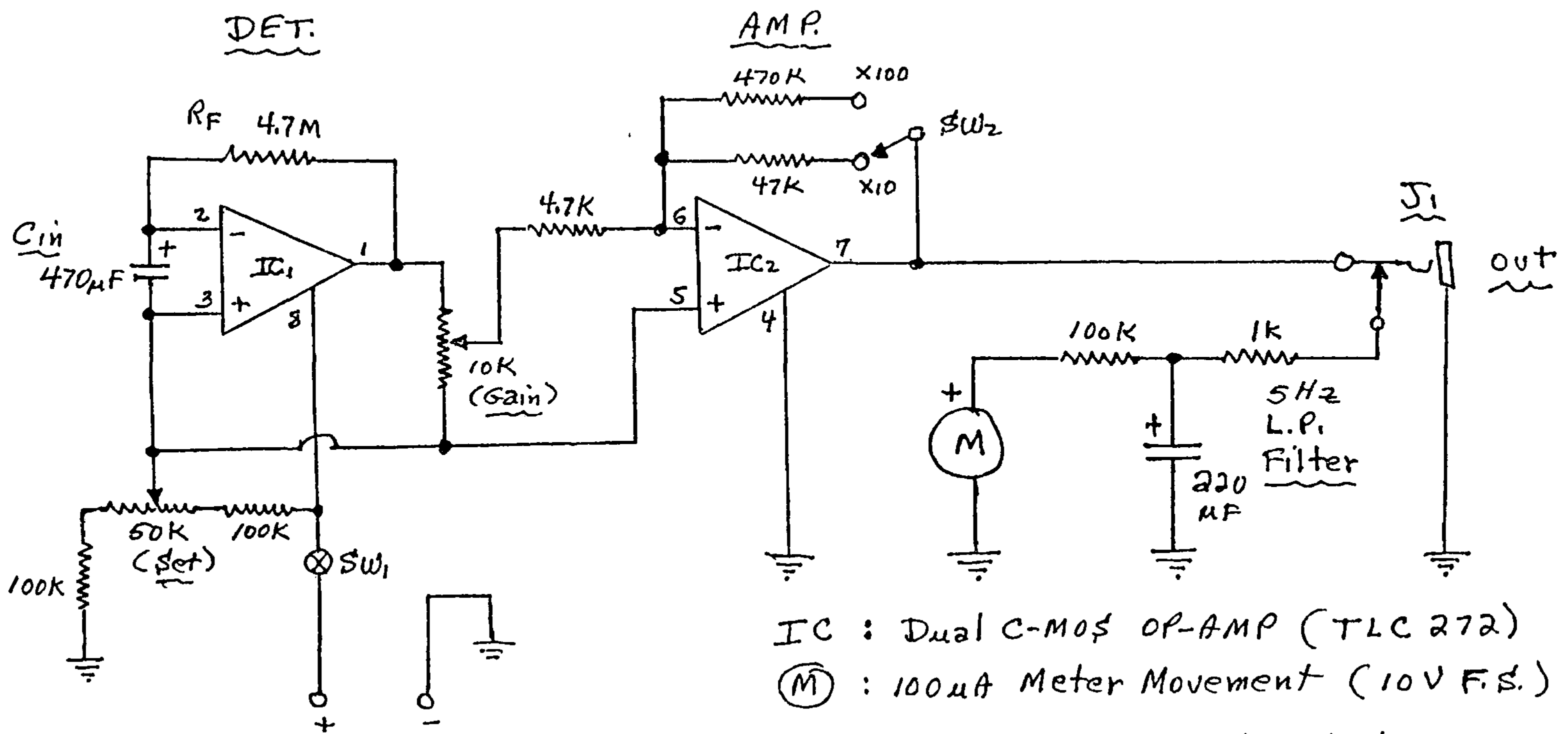
Cosmology Note

GH Labs
Newark, N.J.
11/18/89
gh

GW Circuit #1400
(Revised as #1400A on 1/14/92)



IC : Dual C-MOS OP-AMP (TLC 272)

(M) : 100µA Meter Movement (10V F.S.)

Note: Unit is totally shielded in an aluminum box.

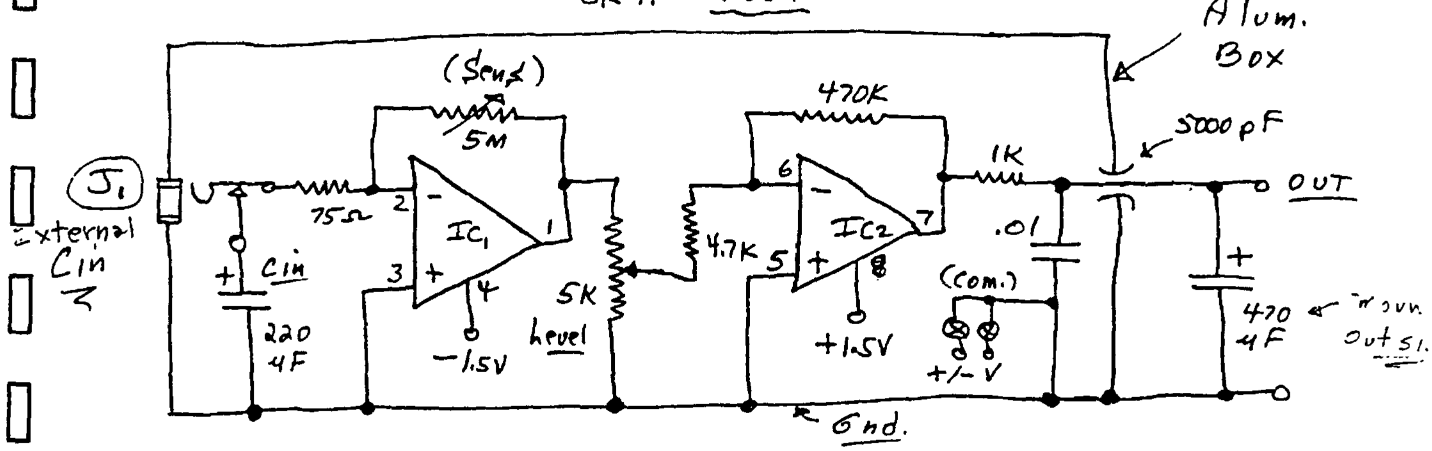
Remarks:

1. Use J₁ output jack for external filters and/or meters.
2. Use x10 amp. gain for gravimeter response of g-field only.
   Use x100 amp. gain for display of 'cosmic' g variations.
3. Use variable gain control to set system sensitivity.
4. Use set control to position response on meter.

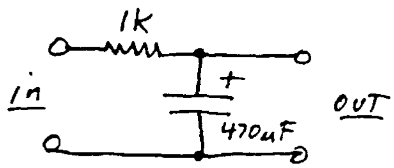
567

GH Love
11/20/91
567

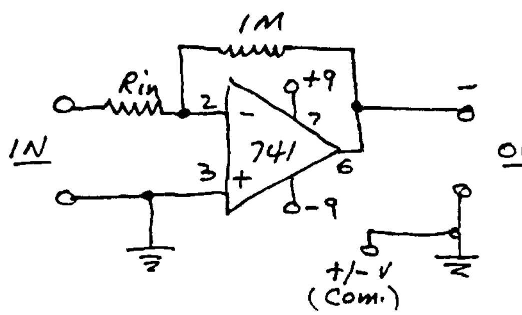
CKT. #130A



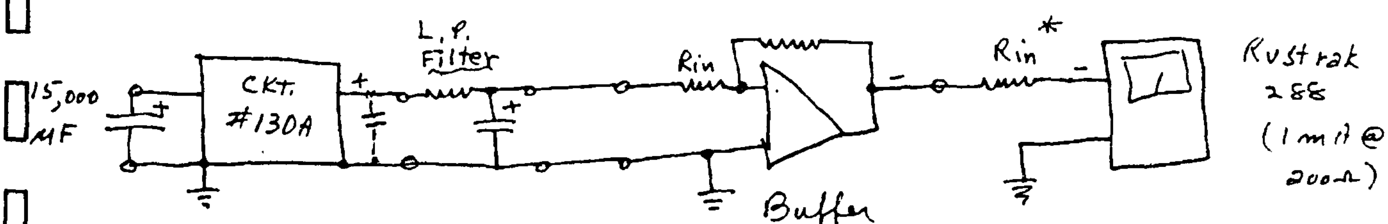
ICL7621 Circuit



1 Hz L.P. Filter
(external)



Buffer Amp.
(external)



Test System

* Rin: to be chosen for best response. (≅ 1 to 2 KΩ)

Notes
1. This is the set-up to be used for preliminary tests.
2. Rin on Buffer was mod 470 K, for gain ≅ 2X plus.
3. L.P. Filter is 2-stage.
4. 15,000 μF Cin on GW detector is external (use jack)
5. Buffer stage (741) needed to drive Rustrak low-Z without instabilities.

568

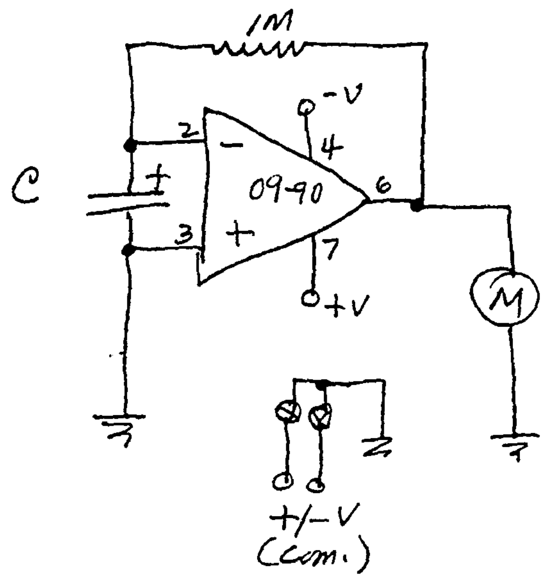
Solar Flare Detector?

568

GH Labs
Newark
11/28/90
GH

I. Based on GW Detector

A. Test Ckt #1 (OP-90 device used)



C : 328,000 uF (7V)

M : 50 uA (2kΩ)

V : 1.5 volts

Note: ① C may retain a charge; discharge it by shorting out the [illegible] temporarily.
② [illegible] meter [illegible] [illegible]

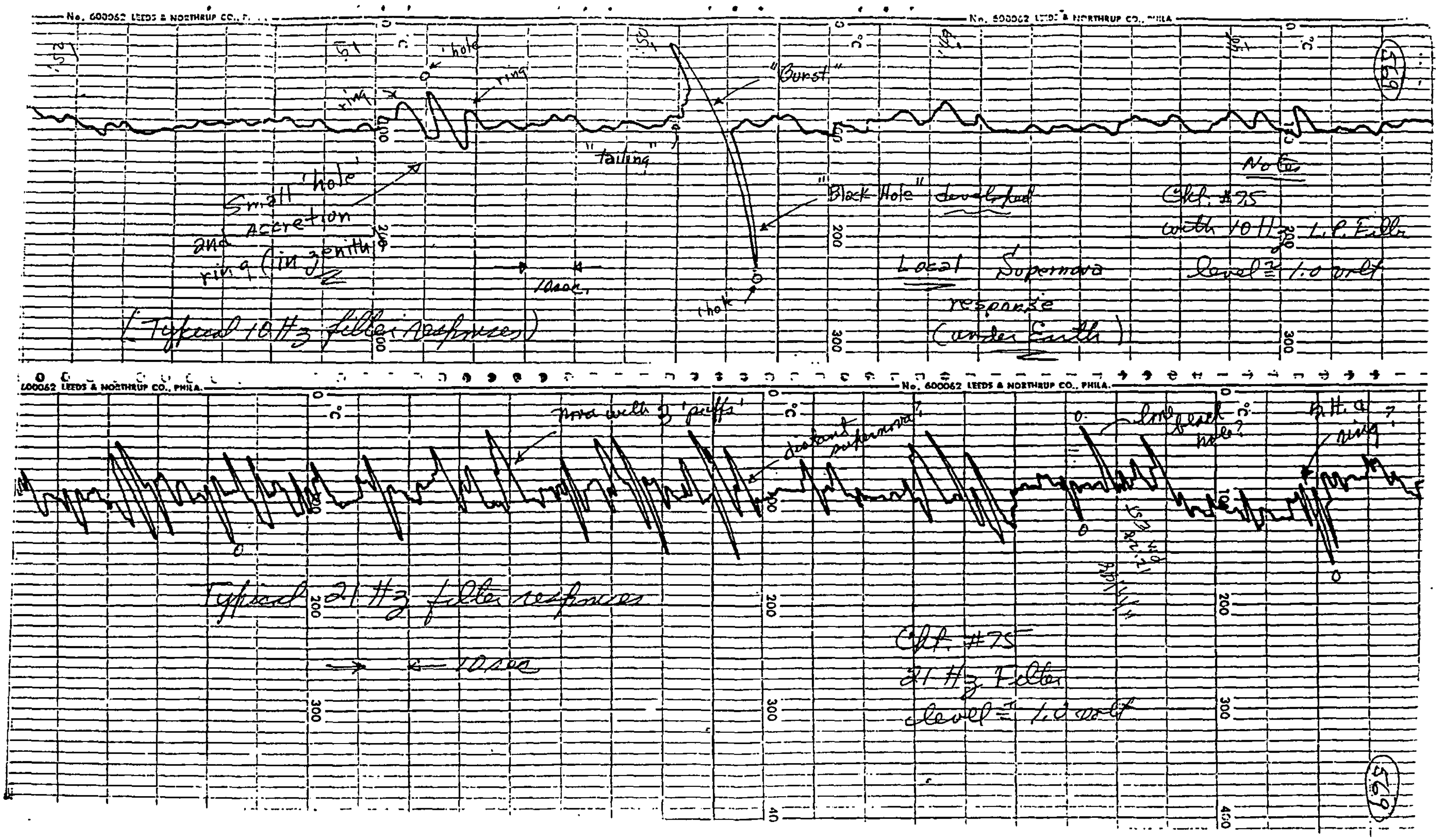
B. Remarks

① Very long time constant of input allows response only to close-in gravity signals -- such as prominences (or flares) on sun???

② Signals are low-level, meter response is approx. 100 mV (using 2k meter resistance only).

③ Prominence response: ??

Flare response: ??


No. 600062 LEEDS & NORTHRUP CO., PHILA.
569
Small 'hole' and accretion ring (in zenith)
'hole'
ring
ring
"tailing"
"Burst"
"Black Hole" developed
10 sec.
(Typical 10 Hz filter responses)
Note
Ckt. #75
with 10 Hz L.P. Filter
level = 1.0 volt
Local Supernova response (under Earth)
nova with 3 'puffs'
distant supernova?
black hole?
ring
Typical 21 Hz filter responses
10 sec
Ckt. #75
21 Hz Filter
level = 1.0 volt
0
100
200
300
400

4) 570

Cosmology Note

G H Labs 570
Newark
12/12/90
GH

VI. Determination of the Value of the Quantum of Charge, e, from Planck (Rhysmonic) Natural Units.

A. The value of e in conventional science (from experiment) is:

$$e \cong 4.083 \times 10^{-10} \left(gm \frac{cm^2}{sec^2} cm \right)^{1/2}.$$

B. e is also determinable from The Planck (Rhysmonic) Natural Units:

$$e \cong \left(\frac{gm\ cm^3}{sec^2} \right)^{1/2}$$

$$\cong \left(\frac{2.177 \times 10^{-5} \times 4.22 \times 10^{-99}}{29.06 \times 10^{-88}} \right)^{1/2}$$

$$\cong \left(\frac{9.187 \times 10^{-16}}{29.06} \right)^{1/2} \cong \left(.3161 \times 10^{-16} \right)^{1/2}$$

$\therefore e^{*} \cong 5.62 \times 10^{-9}$ ← Note: This is 13.8 larger Than classical value!

or $e^{*2} \cong 3.16 \times 10^{-17}$

VII. Classical Value of (Reciprical fine-structure constant)

A. $\frac{1}{\alpha} = \frac{\hbar c}{e^2} \cong 137.06$

B. $\frac{1}{\alpha}$ in Rhysmonics

$$\cong \frac{\hbar c}{e^{*2}} \cong \frac{1.0545 \times 10^{-27} \times 2.997 \times 10^{10}}{3.16 \times 10^{-17}}$$

$$\cong \frac{3.16}{3.16} = \frac{1}{Z}$$

Note: α is unity in Rhysmonics!!

571

Some Notes on the Gravity Detectors
(#75, #175, & #275)

GH Labs 571
Newark
1/3/91

Introduction

GW detectors #75, #175, and #275 (all exactly the same) were built to originally 'observe' possible Tesla-type resonances as noted on some previous detectors at around 1 to 2 Hertz. A report on this was made in an article submitted to the International Tesla Society, but was never used by them. Due to the nature of these resonances, the unit had large by-pass capacitors placed across the +/-9 volt power supplies, and the amplifier section of the unit was made a simple low-pass filter (with the .047 uF capacitor placed across the 470k feedback resistance) having a cut-off frequency of about 8 Hz. The unit was intended to directly drive the author's Esterline Angus Analog Meter strip chart recorder unit. This unit has a 0-1 mA movement (1.4 volts full scale at 1.4k ohms). An external low-pass filter is also normally used with the detector unit.

Operation

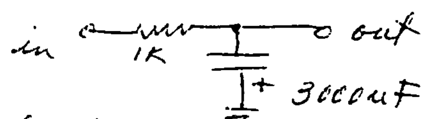
The unit can be checked out with a low resistance voltmeter (1k or 2k ohms per volt) directly at the output of the filter. A high resistance voltmeter (or a potentiometric-type strip chart recorder) should measure the voltage drop across a 1 to 2k ohm load resistance placed across the output for best results.

Remarks

The D'Arsonval meter type recorder units tend to 'smooth out' high frequency components due to the inertia of the large meter coil in the movement. Potentiometric-type recorders tend to reproduce much of the high frequency components which get through the filters. The detectors were found to respond to much of the various astronomical gravitational signals without noticeable distortion (using the D'Arsonval recorder) and thus the units were used as is for much of the 'shadow' and active astronomical observations. However, the experimenter might wish to increase the cut-off frequency of the amplifier low-pass filter from 8 Hz to about 30 Hz, by changing the .047 uF capacitor there to .01 uF. The unit has high gains and is capable of fairly large signal excursions (up to +/-.5 volts) in the range of output voltages of 1 to 2 volts or more.

Notes

Bill: For the eclipse test, possibly a LP filter like -



would be okay? Note, the output of the GW unit is from the negative supply!

P.S. - Yes, I have used 1F caps which were available from Radio Shack in a number of experiments, mainly in LP filters. They seemed to work okay.

572

Cosmology Note

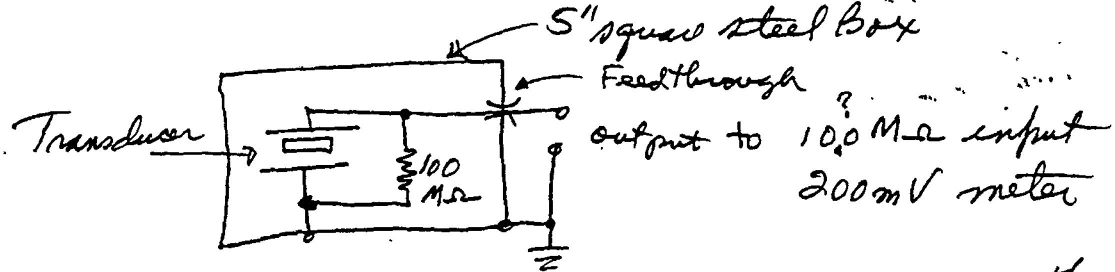
2/9/91

572

GD

Dear Bill:

Here is something you may want to try?
An ordinary piezo transducer (Barium Titanate?)
responds quite well to GW impulses also. I tested
a unit (same as that enclosed) as follows:



I had to place a 100 MΩ load across the unit
inside the box since the output would over-range
the 200mV scale on the meter (at 10.0 MΩ input impedance).
The typical current was:

$$I = \frac{E}{R} \cong \frac{25 \times 10^{-3}}{50 \times 10^{6}} \cong .5 \times 10^{-9} A \text{ or } \underline{.5 \text{ nanoAmp}}.$$

The output varied with the GW impulses and
even went negative at times. The unit also
responded to local mass movements. The unit
should make a gravimeter with use of a LP filter.

Hope all is well with you and yours. Did
you ever hear from Tom Ziko (perhaps he
had gone to the Navy before he got my letter?).
Take care and good experementing!

Sincerely,

Greg

P.S. - The transducer is highly microphonic,
keep it on a sponge to reduce it. Use fine lead...

573

Cosmology Note

GH Labs 573
Newark, NJ
8/10/91

Dear Colleague: This may be of interest to you.

Stability in GW Detector Units:

It häd come to the attention of the writer that many would-be researchers in GW detection techniques may have been discouraged by the tendency of some circuits to develop instabilities or oscillations at the high gain levels. This was particularly true when recently made IC devices were used. These instabilities are believed to be due to scalar-type signal feedback from the output circuitry to the input capacitor detection device. Such feedback could be circumvented to some extent by the use of a small capacitance, say less than 500 pF, across the detector section feedback resistance---but such 'degeneration' also results in significant loss of conversion gain. However, a simple 'fix' was reported to me recently by Bill Ramsay, a newcomer, but very active researcher in these techniques. Bill has found out that a small resistance in the order of 47 ohms, in series with the input detector capacitance, appears to stabilize many IC devices! The writer has evaluated this and verified it to be very effective in 'squelching' the unwanted feedback! To make the fix more versatile (for many devices) the writer made the resistor variable, by using a subminiature trimpot of 1k ohms as shown in Figure 1. This was desireable, since some preliminary tests indicated that anywhere from 27 ohms to over 500 ohms may be needed for certain IC devices for an adequate measure of stability.

Use of a small resistance for the input detection device is also effective as a GW detection unit as was shown in Figure 6 of the R-E Electronic Experimenter Handbook article of January 1989. However, signals generated by a capacitive and a resistive detection unit are 180° out-of-phase in the output. Thus, any scalar-type signal developed in the output will also be 180° out-of-phase with the strong GW signal developed by the main input capacitance and thus the system will tend to 'degenerate' rather than 'regenerate' at the high output levels and thus not go into instabilities or oscillations. There would not be any loss of conversion gain in this process.

Preliminary test by Bill Ramsay seem to indicate that the units can be driven to higher sensitivity and gain levels without noticeable (?) distortions present. A few tests by the writer appear to confirm this. Perhaps some of you more active researchers may want to try to confirm this also? The GW detectors may now be even more versatile and useful now with this simple rèvision--thanks to Bill Ramsay.

Take care, and good experimenting. I remain,

With best regards,

Greg

Enclosure

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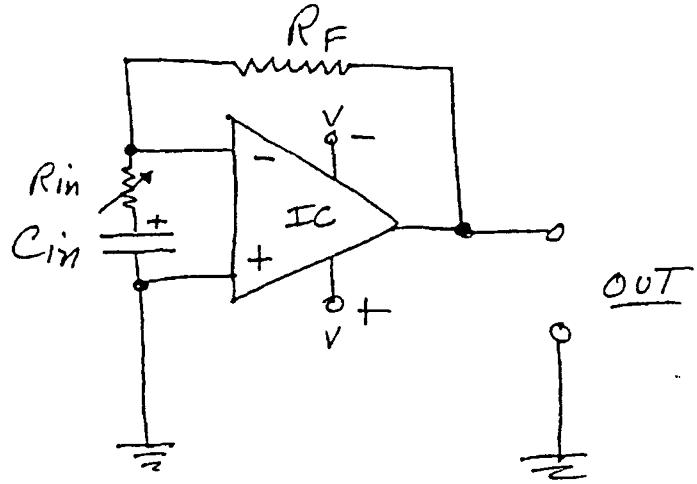
Figure 1



Detector Section

R_F : Typically 1-2 MΩ

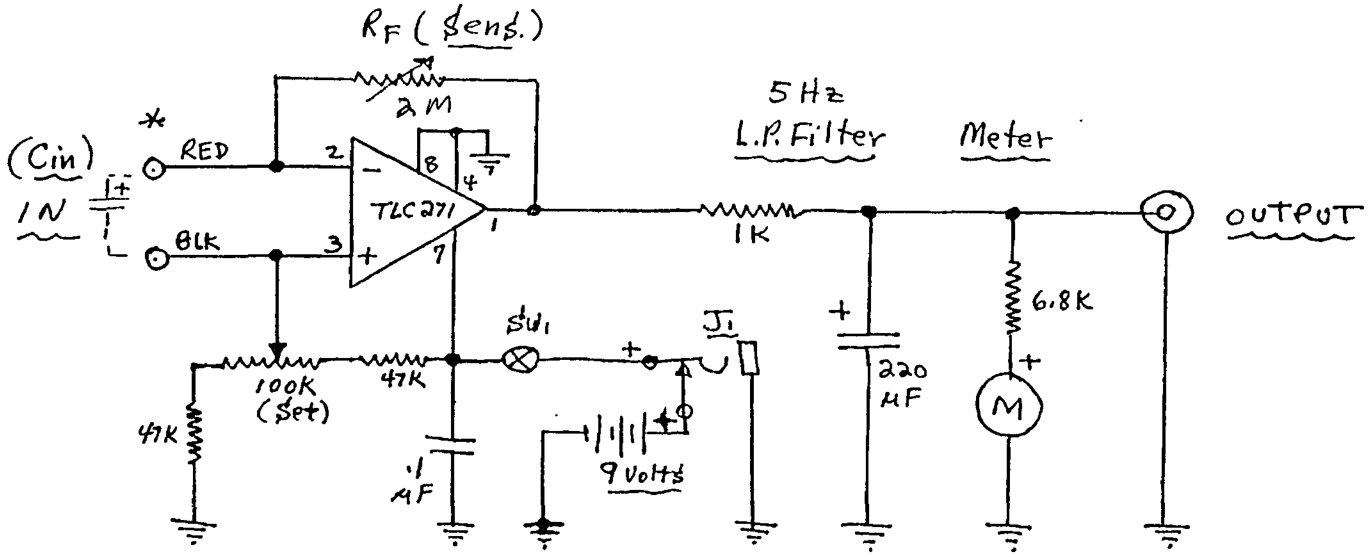
Cin : Typically 2000 uF

Rin : 1K Ω subminiature trimpot

Gravimeter Ckt. #6000A

GH Labs
Newark
12/12/91
gh

575



Remarks:

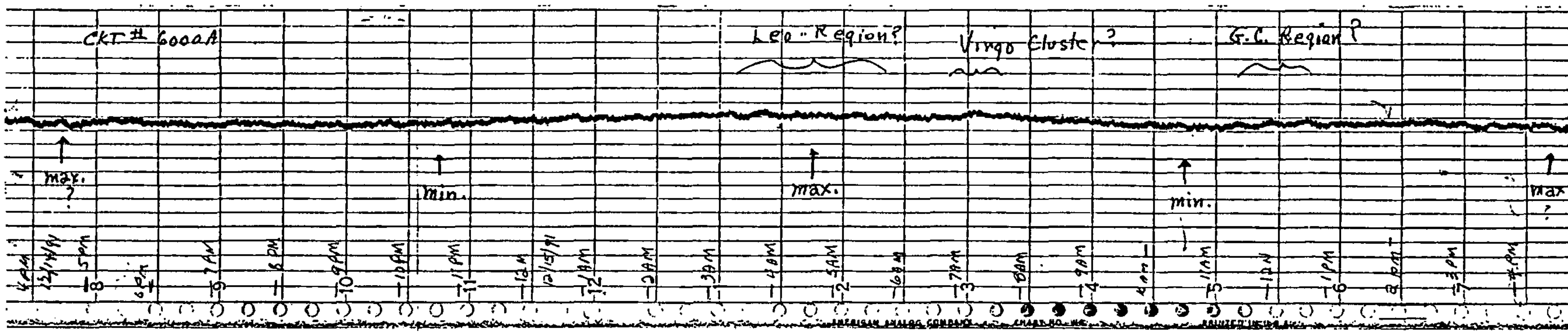
1. Circuit is made in an aluminum box but the detector capacitance is external (binding posts).
2. Jack, J_1, is for external 9 V adapter plug supply.
3. 3.2 V on meter scale ≅ 32 ft/sec² (value of nominal g). Increase in g reads up-scale. (Tracks with postal scale).

* Some IC devices may develop an instability (slow oscillation). A small resistance, order of 27 to 150 Ω, will stabalize such devices when placed in one leg of the capacitance. A 1K variable subminiature pot will enable the experimenter to adjust this resistance for the min [illegible] value for stability.

575

Newark, N.J. | **Cosmology Note** | GH Labs 12/17/91 (gh)

576



Note: Above responses were confirmed with Hooke's Scale gravimeters!

I. Circuit # 6000A

a. TLC 271 used with +9V supply.

b. AC operation achieved with non-inverting input connected to 200k pot connected across +9V supply (off-set control).

c. Input jack provided for use with external 12V dc supply.

d. Cin (detector) ≅ 2200 uF (10V).

e. Internal LP Filter ≅ 5Hz.

f. R_F ≅ 2.5M

g. The output of CKT. # 6000A is thus highly filtered and will not show much fine structure, but a highly averaged value for the Earth's g-field.

h. 3-diode off-set used also.

II. Rustrak 288

a. 1mA at 100Ω made into 0-1 V meter with 1K ohm series resistor.

b. Chart range ≅ 0 to 1000 mV.

c. CKT. # 6000A adjusted with R_F and off-set controls to read 650 mV on Rustrak chart. This was roughly equivalent to 32 ft/sec² for the value of the g-field!

d. The test run shown above was made with an external AC line-powered dc supply of 12V to avoid any response 'droop' due to a weakening Battery supply.

III. Remarks

a. The test run showed the highest value of averaged g-field around the hours of 4-5 and minimum values of g-field around the hours of 10-11.

b. The response is similar to the cosine (sine) function seen in tests in the past.

c. Using an average value of 625 mV and excursions of +/- 25 mV, the resulting variation is about +/- 4%!!

d. The g-field maximums still appear to be related to the Leo Regions?

576

(577)

Cosmology Note

GH Labs (577)
Newark
2/18/92
(gh)

I. Comparison of Variations of g-field on three different Gravimeters: (Checked at ≅ 8:30 PM EST)

A. Postal Scale:
(With 2 oz. weight on 8 oz. scale)

Reference : 53.0
Checked : 53.7 } .7 increase

$$53 \overline{)\,.700}\;=.013 \qquad \cong +1.3\%$$

B. Electronic Gravimeter #6000A
(AC adapter powered)

Reference : 32
Checked : 31.6 } .4 increase
(Reads reverse!)

$$32 \overline{)\,.4000}\;=.0125 \qquad \cong +1.25\%$$

C. Electronic Gravimeter #1400A
(Battery powered)

Reference : 40.0
Checked : 40.5 } .5 increase

$$40 \overline{)\,.5000}\;=.0125 \qquad \cong +1.25\%$$

II. Remarks:

① All gravimeters track each other!
Gravimeter #1400A directly tracks Postal Scale.
Gravemeter #6000A inversely tracks Postal Scale.

② Based upon recent checks on Gravimeter #6000A:

max : 31.0
Reference : 32.0
min : 33.0 } 32 +/- 1 ≅ +/- 3% (Typical now!).

III. Conclusions:

This test and many other similar tests in the past confirm the reality of these gravimeters and the variations in the earth's g-field as seen by these units. These are averaged variations; short term variations are as much as 10%! Such variations are bound to have an affect on the earth.

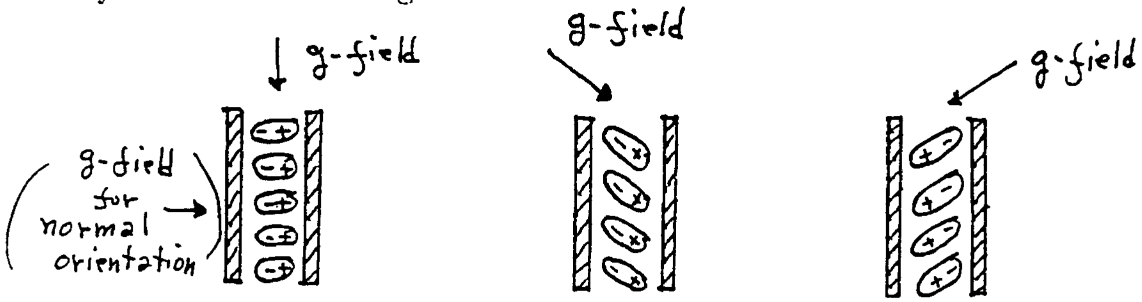
578

Cosmology Note

GH Labs 578
Newark
4/12/92

I. Capacitor Orientation in GW Detectors:

Circuit #555 (see attached) was originally intended to be used in a vertical position---thus the input detection capacitors were mounted with the long axis in the direction of the panel face, so that they would be in a horizontal position in actual use. However, for the initial system evaluations, the unit was operated in the horizontal position---thus the capacitors now aligned with the long axis in the zenith-nadir direction. This orientation was therefore 90° away from that normally used in the previous evaluations of 2-D type tests using the Rustrak chart recorder technique. With a 1000 uF input capacitor and a 5 Hz LP filter, it was noticed that the #555 detector was unusually responsive to dense structures---such as the Leo holes, the Bootes holes, and the Galaxy Center, to name but a few. The same response was seen with the 470 uF input capacitor and at both the 1 Hz and 5 Hz LP filter levels. A possible explanation for this response may be the following:



The vertical orientation of the capacitor may be more sensitive to 'torque' modulations of the polarization in the capacitor over a longer length of the capacitor, compared to the normal horizontal orientation. It was also noticed in past gravity communications tests that best response was seen when scalar flux was directed largely along the long axis of the capacitor rather than normal to it. Since some of these tests included scalar magnetic flux, it was attributed at that time that possibly some crossed-field effects were being noted. However, there is more work and evaluation needed here!

II. Conclusions:

It is important that different capacitors (and other dielectrics) be evaluated in different orientations in careful tests. Even 'fast' scans may have different response sensitivity with capacitor orientation? It has also been noted during the construction and evaluation of the recent GW units, that some manufactured electrolytic capacitors do not respond well to gravity fluctuations. So, if a particular type (or brand) of capacitor you are using does not appear to work, try some other brands!

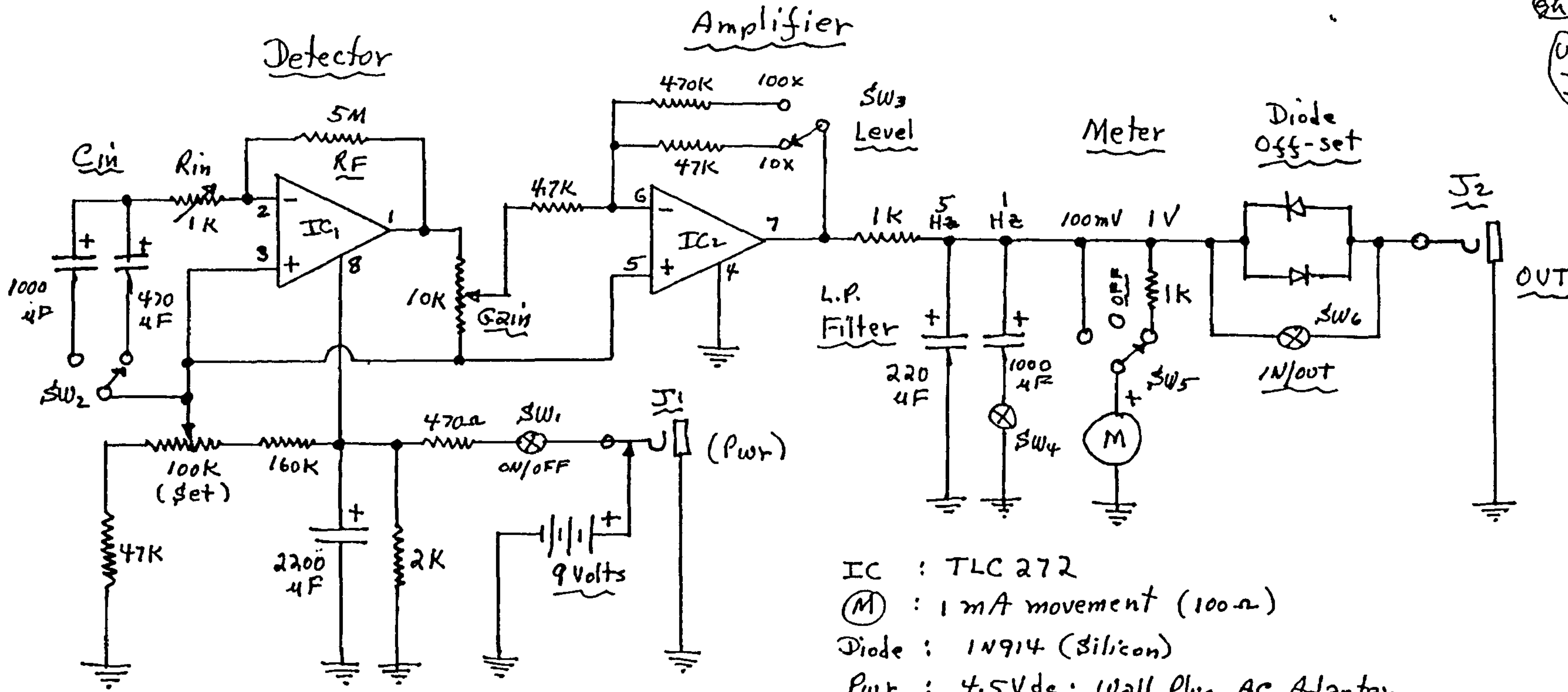
Take care!

Greg Z

Gravimeter Ckt. #555

GH Labs
Newark, N.J.
3/27/92
gh

579



IC : TLC 272
(M) : 1 mA movement (100Ω)
Diode : 1N914 (Silicon)
Pwr : 4.5Vdc; Wall Plug AC Adapter
SW_2 : This switch is internal.

Note: Unit is completely shielded in an Aluminum Box.

Remarks:

① Unit was made with many adjustments so as to enable a wide range of gains, sensitivities (input time constant), L.P. filter ranges, as well as meter ranges. Intent of this unit is to study the more nearby 'superclusters' of galaxies.

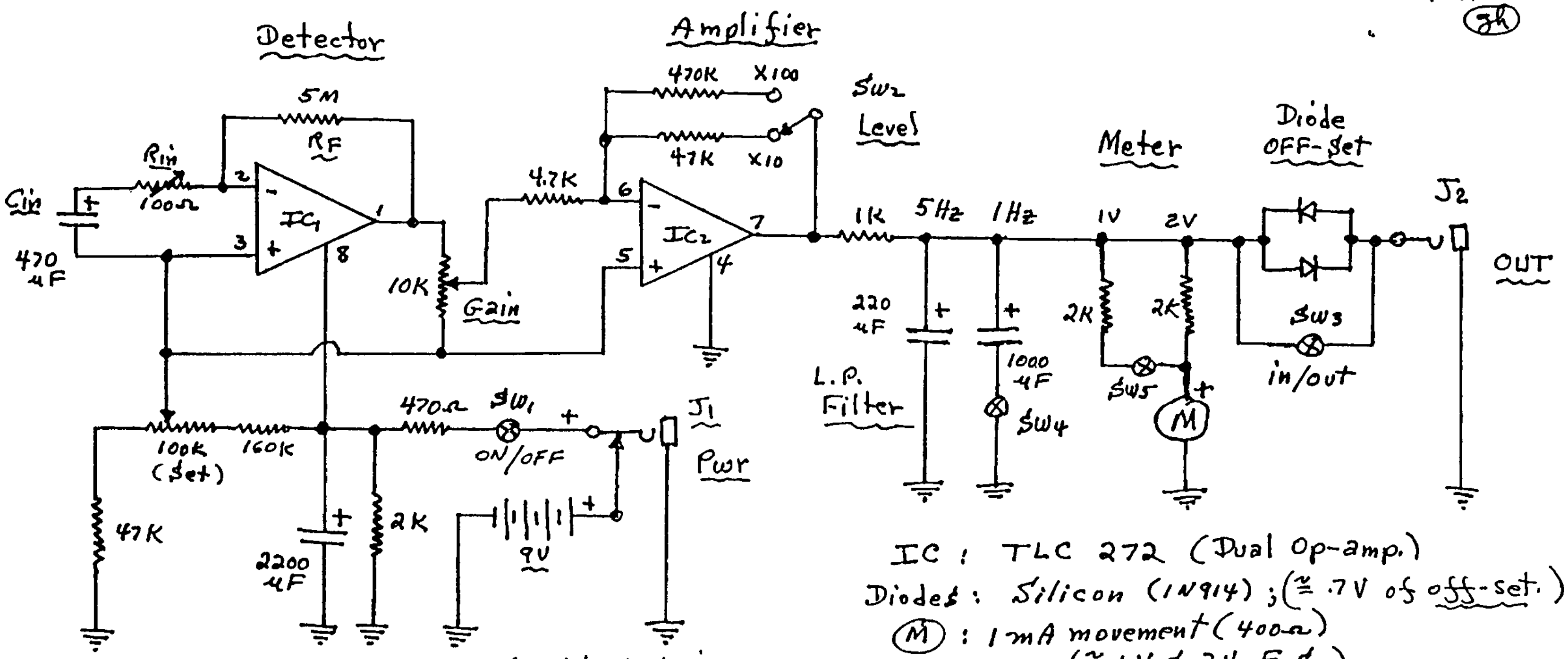
② The prime mode of o· ·ration will be The 2-D scans as seen on Rustra ·hart recorders.

579

Gravimeter Ckt. #960A

GH Labs
Newark, N.J.
3/29/92
GH

580



IC : TLC 272 (Dual Op-amp.)
Diodes : Silicon (1N914); (≅ .7V of off-set.)
(M) : 1mA movement (400Ω)
(≅ 1V & 2V F.S.)
Pwr : 4.5V dc (Wall Plug AC Adapter input)

Note: Unit is fabricated in an aluminum box.

Remarks:

1. For earth g-field measurements, keep Level at x10.
   For 'rapid' g-field fluctuations, keep Level at x100.
2. L.P. Filter is normally 5 Hz; close SW_4 for 1 Hz measurements.
3. Meter is normally 2V full scale; close SW_5 for 1V full scale.
4. Adjust Gain and Set controls for desired sensitivity and location on Rustrak or other chart recorder unit.
5. Rin is normally 0Ω; add minimal Rin [illegible]ly if unit tends to go into ELF 'oscillation' at high gain [illegible]vels.

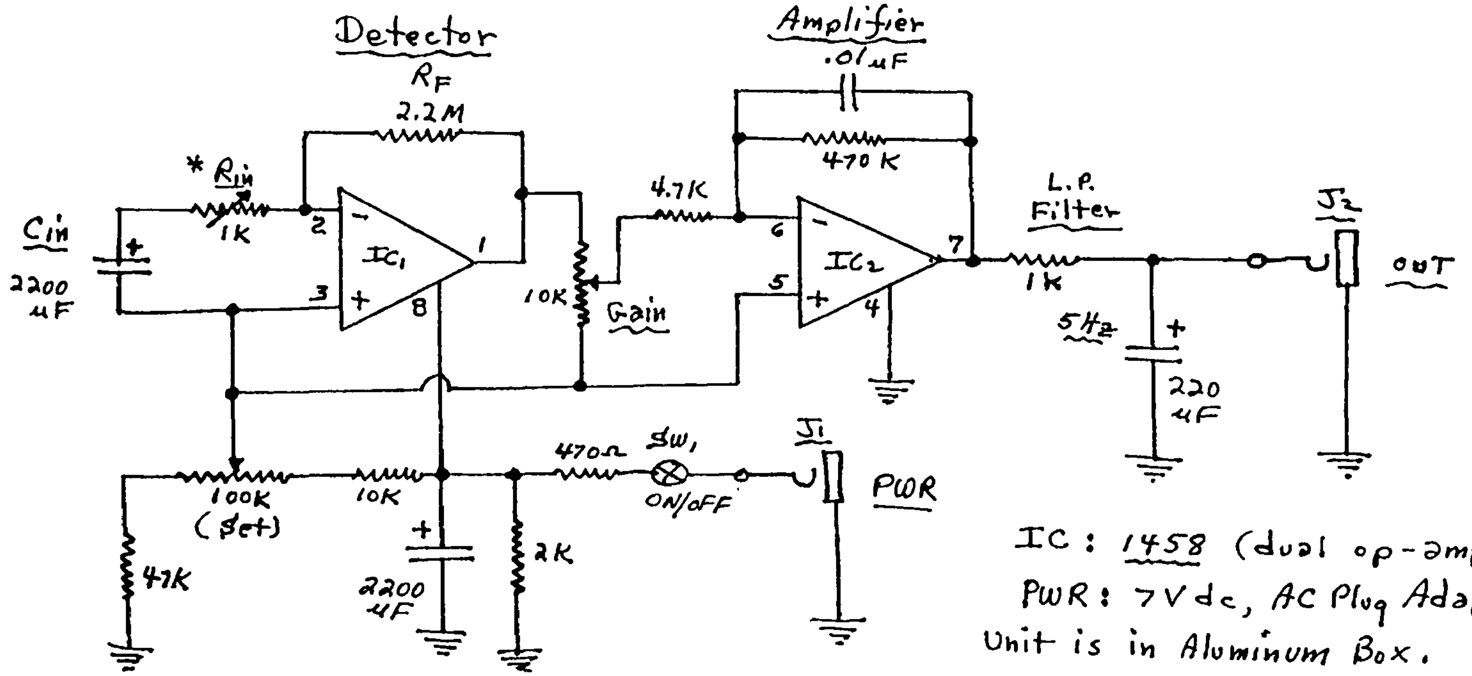
580

Circuit # 333A

GH Labs
Newark
4/12/92
94

581

Note: Ckt. # 333A is intended to primarily 'observe' the Galaxy and the Local Supercluster.



IC: 1458 (dual op-amp)
PWR: 7Vdc, AC Plug Adapter
Unit is in Aluminum Box.

Remarks:

① Unit is basically similar to original #75 detector.
② While unit is intended for AC adapter use, it can be operated with 9 V battery inserted into J_1.
③ L.P. Filter can be lowered in cut off frequency by shunting additional capacitance across output.
④ Output is nominally in the 2-4 volt range, suitable for most chart recorder units.
⑤ Unit is suitable for 'fast' scans as well as '2-D' scans.

* Add some R_{in} only if unit tends to go into ELF oscillations at high gain levels.

581

582

Cosmology Note

GH Labs 582
Newark
4/27/92

Dear Colleague: This may be of interest to you.

Special Test with the Solar Flare Detector Circuit:

Circuit #8000A was intended to 'observe' ELF gravity signals such as could be developed by solar flares and prominences on our own Sun, possible earth core movements (also earthquakes?), as well as the more 'local' novae in our own Milky Way Galaxy. Tests with observations on a meter over the past year or so seemed to indicate that the unit was indeed observing such effects.

It was decided to couple this #8000A detector unit to a Rustrak chart recorder unit to actually plot these gravity variations for more leisure study. It was not expected to record the numerous solar flares and prominences since these 'events' would be 'lost' in the slow sampling rate of 2 seconds for the Rustrak recorder. However, it was expected that the more long-term variations would show up.

That this was so is seen in the 2 1/2 day 'scan' recently recorded which is attached to this Note. During the time of this scan, the basement lab of the author hovered around 64-66 °F. This 65 °F +/- 1° variation in ambient temperature should not have introduced much offset in the output voltage variation, but when the heating furnace was turned on at the end of this scan period, the basement temperature increased to about 75 °F, and this shifted the nominal dc output of the detector to the negative side of the op-amp output. Further tests showed that the large computer type capacitor used for the detection 'device' was much more sensitive to temperature than the normally used capacitive devices of 2200 uF or much less. This response is under further investigation.

The recorded response shows the 'typical' cosine function of the averaged g-field as noted in past tests, and also much other 'structure' some of which is noted on the scans. It is concluded that this is also a very fertile area for investigation, and those of you who may have access to Rustrak recorders (or computer techniques) may want to look into this also. Good luck with your experiments!

Regards, Greg.

Enclosures

Comments:

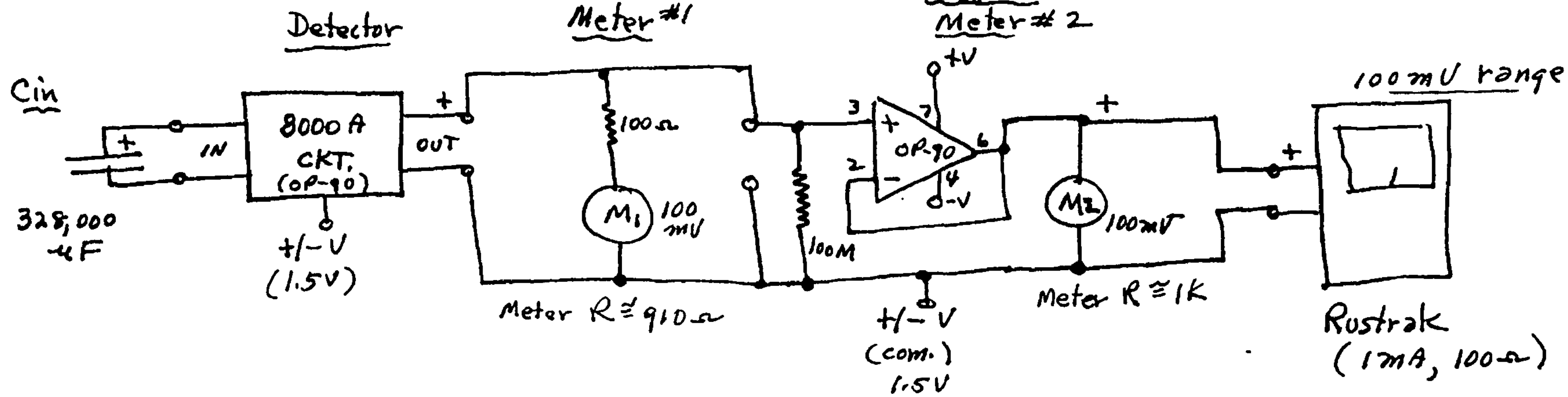
Dear Bill,
Here is the data I mentioned on the phone. I am under the impression that the temperature 'effect' noticed when the furnace went 'on' is more than just a 'heating' of the 328,000 uF capacitor. Will let you know if I can confirm that. Regards, Greg

Solar Flare Detector #8000A

(Rustrak Recorder Set-up)

GH Labs
Newark
4/26/92
gh

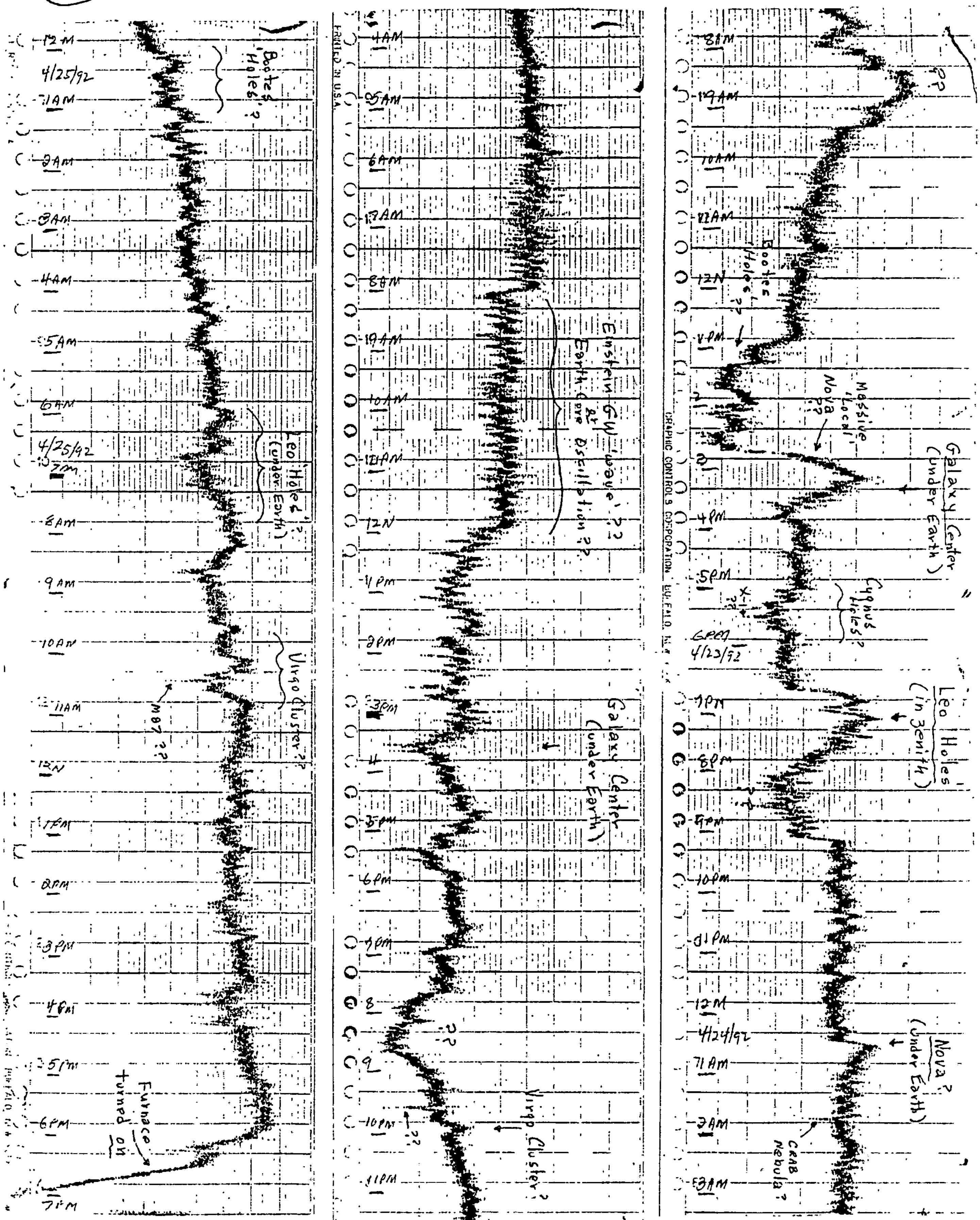
I. Set-up used:



II. Remarks:

1. The 8000A detector circuit has been continually monitoring ELF signals (gravity) for the past year or so. It is connected to a 50uA meter connected as a 100 mV dc meter, which, in reality, is capable of several ranges (and polarity reversal). (Meter #1).
2. The Meter #1 was coupled to a 'buffered' meter #2, which, in reality, is also capable of several ranges and input impedances. A 100 megohm input impedance was used so as not to 'load' the 8000A set-up, but the low Z output of the buffer will drive the low Z (100Ω) Rustrak unit very well.
3. Thus, the parameters of the system were such to keep the Rustrak input at 0-100mV as long as the ambient temperature was in the order of 64-66 °F. The very large Cin of 328,000 uF is much more sensitive to temperature than most electrolytic capacitors of 2220 uF or much less. Temperat. above about 72° F will move the output to the negative portion of the supply!

③ 584 Rustrak 'scans' with CKT. 8000 A (see P. 2) 584



GH [signature] 4/26/92

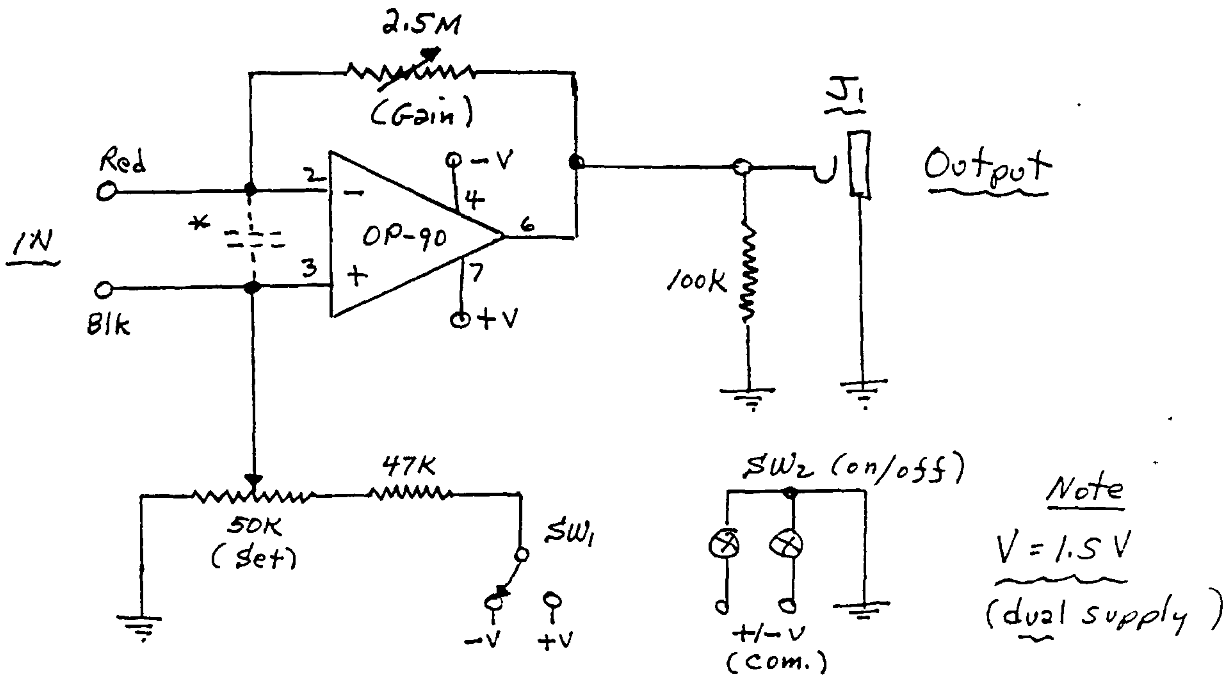
585

585

Solar Flare Detector # 8000B

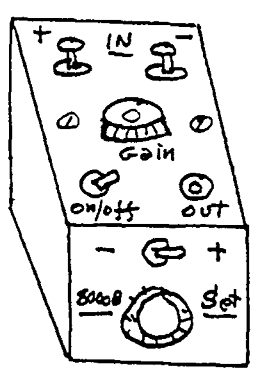
GH Labs
Newark
4/28/92
gh

I. Ckt. # 8000B is # 8000A revised as shown below:



* .01 uF ceramic capacitor with 1½" lead lengths added to author's unit to suppress strong local FM radio signals.

Author's Unit



Built in AL Box, 1⅝" x 2" x 2¾"

II. Remarks:

① For solar flares and other ELF gravity signals the author used a 328,000 uF computer-type capacitor in the IN position (+ connected to pin 2).

② This unit is versatile enough to be used in many experiments with other 'detection devices' in IN.

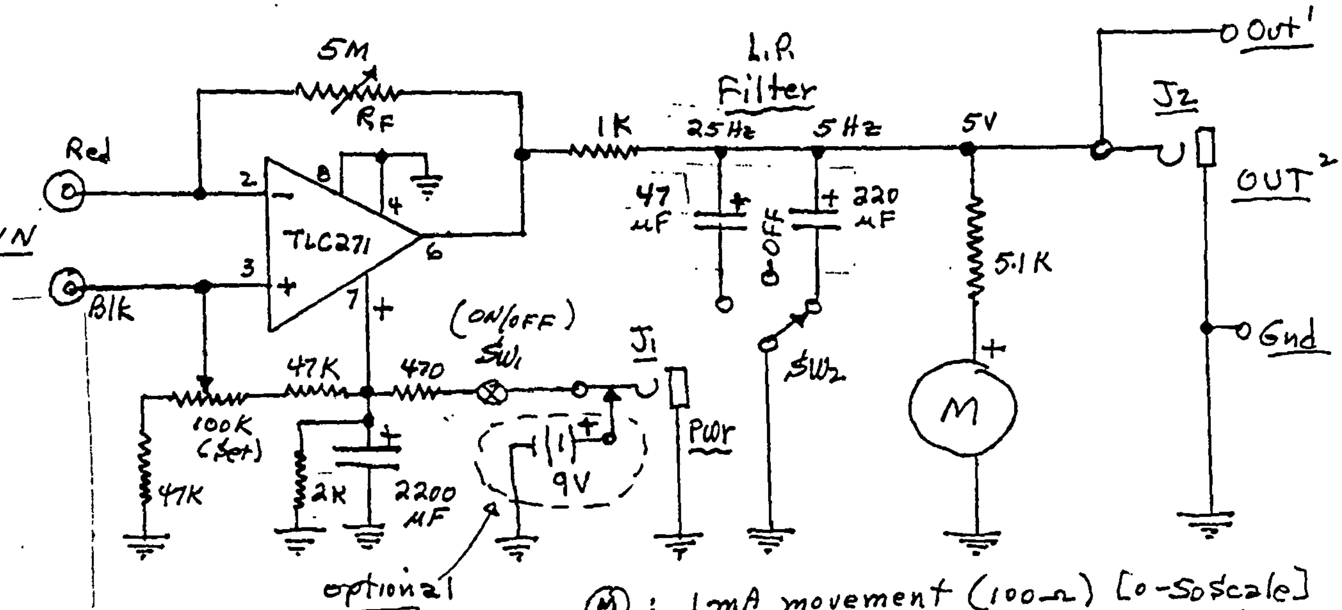
③ GW signal output is in range of 50 mV to 1 volt, depending on setting of Gain and Set controls.

586

Test Ckt. 6000 B

GH Labs 586
4/28/92
gh

I. Modified ckt. #6000 A:



Ⓜ : 1 mA movement (100 Ω) [0-50 scale]
Pwr : 7 V (100 mA) Adapter (Tip is +)

II. Remarks:

1. This unit is very versatile: it may be used for a wide range of sensitivities in 'fast scan' gravity signal observations, as well as a wide range of 'slow scan' gravimeter-type observations.

2. The detector 'detection device' is connected to Input binding posts to facilitate the insertion of different devices. Sensitivity is also controlled by the 5M (R_F) feed back control.

3. Three levels of L.P. filtering is provided by the unit. Additional filtering may be provided by an additional filter capacitor inserted in the OUT' and GND jacks.

4. The SET control may be used to position the response on the meter scale or a recorder unit.

5. Operation is nominally with a positive output. In this case, $g \cong 32$ ft/sec² (nominal) can be calibrated to read directly at 32 on the meter scale.

587

587

MR GREGORY HODOWANEC
34 CLEVELAND AVE
NEWARK NJ 07106-3615

(LETTER TO DON SAVAGE)

May 9, 1992

Dear Don,

This should be of interest to you since it seems to confirm your hypothesis that time (gravity) dilation effects extend for a distance from the time dilating body (as was expounded in several of your past papers). This change of time (gravity) you attributed to scalar potentials and you were able to measure this phenomena with a number of methods including clocks, pendulums, and the novel sand glass (egg timer) method. The experiments I recently performed involved my gravity detectors, postal scales, and bathroom-type scales under relatively constant room and device temperatures. Attached is results of a test made with the boiler of my home heating system acting as the time (gravity) dilating body. Two other tests of this type were also made with similar test results.

The tests indicate that these results were <u>not</u> a function of the ambient or device temperatures. While it took about 20 minutes for this old-time coal-type furnace (now oil burner fired) to reach the boiling temperature, it took 2-3 hours for the time (gravity) to return to normal levels after the system heating unit was shut down. Whether this was due to the slow cooling down of the boiler unit or an extended dilation effect is still under study. For this boiler test, the Ckt. #8000B detector and the postal scale were about 15 feet away from the furnace unit, while the bathroom scale was about 10ft. away. The 8000B responses are recorded on the Rustrak recorder chart, but the other responses were hand recorded from time to time.

An interesting aspect here is that the time (gravity) responses as seen on Ckt. 8000B and some other gravimeters, could also be affected by the much lower energy levels as provided by a boiling kettle of water and even by the presence of my own body! Affects by my body near the detectors showed up as a definite reduction in gravity levels as recorded by the Rustrak unit. The presence of a boiling kettle of water about 1-2 feet away from the detector showed a pronounced dip in gravity levels. In these lower level energy tests, the gravity required at least 1/2 to 1 hour to return to normal after the removal of the dilating body.

During these tests, the gravimeters also responded to some other effects on the earth's g-field, including what appeared to be novae and black hole type structures, most likely quite nearby in our own Milky Way Galaxy. The detector is now recording such events for a few more days on the Rustrak recorder unit. These will be analyzed at leisure and a Note will be prepared on these in the near future.

In conclusion, Don, I feel that your hypotheses may have been confirmed here in these tests. While I still look at these as gravity effects, perhaps you will be able to relate them to time effects as well? While I had noticed that my body could affect gravity in the past, I considered that as a 'shadow' or screening effect. These tests seem to show the affect is probably an energy effect as you have surmized. I will keep you informed of progress along these lines.

Best regards,

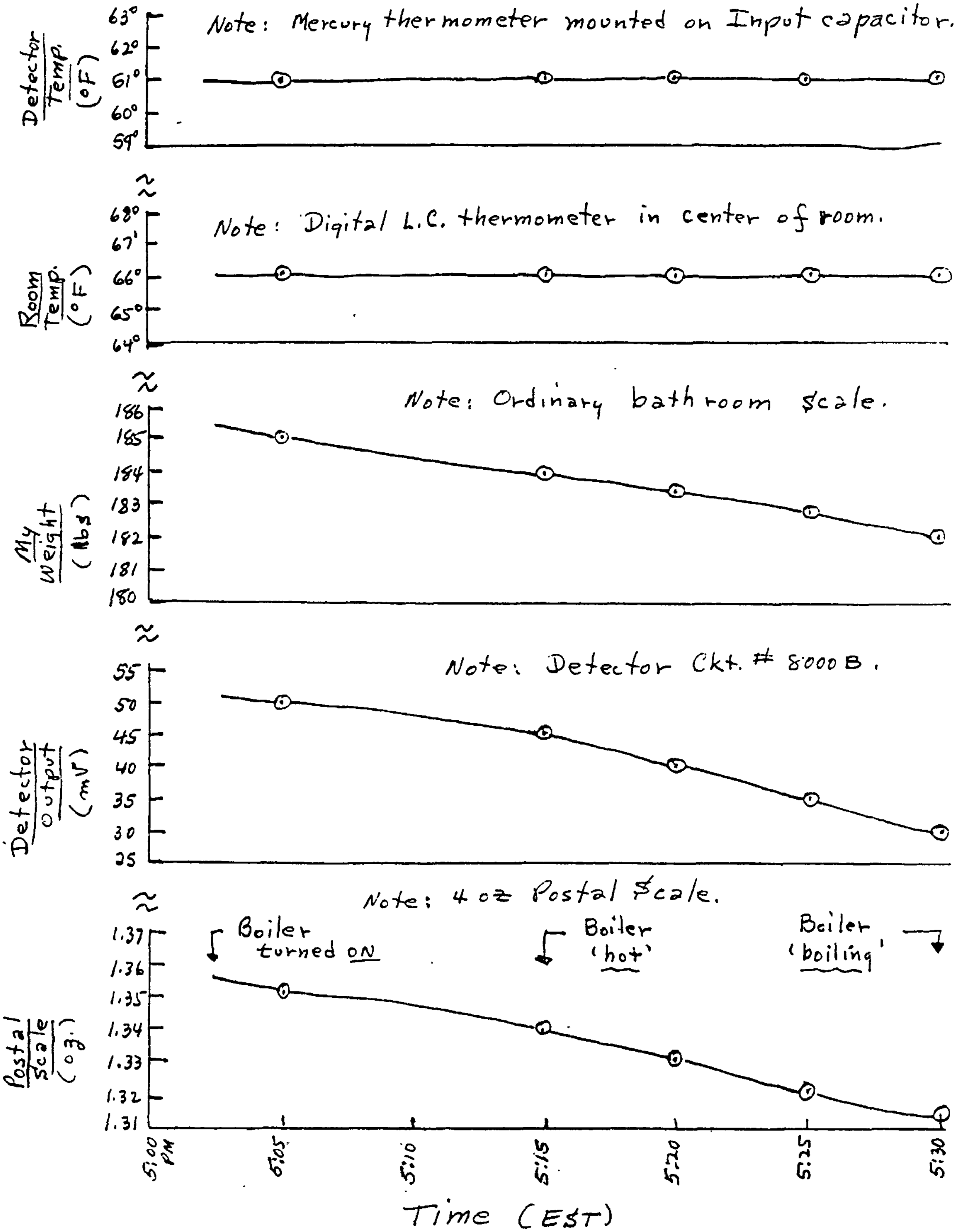
Greg

Enclosure

Boiler/Gravity Experiment

GH Labs
5/8/92

588



589

589

Gregory Hodowanec
34 Cleveland Ave.
Newark, NJ
07106-3615

May 19, 1992

(LETTER TO DON SAVAGE)

Dear Don,

I have been looking at your time/gravity concepts and its possible relation to rhysmonic cosmology theory. Since 'thermal energy' sources are definitely affecting Hooke's-type scales and the electronic gravimeters, those energy sources must be sources of scalar fields, ie., the ϕ potential, and I have some ideas of the possible mechanism involved. The source of the fields are believed to be molecular currents excited by the high temperatures, ie., energy. Since the process I am thinking of is quite similar, in a way, to Ampere's molecular currents involved with most permanent magnet 'mechanisms', I decided to start this investigation with permanent magnets.

The experiment here involved a stack of four Radio Shack Part No. 64-1877 Hi-energy ceramic magnets. The torroidal flux provided by this stack is roughly as shown in the cross section of the attached sketch. An all plastic postal scale (originally a 16 oz. unit)was modified to about 4 oz. by changing the original spring. A small brass weight of about 1.25 oz. and .5 inch in diameter and .75 inch long, was used as the reference weight. This weight reads nominally 5.10 on the original scale calibration. The weight on the scale is normally kept about on the same horizontal center line as the magnet except when making a measurement in a direct vertical line with the magnet. For these tests, the magnet was just above the reference weight for the first test, and then moved to a horizontal line position about 2 inches away, and finally to a horizontal line position 4 inches away. A number of measurements were made at each position to average out any possible variations due to fluctuations in the earth's g-field. The averaged values were noted for <u>two</u> magnetic flux <u>orientations</u> as noted on the attached sketch. Note that there is a definite interaction of the magnetic flux on the Hooke's law scale readings, which would normally only respond to the earth's g-field, and thus read about 5.10 only.

It is believed that a similar type 'flux' may be generated by the thermal processes in the boiler unit. I will report on my ideas on this when I am satisfied that they are feasible. I hope that this remains of interest to you.

Best regards,

Greg

Enclosure

Dear Bill,

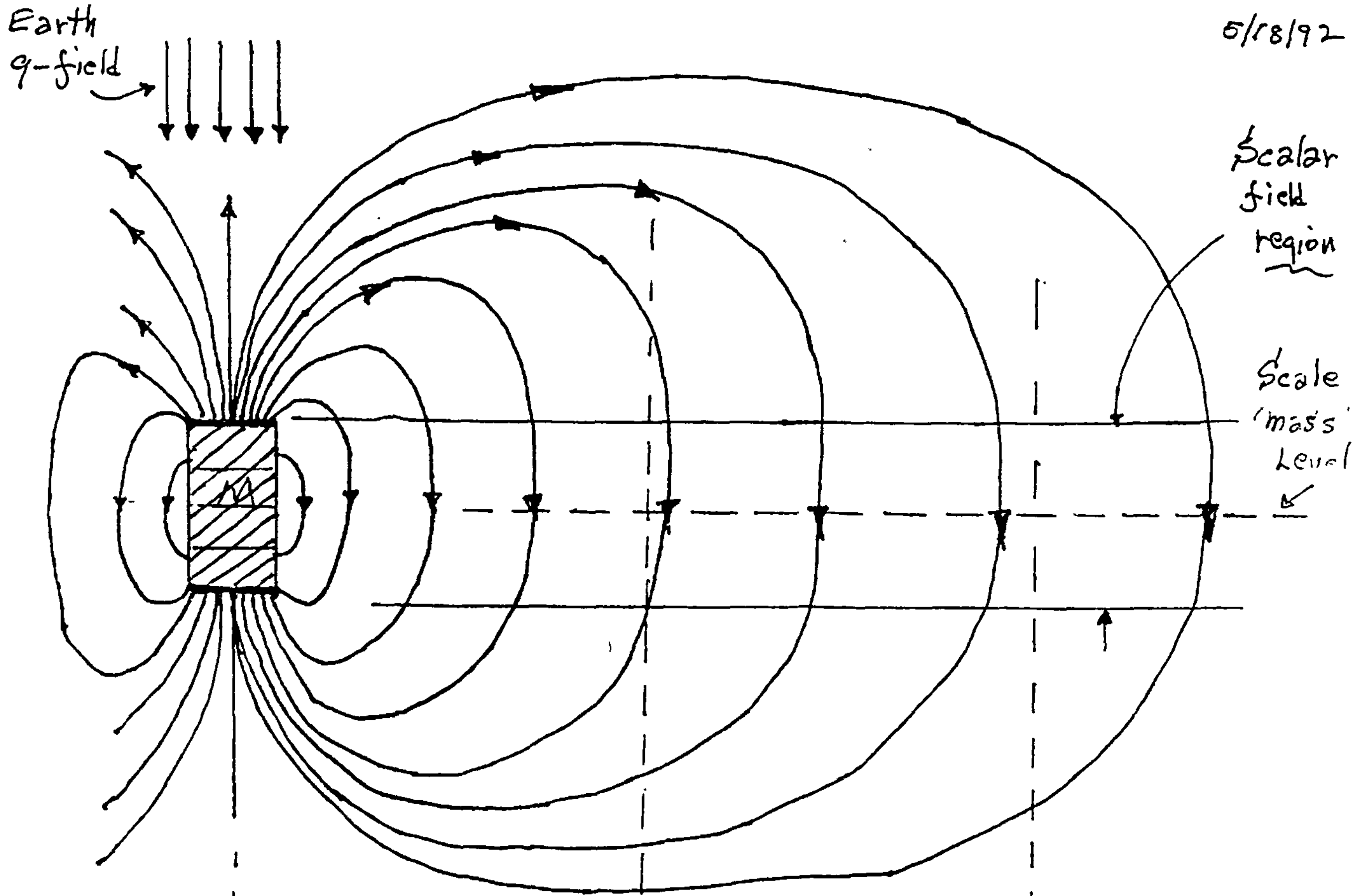
Perhaps you can try this and see if it is real? Will soon come up with a possible explanation for the 'boiler' experiment.

Regards,

Greg

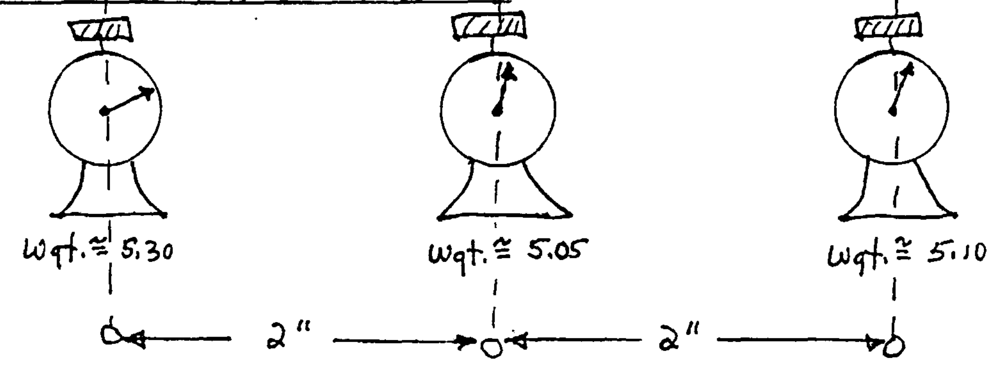
Magnet/Scale Experiment

GH Labs 590
Newark
5/18/92



With magnet flux as shown above:

With magnet flux reversed:



591 591

Speculations on the nature of the gradients in the Ø potential in the region of a hot steam boiler.

GH Labs
Newark
5/19/92

Thermal sources (especially hot water) may generate molecular currents, ala Ampere, thus converting kinetic energy to circular electrical currents. These would normally be random currents as shown in Fig. 1a, but the earth's gravity field could possibly result in a generally vertical orientation of these currents as shown in Fig. 1b. However, the spin orientation of the currents as shown in Fig. 1c, is believed to possibly be the result of the spin of the earth in a process as shown in Fig. 2.

In rhysmonic cosmology, the rhysmoid, the aether, if you wish, is relatively fixed in space. Mass is but a perturbation (vortex?) in this rhysmonic structure, and thus 'moves' as an alteration in that structure. Therefore, for a mass on the surface of the earth, there will be a relative 'flow' of rhysmons (aether?) past this mass, which can be that elusive inertial or gravity wind sought in the past. There will be a gradient in this 'wind' depending upon the relative surface velocity of the earth, being maximum at the equator and minimal at the poles, as depicted in Fig. 2. The molecular current spin orientation will be a function of this gradient, even at the molecular levels. This spin will be clockwise in the northern hemisphere and in the counterclockwise direction in the southern hemisphere. This should be able to provide for a test of these premises.

This process should be self-cohering and highly synergistic, and result in a very measureable 'flux' gradient in the Ø potential as depicted in Fig. 3. It should be directly comparable to the flux generated by molecular currents generated in permanent magnets. The larger the thermal source and the greater the kinetic energy, the larger the observed flux gradients. In the northern hemisphere the gravity effect will be increased at the thermal source and fall off as one proceeds away from the source. The effect will be reversed in the southern hemisphere.

While all this appears to be but a simple interaction between scalar fields, the aspect of time may still be a consideration.

Remarks:

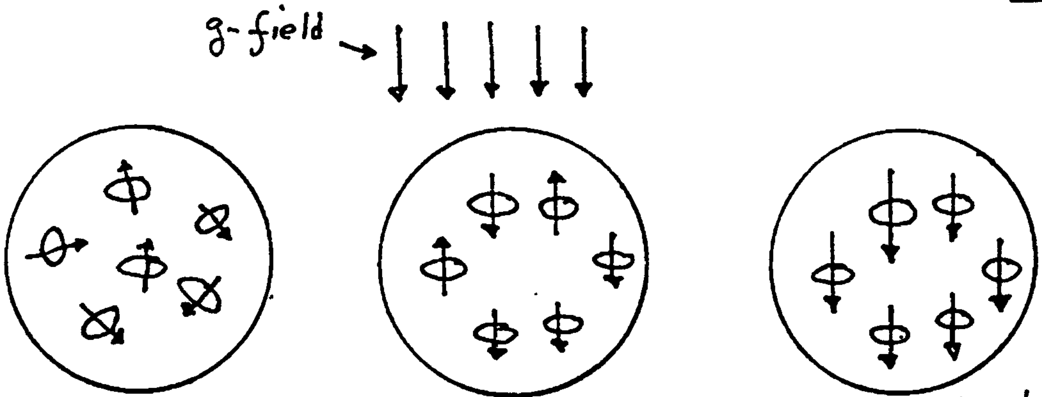
Dear Bill,

This is some preliminary thoughts on how 'energy sources' affect gravity on earth. Hope it is of interest to you.

Greg

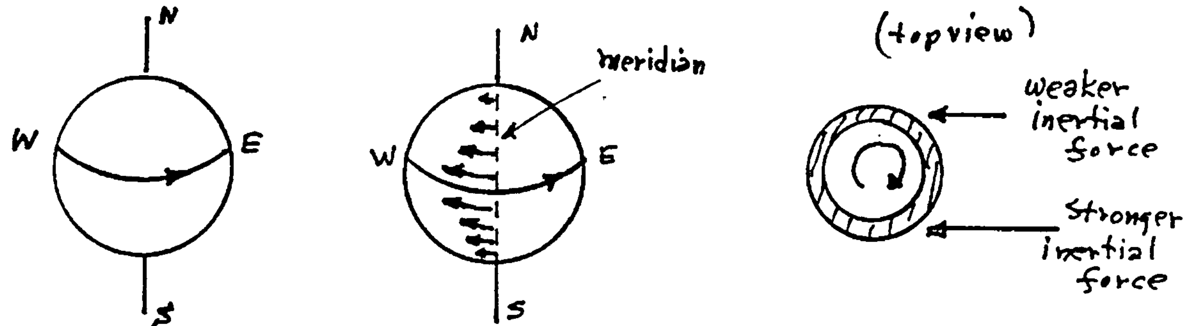
592

GH Labs
~~9/19/92~~ ?
GH
5/19/92



a. Random orientation b. g-field aligned. c. spins aligned

Figure (1) - Possible kinetic motions of molecular currents in a boiler unit.



Earth spins CCW (west to East)

Mass on earth experiences an inertial (gravity) wind as shown.

Gradient in inertial force results in a CW spin to molecular currents (in northern hemisphere).

Figure (2) Inertial effects on Earth.

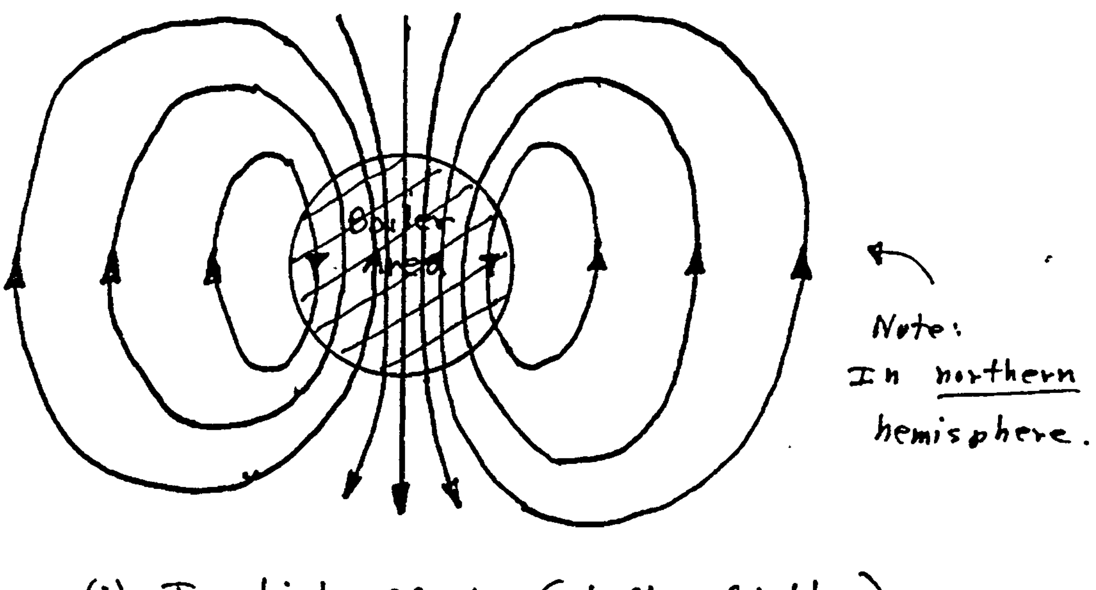


Figure (3) Inertial effects (ϕ flux fields) generated in the boiler and away from it.

(593)

(593)
Newark
6/15/92
(gh)

Dear Bill,

Here is unit # 8000A. It is similar to # 8000B but does not have the off-set capability. The unit was made in an old Grid Dip Meter unit, so it contains a built-in +/- 200 mV tuning meter which is only used to help establish the operating conditions. The input leads were used to couple to large value computer type capacitors. The capacitor I used for many tests was the 328,000 uF unit. The + and - terminals for the input refer to the capacitor terminals and not the IC input polarity. With the capacitor connected as shown on the box, the output is negative. With the capacitor polarity reversed, the output is positive. It may take a little time to stabilize the capacitor in the circuit. The circuit can also test many other input capacitors and 'detection' devices. The output leads have the center pin of the plug tied to the striped lead.

Coupling to this unit with the Rustrak may require adjusting the voltage range for the Rustrak and/or using diode off-set.

Hope you will be able to repeat some of my tests and come up with more (with this simple unit). Have fun!

Best regards,

Greg

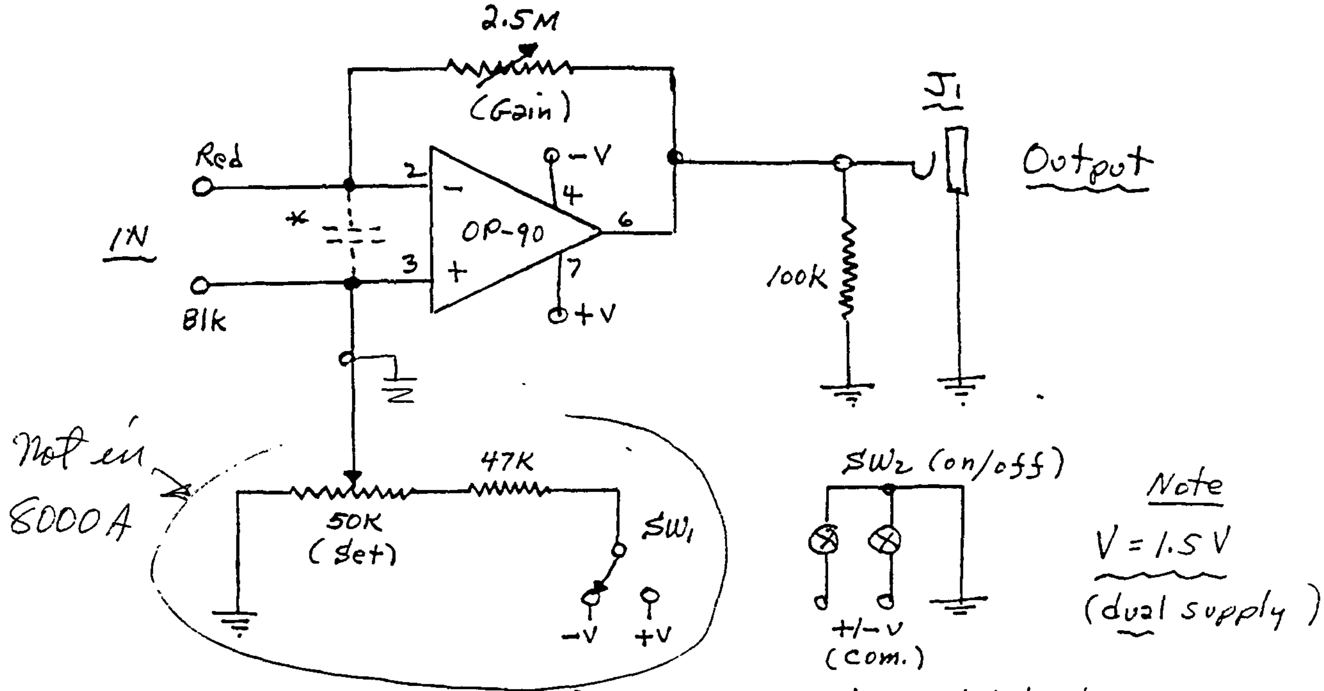
P.S- I took off the knob on the unit to facilitate shipping.

594

Solar Flare Detector # 8000B

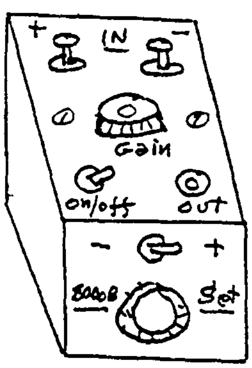
GH Labs
Newark
4/28/92
gh

I. Ckt. # 8000B is # 8000A revised as shown below:



* .01 uF ceramic capacitor with 1½" lead lengths added to author's unit to suppress strong local FM radio signals.

Author's Unit



Built in AL Box, 1⅝" x 2" x 2¾"

II. Remarks:

① For solar flares and other ELF gravity signals the author used a 328,000 uF computer-type capacitor in the IN position (+ connected to pin 2).

② This unit is versatile enough to be used in many experiments with other 'detection devices' in IN.

③ GW signal output is in range of 50 mV to 1 volt, depending on settings of Gain and Set controls.

595

595

10/3/92

Dear Bill,

It was nice talking to you on the phone recently. I wish you the best and hope that you will be able to find that position you desire.

I am enclosing a rough scan of gravity as measured here since Sept. 24th. I started about Sept. 1st with Ckt. 6000B set to 32.0 on the scale. When I noticed that gravity seemed to have increased and had some unusual 'fluctuations' since, I decided to records levels whenever I could. I added Ckt. 1400B to the tests and also made comparisons on the modified 4 oz postal scale (using about a 1.3 oz weight). The two gravimeters 'track' perfectly, and the postal scale also follows closely. Note that the g-field as measured here is inverse, i.e., an increase in g-field reads down, for example, 30 compared to 31 means an increase in g-field (This is due to the circuitry!)

As I mentioned, I am also still monitoring the sun's transit and the black hole 04:22+32 on the Rustrak 2-D setup. I will run many days tests to fully confirm the detections (which can be wiped out or distorted due to other 'events'). Will write up as a Note when I am satisfied with the results.

Again, hang in there, and I wish you the best.

Regards,

Greg

596

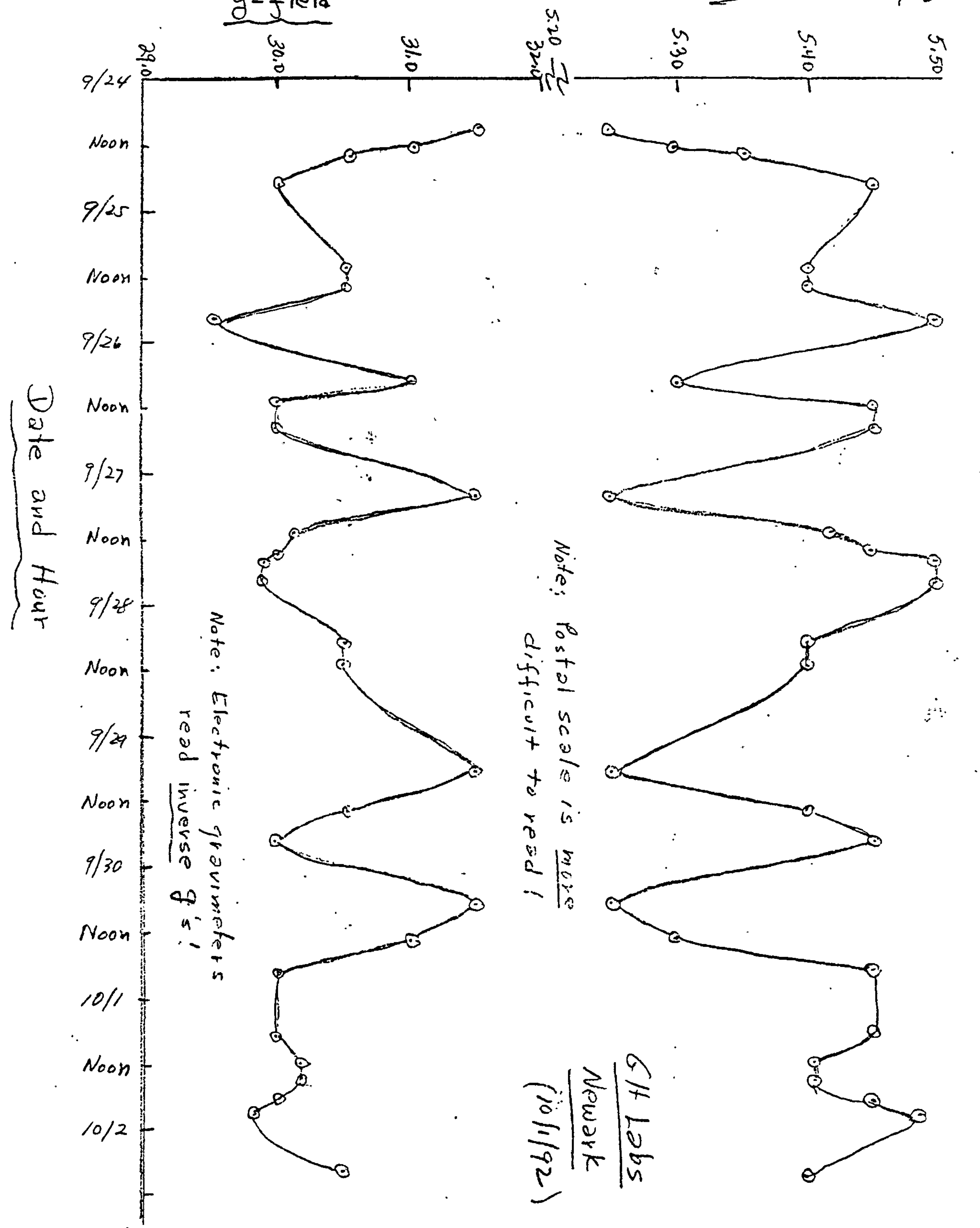
Gravimeters

#1400 B
#6000 B } both track!

g-field

(Modified)
Postal Scale 596

≅ 4.0 oz F.S.
(divide reading by 4!)

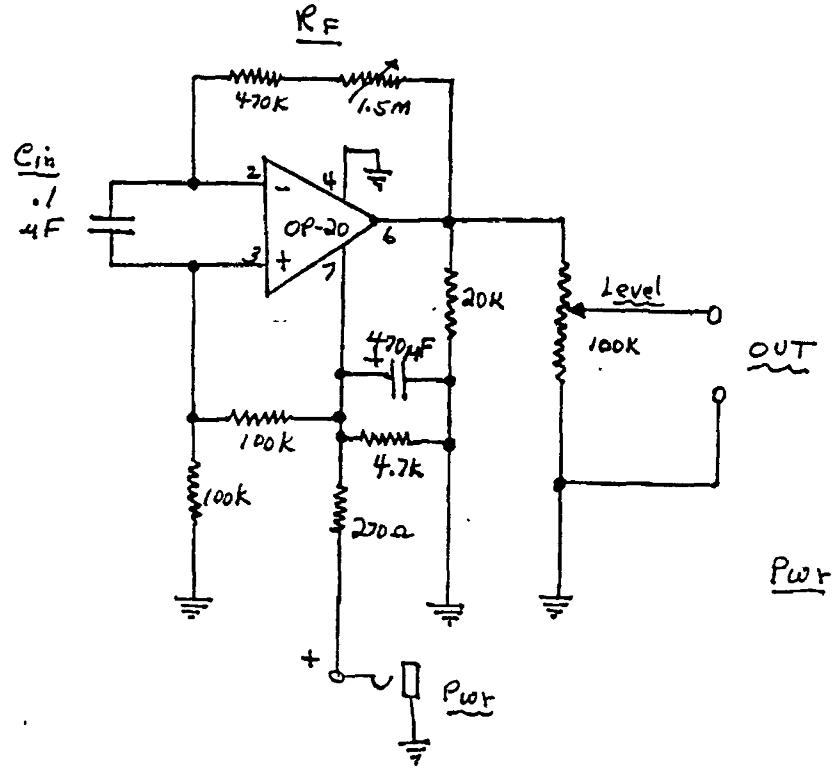


597

597
GH Labs
Newark
4/17/93
GH

QND Demo Unit
(Also gravimeter)

I. Ckt #15B (Uses OP-20)



Pwr: 7 Vdc Adapter Plug

II. Remarks:

① Unit demonstrates QND responses over approx. range: 300 to 900 Hz.

②. When output is coupled to 6 Volt DC meter, level control can be set to 3.2 on scale to conform to 32 ft/sec² for earth g-field. Unit will directly track earth g-field variations.

③ The output level control as shown was intended for use with high impedance (ohms) dc meters. For many ordinary meters, The 20K output load can be made a potentiometer instead and the 100K potentiometer is not used.

598

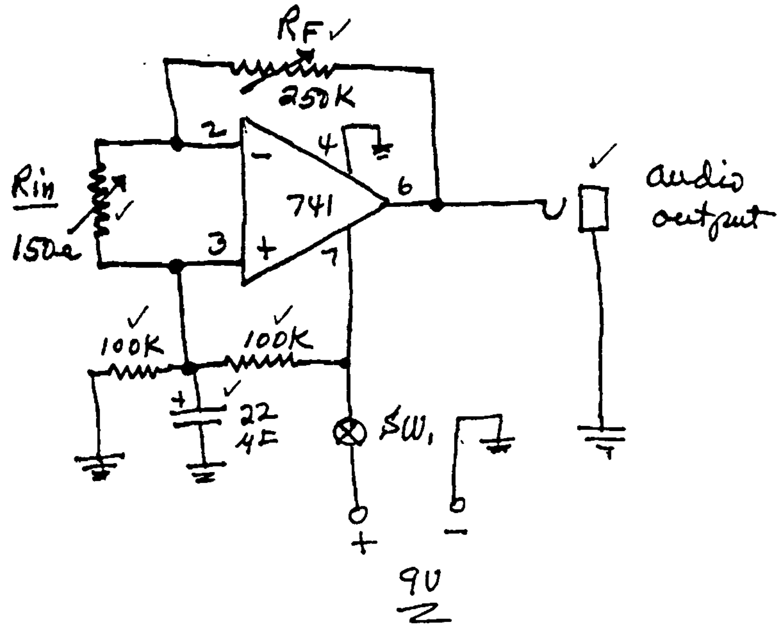
598

Cosmology

GH Labs
5/16/93
Newark
gh

I. Resistive 1/f GW Detector Ckt. # 29A

(Similar to Ckt. #29)



II. Remarks

1. Strong 1/f noise into Radio Shack amplifier.
2. With shielded tape motor, maximum response seen with Rin ≅ 20Ω and RF ≅ 100kΩ.

(599) (1)

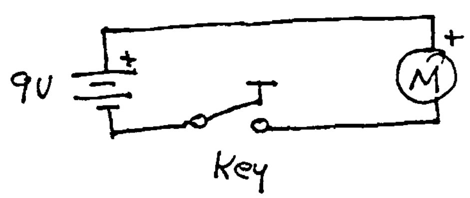
GH Labs (599)
Newark
5/22/93
(gh)

Cosmology Note

I. Dear colleague: This is a re-test of an experiment made in 1987. The results to-date appear to be promising. This is a very <u>limited</u> release!

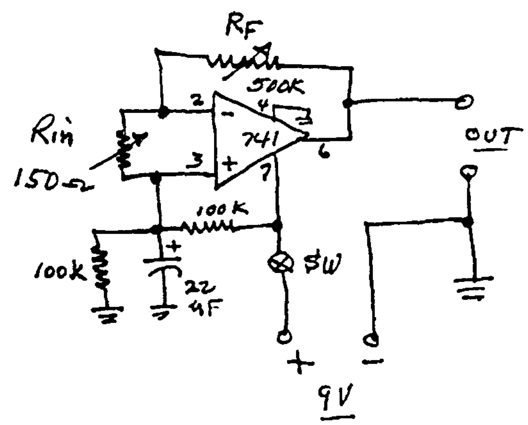
II. Re-tests of a simple GW Communications System

A. The Transmitter:



(M) is a special fully RF and Magnetically shielded Tape recorder motor unit.

B. The Receiver: (A resistive type GW detector)



① Rin and RF are miniature (½" Diam.) carbon type (?) potentiometers.

② 741 is a fairly recent lot RCA device.

II. Remarks:

① Receiver is 'tuned' for best response to 'motor noise' in the lab area. (Rin ≅ 15-25Ω; RF ≅ 90-100KΩ). The motor noise is somewhat <u>stronger</u> than the general 1/f background noise when properly 'tuned'. Motor is keyed on-off with morse code signals at about 5 words per minute rate.

② Tests were made by taking 'Transmitter unit' in car and connecting 'receiver unit' to an audio amplifier which in turn is recorded on tape (using auxiliary jack). Stops were made at approx. 500ft; one mile, and two miles, identifying the sender and distance at each stop.

600 600

②

<u>Cosmology Note</u> 5/22/93

③ Tests so far <u>were made</u> at the 500 ft, 1 mile, and 2 miles distances. The recorded responses on the tape at each distance were found to be about at the <u>same level</u> as was seen in bench tests! This implies very little, if any, loss with distance?

④ Optimum tuning of the receiver is very sensitive to the Rin value -- it <u>roughly</u> co-incides with the maximum general 1/f background noise also.

⑤ Tests at the 2 mile distance were also made with the motor unit cycled on/off at about a 1 second rate with a 555 timing circuit. The receiver was now in the car. Results were <u>about the same</u> as with the original positions.

⑥ Tests are planned at the 5-10 mile range soon.

III. <u>Conclusions</u>:

① These tests are yet <u>very crude</u> but appear to be <u>real</u> (I tried to eliminate psychic or any imagination effects?)

② This rough system is possibly equivalent to the early days of radio when experimenters use spark-gap transmitters and coherers as detectors. Since those experimenters 'jammed' the air waves at that time, it <u>behooves us</u> to limit these data to only the real avid gravity researchers, to <u>limit the 'jamming'</u> if this turns out to be real!

Good luck with your tests!

<u>Greg</u>

601 601

May 22, 1993

Dear Bill,

Got your latest letter and experiments (and devices) today. I had also just made some notes on a simple gravity communication experiment (copy enclosed). This test was originally made with a small 'hobby' motor which spun around an off-set weight made of solder. This present motor unit is not at all 'strong' but I use it since it is completely RF and magnetically shielded so that only GW effects are emitted! I have one spare motor unit which I can send you if you plan to look into this. I still haven't sent you 'pipe unit'; The local UPS shipper moved out. I will find another ??

The LT 1078 device you sent me might be similar to the LT1028 device I had (single unit). In the basic test box, it also strongly oscillated and I didn't pursue it further. I will read your material and try it when I get a chance.

Not busy with GW too much but am tied up with 'Home repairs' after this rough winter and spring.

Take care — will keep you informed on any further results.

Regards,

Greg

① (602)

GH Labs
Newark
5/22/93
GH

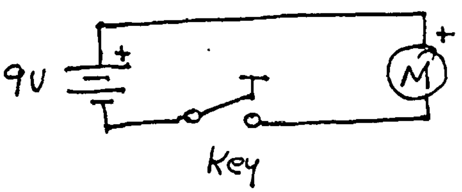
(602)

Cosmology Note

I. Dear colleague: This is a re-test of an experiment made in 1987. The results to-date appear to be promising. This is a very limited release!

II. Re-tests of a simple GW Communications System

A. The Transmitter:



(M) is a special fully RF and Magnetically shielded Tape recorder motor unit.

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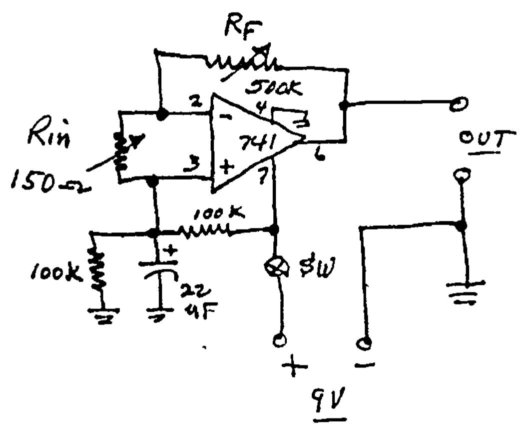

① Rin and RF are miniature (½" Diam.) carbon type (?) potentiometers.

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II. Remarks:

① Receiver is 'tuned' for best response to 'motor noise' in the lab area. ($R_{in} \cong 15$-25Ω; $R_F \cong 90$-$100k\Omega$). The motor noise is somewhat stronger than the general 1/f background noise when properly 'tuned'. Motor is keyed on-off with morse code signals at about 5 words per minute rate.

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(603) (603)

(2)

Cosmology Note 5/22/93

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⑥ Tests are planned at the 5-10 mile range soon.

III. Conclusions:

① These tests are yet very crude but appear to be real (I tried to eliminate psychic or any imagination effects?)

② This rough system is possibly equivalent to the early days of radio when experimenters used spark-gap transmitters and coherers as detectors. Since those experimenters 'jammed' the air waves at that time, it behooves us to limit these data to only the real avid gravity researchers, to limit the 'jamming' if this turns out to be real!

Good luck with your tests!

Greg

Cosmology Note

GH Labs
Newark, NJ
604
6/15/92

Dear Colleague: This may be of interest to you.

Some Recent Experiments:

Bill Ramsay of South Carolina issued a brief on 5/30/92 on some of his most recent experiments. These experiments concerned directly driving a Rustrak chart recorder with a ELF function generator. Best results were obtained with a triangular waveform. Some interesting effects were seen at .25 Hz and some other effects were noted at 3 Hz. At 3 Hz Bill noted a strange 'dip' in response which repeated at another time also. A very similar type 'dip' was also noted by the writer as is seen in the gravimeter response shown in Figure (1).

The typical 'structures' seen when a gravity detector unit is coupled to the Rustrak chart recorder unit is shown in Figure (2). In this case, the 'random' sweep frequency to the recorder unit is provided by nova and supernova detections as developed in the detector. Therefore, there is not much possibility for 'artifact type' responses to develop due to sweep timing and the Rustrak sampling timing. Thus, the unit will respond mainly to the gravity variations as seen by this detection unit.

However, with a function generator providing the sweep frequency and the Rustrak proving the sampling times, the possibility of seeing artifacts developed are greatly increased. These will be somewhat similar to the Lissajou's patterns seen on the oscilloscope. The writer made a test run with a .8 Hz triangular waveform and the response is shown in Figure (3). The 'patterns' are quite evident. However, the possibility still exists that the special D'Arsonval meter structure used in the Rustrak unit might also be responding directly to some scalar signals. This is conjectured since some of the responses seen may not be 'artifacts', for example the response seen at A in Figure (3).

Again, as Bill remarks, these investigations get more interesting all the time---we need more of you to get involved here also.

Best Regard,

Greg

Remarks:

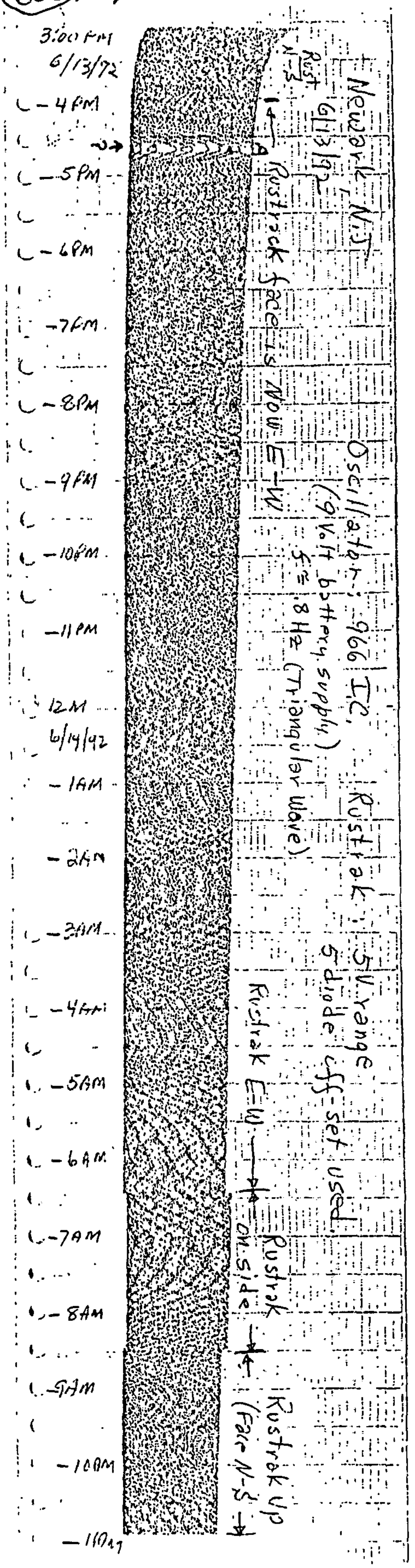
Dear Bill,

This is but a preliminary report to get some others possibly interested. When I get some time, I will look into this further. Presently, I am revising my 966 oscillator to operate from a wall-plug AC dapter so as not to see battery slumps as was seen in Figure (3). Also I will operate at somewhat higher voltages. Good Experimenting!

Regards,

Greg

(606) Figure 3 (See Note)



G.W. detector on Rustrak

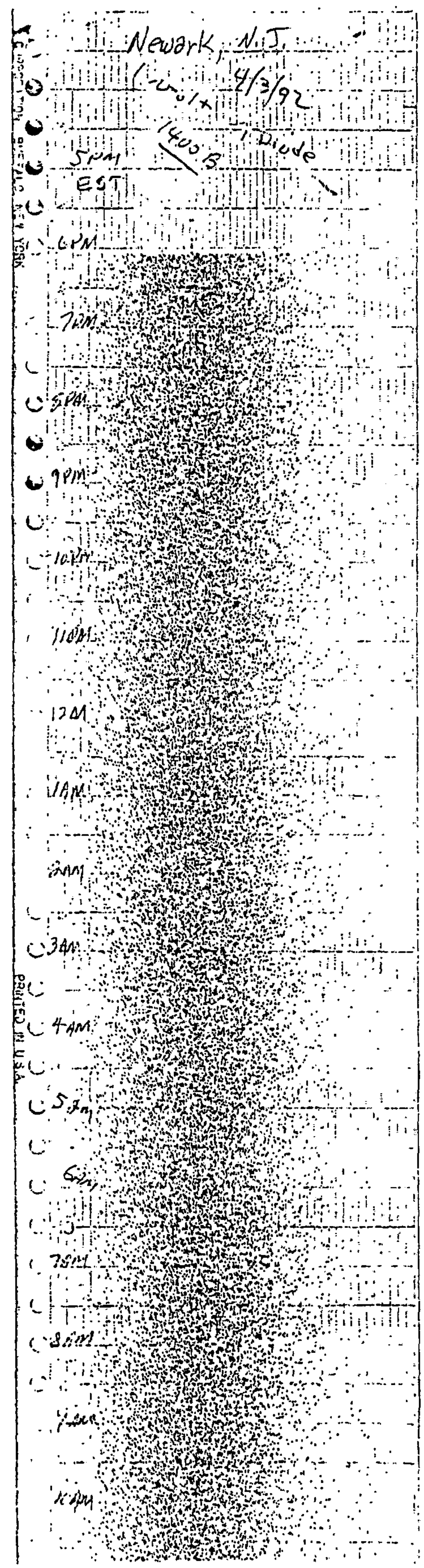
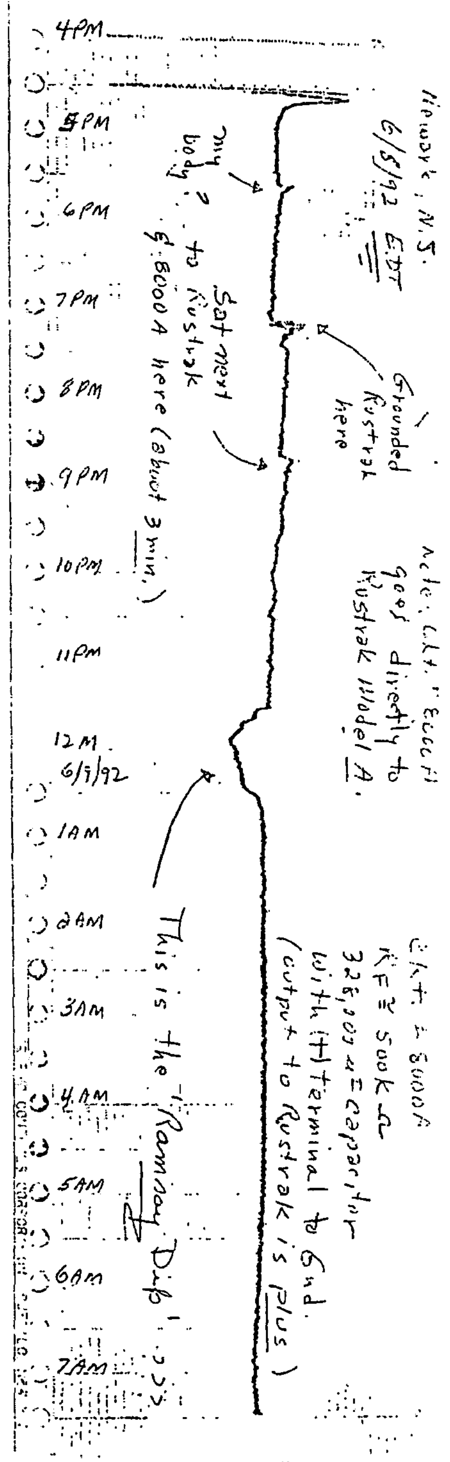


Figure-1 (605)

Gravimeter Response with Ckt. # 8000A



607

Cosmology Note

GH Labs
Newark, NJ 607
6/22/92

I. Second Test ELF (triangular) waveform with Rustrak Recorder Unit

A. The original LM566 triangular wave oscillator used by the writer in his Note of 6/15/92 was modified to use an Adapter Plug dc power supply. The test was moved to the writer's so-called magnetic test bench, a wooden bench. To his surprise, the expected 'patterns' were not seen! See Figure (1). Tests were conducted at 1 Hz and .55 Hz. Switching to a battery power supply resulted in a reduction of output which could not be properly off-set. The test was shifted to .7 Hz and the filter capacitor removed---still no patterns. At this point it was decided to go back to the steel work bench and see if the original data of 6/15/92 could be repeated.

B. Figure (2) shows that a return to the battery supply (no filter) on the steel bench (freq. now .7 Hz) appeared to show a return to the 'patterns'. Return to the Adapter supply with filter seemed to show no real patterns. Going to the battery supply with filter seemed to show some weak patterns. Since it was possible that the capacitor may have been generating counter signals, cancelling the patterns, it was removed after a couple of hours of test. This removal seemed to enhance the formation of patterns. Reduction of the frequency to .53 Hz seemed to further enhance pattern formation. The presence of a steel plate above the Rustrak unit seemed to have little effect on the pattern formation. Ignore my thumb print on the start of this scan!

C. The only tentative conclusion I can reach at this time is that the presence of a magnetic plate underneath the Rustrak unit seemed to enhance pattern formation. This may be that it may act as a 'sink' for scalar magnetic fields, or possibly reduce the response of possible scalar signals from the direction of under the earth? It is obvious that more work is needed here.

II. Remarks

608

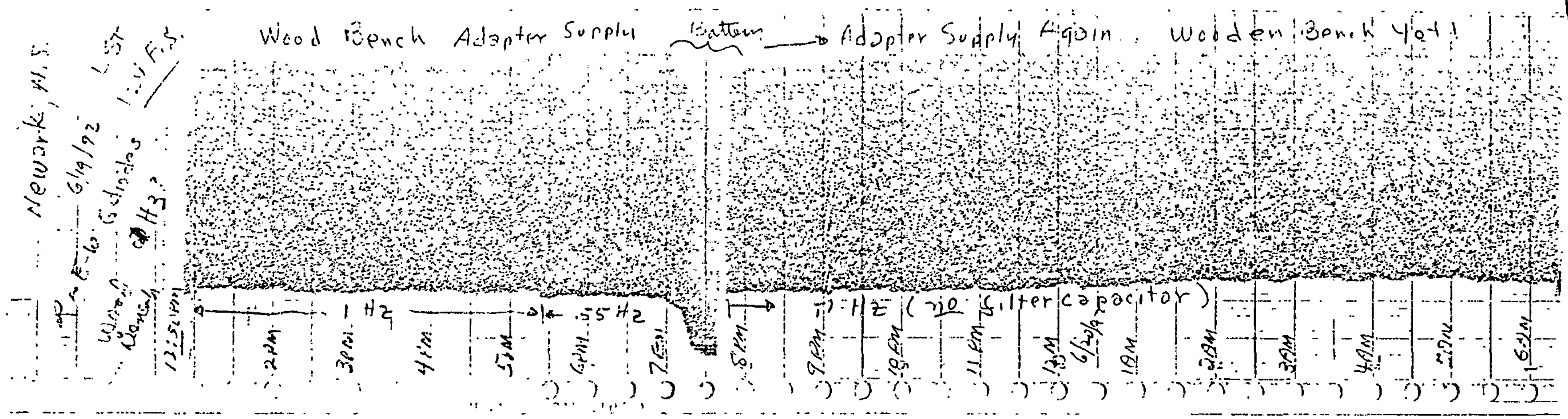


Figure (1)

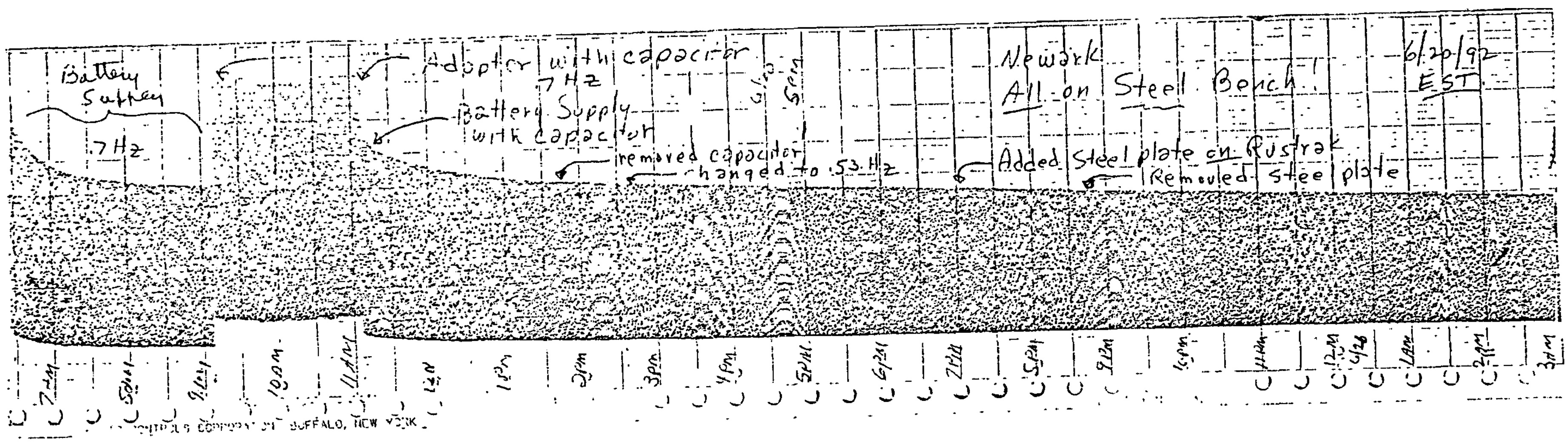


Figure (2)

608

609

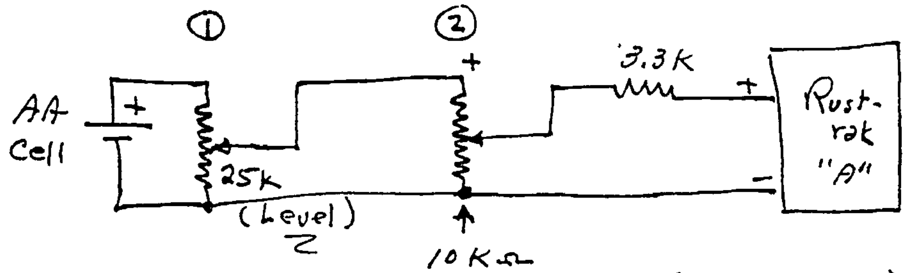
Cosmology Note

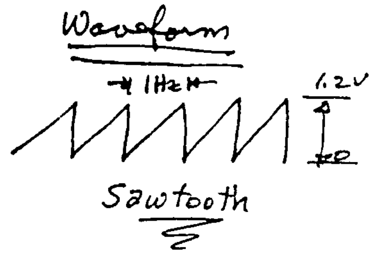
GH Labs 609
Newark, N.J.
6/28/92

I. Special Rustrak Test

A. Objective : To determine if Rustrak Recorder is directly 'detecting' scalar signals??

B. Test Set-up :

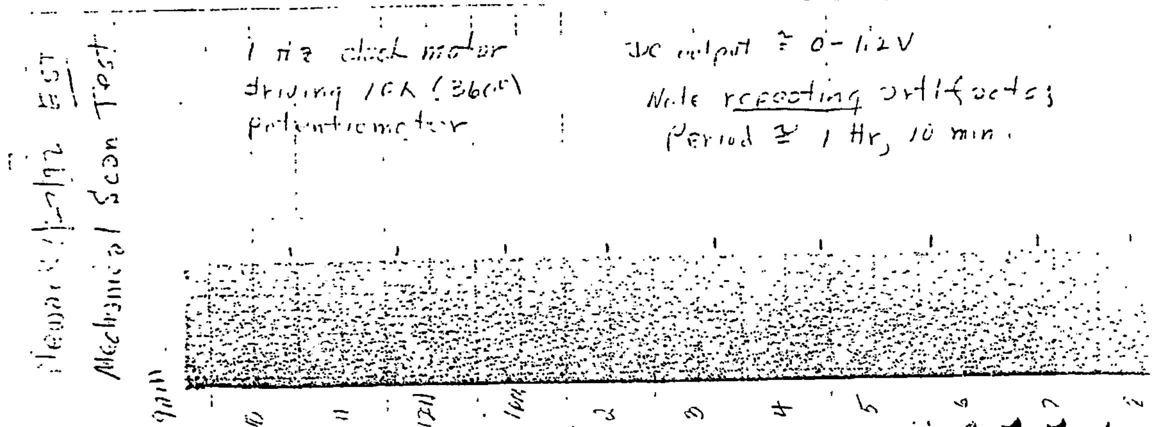




10 KΩ precision 360° potentiometer { This pot is driven by a 1 Hz clock motor.

Note: Rustrak unit samples once every 2 seconds!

C. Test Results :



D. Conclusions : No apparent ELF 'resonances' were noted in this 11 hr test run. The 'structure' which was seen appears to be related to 'artifacts' due to a small change in phase between the two synchronous clock motors. There may also be some 'weak' responses due to 'pot noise' and possibly 1/f noise generated in the resistances. However, there did not appear to be any 'scalar' responses to be seen which could be related to the Rustrak unit directly. It is surmized at present, that the ELF 'resonances' seen in previous tests may have been 'detected' by the large timing capacitor in the generators

610

610

Cosmology Note

GH Labs
Newark
6/28/92

I. Some ELF 'Resonances' ???

A. An LM 566 voltage controlled Oscillator IC was used as the function generator in these tests. The waveform is essentially triangular in form. Most 'patterns' are seen when the frequency is less than 1 Hz.

B. Remarks:

① In Figure (1) The test oscillator was biased with a 9 volt battery and the power supply filter was disconnected. At about .2 Hz, little structure was seen. However, at about .25 Hz, some interesting structures (patterns) came into view.

② In Figure (2), the test frequency was reduced to about .03 Hz. With the filtered AC adapter power supply, little structure was seen; however, resorting back to a battery supply developed interesting 'patterns'.

③ In Figure (3), I tried to return to about .25 Hz again. With the AC power supply some 'structure' was seen between about 3 and 5 PM (EST), which might have been related to the proton winds from the sun flare of the previous day. However, the structures seen on 6/23/92 were not noticed -- not exact frequency???

II. Conclusions

① Based upon the mechanical scan test of 6/27/92, it is presently surmized that these 'patterns' may be real and not due directly to the Rustrak recorder. More likely, they are due to ELF scalar signals being detected by the large timing capacitors in the function generators, in a manner similar to the past GW detectors.

Fig. (1) 6/11

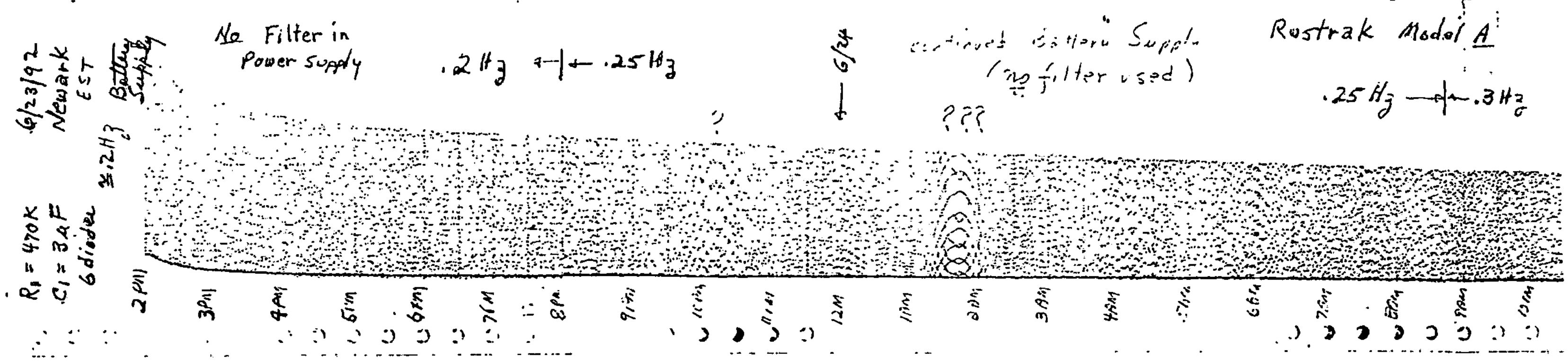


Fig. (2)

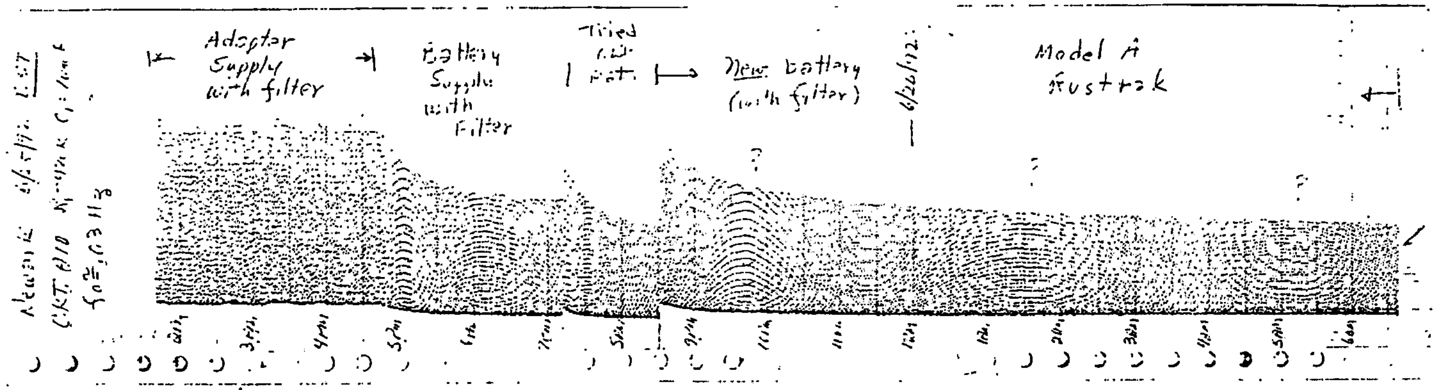
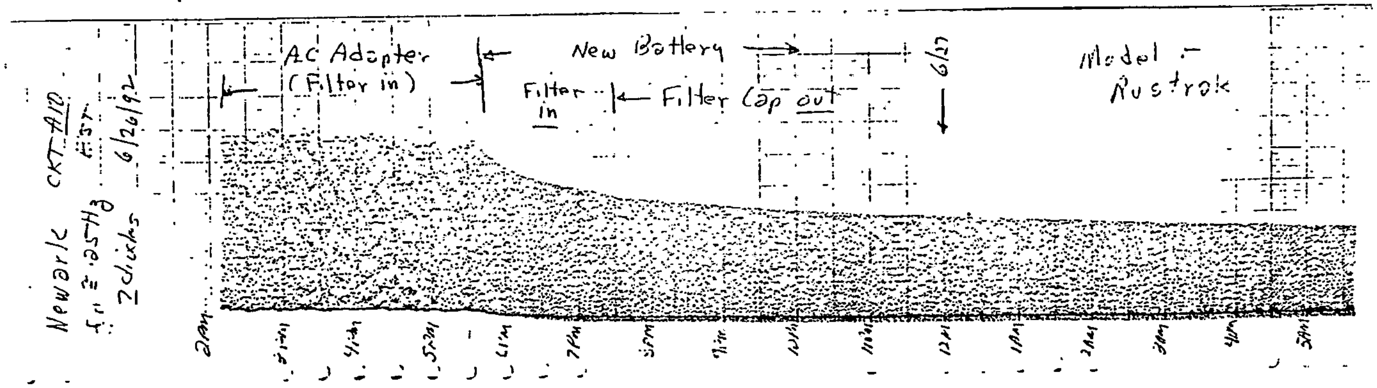


Fig. (3) 6/11



(612)

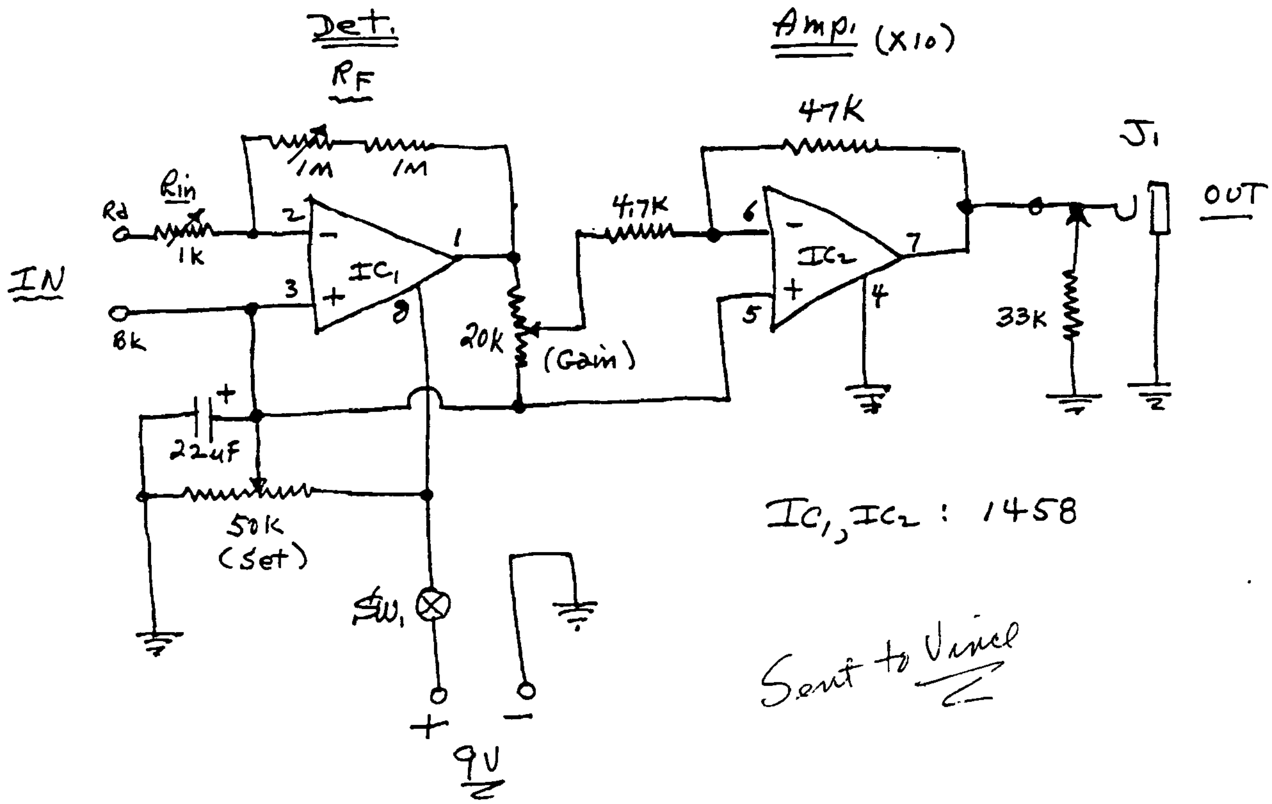
Cosmology Note

GH Labs
Newark
7/12/93
(gh)

(612)

I. GW Ckt. Test Bed (Ckt. #400B)

A. Schematic:



IC1, IC2 : 1458

Sent to Vince

B. Remarks:

1. Unit is suitable for QND, 1/f, and gravimeter tests.
2. While a single 9V battery supply is used, the unit operates also in the AC mode.
3. Rin is normally kept at 0Ω. Add minimal Rin only if IC device used tends to go into ELF oscillation at high gain levels.
4. Gain and Set controls are internal trimpots. (Gain is white; Set is black.)
5. Adjust Gain control so as not to overdrive IC2.
6. Ckt. 400B was tested with Radio Shack Speaker/Amp. Part No. 277-1008.

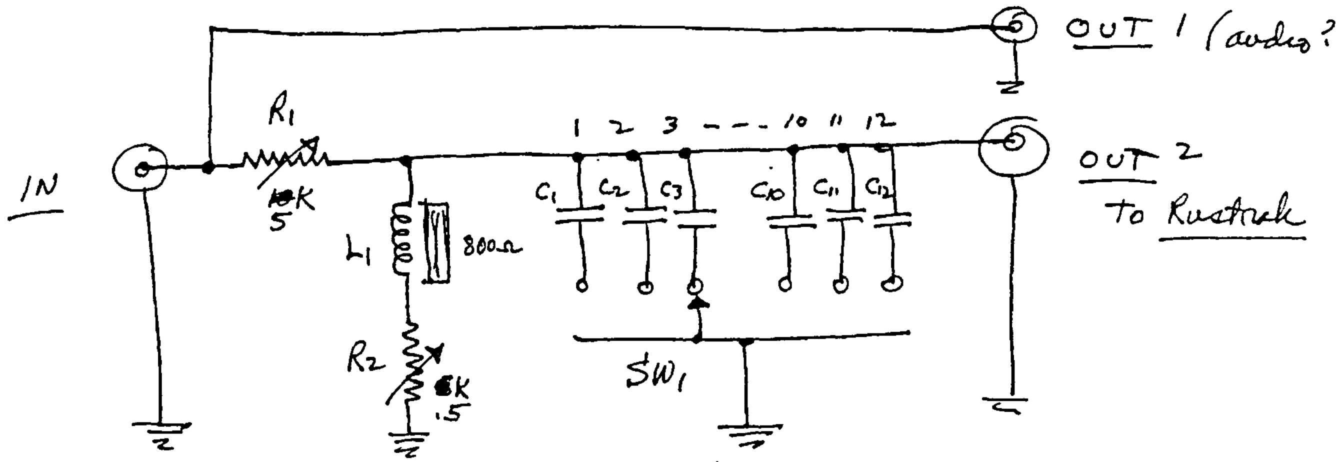
6/13

Cosmology Note

GH Labs
Newark
9/2/93

I. Simple LF B.P. Filter (#B.P.-2)

A. Circuit (Parallel Resonant Type)



$L_1 \cong 10\,H$ (?)

B. Response (f_0) 3dB BW $\cong \pm \tfrac{1}{2} f_0$

			B.W.
C_1	$\cong 6.6\,\mu F$	$\cong 6\,Hz$	$\cong \pm 3\,Hz$
C_2	$\cong 3.3\,\mu F$	$\cong 12\,Hz$	$\cong \pm 6\,Hz$
C_3	$\cong 2\,\mu F$	$\cong 20\,Hz$	$\cong \pm 10\,Hz$
C_4	$\cong 1\,\mu F$	$\cong 40\,Hz$	$\cong \pm 20\,Hz$
C_5	$\cong .47\,\mu F$	$\cong 85\,Hz$	$\cong \pm 40\,Hz$
C_6	$\cong .22\,\mu F$	$\cong 180\,Hz$	$\cong \pm 90\,Hz$
C_7	$\cong .1\,\mu F$	$\cong 400\,Hz$	$\cong \pm 200\,Hz$

(614)

Cosmology Note

GH Labs
Newark
9/11/93

(614)

Dear Colleague: This may interest you.

I. Some preliminary tests of Ckt. 8000B followed by a simple B.P. filter.

A. Simple 40 Hz B.P. Filter

The initial test circuit for this filter is shown on the attached sheet. It is basically a parallel resonant tuned circuit having a center frequency (f_o) of 40 Hz and a 3db B.W. of about 80 Hz. The center frequency can be shifted somewhat by changing the value of C_1. The control, R_1 , was added to change the BW to some extent, but it will also affect the scale of the Rustrak recorder unit. This experiment was tried to determine if bandpass filtering would limit GW signal responses to a definite range in space. This would be evident if 2-D type responses were to become somewhat more limited and if there were more 'repeatable' responses seen.

B. Initial Responses

The initial test runs for the 40 Hz BP filter are shown in Figures (1) and (2). The tests indicate that the response is a function of the detector operating conditions as well as of the filter characteristics. The conditions of Figure (1) showed very little cosmic 'shadow' response, but appeared to be quite sensitive to 'effects' which affect the earth g-field response. This has been noted before with Ckts. 8000 and 8000A. The conditions of Figure (2) showed less g-field variations, but had a more pronounced response to certain 'structures' as is seen near the Vega meridian line. These structures were also quite repeatable with LP filters of 20 Hz or less. The structure marked 'Vega' appears to be a well-defined 'black hole and ring' structure. Since it took about three minutes to 'scan', this structure must subtend an area in the sky about 1 1/2 times the apparent diameter of the moon.

C. Conclusions

1. Adjusting the operating point of the detector IC in circuit 8000B appears to make the unit more versatile. For example, the conditions of Figure (1) appear to make an increase in the earth's g-field an up-scale reading on the Rustrak chart. However, for the conditions of Figure (2), which is more generally used, the increase in the g-field is a down-scale reading on the Rustrack unit. This is probably due to the IC operating point being on either the + or - side of the dual power supply.

2. Use of a BP filter in the output of the detector therefore seems to limit response on the Rustrak chart to a definite depth range. This is indicated by the 'sparser' recording of 'imbedded forms' and the increased repeatability of 'strong' signal responses.

3. This area of investigation is fertile ground for more advanced developments in these techniques.

Greg Hodowanec

P.S. - The 10 H subminiature choke was from Radio Shack many years ago. Perhaps some surplus outlets may still have them?

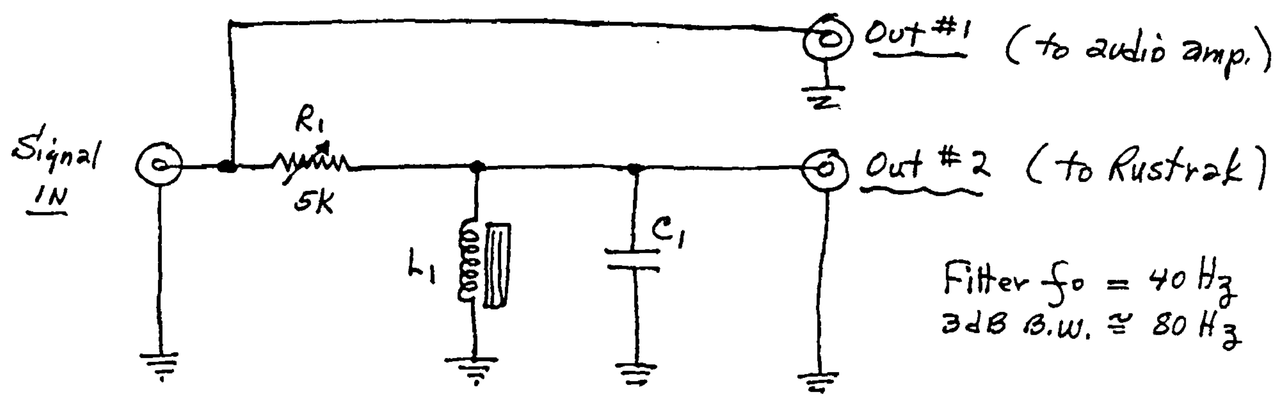
(2) (615)

(615)

Cosmology Note

GH Labs
Newark
9/10/93
(gh)

I. Test B.P. Filter (Parallel Resonant Type)



L_1 : ≅ 10 H (800 Ω) miniature choke coil

C_1 : ≅ 1 μF (non-polarized electrolytic)

II. Test Conditions for Rustrak chart records:

A. 8000 B : For test of Figure (1).

OFF-SET : −V, control at about 80% full.

Gain : control at about 40% full.

B. 40 Hz B.P. Filter : For test of Figure (1).

R_1 : ≅ 200 Ω

A. 8000 B : For test of Figure (2).

OFF-SET : −V, control at about 60% full.

Gain : control at about 80% full.

B. 40 Hz B.P. Filter : For test of Figure (2).

R_1 : ≅ 100 Ω

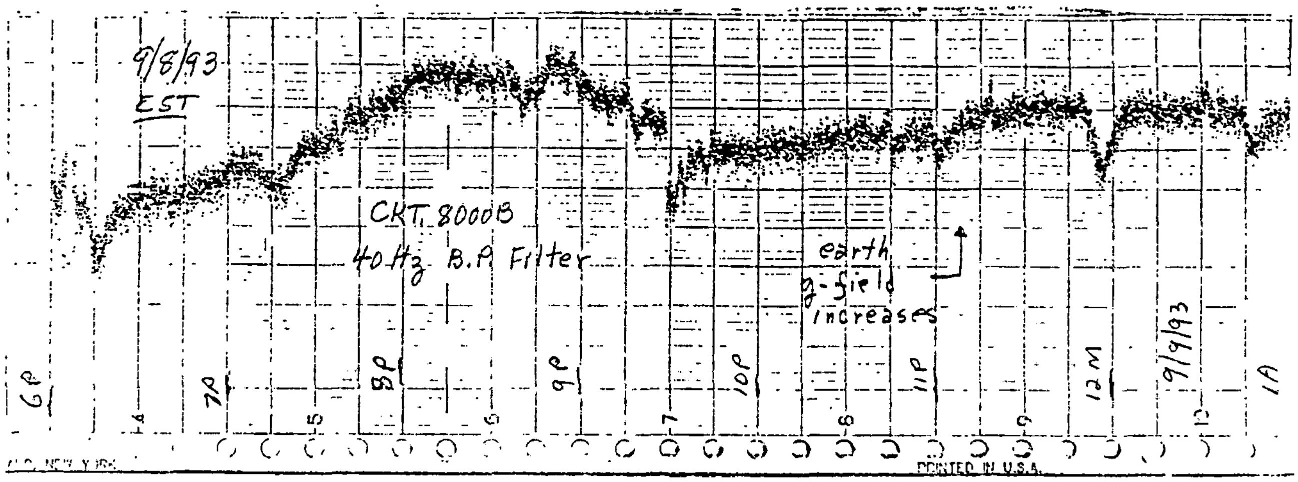
III. Rustrak recorder is driven directly as 0−100 mV meter.

(3) 616

616

GH Labs
9/10/93

Figure (1)



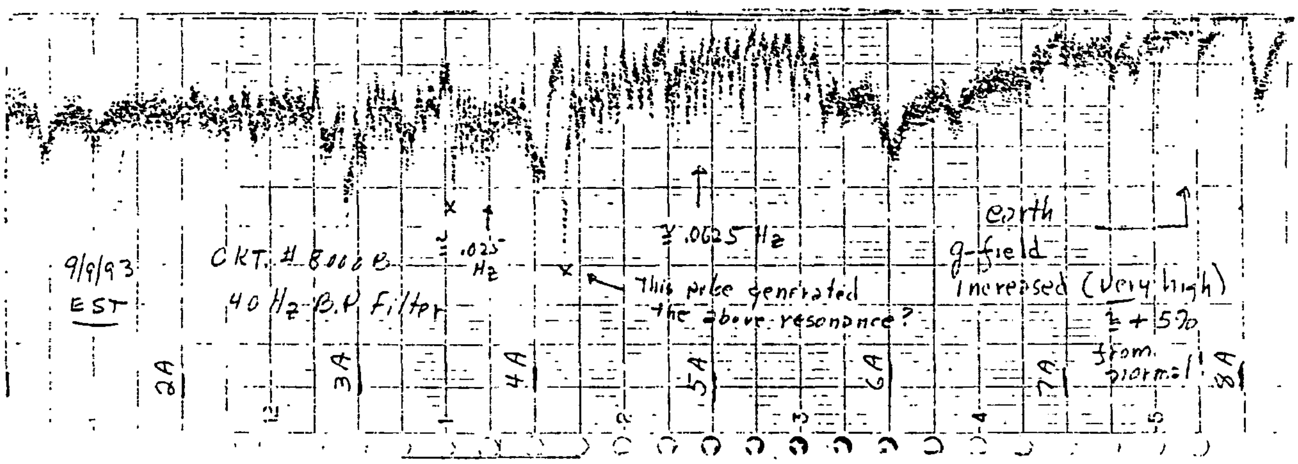
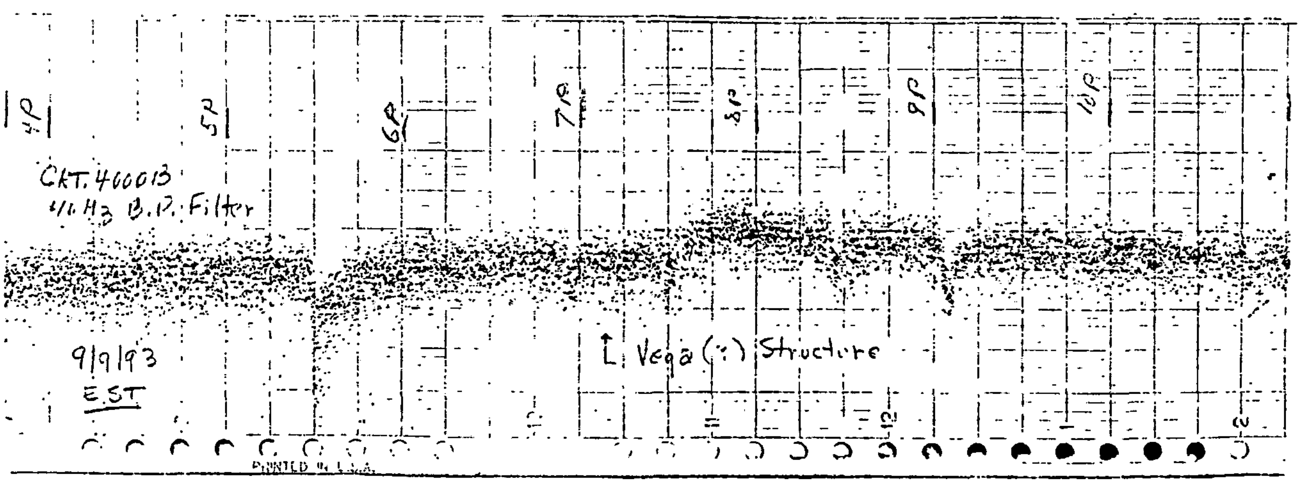


Figure (2)



(617) Cosmology Note GH Labs (617)
Newark, NJ
Dear Colleague: This may be of interest to you. Oct. 10, 1993 (?)

I. Recent Circuits and Experiments:

Within the limited time I have recently been able to devote to some research efforts, I have concentrated on the construction and evaluation of a well-shielded master gravimeter circuit and a simple alarm circuit to be used in conjunction with the gravimeters. Schematics of the present prototypes are enclosed.

The master gravimeter circuit, #8000C, is a single IC unit and was built into a large steel cabinet to provide for both electrostatic and magnetic shielding against possible EMF responses. It is powered by two type 'D' cells and has a built-in voltmeter, an audio output, and a special output for 2-D tests with the Rustrak chart recorder, as well as 'fast scans' with the Esterline-Angus chart recorder. It has provisions for several bias modes for the IC for added flexibility. The unit 'on' light also serves as a very low battery indicator.

Preliminary tests had been made with circuit 8000C which indicated it to be normal in operation. Several days scans were also made under various operating conditions. The 2-D type scans were quite revealing. Many 'repeatable' detections were observed. In particular, it was very interesting to further follow the development of Cygnus 'H' which was reported previously. This structure is now well-defined with a single center 'black hole?' and a ring of separate masses now surrounding it. This ring has now expanded to a diameter of about 15 minutes of earth rotation time, implying that it may be much less than 300 light years away?? The averaged earth g-field measurements with this circuit have also been revealing, but lately, the wild variations in the outside temperatures have also affected the basement lab temperatures, and thus have adversely biased the unit output readings due to the temperature variations on the detecting capacitor. An oven-type temperature control for circuit 8000C is now under consideration. Another item noticed is that the overall 'structure' of a repeating event is best 'seen' when the object is located in the zenith region, but the central core, or black hole (?) is best seen when the event is under the earth. This is believed to be due to the 'filtering action' of the mass of the earth which sort of 'fades out' the surrounding structures.

The alarm circuit, AL-2, is intended to warn of very high (or very low) earth g-fields, whatever may the reason be. It works well, but will be connected to circuit 8000C only when that unit is temperature stable.

II. Comments:

These circuits are for your interest and possible evaluation. At present, I have ceased continous chart recording, since I now have much chart recordings on hand which have yet to be more fully analyzed. The only experimental work I plan in the near future is the thermal control for circuit 8000C. Otherwise, I plan to devote more time to the theoretical aspects of these efforts instead. Take care--- and good experimenting.

Greg

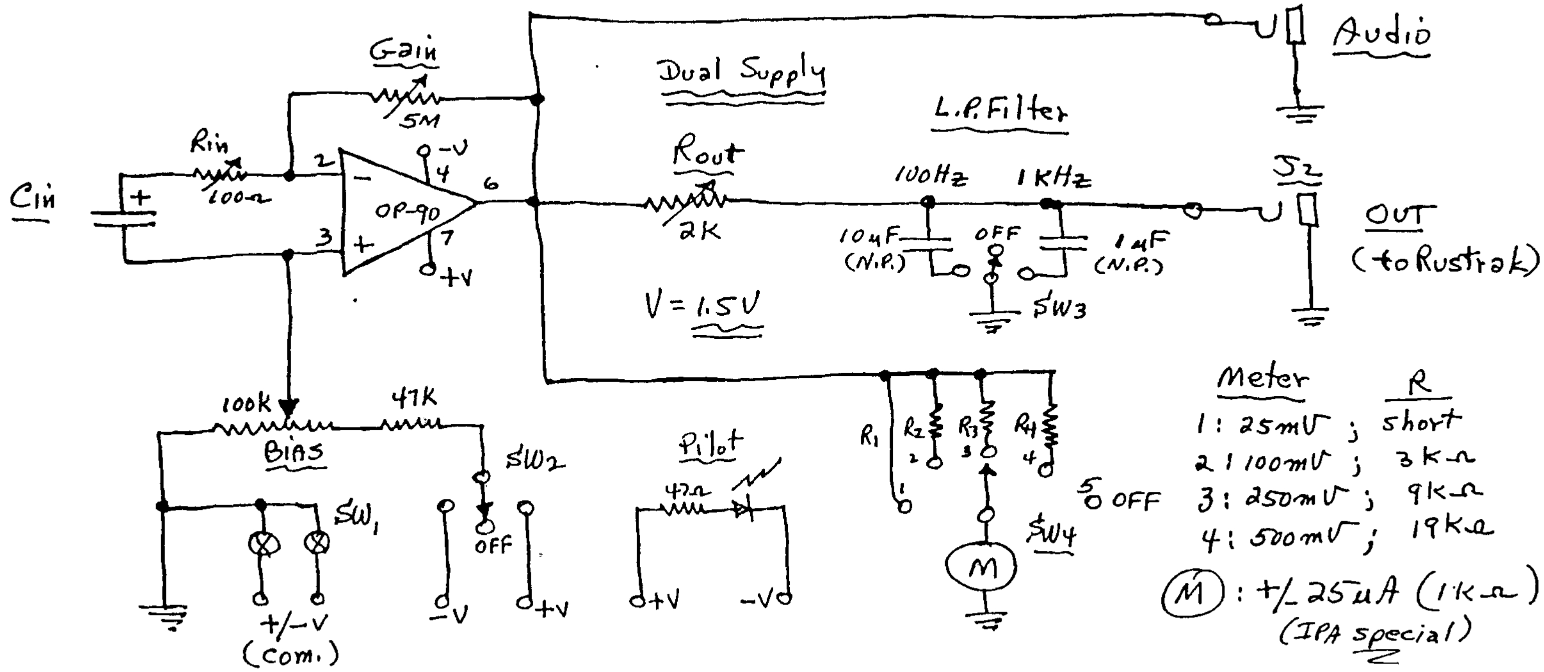
Bill: Will take it easier for a while now.
Take care —

Cosmology Note

GH Labs
Newark
10/5/93
G18
GW

I. Master Gravimeter Ckt. # 8000C

A. Schematic:



B. Remarks:

① Cin is 328,000 uF (7V) computer type capacitor.

② SW1: on/off; SW2: Bias polarity; SW3: Filter; SW4: meter range.

II. Operating Notes

① Rin is internal trimpot. Normally 0 Ω; use minimal Rin only if IC device used is unstable at high gains.

② Audio out is for monitoring 1/f and white 'noise'.

③ SW4 is normally at 250 mV; increase or decrease meter sensitivity as needed.

④ The bias control enables a wide range of IC operating points. Cin is generally connected as shown, but can be reversed with well-formed Cin! Negative bias and output seems to be most sensitive!!

G18

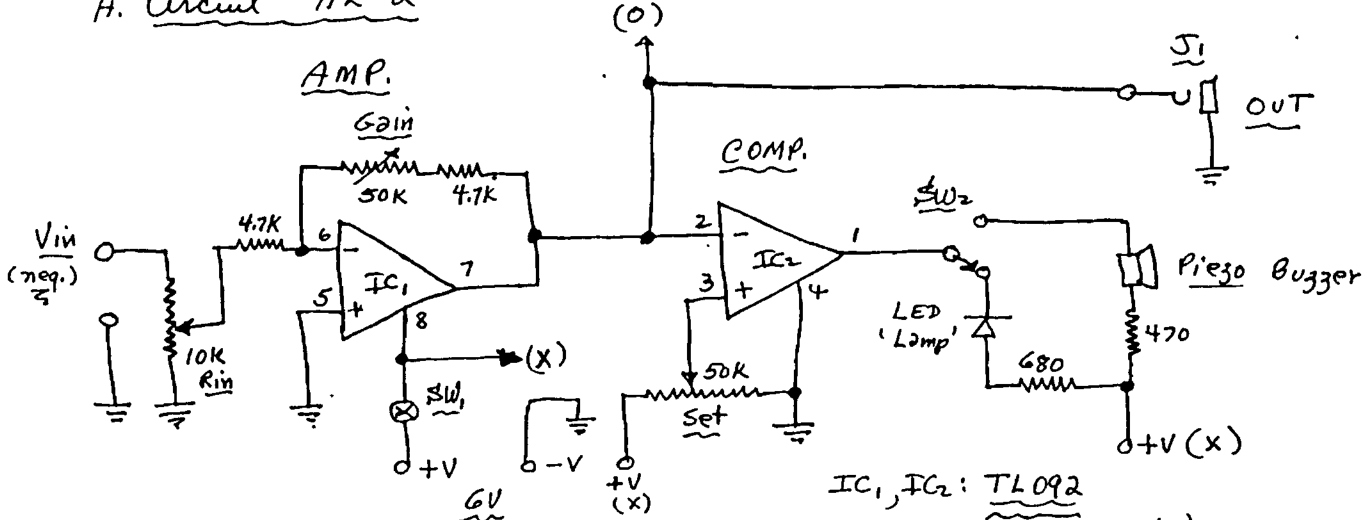
GH Labs
Newark
10/9/93

(6/9)

Cosmology Note

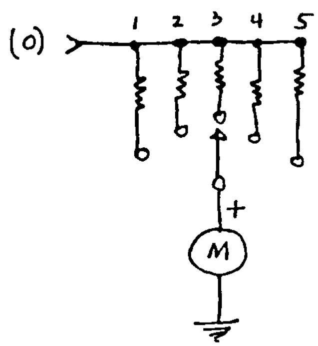
I. Simple Alarm Limit Circuit for GW Detectors

A. Circuit # AL-2



IC1, IC2 : TL092
V : 6V (4 C-type cells)

Optional Meter Ckt. (connect at (0) above)



	Range	R
1.	150mV	68Ω
2.	300mV	220Ω
3.	1.5V	1500Ω
4.	3.0V	3KΩ
5.	15V	15KΩ

Meter: Radio Shack
0-15V Panel meter

B. Remarks

1. Vin must be negative.
2. On-off (SW1) is on 10K (Rin)
3. Gain (50K) is internal trimpot
4. Piezo 'buzzer' is from Radio Shack
5. J1 (out) is for external meter or audio monitoring.

II. Conclusion: Ckt. as made is for upper limit on output (meter) only. Whether this will conform to a high g-field or a low g-field will depend on the gravimeter circuitry.

(6/9)

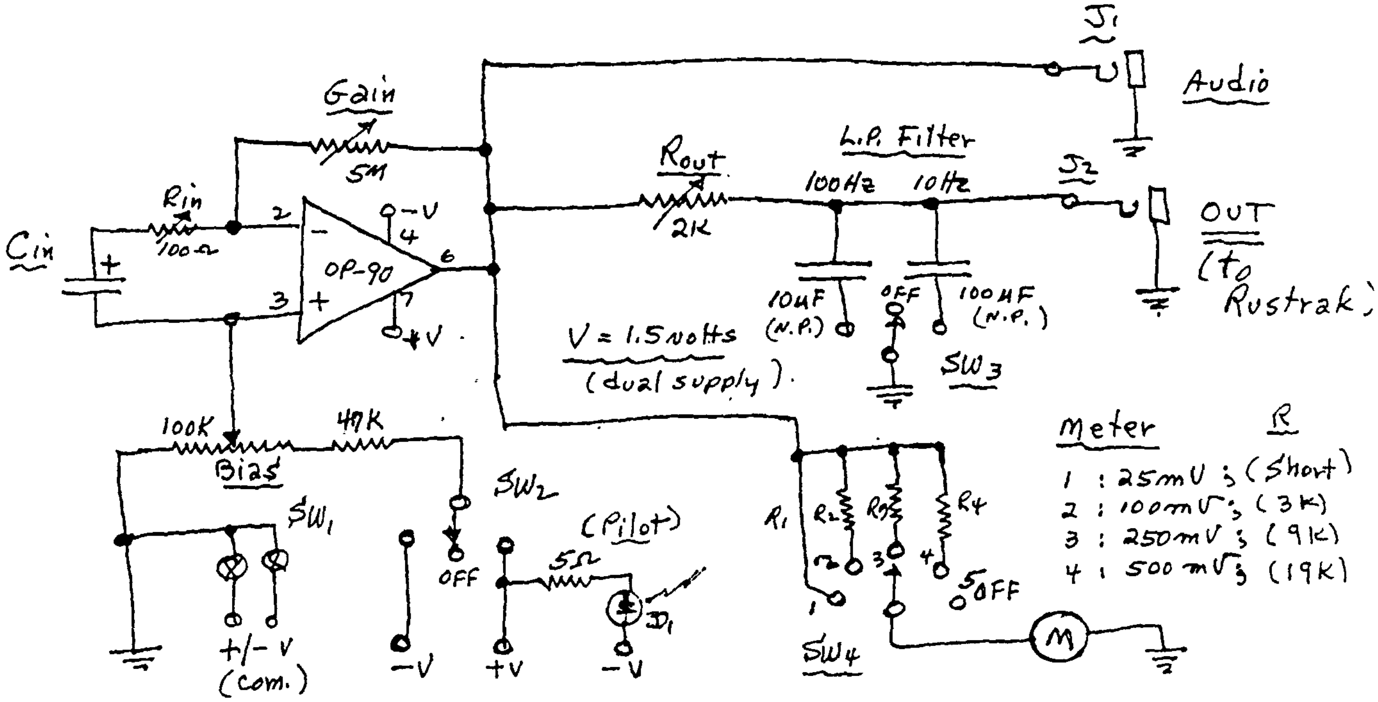
620

Cosmology Note

GH Labs 620
Newark
10/2/93
gh

I. Master Gravimeter Ckt. # 8000C

A. Schematic:



B. Remarks:

Cin : 328,000 uF (7v) computer type capacitor

M : +/- 25uA (1000Ω) API meter.

SW1 : ON/OFF

SW2 : Bias polarity selection.

SW3 : L.P. Filter selection

SW4 : Meter range selection.

II. Operating Notes

① Rin is internal trimpot. Normally at 0Ω; use minimal Rin only if IC device used is unstable at high gains.

② Audio output is for monitoring 1/f and white 'noise'.

③ Keep SW4 initially at 500mV. Increase sensitivity as needed; normally at 250mV or 100mV.

④ The bias control system enables a wide range of device operating points. Cin is generally connected as shown but can be reversed when it is properly 'formed'. Negative bias and negative output seems to be most sensitive.

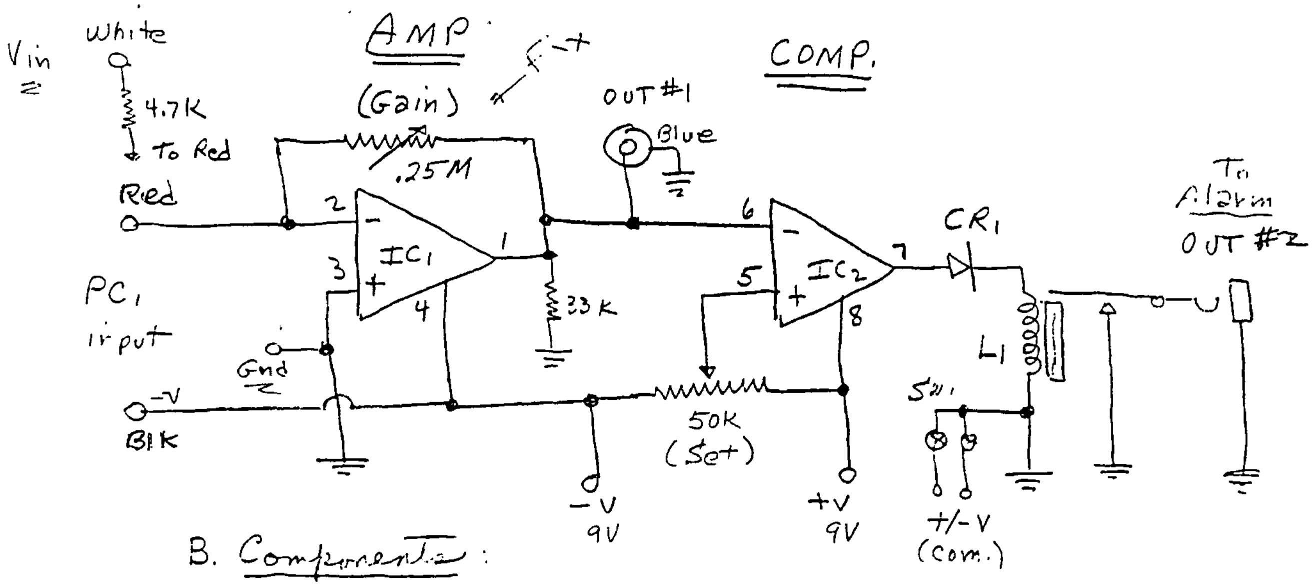
621 621

Cosmology Note

G H Lake
9/25/93
(90)

I. API Optical Meter-Relay

A. Circuit API-#1:



B. Components:

① IC_1, IC_2 : 1458 (any dual IC can be used).

② Photoconductor cell (PC_1) is main input for use with API optical relay unit.

③ White input (and Gnd) is used for a voltage source input rather than current-to-voltage conversion.

④ Out #1 is Amp. voltage output. Ampies current-to-voltage.

⑤ Set control is 'trigger' level for comparator. (Sets the reference voltage)

⑥ CR_1 is germanium or Shottky to keep voltage drop low.

⑦ L_1 is 12V (1.05 kΩ) Reed relay from Radio Shack

⑧ SW_1 is DPST power on/off switch.

II. Remarks:

(1) This is initial test circuit (works okay).

(2) CR_1 polarity as shown is for + output; reverse for − output.

(3) Trigger point (Set) is determined by both Gain and PC_1 (resistance) values.

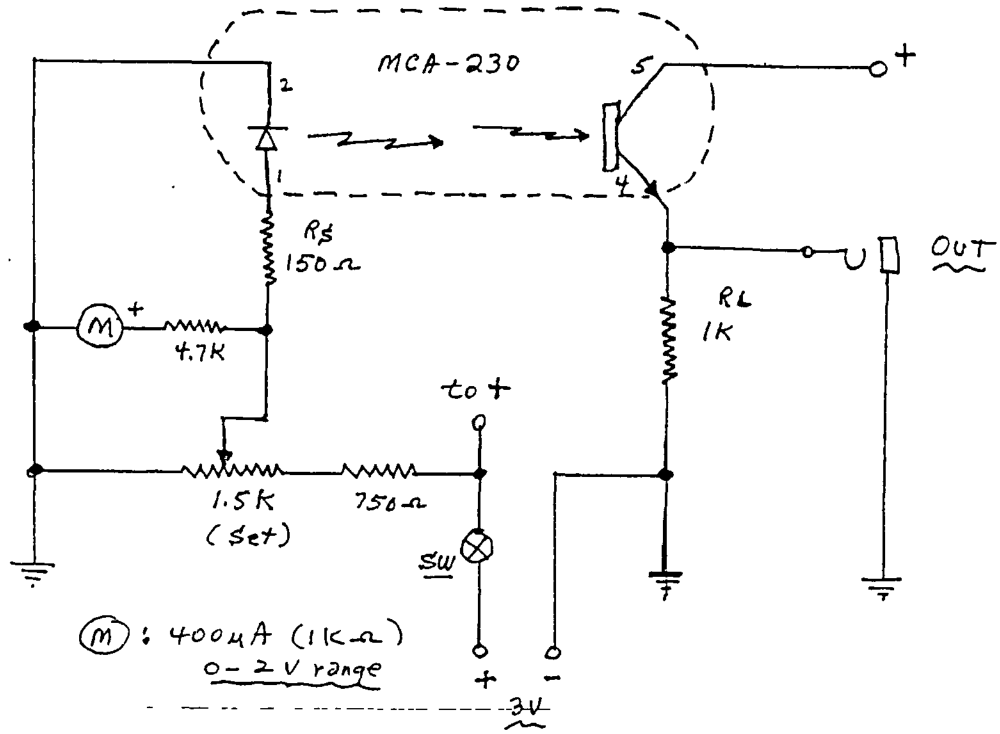
Cosmology Note

GH Labs
Newark
11/25/93
(gh)

(622)

I. Opto-isolator GW Detector Test

A. Test Circuit : Using early Monsanto MCA-230 Darlington Unit
CKT # OP-1 (Also tried MCT-2 device)



B. Remarks :

① A set control was used to be able to finely adjust the dc operating point of the LED in the isolator unit. A current limiting resistance (R$) of about 150 Ω was used to keep the LED forward current at about 15 mA. The maximum I_f for this particular unit is about 60 mA, thus at least a 47 Ω R$ should be used. Lower values of R$ (or no R$) will result in badly degraded LED junctions and thus poor (or no) operation of the unit as a GW detector.

② Operation of the LED near the 'Knee' of the transfer curve will result in strong 1/f and white noise response. When the voltage is reduced below the 'firing point' of about 1.1 volts, there is very little noise developed in the bipolar darlington junctions!

③ A Radio Shack Mini Speaker/Amplifier was used in the output.

623

Cosmology

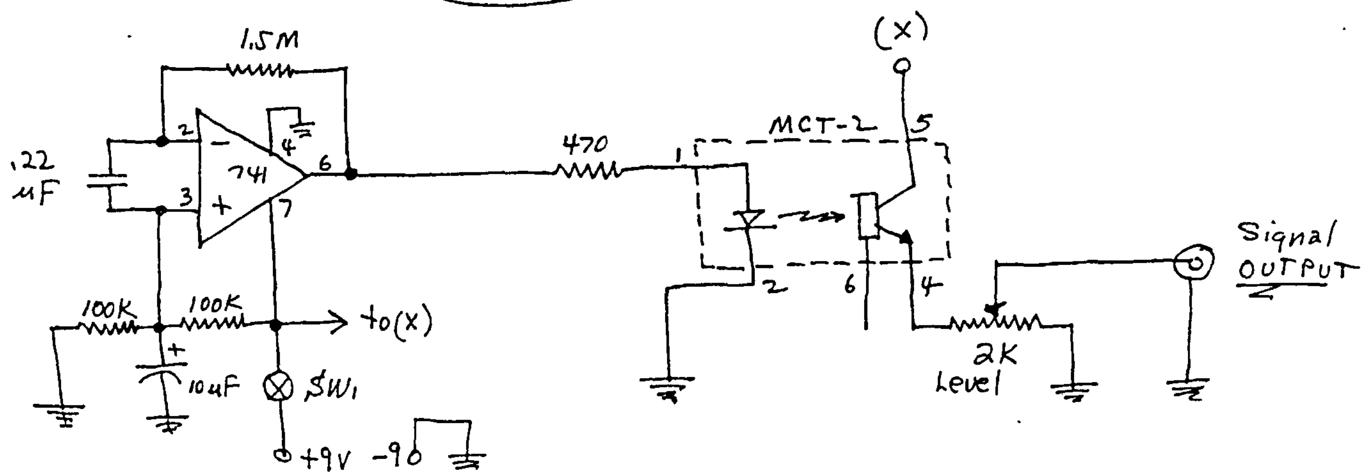
GH Labs
Newark
10/31/85
GH

623

I. Optically-coupled GW Detector (Simplest)

A. Circuit #42 as made.

Ckt 42



Notes:

(1) SW1 is sub-mini SPST Toggle switch (ON-OFF)

(2) Level control (2k) is mini pot (linear)

(3) Ckt. is basic QND type.

(4) Increased 1/f noise level noticed, but QND signals are clean.

624

624

Newark
Nov. 22nd/93

Dear Bill,

Enclosed is a copy of Ckt. 333B which I will use to follow the 'Local Supercluster' here, both in fast scan and 2-D scans. It is fairly straight forward in design. It works with the 1458 device with either the internal C-cells or a wall plug adapter. At one time I didn't want to use zener diode regulation as I was warned about zeners 'noise', but with the ~~adequate~~ filtering used, I don't really see any difference between the zener and a pure battery supply. I prefer running off the AC line in order to conserve the batteries for portable use.

The meter on this unit is unique. It was made by Parker Instruments and is a max. of 1/2" thick and fits on the front panel; only 1/4" meter leads goes through the panel. I got two of these at \$2 - each (!) when a local distributor was closing them out. I was afraid to take more since I thought they were simple vane type meters. However, they are true D'Arsonval meters, using flat printed circuit coils! They are fast response and accurate! If I knew that then I would have picked up more (15 years ago) since they had about 50 of them or so*. These were originally with 0-200V scales (I shorted out the internal 100K resistor). I ran a couple of 2-D tests with it (333B) just to see that it works okay.

I will return your copy of Callahan's report soon, after I copy some sections. Have a nice Thanksgiving!

* all different ranges, including AC!

Regards,

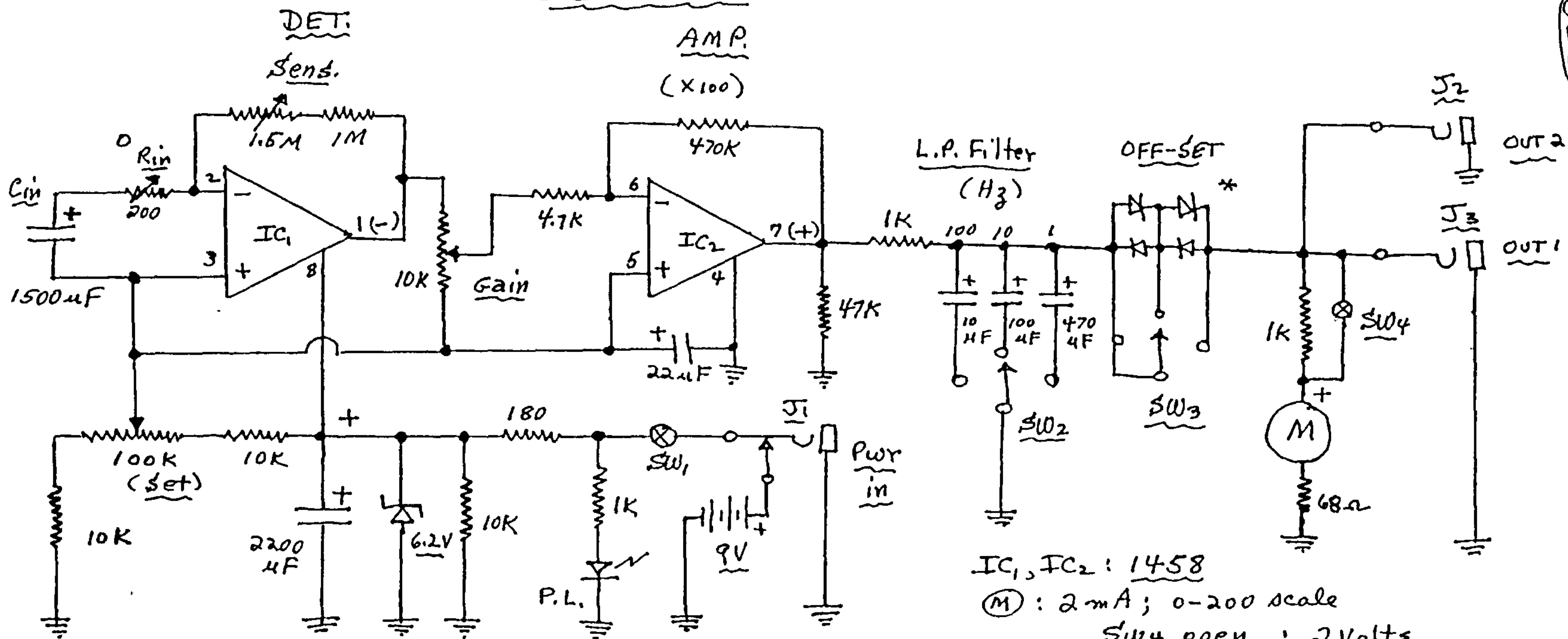
Greg

Enclosure (1)

Cosmology Note

GH Labs
Newark
11/12/93
gh

I. GH Labs Demo Unit: CKT #333B



IC1, IC2: 1458

(M): 2 mA; 0-200 scale

SW4 open : 2 Volts

SW4 closed : 200 mV

* Silicon Diodes; 3 sections in actual demo unit!

II. Remarks:

① This unit is similar to the basic GW circuit #75 but has been modified to make it more useful in both linear and 2-D type scans. It is intended to demonstrate the Supercluster + and more local galaxies. + 'local'

② The unit is operated normally from a 7.5 volt wall plug adapter supply, but has an internal 9 volt (6 c-cells) supply also.

③ Two output jacks are provided to facilitate connections to an external audio amplifier, meter and/or recorder unit.

④ The diode off-set control provides for .7 volts, 1.4 volts, (and 2.1 volts) off-set in the dc levels of the output in order to 'magnify' the fluctuation response.

⑤ The unit was fabricated in a fairly large (vented) steel cabinet.

0 Note: use minimal Rin only if the IC device used tends to ELF oscillations.

Cosmology Note

GH Labs
Newark
12/23/93
GH

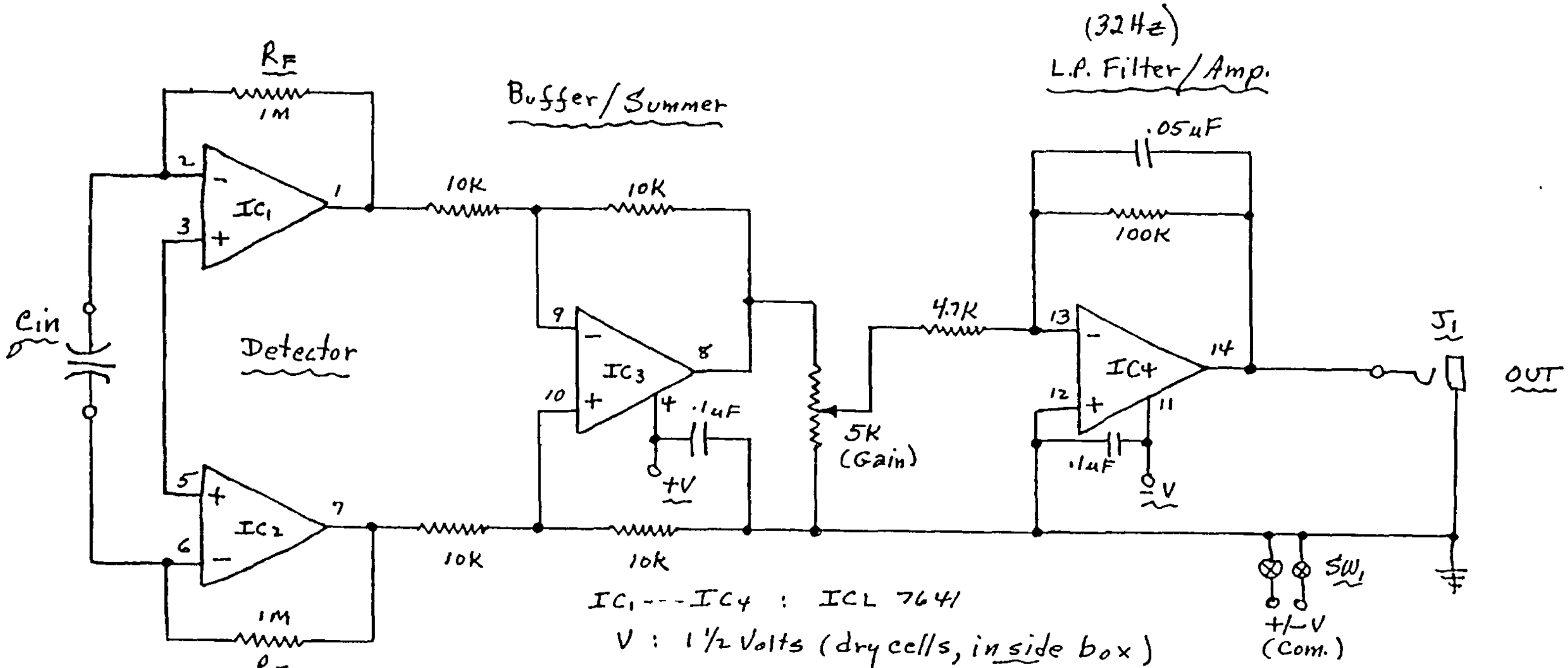
626

I. Simple Differential-Type-Amplifier GW Detector

A. Prototype Ckt. #10,000 A

(ICL 7641 with dual 1½ V supply)

P.S. - not built & tested yet! GH



B. Remarks:

① While Ckt. #10,000A was built into an aluminum box, the input (Cin) was brought out to pin jacks to facilitate the evaluation of other 'detection' devises.

② The 10k resistors in the buffer stage should be closely matched.

③ RF resistance can be made variable for more optimization.

④ L.P. Filter cut-off is approx. 32 Hz.

⑤ Circuit is a basic instrumentation amplifier; IA.

626

627

627

Jan. 3, 1994

Dear Bill,

I finally got a chance to build and roughly test Ckt. # 10,000, The instrumentation-type (IA) GW detector. The detectors are the usual current-to-voltage converters running with a fixed 1M feedback resistance. The detectors 'sum' quite well here and Thus There is a lot of output signal from the single capacitor! I put in a gain control as well as a 'set' control so as to be able to use it with chart recorders. The IA circuits swing +/- from zero. I checked it out with my analog type zero center voltmeter. Works fine. I increased The built-in LP filter to about 100 Hz, so that I could use my other lower cut-off filters also. I am now Trying some Rustrak tests.

I also tried the circuit with some coil inputs. I can pick up some 60 Hz and also the pulses from moving permanent magnets as well as pulsed electro-magnets. I believe it should be able to pick up scalar (GW) signals, but the coil must be of very high turns (inductance), such as Bill P. uses and The other coil researchers.

I had thought of using IA units in The past but never got around to it until I saw that more conventional IA circuit in the last issue of Geo-Monitor.

Hope This has been of some interest to you. I wish you and yours a very Happy and Prosperous New Year. Best regards,

Greg

628

Cosmology Note

GHLabs
Newark
1/2/94

628

Dear Colleague: This may be of interest to you.

I. Remarks on the IA-type GW Detector, Ckt. #10,000B

A. Preliminary tests of the instrumentation amplifier type (IA) GW detector circuit #10,000B indicated that the signals 'heard' on this unit are very much like those heard on Geiger Counters! This seems to imply that perhaps radioactivity effects might be 'set off' by these GW signals?

B. Some speculative thoughts on this:

1. Possibly the GW signals present at each zenith-nadir line on earth generate the 'impulses' needed to 'excite' the radioactivity events?

2. The type of signals being 'heard' on the IA-type detector at this location should also be available at every other individual zenith-nadir line on earth!

3. Each individual 'impulse' is a rhysmonic vector force and thus should easily be physically located well within the realm of an atomic nucleous.

4. The energy of such rhysmonic 'impulses' could thus be possibly transferred to certain atomic nuclei which are momentarily unstable to enable the observed radioactivity. This should be possible since we know that GW signals also react with matter (mainly nuclei) to cause the observed gravity acceleration and the reaction in these capacitive detection elements. The actual process needed for the radioactivity, however, requires further study.

II. Conclusions

This appears to be a viable area for further investigation and it could turn out to be of great importance. It would be nice if a few of you could try the experiment and see if you could confirm my observations here. When time permits I will try some other devices and continue some studies here also.

Bill

For audio tests, I ran the output to a Radio Shack Mini Amplifier Speaker Unit.

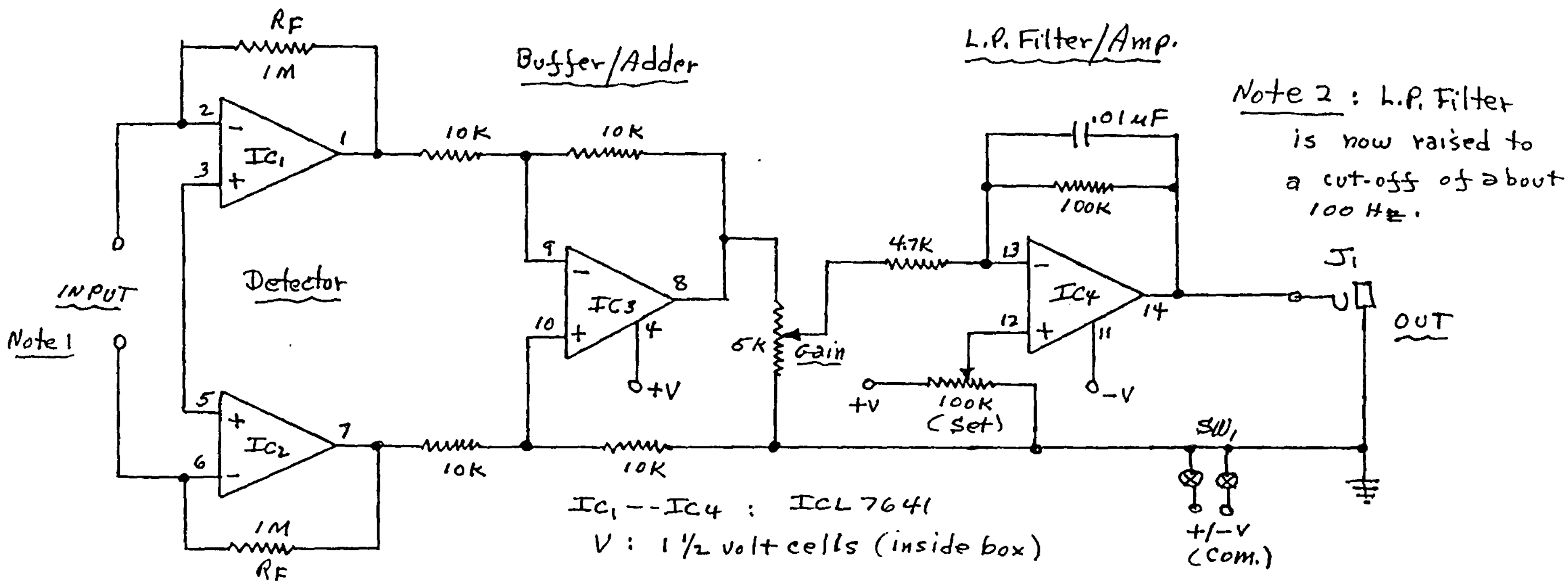
Cosmology Note

GH Labs
Newark
12/27/93
(gh)

629

I. Simple Differential-Amplifier Type GW Detector

A. Prototype Ckt. # 10,000 B
(Tested 10/28/93)



B. Remarks:

① Ckt. #10,000 B is constructed within an Aluminum Box but The detector 'device' input is brought out in pin jacks --- to facilitate test of other devices.

② Use matched 10K resistors in the buffer stage (Best CMMR).

③ Ckt. swings +/- around 0 volts; set control was added to enable use with positive input chart recorders.

④ Ckt. is basic instrumentation amplifier (IA).

⑤ Ckt. is very sensitive (large outputs)..

Note 1: Input device must be current generator. Will coils work here?? Evaluated with capacitors over range .1uF to 3000uF. works okay here.

629

(630)

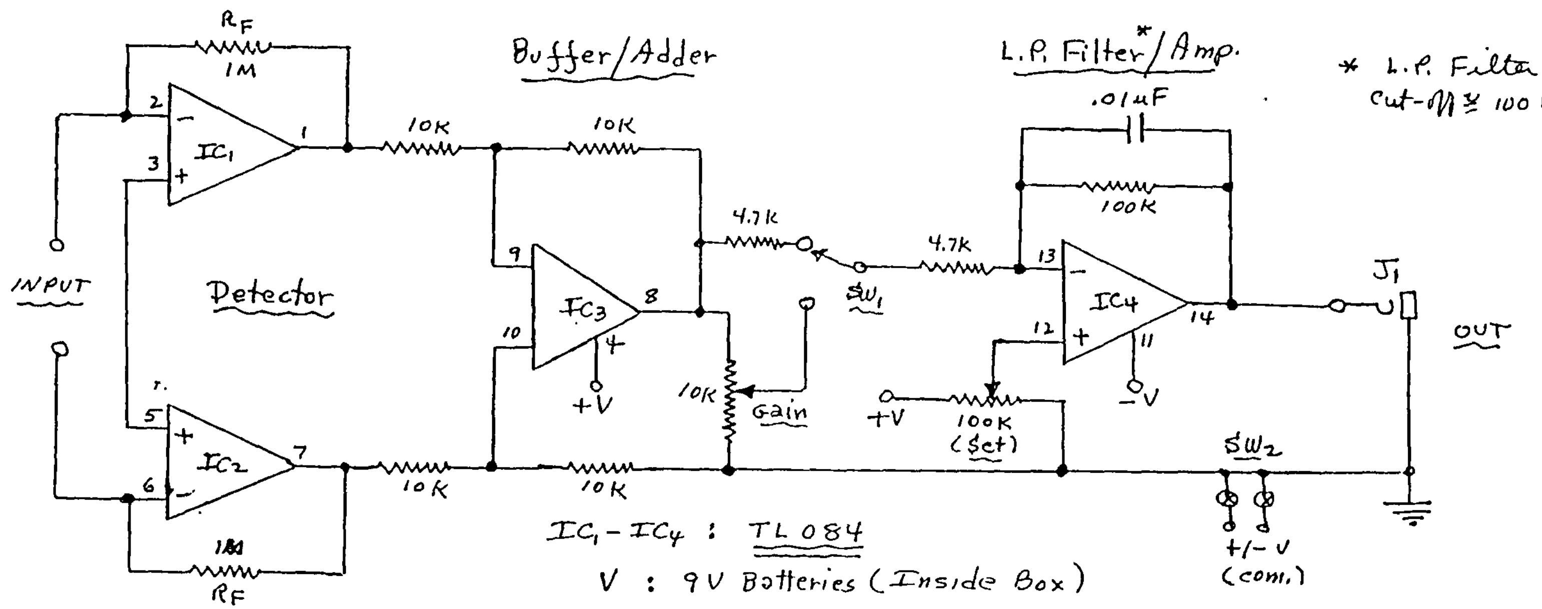
GH Labs
Newark
1/14/94
(gh)

(Cosmology Note)

I. Differential Amplifier Type GW Detector

A. Ckt. # 10,000 C

* L.P. Filter cut-off ≅ 100 Hz.



IC1 - IC4 : TL 084

V : 9V Batteries (Inside Box)

Note: Set control is internal.
SW1 is on gain control. SW2 is ON/OFF.

B. Remarks :

① Ckt. #10,000 C is constructed in a steel box but the detector 'device' input is also brought out to pin jacks -- to facilitate tests of other devices.

② Use matched 10K resistors in the buffer/adder stage for best CMRR.

③ Ckt. normally swings +/- around zero. Set control enables use with positive scale output meter or chart recorders.

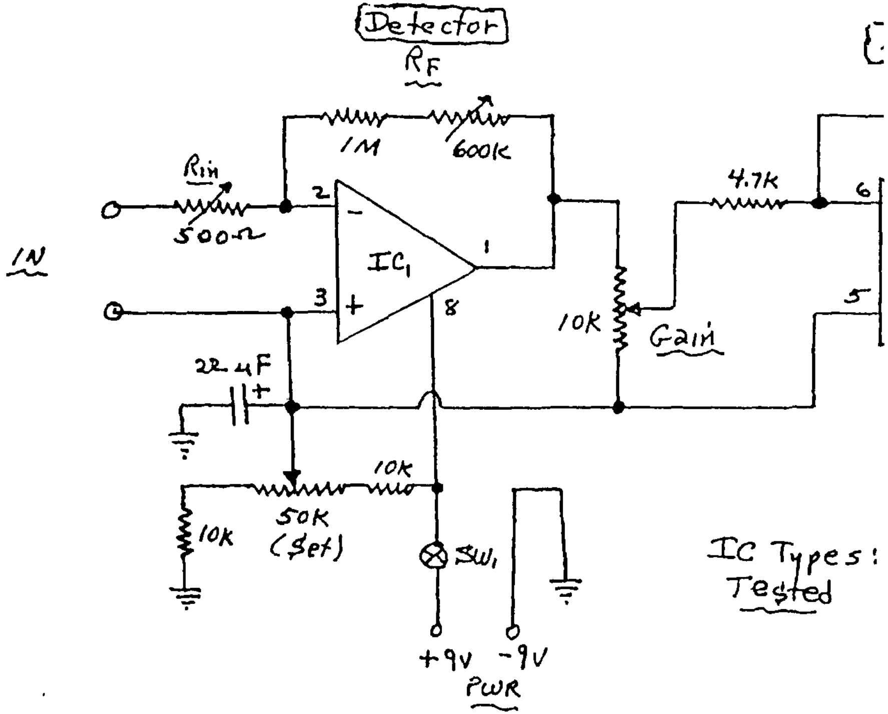
④ Ckt. is basic instrumentation amplifier and is very sensitive with large scale EX cursions!

(630)

Cosmology Note

I. GW Test Jig (Ckt. # 400c)

A. Schematic:



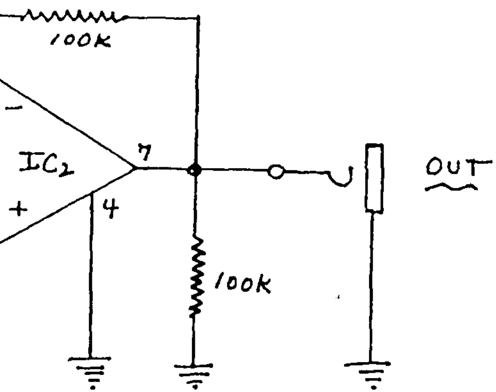
IC Types:
Tested

B. Remarks:

GH Labs
Newark
2/1/94
gh

631

Amplifier



(1) (632)

Cosmology Note

GH Labs (632)
Newark
2/15/94

I. Scalar Signals from a Microwave Oven!

It was noticed for some time now that a Sharp model R-3A60 Carousel II microwave oven at this location affected certain gravimeters here. Some very preliminary tests were made recently to determine if the 'effects' were scalar or EM effects. A brief summary report is given here.

A. Conventional GW detectors were used:

(1) Ckt.# 400A (741 device)
Rin ≅ 0 Ω
R_F ≅ 1.5 MΩ
Cin ≅ 3300 μF (6 v.)
} fair response

(2) Ckt.# 400C (1458 device)
Rin ≅ 0 Ω
R_F ≅ 1.3 MΩ
Cin ≅ 4700 μF (10 v.)
} very good response

B. Nature of the Response:

(1) The detected signals, when the microwave oven was operating (about 10' away, one floor up), appeared to be about a 30 Hz 'rumble' with additional general 'noise'. The signals appeared to be 'modulated' with the position of the turntable in the microwave oven.

(2) The signals appeared to fall within about a 2 foot sector, centering on the microwave position, and appeared to be of similar strength +/- 10 ft away. The signals 'disappear' sharply off this 2 foot sector.

(3) No attempt was made to check signal output at the same level (ie., at the first floor).

II. Conclusions

(1) The scalar signals appear to be related to the 'standing wave' E-fields (or H-fields) of the EM generated in the oven cavity. The 30 Hz 'rumble' could be due to a half-wave (DC voltage) powering the oven magnetron. The article being 'cooked' on the carousel appears to be 'modulating' the scalar field output, resulting in 'strange' signals.

(2) (633)

GH Labs (633)
Newark
2/15/94

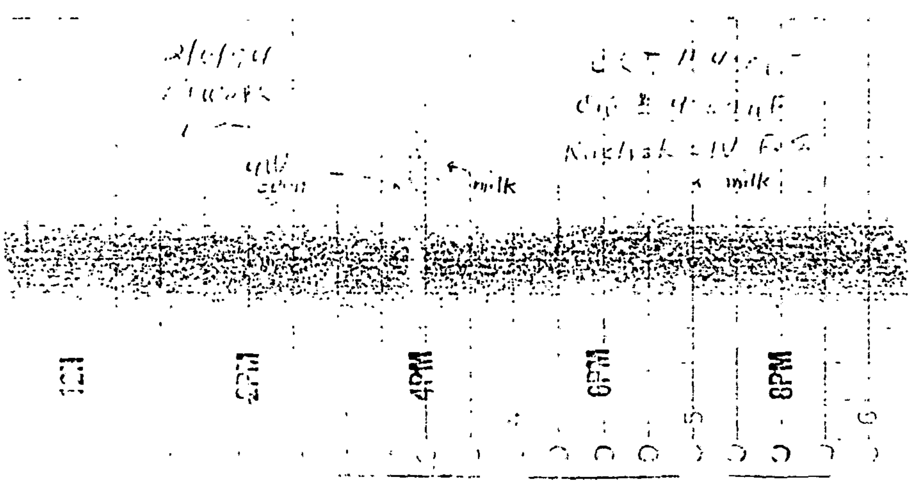
Conclusions :

② A Radio Shack Mini Amp/Spkr. unit was used in the output of the detectors. A larger (4") speaker was plugged into the Mini unit output jack to better respond to the ULF signals detected.

③ The unit #400A required about a 3/4 full on the Mini Amp volume control for best response. Unit #400C needed only about a 1/4 full on the Mini Amp volume control for best response. Under these conditions, The detector response would drop down to only a low level MBR response when the microwave unit was off.

④ These preliminary tests were made because recently I was running some Rustrak Tests with Ckt. #400C, 'looking' for a possible cosmic source for the recent rise in 1/f noise levels. The recorded charts showed a very high level 'noise' response for about 10-12 minutes at around 4:00 PM for two days. When these responses did not show up at 4:00AM and then 'disappeared' since, I was able to 'associate' it with my wife 'baking' Idaho potatos in the microwave in this time period!!

⑤. Here is one of those responses:



Note

The 10 min response at at 3:50 PM is the Idaho 'baking'. The 1 min responses marked 'milk' is my wife heating her mug of milk.

(634) Cosmology Note (634)

March 5, 1994

Dear Bill:

In going over some early Notes, looking for the original note on Ckt. #15, I came across some other Notes which could be of interest to you. Some remarks follow:

I. Ckt. #15 : This unit has been in continous operation since early 1984. The unit has been used for many early experiments in "modulation" tests and GW communications. For some reason, this unit 'works' very well in these sort of tests and it is recommended that this unit be built for any GW pendulum or communication tests. The Ckt was also shown in R-E Experimenter Handbook and a SARA article. (See also Note of 4/3/84)

II. Note of 9/11/86 was an attempt to answer a colleague's 'question' on how the detector capacitor might be 'working' as a detector (or source of) scalar signals.

III. Note of 2/22/87 was an attempt to explain to a colleague how Saxl's Pendulum test was possibly operating.

Remarks:

Thought you might be interested in some of this -- I will look into it further as I get time.

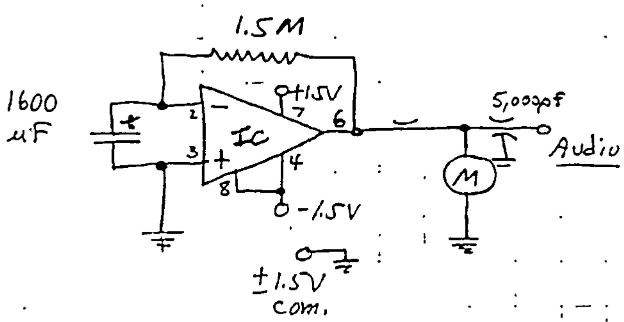
(FL)

(635) Cosmology

GHF. lab (635)
Newark
4/1/84
(gh)

I. Demonstration Unit, Ckt. #15

A. C-mos version : Single Op-amp
Shielded Box (Al)
1/f noise version



$M = \pm 50\,\mu A \ (\cong \pm 50\,mV)$
$(R \cong 1k\Omega)$

Note: No power switch; on continuously!

IC : ICL7611

B. Remarks:

(1) Meter detects massive supernovae, mainly within about 500M L.Y. away. (Most are probably in Realm of Galaxies)

(2) Detects local "shadow" effects.
a. Mass movements
Body (ie, head, fist, legs, arms, etc.)
b. Metal masses
Pendulum, etc.

(3) Non-quantum demolition, primarily due to very low resonance, - outside of range of most novae or supernovae. Meter responds mainly to dominant gravitational pulses, limited by meter inertia movement.

Later note → (4) The meter movement was added to 'load' the IC output and 'monitor' the response without running the audio amplifier on all the time. Also, it indicates when the battery is depleted.

Cosmology

G. H. Fabz
Newark
4/3/84

I. Detector #15 Notes: (Inter-galactic coherent signals?)

A. Low-level audio sounds:

(1) "swishing" and "staccato" sounds of general background gravitational radiation was heard as usual. Also heard were:

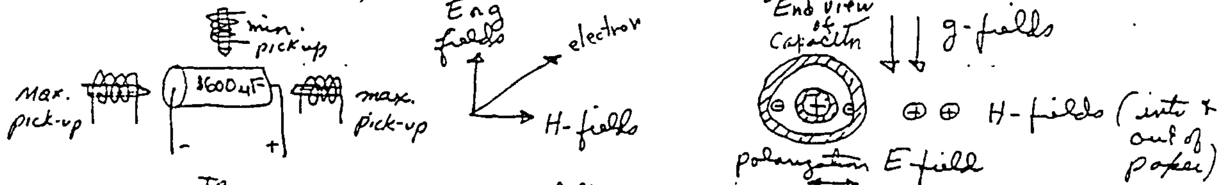
(2) "musical" sounds, something like an accordian playing the same bars of a "polka-type" tune over and over again. The sounds were monitored for about 10-15 minutes and then were "lost" when the detector was moved. (Directional signals?)

B. The "sounds" of (2) above could have been of earthly origin in that magnetic effects could still penetrate the shielded (Al) circuit, i.e., it could be a "local" TV, radio, or player which emits strong magnetic fields. Or else, it could be extra-terrestrial G.W. sounds of natural origin or extra-galactic communication signals? The sensitivity of Detector #15 to magnetic effects was tested as given below:

C. Magnetic Tests: (Preliminary)

ckt #15 in Al shielded box was used as receiver.

(1) A telephone pickup coil was coupled to the output of an FM radio receiver to serve as a "local" magnetic transmitter. Pickup was weak except in the regions of the capacitor as shown below. In any case, even with maximum receiver gain, all pickup was lost about 6" away from the detector. Therefore the source of the "musical" sound is gravitational and probably extra-terrestrial (galactic?)



a. Assume static g-fields & dynamic H-fields
b. Electrons move radially. Thus there is current

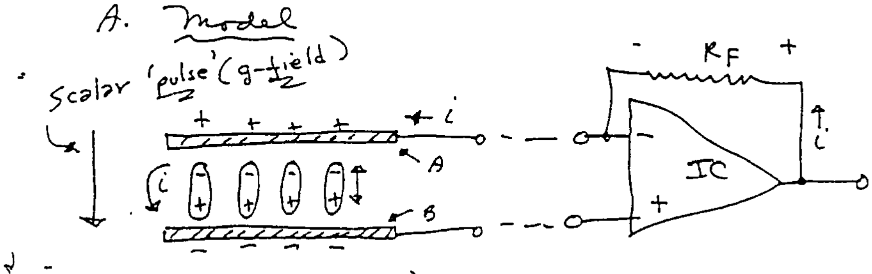
① (637)

Cosmology

GH Labs (637)
Newark
Sept. 11, 1986
(GH)

I. GW Excitation of the Capacitor

A. Model



(1) Scalar 'pulse' vector is drawn in direction in which a ~~positive~~ negative charge would move. (The ~~negative~~ positive charge would move in opposite direction) *

(2) The movement of charge as in (1) above, would result in the external current flow, i, as shown.

(3) The IC will draw the same current flow through the feedback resistance, R_F, causing a negative voltage to form at plate 'A' which acts as the restoring force in the capacitor element.

(4) The resulting E-field will 'polarize' the dielectric element now in the opposite direction, causing a current pulse also in the opposite direction, causing the IC to also draw current in the opposite direction.

(5) The voltage across R_F will again oppose this change and thus will restore conditions to (2) above, repeating the cycle at a resonant frequency which is determined by the number of carriers in the capacitor and the feedback voltage due to R_F. In other words, both E_0 and f_0 are determined by i and R_F; (i is also a function of the scalar impulse levels).

* For a scalar 'pulse' as shown, the 'bound' dipole would 'compress'. For a scalar pulse in the opposite direction, the 'bound' dipole would 'expand'! This is based upon 'image charge' experiments. Theoretically, a planar capacitor, with plates horizontal, should work best here??

B. Conclusions

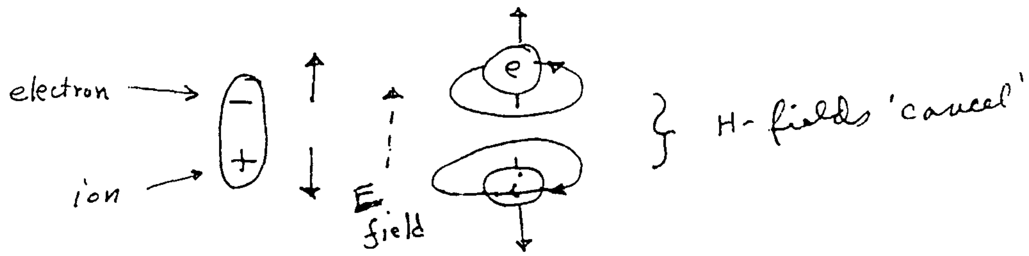
(1) The natural resonant frequency of the circuit is a function of C and R_F, but the amplitudes of the resonances are also a function of the scalar excitation. The resonance response is QND in nature!

② 638 9/11/86 638

II. Capacitor Generation of Scalar E-Fields

A. Tenet:

A scalar E-field is generated from excitations of charge carrier systems, which can also cancel the H-fields generated in this process.



(1) For electron 'spin' as shown (in translation upwards), the magnetic field is determined from the 'right hand rule'.

(2) For ion 'spin' as shown (in translation downwards) the magnetic field is determined from the 'left hand rule'.
(Ex?? right hand also??)

(3) The magnetic field due to ion movement can cancel the magnetic field due to electron movement. Thus, an E-field can be developed which is devoid of an H-field, the condition for generating a scalar E-field.

(4) The charges are 'bound' and as such do not 'move' far.

B. Conclusion:

① A capacitor can be a 'source' of a scalar E-field.

② An E-field applied to a 'bound' electron-ion pair can 'move' or polarize the structure.

③ A g-field is equivalent to an E-field and thus can also 'polarize' the 'bound' structure.

639

GH Loba
Newark
2/22/87
gh

Cosmology

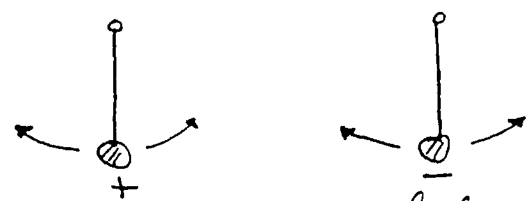
I. Saxl's Pendulum Experiment

A. Pendulum Period

$$T = 2\pi \sqrt{\frac{l}{g}}$$

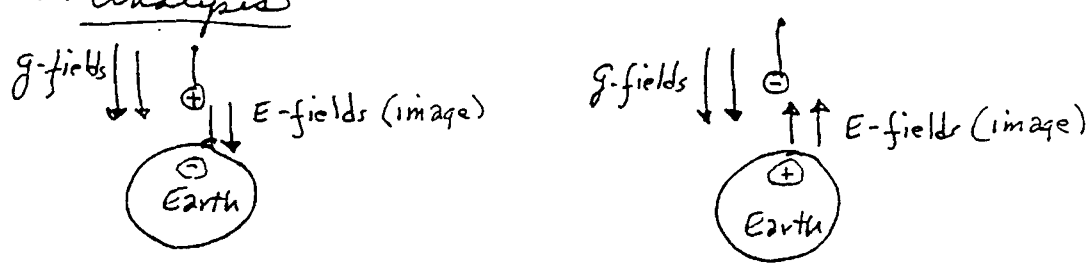
∴ period varies with g
ie., when g increases, T decreases.
when g decreases, T increases.

B. Saxl's Pendulum:



longer period   shorter period

C. Analysis



The E-fields and g-fields are in the same direction. Thus the apparent weight, ie., the g-fields, decrease and thus T increases.

The E-fields and g-fields are in opposite direction. Thus the apparent weight, ie., the g-field, increases and thus T decreases.

D. Conclusions

(1) Dr. Saxl's work is in agreement with rhysmmic cosmology.

(640) (640)

Cosmology Note

GH Labs
Newark
3/6/94

I. Follow-up on 'Signals' from a Microwave Oven

It was reported to a few of you colleagues that 'radiation' from a microwave oven was detectable on certain GW detectors. During a short visit here by Paul Savage, Paul believed it was EM signals being detected. Since the detector capacitors were external in the noted detections, this was a distinct possibility! On this date some additional tests were made:

1. Ckt. # 400A was used. The capacitor (3300 uF) was now placed inside the aluminum box. Tests indicated no change in response.

2. Ckt. # 400A was then placed within a steel case, with filter on feedthru for the output. No signals were obtained in this doubly shielded Faraday cage set-up.

3. The circuit as given in (1) above was then used as a probe to outline the EM response from the microwave. It was found that the response was in the form of a narrow beam from the 'window' section of the microwave. Some radiation was seen behind the microwave, but this was believed to radiation 'reflected' from a screen door in front of the oven (in basement).

II. Conclusions:

It is believed that the 'radiation' leaving the front window of the oven may be the 2.4 Gc fundamental RF of the oven, but more likely its higher harmonics? While this is very low level radiation, the very high sensitivity of GW detectors will respond to it. The response mechanism is probably due to the 'resonance' of the input capacitor 'transmission line' as given in the R-E article of July 1986. Simple aluminum box shielding may take care of the E-field component, but magnetic shielding is necessary for the H-field component. Therefore, it is concluded that no scalar signals are present!

(641)

(641)

4/25/94
(GW)

Bill:

Just a couple of lines to jot some initial 'brief looks' at Fogal's Transistor. It is hard for me to 'see' inverse Hall Effects taking place as Bill F. states. Even what I surmize may not be correct, but it is an idea, any way.

Glad to see that another person 'verifies' that 'mind over matter effect' in GW signal noise tests! Thought that maybe it was only in my own mind and not real?

Will be busy here with both inside and outside repair work due to that 'rough' winter. Have to reseal and repaint the cellar floor again! Did some lawn repair work, but will have to re-seal the driveway this year also.

I think I sent you a copy of that NEN proposed article in a recent letter. If not, let me know, I have an extra copy here.

Will look at Bill F.'s transistor more carefully when I know the structure of the die that he is using. The sketch attached is for a generic design.

Take care --

Regards,

Greg

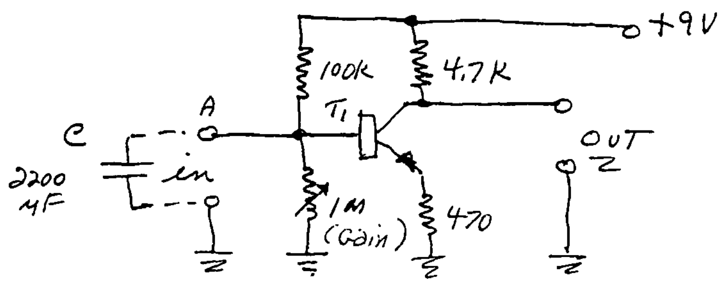
Enclosure

(642) (642)

GH Labs
Newark
4/25/94
(GH)

I. Transistor Noise Tests:

Circuit Used:

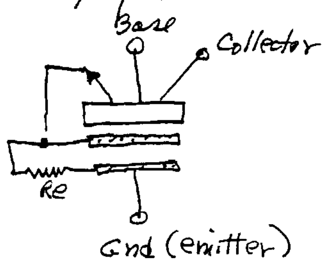


$T_1 = 2222A$

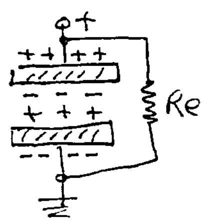
Remarks: ① Local radio station comes in strong with short antenna at point A and gain control (1M) around 20-30KΩ.
② Capacitor (C) noise comes through weakly at full gain (1M) only.

II. Remarks on Fogal's Unit:

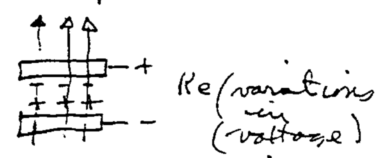
Simplified Structure (?)



Capacitor (?)

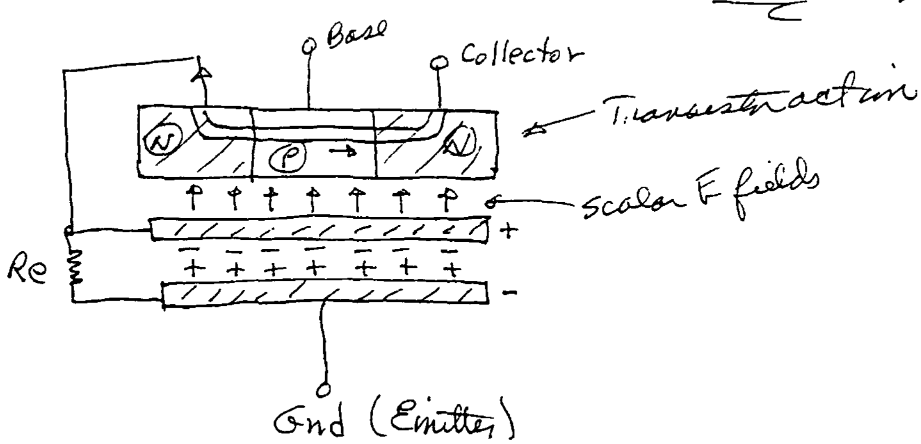


Scalar E-field (?)



Fluctuations in capacitor result in fluctuating scalar E-field (in space).

Simplified
Possible Mechanism (planar transistor assumed)



Remarks: E-field flux will force majority carrier flow (electrons) to flow in narrow channel just under the metallization at the surface of the die. By the same token 'hole' injection from base lead will be aided by rapid neutralization by electrons 'pressed' up by E-field. Overall results could be high gain and low losses?

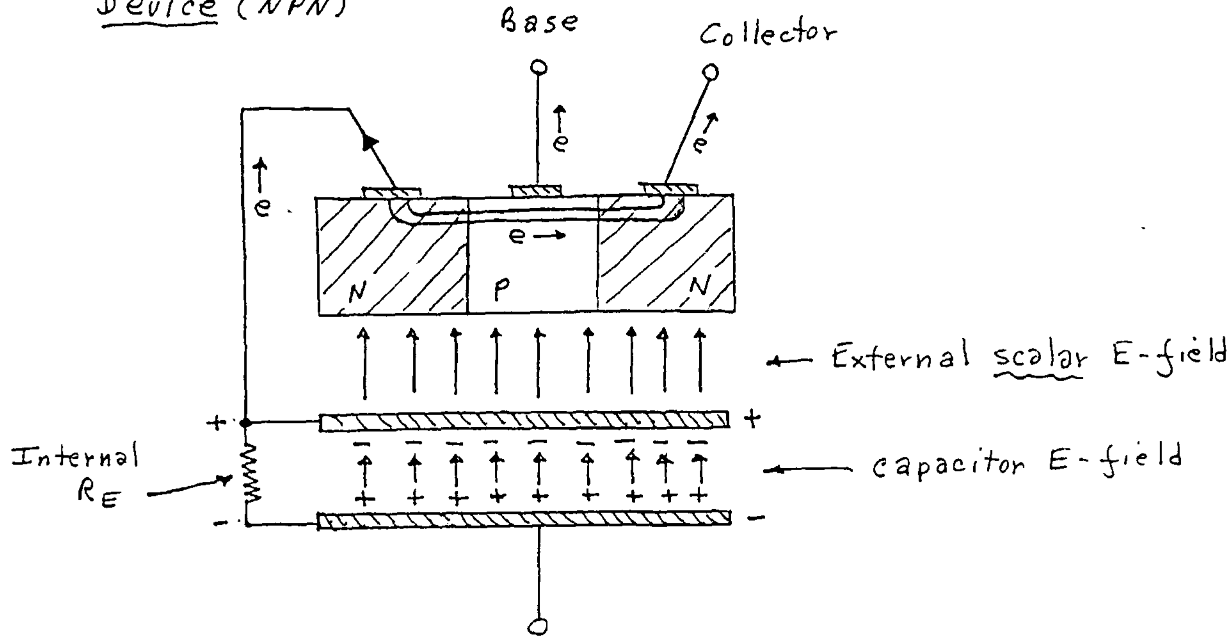
Cosmology Note

(643)

GH Labs
Newark
4/25/94
(Gh)

I. Speculation on the possible operation of: Bill Fogal's Device

A. Simplified Device (NPN)



B. Remarks:

A simplified planar NPN transistor structure is shown for illustrative purposes only. For an NPN device, the electron is the majority carrier and its 'flow' is sketched above. The mode of operation may be as follows: A capacitor element is mounted below the active portion of the NPN transistor unit. An internal resistance (RE) provides a bias voltage across the capacitor as a function of the emitter current flow. The capacitor is a planar unit which develops an internal E-field as shown. This parallel E-field will also establish an external scalar E-field as shown, which can interact with the active NPN device above it. Since the majority carriers are relatively 'free' electrons, the scalar E-field will 'force' the electrons to move in a narrow channel near the top of the semiconductor and just beneath the unit metallization. The scalar field will also enhance the neutralization of 'holes' in the injection region of the P-type base region. Therefore, the presence of the scalar E-field will increase the sensitivity of the base control region and also allow large emitter-to-collector current flow with minimal losses. This unit appears to be a most significant improvement in transistor design!

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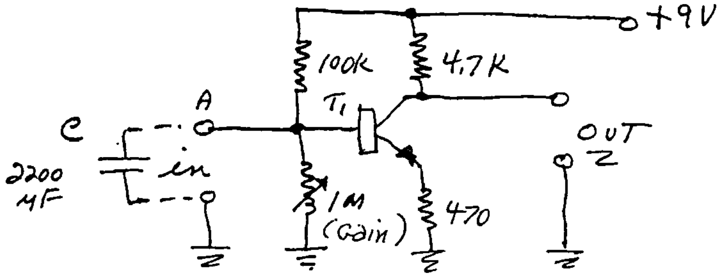
GH Labs
Newark
4/25/94

I. Transistor Noise Tests:

Circuit Used:



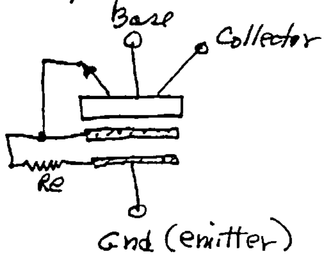
T_1 = 2222A

Remarks: ① Local radio station comes in strong with short antenna at point A and gain control (1M) around 20-30KΩ.

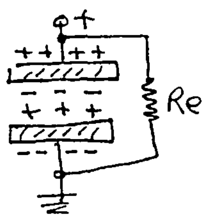
② Capacitor (C) noise comes through weakly at full gain (1M) only.

II. Remarks on Fogal's Unit:

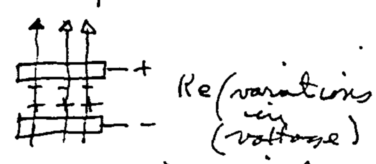
Simplified Structure (?)



Capacitor (?)

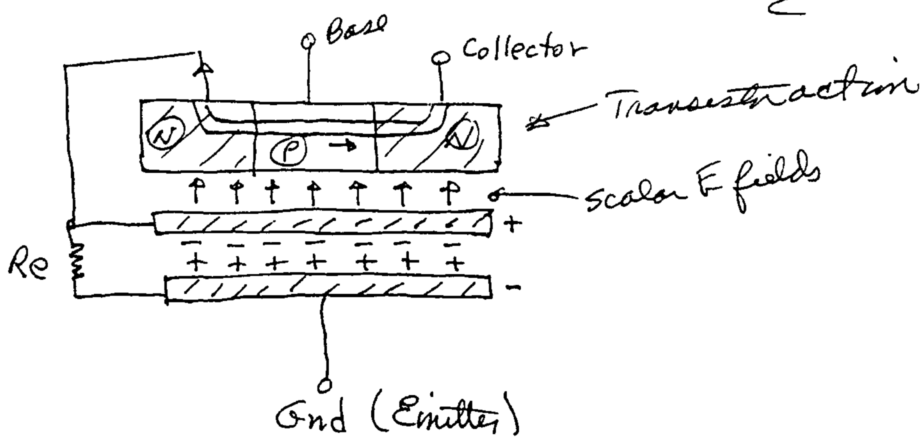


Scalar E-field (?)



Fluctuations in capacitor result in fluctuating scalar E-field (in space).

Simplified Possible Mechanism (planar transistor assumed)



Remarks: E-field flux will force majority carrier flow (electrons) to flow in narrow channel just under the metallization at the surface of the die. By the same token 'hole' injection from base lead will be aided by rapid neutralization by electrons 'pressed' up by E-field. Overall results could be high gain and low losses?

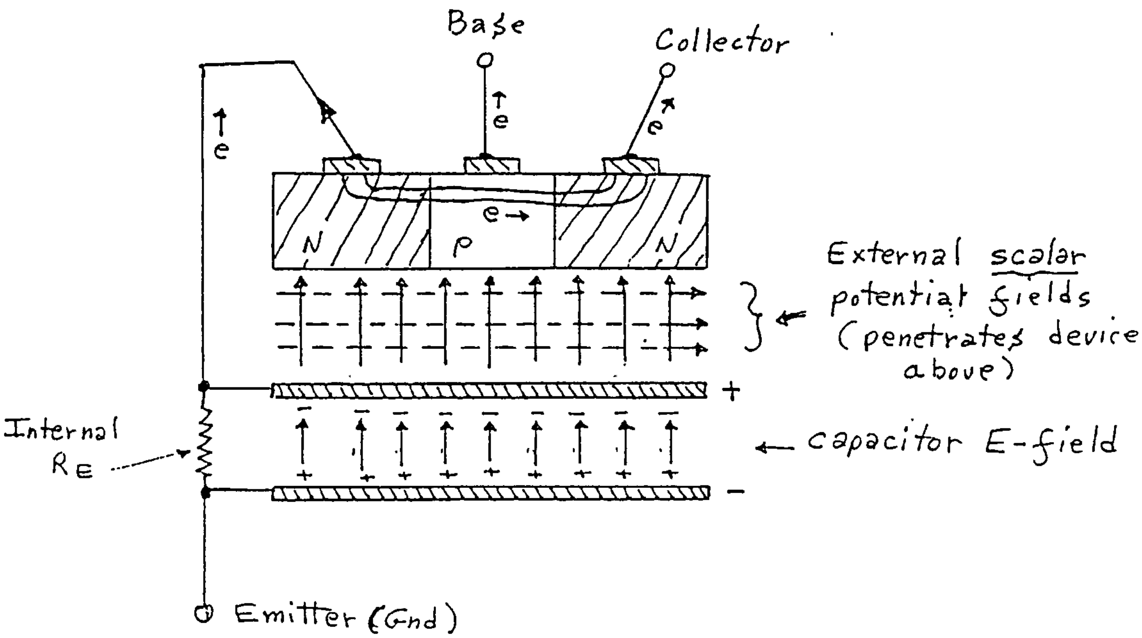
① (645)

Cosmology Note

GH Labs (645)
Newark
4/29/94
(gh)

I. Speculations on the possible operation of: Bill Fogal's Transistor

A. Simplified sketch of Device (NPN)

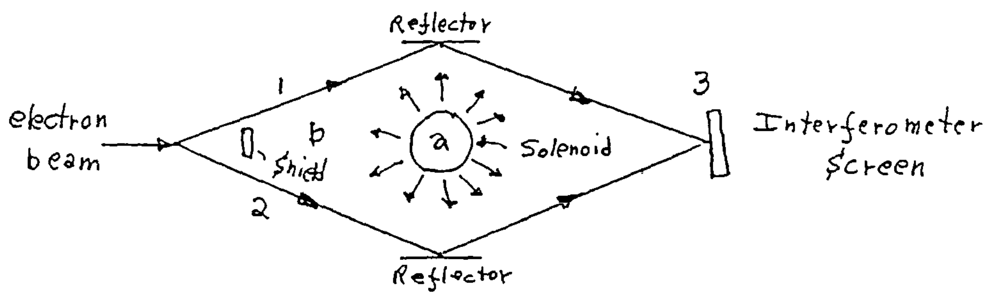


B. Remarks: The simplified structure for a planar NPN transistor as shown above is for illustrative purposes only. For an NPN device the majority carrier is the electron and its 'flow' is also sketched above. A speculated mode of operation may be as follows: A capacitor element is mounted below the active portion of the NPN device. An internal resistance, R_E, provides a bias voltage across this capacitor which would be a function of the emitter current flow. The capacitor is a planar unit and would develop an internal E-field as shown. This E-field is formed by the bound electron-ion pairs in the dielectric, and it is postulated that such a structure could form the external scalar potential field depicted there. There is some reason to believe that this scalar potential field (which would resemble the gravity field in its properties) may have both vertical and horizontal components as depicted above, and these components would 'penetrate' the transistor die. These components are not shown in the die above so as not to 'clutter up' the sketch. Since the majority carrier (electrons) in the die are relatively 'free', the scalar field will interact with them and 'force' the electrons into a narrow channel just-beneath the device metallization patterns. This action is similar to the action of a gravity field in 'moving' a free 'particle' in its influence area, the charge on the electron is not a factor here, although it is with transistor action itself. In addition, the possible horizontal component, if real, could also enhance the flow of carriers from emitter-to-collector. The potential fields would also enhance the 'neutralization' of holes in the base region. These fields, it must be remembered, would be a function of the capacitor E-fields, which in turn are a function of the emitter current flowing through resistance, R_E. The net effect of all these actions would be an increased sensitivity in the base control region and also a much larger emitter-to-collector current flow (with much reduced losses). Therefore, it should be expected that such a device would have very high AC gains and AC voltage outputs, as claimed by Bill Fogal. A sample prototype unit provided the writer by Bill was briefly tested in a preliminary circuit and these claims have been fully verified!

II. Generation of Scalar Fields

A. Aharonov - Bohm Effect (AB effect)

This experiment was suggested by AB in 1959 and has been verified many times since then. In essence, the original experiment was as shown below:

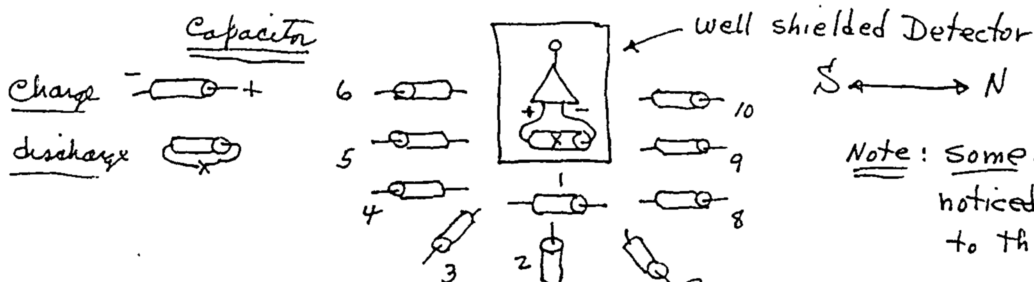


Basically, an electron beam is split into two paths, 1 and 2, and each component is deflected around a long solenoid to meet again at an interferometer device at point, 3. The long solenoid will establish what is essentially a scalar type magnetic field in region, a, while region, b, inside the electron beam paths but outside the solenoid region, a, was assumed to be field free. Yet, when the solenoid field is varied, interference patterns are seen at point, 3, inferring that there must be a real field present in region, b.!

(3) This field is usually termed the potential field, $\vec{A}$. It will be postulated here that this new field is a consequence of the scalar magnetic field within the solenoid and it may be orthogonal to the solenoid field, ie., it might be as shown by the arrows in the sketch above. Any variation in the scalar H-field in region, a, could possibly result in a rotational variation in the radial components developed in region, b, which in turn, would affect the transit times for the electrons in each beam path, resulting in the interference patterns observed. The reasons for suspecting such orthogonality is given in the next section.

B. An Experiment with a GW Detector

a GW detector unit is a very sensitive detector of scalar type fields, eg., the variations in the earth's gravity field.. The detector element used is generally a capacitor device. It would normally be considered that the capacitor would be most sensitive when a scalar field is directed parallel to the internal E-fields of the detector capacitor unit. It was also postulated that the capacitor could also be used as the source of scalar type fields. A test of this premise was made in the past using a 4700 uF (25 volt) electrolytic capacitor which was fully 'charged' and then discharged (short-circuited) near the detector unit. The detector capacitor was a 3300 uF (6.3 volt) electrolytic unit connected in a typical GW circuit using the 741 device and a +/- 9 volt dual supply. The detector unit was shielded within an aluminum box and the output was brought out with a filtercon capacitor to minimize any RF leakage into the shielded enclosure. The test setup was as follows:



Note: Some effects were also noticed with orientation to the earth's rotation!

Looking over some 'scratch' notes remaining (some as long as 5 years ago) and some brief more recent tests, a number of observations were noted. These 'remarks' are only tentative since more careful tests must be performed with double Faraday shielding to ensure no E/M effects are present and response levels and distance relations are more accurate.

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However, the observations which were noted are summarized here:

① With the source capacitor at position (1), about 1" to 2" away from the detector capacitor (x), a fairly strong 'impulse' was noted in an audio amplifier connected to the output of the detector. It was ascertained that this 'signal' was from the detector and not an E/M signal being picked up by the audio amplifier or its connecting coax cable. This impulse was independent of the +/- orientation of the source capacitor, which was expected, since the scalar fields involved here would largely be parallel.

② When the source capacitor was in position (2) a similarly strong impulse was detected at 2" to 4" away from the detector capacitor. When the source capacitor was oriented in the opposite direction from that shown, the impulse was a bit 'stronger'. This was not really all that expected!

③ When the source capacitor was discharged in positions (3, 4, and 6), strong impulses were detected for either orientation of the capacitor, but a weaker impulse was noted at position (5).

④ When the source capacitor was in positions (7, 8, 9, 10) with the orientation shown, the detected impulses were very much weaker, with essentially no impulse noted at position (9). Reversal of the orientation shown resulted in even less interaction!

It was tentatively concluded at that time that the scalar fields acting on a capacitor (or emerging from a capacitor) appeared to have two components at right angles to each other, somewhat like an E/M field in space. This was considered interesting then, but due to the crudeness of the test, it was also considered questionable then.

III. Conclusions

1. It is now suggested that perhaps a scalar field (in space) which is variable, ie, 'moving' relative to a stationary aether, may develop orthogonal components, somewhat like that suspected in the AB experiment. If this were real, then perhaps it also could be an additional factor in explaining the extreme sensitivity and output of the Fogal Transistor device.

2. The items discussed in this Note are yet but purely speculative at the moment. They were considered mainly because the writer was not (as yet) able to visualize possible

(5) However, it cannot be denied that the much improved performance of a Fogal device is very real thus there must be a logical explanation for it.

(3) The input impedance of a transistor is by nature a low impedance. The input impedance is usually increased by circuit parameters, witness IC devices using bipolar transistors. One of the objectives of the writer for this device was to see if he could directly amplify the 'noise' output of a capacitor, and independently of the device noise -- the Fogal device apparently has very low noise! First brief tests with a Fogal prototype unit was not able to do so -- the input impedance was too low. Further tests along this line will be tried. Perhaps, a Darlington arrangement will help.

(4) Bill Fogal has invented an interesting and very useful new transistor device which should be of interest to all open-minded researchers and the industry in general. We wish Bill good luck and the very best with this device

G. Hodowanec

P.S.- Please excuse the handwritten note!
It was written "off the top of my head" and thus may be a bit rambling. However, I can release it faster this way and I wanted Bill R. and Bill F. to have it before the INE meeting!

(GH)

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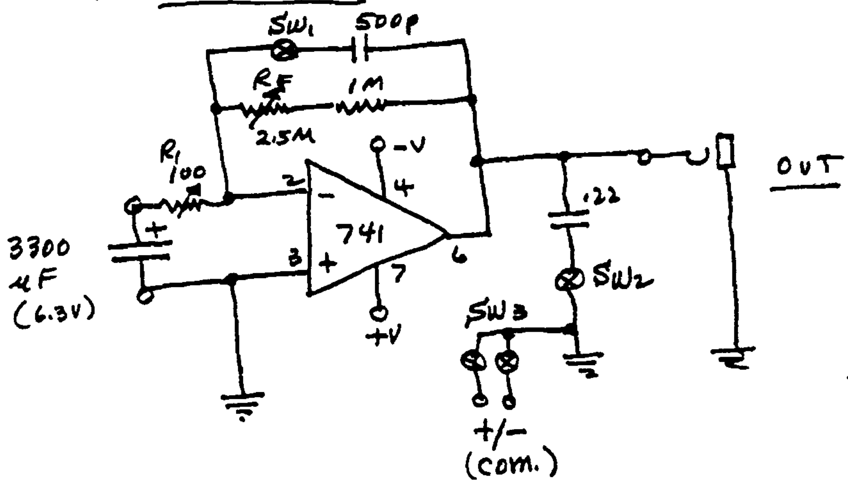
Cosmology Note

GH Labs
Newark
5/4/94

I. Demo Unit Ckt. #400A

Re-drawn 5/1/94, couldn't find original!

A. Schematic



SW1: 1/f in-out
SW2: osc. in-out
SW3: PWR ON-OFF

Unit is built in Aluminum box, with internal 9V batteries (2).

B. Remarks

① Input capacitor can be internal or external, as binding posts are provided. Present unit has 3300uF internal capacitor, for fully shielded tests.

② For 1/f and oscillator tests, use external .22 uF capacitor (internal capacitor must be removed). SW1 controls GND/1/f response, while SW2 controls oscillator on/off response.

③ R_1 is used only if IC device used is unstable. Use minimal R_1, just enough to stabilize device.

④ R_F controls sensitivity (gain) and frequency in oscillator mode.

C. Conclusion

Unit is effective demonstrator of simplest GW signal detector unit.

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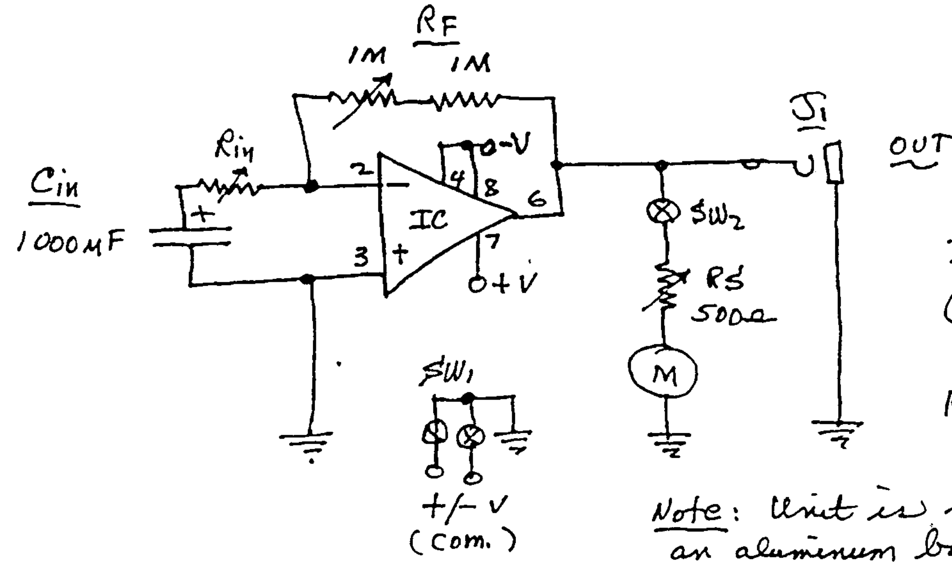
Cosmology Note

GH Labs
Newark, N.J.
6/1/94
gh

I. GW Circuit #15D

A. Schematic:



IC : ICL7611
(M) : +/-50 μA (2K)
V : 1.5V cells
Rin : 500 Ω

Note: Unit is built within an aluminum box, with only the output brought out.

B. Remarks:

① Keep Rin at 0 Ω, unless IC used tends to oscillate; then use minimal Rin to stabilize.

② Keep R$ at zero Ω, unless meter excursions are too high.

③ Adjust RF (1M variable) for best response to pendulum modulations of .25 cm noise, with meter out of circuit.

④ SW1 is unit on/off switch. SW2 is meter on/off.

II. Conclusions

1. Unit is primarily a demo unit to illustrate:
   a. modulations of the .25 cm MBR with 'local' mass movements, eg., the pendulum tests.
   b. modulation of the .25 cm MBR with direct 'thought' messages.
2. Unit also serves as an electronic gravimeter unit.

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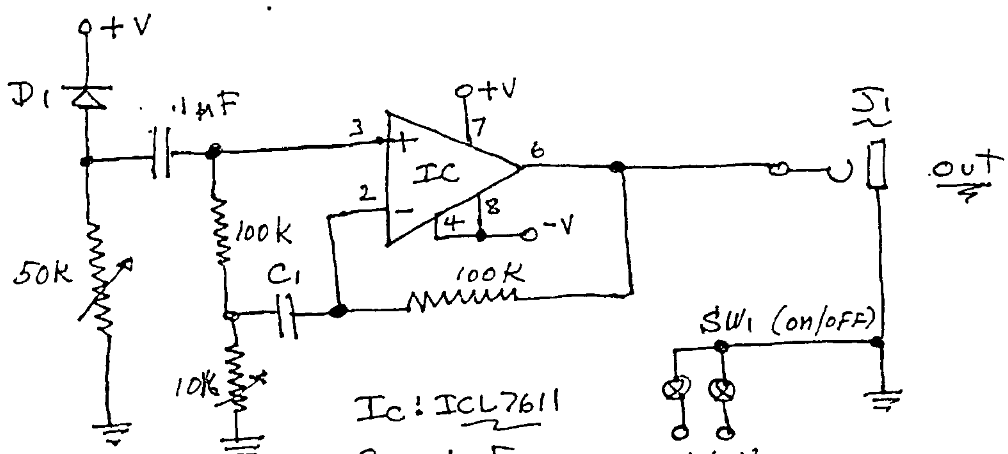
Cosmology Note

GH Labs
Newark, N.J.
6/2/94
GH

I. Info/Net Research EVP Receiver

A. Schematic: (Ckt. # QR-1)

This circuit is based upon one shown in "Quantum Realities", Vol. I, Issue I and is one which was originally designed by Bill Weisensale in 1975. It has been slightly modified by the writer to make use of a C-mos IC device, the ICL 7611, and operate at a +/- 1.5 volt supply. The output is fed into a Radio Shack miniature speaker-amplifier unit.



Ic: ICL7611
C1: 1uF (non-polarized electrolytic)
D1: Germanium diode

B. Remarks

① Entire circuit (including batteries) is enclosed within an aluminum box.

② The .1uF capacitor is a conventional printed circuit type capacitor but the 1 uF capacitor used was a non-polarized 1uF (25 volt) electrolytic unit.

③ The 50K and 10 K potentiometer units are trimpots.

④ The diode, D1, used was a standard germanium unit.

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Cosmology Note

GH Labs
Newark, NJ
June 6, 1994

653

Dear Colleague: This may be of interest to you.

I. Electronic Voice Phenomenon Receivers (EVP)

I recently received a sample copy of the first issue of a new periodical "Quantum Realities". (See C-Note of 6/2/94 enclosed). This issue contained a circuit for a simple EVP receiver which used the 741 IC device. The circuit is basically a white noise generator which has a reverse-biased germanium diode coupled to it. It was long known by the writer that noise generators (especially those using capacitors) and diodes would respond to scalar type signals. GW circuit #15 (built by me sometime in 1983) was noted to respond quite well to scalar signals even in a doubly shielded Faraday cage. The 'effects' noted here were (1) the .25 cm 'picket fence' type modulation of the 1/f and white noise background with a movement of mass near the detector, (2) 'mental' modulations of the noise background, (3) modulations due to the 'cosmic' effects, and (4) and most interesting---what appeared to be musical and voice sounds heard in the background noise signals. It was thought at that time that the 'voice' and 'music' signals might have been RF leakage into the shielded detector, perhaps mainly from the very long wavelength (LF) radio stations. However, it was also noted that some of the signals appeared to be related to definite areas in the zenith of the writer's lab location, primarily the Auriga-Perseus region, and thus some of these signals could have been of extraterrestrial origin?? A test of a C-Mos white noise generator, the MM5837 device, was undertaken in 1986. This is a single IC unit which was operated at 9 volts only. Again, this device showed that modulation of the .25cm background was possible, both by mass movements and also 'mental' thoughts (?), while some music and voice sounds could also be weakly heard above the white noise.

II. Recent Tests

To better evaluate and compare performances, a modified version of the Quantum Realities circuit was made (as the Ckt.#QR-1 enclosed) and an up-dated version of the original Ckt.#15 (as Ckt.#15D in the enclosed C-Note dated 6/1/94) was also made. Both were shielded in aluminum boxes. I was able to verify the 'picket fence' modulation of the .25cm radiation (ie., the pendulum test), thought modulations, and the music and voice responses with Ckt. #QR-1. However, circuit #15D was more effective in these types of responses and the voice and music type of responses were much more clearer. I also tried Ckt. #130A (which used the ICL 7621 device for more gain) and this was the most effective unit. In all these tests I used a Radio Shack Mini-Speaker Amplifier unit coupled to the output of the detectors but I used an external small 3" 'Cube' speaker for better low frequency response.

Conclusions

1. It appears that all the units tested were behaving as scalar field type detectors, but the white noise generators, such as the IC MM5837 and Ckt. #QR-1 are less effective since the white noise generated is so over-riding and strong. Ckts. #15D and #130A were quite effective and could be 'tuned' for a better response to the 'music' and 'voice' responses. The Auriga-Perseus responses come through whenever that region was in my zenith area. The 'music' sounds somewhat like an accordian repeating a short refrain over and over again. This may be just a 'musical' cosmic noise, or is it an extraterrestrial signal of some sort?

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654 -

The 'voice' signals are generally somewhat muffled but occasionally a recognizable word comes through.

2. While I had not paid much attention to EVP as such in the past, it was nice to note that I was not the only one claiming to have heard such responses.

3. There is so much to investigate in such experiments. It would be nice to have more of you on board here. The detectors are basically simple to build and the equipment needed here is low cost.

Best Regards,

Greg

① (655) (655)

Cosmology Note

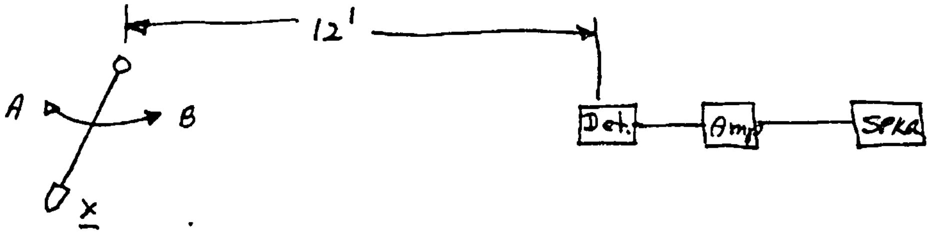
GH Labs
Newark
7/26/94
(gh)

Dear Colleague: This may be of interest to you.

I. Pendulum Tests Continued

A. Detection Ckt. #15D was used here with it driving a Radio Shack mini-amplifier coupled to a Radio Shack 3" Cube Speaker. The pendulum was an 8 oz plumb bob on a 1½' string length.

B. Test Conditions



C. Test Results

When the pendulum bob X swings in the B direction (toward detector) the .25 cm 'picket fence' modulation is slightly higher pitched than when the pendulum bob swings in the A direction (away from the detector).

D. Speculations

(1) This result could be explained if the movement of mass (the bob) creates a gravity impulse, or 'wind', toward the fixed detector and thus compresses some of the aether matrix structure along this line, ie., it 'tightens it', and thus the .25 cm universal wavelength is reduced, ie., the detected frequency is increased.

(2) When the bob moves away from the fixed detector, a rarefaction may take place in the aether in this line, such that the .25 cm wavelength may be increased, ie., the detected frequency is lowered!

(3) If a relatively moving system can do this with gravity impulses, it is surmised that a relatively moving system could do the same with EM waves. Thus the velocity of EM waves from a moving system might depend upon whether the source of the waves is moving toward or away from the fixed detector.

(4) In terms of a fixed source and detector system, the net result might also be determined by the gravitational 'wind' direction between the source and the detector. For example, with a possible gravitational 'wind' generated by the rotating earth, there might be possibly a difference in one way light travel time between a source located east of a detector and a source located west of the detector, even if the physical spacings are equal!

E. Conclusions

The speculations given here may or may not be the correct interpretations, but the experimental facts of this test are real --- there is a noticeable change in 'pitch' noted in this test which have been observed by many (as well as recorded on tape). The writer has used such 'disturbances' in the aether in long-range communication tests, in the order of 5-10 miles!

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Newark
6/1/95

Cosmology Note

I. Preliminary Test of BaFe Capacitor

A. MRA Test unit with generator:

$f_0 \cong 78\,KHz$ with 780pF Ag-mica cap.

780pF Ag-mica

$P_{in} \cong 5.3V @ 1mA \cong 5.3\,mW$ (RMS)

$P_{out} \cong 1.7V @ 7.6mA \cong 13\,mW$ (RMS)

$P.G. \cong \frac{13}{5.3} \cong \underline{2.5\times}$

B. MRA Test unit with generator:

680pF BaFe

$f_0 \cong 90\,KHz$

$P_{in} \cong 5.3V @ .12mA \cong .64\,mW$ (RMS)

$P_{out} \cong 1.5V @ 5.8mA \cong 8.7\,mW$ (RMS)

$P.G. \cong \frac{8.7}{.64} \cong \underline{13.6\times}$

C. Conclusion:

① BaFe unit has higher gains than Ag-mica unit due to lower Pin Pwr, ie, reduced line current!

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(GH)

Cosmology Note

Dear Colleague: This may be of interest to you.

I. Simple 'Flexible' GW Detection System

This circuit was put together to illustrate a number of modes of operation for a typical GW detector. It was designed around parts available from Radio Shack to make it easier for the interested experimenter to get parts. The detector uses the common 741 device and the amplifier the common 386 device. The unit was made self-contained in an experimenter box with a 3" speaker. The circuit as shown was adjusted for a range of about 400 Hz to 1 KHz. Since recently made 741 devices tend to 'oscillate' and operate at higher frequencies, a stabilizing resistance, Rin, was included in this circuit. A feedback resistance, R_1, was included in this circuit to enable operation QND only (fully CCW), and which could be turned slowly clockwise (CW) for somewhat longer 'rings' and then on to self-sustained oscillations. A ~~pure~~ 1/5 mode of operation is also possible by increasing Rin to 100 ohms or more. Normally, only a minimal amount of Rin is used to just keep the newer 741 devices from going into oscillation in the QND mode. Older 741 devices generally do not oscillate, even at 0 ohms.

II. Comments

This unit was made primarily to illustrate:

1. The 1/5 rate of 'burst rings', ie, the burst rate at 400 Hz is much less than that seen at the higher frequencies.

2. Also, the 'bursts' at selected frequencies can be extended with fine adjustment of R_1, to emphasize the detection of these 'bursts'. The bursts are believed to be due to novae and supernovae.

Simple GW Demo Unit
(CKt. GW-1)

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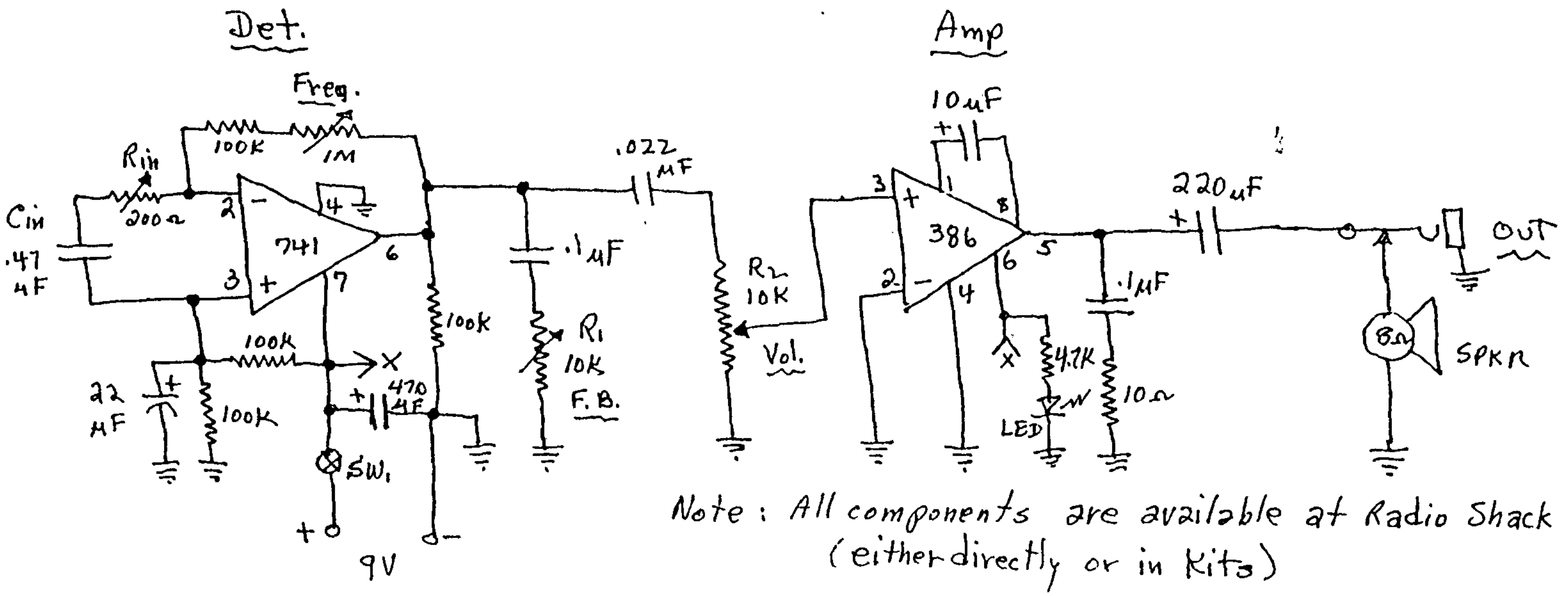


Note: All components are available at Radio Shack, (either directly or in Kits)

Remarks:

① On-off switch, SW1, is on volume control, R2.

② Feed back control, R1, is audio taper and wired 0 resistance CW.

③ A 3" speaker was used to better emphasize low frequencies.

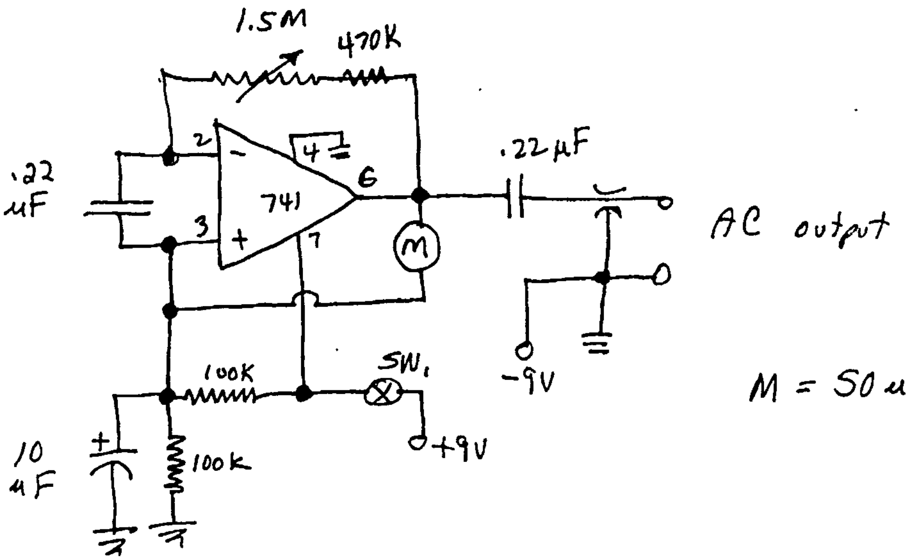
④ Unit was contained in a approx. 6"x4"x2" R.S. experimenter box.

660 Cosmology GH Labs 660
Newark
6/28/86
GW

I. Portable Simplest GW Detector

Circuit #21 mods 6/23/85,

A. Circuit: (Shielded unit)



M = 50 uA ≅ 50 mV

(≅ 20 K/volt)

B. Remarks:

(1) Standard QND type GW detector.
(2) Single supply operation.
(3) Built-in mV meter.

C. Demonstrates:

(1) Detection of supernovae.
(2) 1/f noise background level.
(3) GW oscillator (short output).
(4) Background modulations.
(5) Gravimeter: Set to 32 { increase in g reads upscale / decrease in g reads downscale

D. Conclusions

(1) Low voltage and no amplifier stage makes for low level outputs; but response is typical, thus it is a good demonstration unit as such.
(2) External audio amplifier needed.