

The OBSERVER

Vol 3, No. 4

February 28, 1964



Grader	Charles Puffenbarger
Snow Plower	Merritt Gum
Snow Plow	Henry Taylor
Cinder Truck	Guy Mayes
Michigan Endloader	Fred Cole
Sidewalk Snow Plow	Clifford Barkley
	Neil Horner

Observer Editor:
Peter B. Good

Cub Reporters for Month of February:

Bill Hunter
Tom Hawkins

Norma Brockway
Howard Lambert

Stories Submitted by:

William Pleasants
John Hungerbuhler

Robert Elliott
Tony Miano

Snodgrass

Typist: Norma Brockway

Photography and Printing by:
Graphic Arts Dept.

"Site Ground Maintenance"
by
Robert Elliott

It's 01:30 in the morning. The guard on duty has just finished his rounds and remarks how it took him close to an hour compared with the usual half hour it normally takes him. He slightly opens the door to the guard-house and peers deep into the night. It is really dark and the snow is continuing to come down at a steady increasing rate. It is not likely that this snow fall will stop before dawn, and then the roads, steps, entrances, etc., will all be covered with slick and slippery snow. Well, let's take some action.....

Poor fellow going to have to wake him up, but after all he is on a 24 hour call. Hello...? Hello...? Charlie...???. Charlie Puffenbarger...???. Wake up buddy. You say what's going on.....????? Take a look outside. No!! better not Charlie, better get dressed and come on down, it looks like a bad one, and the earlier you get started the less job it will be. Oh, come now Charlie, it's got to be done. OK... see you in a little while. What? Yes I'll call Merritt Gum and Taylor. I guess you three guys will be able to keep up with it till morning. Then the other guys will be around to help.

(15 minutes later)

Hi Ya Charlie. Kind o' hard getting out of bed on a night like this!!!!!! Well this is the way it goes. At least you're sitting in your car, and later in your little enclosure atop the Grader.

...continued on next page...

There he goes a fine fellow always ready when there's a job that requires doing. Well, after all, they really are all fine and ready fellows. Take Fred Cole. . good man; Guy Mayes. . sourpuss, but still a nice guy when he wants to be; then Clifford Barkley, Neil Horner, and Sammy Taylor, Winfred Sheets. . . the whole bunch of 'em. . . . real nice hard working responsible citizens.

The job is really cut out for them. Start at the works area so as to allow the rest of the force to be able to get in, then over to the 85', 140', 300' then the 40', 20', and Interferometer, Little Big Horn, Reber Dish, Cafeteria, 24 homes, laboratory, Recreation area, Warehouse, and many more but none as urgent as the ones mentioned. Yes, that's a pretty long and solitary job. But it's got to be done, and by jove they're the guys that can do it.

Do you realize that last year's snow clearing project has cost us approximately \$7,500.00!!!!!! That's a lot of money if you imagine that the only folks who love snow are skiers, and little kids.

So when you're whooping it up at the first sign of snow flakes falling from the skies, and you're nice and comfortable during a near blizzard next to your fireplace or nice and cozy at home, do think about the people, who in order to make it a little easier on you, do go out in the middle of the night to plow, and clean up the snowy mess that takes place while you're deep in your slumber, and if you have ever shoveled snow, then you'll really be able to appreciate the luxury afforded to you by having an organization do it for you. Therefore, for the snow clearing detail, I for one say HIPPY HIF HURRAY!!!!!!!!!!!!!!

BIOGRAPHY OF THE MONTH

Mr. W. W. Pleasants joined the Observatory staff in October 1962. Prior to that time he worked for RCA at Moorestown, N J. on construction of the Ballistic missile Early Warning for the U. S. Air Force.

Mr. Pleasants was born in Media, near Philadelphia, and grew up in Chester County. He obtained his engineering degree from M. I. T. and later studied finance at the Wharton Evening School. He has a Professional Engineer's license in the State of Washington and currently is President of the Stephen Well Chapter, National Society of

Professional Engineers.

The Pleasants have two daughters -- Ellen, at Emory University in Atlanta, and Margaret at Washington College, Chestertown, Maryland.

Mr. Pleasants learned to love camping, travel, and sports at an early age. Before going to college he and two other seventeen year olds toured the West in 1928, camping out and covering 11,000 miles of rugged country. At M. I. T. he rowed on the Varsity Crew.

. . . continued on next page. . .

The depression made things rough financially so in order to earn money for college, he spent a year as a clerk at an insurance office in Philadelphia; waited on tables at M. I. T. and borrowed money to get through.

At graduation, he went to work for DuPont in Buffalo, where he averaged \$14 a week. A year later he was transferred to the Engineering Department and worked on construction of the Rayon plant at Richmond, Va. The depression struck again in 1935, and he was back as a boilermaker's helper with Combustion Engineering Co. in Rochester, N. Y.

With Combustion he completed their training course for service engineers part of which was in Chattanooga where he met Mrs. Pleasants. Their honeymoon years were spent in Astabula, Petoskey, Devil's Slide, Bellefonte, Manistee, Pocatello, and other places where there was an empty smokestack to be filled by a new pulverized coal firing system. The birth of their first daughter, Ellen, in 1939 made the travelling job unsatisfactory so he went back to work for DuPont.

During the war years they built and operated the Indiana Ordnance Works and the Alabama Ordnance Works, which produced a major share of the explosives for the allied forces. At the close of the war he was transferred to the Hanford Works in Washington State where they produced the plutonium for the bomb that fell on Nagasaki.

In 1946 DuPont transferred their responsibility for Hanford to General Electric who asked him to stay on and manage the Engineering Division. The

next two years included design and construction of some unusual projects such as high vacuum smelting of uranium scrap, drilling wells to test for contamination of the underground water table, and laying a 42 inch steel pipe 200 feet long in the bottom of the Columbia River to dispose of the radioactive cooling water.

Next came a move back to Philadelphia and a job with Atlantic Refining Co. This entailed design, construction, maintenance, and operation of docks, terminals, warehouses, tank farms, offices, and service stations. Mr. Pleasants' 1958 service station design is still the standard for Atlantic and is being built up and down the East Coast.

The Russian ICBM threat in 1958 resulted in RCA, near Philadelphia, being awarded a \$600 million contract to build the Ballistic Missile Early Warning System for the Air Force. Mr. Pleasants was made Manager of Construction. During the next four years he flew 200,000 miles, much of it in military aircraft and most of it in the Arctic. In 1960 and 1961, he was Site Manager for BMEWS Site II at Clear, Alaska. The third site was in England, where he spent many months organizing contractors to put up the three tracking radars on Flyingdales Moor.

Mr. Pleasants says that after all his travelling Green Bank looks pretty good. Mrs. Pleasants says Green Bank is like Florida compared to the winter she spent in Alaska.

THE SNODGRASS COLUMN

After a successful European tour, we proudly present (again) the Column. happy to be back, bursting with glad tidings of lands beyond the seas (cf. Christopher Columbus). Oh so happy telly screen, that we should meet again (at least for "That Was the Week That Was").

We were pleased to see yet another one film at the Observatory: "Anatomy of a Murder". Music by Duke Ellington, one of the world's great people - by unanimous vote of this column. A fine musician by any standards. A lover of good food and drink. We would invite him to Green Bank, but.....! But???? Perhaps we are unfair. In several recent visits to the Valley Restaurant in Arbovale, we have noted that Hungarian Goulash, spare ribs and sauerkraut, and many other tasty dishes are to be found. We would like to compliment the chef. We will be eating there again.

Fasching or Mardi Gras, it doesn't make any difference; it was a great party!! Marja Baars, Barbara Mezger, and Lisa von Hoerner did a fine job in decorating and providing for our little party. We did manage to find some beer, which always helps to roll a party along. Much dancing, much laughter, etc. Hermann, Japp, and Nigel were still around at 5:00 AM and agreed (just before they fell asleep in their arm-chairs) that it was a good time to finish parties, if not later. We also agreed that conviviality after working hours is a very fine idea.... Anyhow, we thank you ladies three, for your generous efforts in making this the party that outdid all the others. And thank you everyone for such fine costumes.

Where have all the flowers gone? This column thinks that the white mess has been around rather a long time. We tried rolling in the snow (Scandinavian style), and we tried assuaging the anger of the great white weather god by giving up beer for a day. But it was all of no avail. The mess is still around, and we have had to return to our rapidly diminishing supply of alcoholic beverage (strictly medicinal, of course!). We hope that the stage coach gets through soon.

By the time the next Observer appears, Hermann von Hoerner will be back in Germany, and many of us will be missing his independence, his laughter, and his 'bonhomie'. There are not so many such personalities that we can afford to lose Hermann without a protest. So we are trying (without much hope of success) to embarrass him into staying.

Since the Editor has the policy of including contributions of (hopefully) general interest, we have been retained (at enormous expense) to contribute a short article in addition to the Column. The recent television coverage of poverty in the United States has stimulated us into considering a few problems related to World poverty. We hope that readers will excuse us our concern.

BUT SERIOUSLY by Snodgrass

Albert Einstein said that "empty bellies make poor political advisers". Of course, full bellies do not guarantee wisdom, but they help. What is the real problem of world poverty? Is it a political problem? Or is it a scientific problem? Obviously, the most crippling aspect poverty is hunger, closely followed by disease and lack of ed-
... continued on next page...

ucation. What are we doing about it, and what can we do?

An inch of fertile topsoil may take a thousand years to build; erosion can remove it in a single day. Fossil fuels formed over a million years are used up in a single year. Some species of animal have taken millions of years to evolve, and disappear in a decade when the "sportsmen" arrive with their guns. The balance of nature is being disturbed by man. For example, leopards have virtually been wiped out in parts of Africa, and the result is a plague of destructive baboons. Birds of prey are shot to protect pheasants (for "sportsmen" to shoot!), and the crop eating birds and small vermin multiply at a fantastic rate.

The world population is increasing by more than 45 million each year. For each of these people to have one loaf of bread per day, 30,000 square miles of land would be required: this is equivalent to the area of Austria. In prolonging life and reducing disease, science, will further increase this figure. Yet thoughtless exploitation of land, including its slow poisoning by the excessive use of artificial fertilizers and pesticides, reduces the quantity of arable land at an alarming rate.

The problem of drinking water, taken for granted in the large part of Western Civilization, has been virtually ignored in the underdeveloped areas. And even in the West, many city dwellers are drinking treated sewage. The problem is not helped by such irresponsibility as the pollution of the vast underground reserve of water under the Sahara Desert by radioactive fallout from the French atom bomb tests. Here was the possibility of regenerating a vast region, as the Israelis have reclaimed large areas of the Negev Desert, a possibility that was squandered by an act of

of international irresponsibility - at least for some years. And time is not on our side.

If all the resources at present employed in the perpetuation of the Cold War were switched to an international war on want, there would be a possibility of solving this problem. But at the moment, the agencies of the United Nations responsible for these operations are almost without money, and completely without authority on an international scale. The perpetuation of poverty is the surest way of providing fertile political fields in which the seeds of communism and fascism will grow to their full ugly maturity. The doctrinal disputes between East and West shrink to insignificance beside the problem of world poverty. The race against starvation and ignorance is the most important problem in the World today.

HIGH SCHOOL SENIORS LOOK AT
ENGINEERING FOR SPACE AGE
 by W. W. Pleasants

One of the most important jobs Professional Engineers have to do today is selling their profession to high school students. The shortage of engineers has become a nationally recognized problem which will grow more serious in the next few years unless constructive effort is directed toward educating them on the advantages of engineering as a career.

The Stephen Sewell Chapter has started a program with this objective by taking advantage of the fact that the National Radio Astronomy Observatory is located in its district. One of the most successful programs of West Virginia's Centennial celebration was

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The National Youth Science Camp near Green Bank in Pocahontas County. Two boys from each of the fifty states spent three weeks at the camp. These boys were picked for their outstanding ability and interest in the study of science. They devoted a substantial part of their day-time hours at the Observatory learning of the latest developments and methods in radio astronomy and how it is contributing to our knowledge of the universe and the national program of space research.

Although the Observatory has for several years entertained groups of high school students and briefed them on its facilities and programs, there was no specific effort made to interest them in engineering as a career. Experience with the camp last summer suggested that a joint effort between the Observatory and the local NSPE chapter could be productive in influencing outstanding high school seniors toward the study of engineering.

To date, two groups have participated and the response is favorable enough that several more are expected to follow. Greenbrier and Pocahontas counties were the first two. The county school board selected from ten to fifteen students--initially obtaining representatives from each of the high schools in the county. Selection is based on a boy's potential for studying science or engineering.

One day is devoted to the group from one county. They come on Saturday at 10:30 AM and leave at 3:30 PM. The program is put on by members of the Observatory staff who are also members of the chapter. In the morning, the program includes:

A verbal description of the Observatory.

Color slides of radio telescopes, laboratories, shops and other facilities.

3. An explanation of how telescopes operate and how engineering contributes to their design, construction, and maintenance.
4. A verbal description of engineering as a career.
5. A color motion picture from NSPE entitled, "American Engineer."

At 12:30 the group eats lunch in the cafeteria and then takes an hour and a half tour of the Observatory. Finally, they meet again in the lecture room and participate in an open discussion about the various branches of engineering. Personal experiences of the staff members in many foreign countries are used to illustrate the challenge, variety, and rewarding nature of a career in engineering. Pamphlets are given to each student, describing the Observatory and a career in engineering. The latter are published by and obtained from the NSPE.

The only expenses involved in this program are transportation to and from the Observatory at Green Bank, and the boys' lunches. To date, both items have been donated by either chapter members or school officials. If the program is to expand, it should have more adequate financial support

ENGINEERING ESSENSE

FLASH!!!! LADIES ROOM..... A new ladies room has just been inaugurated in the works area by their secretary, Miss Connie Phillips. She said it's real cute and guess what..... all pink.... colors we mean!!!!!!

...continued on next page...

FLASH!!! Sorry fellows. Everybody has to wait his turn now for a shower down in the works area. But you have to admit that all the guys are taking it pretty good for having to wait in line, as long as their secretary does not have to suffer the extreme temperature changes when she has to. well!!! go to the warehouse. No more Connie, you have suffered enough.

Congratulations Grandpa. . . . Claude St. Clair has once again become the proud grandfather of a nice little red headed girl on February 9, 1964 who weighed in at 6 lb. 8 oz. Well nothing to get excited about, it's not the **first** for our good old grouchy Papi.

The works area scrounger Jim Elliott made a trip two weeks ago to Maryland and was able to collect a high precision athex and additional tooling. By the way, this tooling which he conservatively estimated worth \$700.00 for which NRAO did this figure was awarded to him, and from latest calculations we are well up to the four figure totals as to actual cost of this tooling and tools.

NRAO flying school????????? No, it's just that the guys down in Engineering are working hard on a project of adapting a jet engine as a de-icing unit for the welfare of the scopes. And to think that for our welfare we are always trying to put more ice in IT. . .

HOW IS YOUR THINKER?????

On a train, Smith, Robinson and Jones are fireman, brakeman, and engineer, and not respectively. Also aboard the train are three businessmen who have the same names: a Mr. Smith, a Mr. Robinson, and a Mr. Jones.

Clues:

1. Mr. Robinson lives in Durbin.
2. The brakeman lives exactly half-way between Marlinton and Durbin.
3. Mr. Jones earns exactly \$20,000 per year.
4. The brakeman's nearest neighbor, one of the passengers, earns exactly three times as much as the brakeman.
5. Smith beats the fireman at billiards.
6. The passenger whose name is the same as the brakeman's lives in Marlinton.

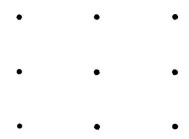
WHO IS THE ENGINEER?????????????
 (answer on page 10)

- (2) What do these two groups of numbers have in common?

1, 4, 10, 13, 16, 19 . . .
 $2^3 - 1 =$

(answer on page 10)

- (3) Draw four straight lines connecting all these dots without removing your pencil from the paper.



(see how page 10)

Did you know:

Since they started putting those Smokey the Bear signs in the New York subways there hasn't been a single forest fire in Manhattan.

. . . continued on next page. . .

Laugh it off:

Buyer: This car you sold me wouldn't even climb a hill.

Seller: I didn't say it would. All I said, was on the level, it's a fine car.

Did you hear about the man who never drinks before golf because he has to drive??

LAB GAB

Two of our technicians have left the Observatory. John Hensley has gone to North Carolina to work for Bivins & Caldwell. Theodore Zatta left to work for RCA in Pittsburgh.

We wish both of them luck and say they will be missed by all!

In case you haven't heard or seen.....
IT SNOWED!!!!!!????????.....!!!!"''''''''''

It has been a quiet month. Wish something exciting would happen.

For sale: 6 volumes of "How to be Happy - Though Snowbound".

ADMINISTRATION REPORTS

Norma and Dick Brockway, Mr. and Mrs. Kent Galford, and Bill Simmons went to Morgantown Saturday, February 11, 1964 to see the VPI-West Virginia game. Yeah!! West Virginia. We're still at the T O P.

Bill Simmons, Norma's brother was guest of honor at a surprise birthday party February 15. Even with the lovely weather we had that evening (remember????????) approximately 50 people were there.

We would like to welcome Heinz Wendker. He comes from the University of Muensger in Germany.

We would also like to welcome two new technicians which everyone is probably familiar with--Andy Rogers and William Shank.

All "Sis" and Shirley have to say for this month is "Please let it quit snowing and something exciting happen!"

SMART PARTS FROM GRAPHIC ARTS

Bob McMillion reports--he has been shaving with the "Boo hoo" blade for 2 years and has cut himself both times.

Gene Crist says the difference between he and George Washington is: George could not tell a lie and Gene can but would not. "Vive'La difference" Ronald Monk retorts, "I noticed that".!

Scottie promulges to the fact of seeing the following sign on the North Branch of the Delaware River: "George Washington Slipped here"

Q. What was purple and almost ruled the world?

A. Alexander the Grape

CRYOGENICS LAB

Frank Bash has been on an extended vacation for the last month measuring water vapor content from various mountain and desert sites as: Los Angeles, Tuscon, Arizona, etc.

...continued on next page...

While in California, the water vapor instrument was flown to an altitude of 70,000 ft. in a Lockheed U-2 piloted by none other than Frances G. Powers.

A REDUCING DIET

	Breakfast	Weak tea
Mon.	Lunch	1 bouillon cube in 1/2 cup diluted water
	Dinner	3 oz. prune juice (gargle only)
	Breakfast	Scraped crumbs from burnt toast
Tues.	Lunch	1 doughnut hole (without sugar) and 1 glass water
	Dinner	3 grains cornmeal broiled
	Breakfast	Boiled out stains of table cloth
Wed.	Lunch	1/2 dozen poppy seeds
	Dinner	Bee's knees and mosquito knuckles salted with vinegar
	Breakfast	Shredded egg shell skins
Thur.	Lunch	Belly button from naval orange
	Dinner	3 eyes from Irish potatoes (diced)
	Breakfast	2 lobster antenna
Fri.	Lunch	1 guppy fin
	Dinner	Filet of soft shell crab claw
	Breakfast	Pickled cock's comb
Sat.	Lunch	Prime ribs of tadpole
	Dinner	Aroma of empty custard pie plate, tossed paprika and 1 clover leaf salad

YOURS FISCALLY

New Recepte:

The women of the Fiscal Division quite often exchange their favorite receipes. The following one is one of their latest, which they would like to share with you.

Elephant Stew

1 Elephant (medium size)
 2 Rabbits (Optional)
 Salt and Pepper

Cut the elephant into small bite-size pieces. This should take about two months. Add enough brown gravy to cover. Cook over kerosene fire for about four weeks at 456 degrees.

This will serve thirty-eight hundred people. If more are expected, two rabbits may be added, but do this only if necessary as most people do not like to find hare in their stew.

Ceramic Class is still being held every Tuesday night, 7:00 PM to?????

A new stock of greenware has recently been purchased, so why not come out, make some lovely items and also enjoy an evening's company with other NRAO employees and wives.

CAPSULES OF WISDOM

A dollar may not go as far as it used to, but what it lacks in distance it makes up in speed.

You owe it to yourself to become a success -- and then you owe it to the income tax collector.

BIRTHDAYS FOR MONTH OF MARCH

Linda Ervin	5
Marvin Wimer	6
Don Hovatter	9
E. M. Arbogast	9
Martin Barkley	11
George Grove	12
David Heeschen	12
Lillian Ness	16
Arthur Shalloway	20
Jim Ware	26
Tony Miano	2

WEATHERING HEIGHTS

Feb. 12	-4 ^o F.
Feb. 5	56 ^o F.

85'

Gears are in order for all operators of the old 85'. This week, as Dr. Hogg's rotating feed polarization observations come off Monday February 24. All the Operators, being somewhat inexperienced at the beginning of this experiment, wish to extend to Dr. Hogg and Dr. Pauliny-Toth our thanks for the splendid co-operation and patience given us during this period.

A 2 cm feed from NRL will be installed on the dish presumably this Monday. This should be an interesting experiment for all concerned. This program demands good clear observing weather and I'm certain everyone joins be in wishing for plenty good clear crisp days ahead.

Our boy, Leroy Webb, after his brief appearance on nationwide TV

has begun to settle back to earth and has become one of the boys again. Leroy recently purchased a mobile home and lives at the Arbovale Trailer Court. Len Howell has also become a home owner. He now resides on the Arbovale-Green Bank city line after purchasing the home formerly owned by Teo Zatta. It looks as if an old fashioned house warming party is in order with Leroy and Len supplying refreshments.

Howard Brown recently proved that it is possible one can get stuck in a VW bus while on an excursion to the local trash disposal and in drifts on North Fork Road. He has added to his tool kit a shovel and a broom.

Bill Hunter has an unwelcome guest under his house with white and black stripes. Anyone with ideas on how to dispose of this pest????????

140'

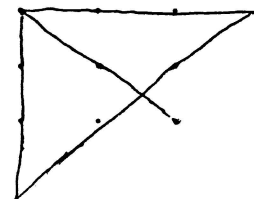
Spencer Greenwood, John Ralston, and Fred Crews visited Goodyear Tire & Rubber Co. in Akron, Ohio on January 24, 1964 and witnessed tests of the first completed brake unit.

Howard Brown and other Telescope Operations Division personnel are frequently in and out at the 140' working with the console and preparing for tests of polar and declination drive units.

..... continued on next page.....

(Answers)

- (1) Smith is the Engineer
- (2) 7
- (3)



Racks for hydraulic pumps were completed on the second floor and 16 pumps have been placed on the racks. Mr. Paul Graham is the pipefitter superintendent for PC&R and he will supervise installation of hydraulic system components.

Accumulators are being placed in the south passageway and installation of them is nearly complete.

Electrical Subcontractor, D. H. Elliott Co. has arrived on job site and work has begun on installation of electrical equipment.

Peter Good traveled to Philadelphia Gear Corp. and Westinghouse to film work in progress at their plants. Westinghouse is presently machining the spherical gearing. John Ralston accompanied him (to do his heavy work for him), but primarily as a back seat driver and a chaperon. Really, John's part of the trip was for detailed inspection purposes.

Sorry about the misspelling of George Grove's name - good grief. We thought it was Groves - accept our apologies.

Have you seen the bugs - oops - Beatles??? Heaven help us if a crowd such as the one that greeted them in N. Y. were to take over this country. Civilized????!!!! I don't believe it. Some people say we're backward, uncivilized hillbillies. What do you call that crowd?????

Saw a groundhog on February 24 crossing the road near Wally Oref's place and dragging his tail through the snow towards the H. E. Tatel 85'. Must have been awfully hungry or just plain nuts. Could be the screaming and raving of the Beatles and their welcomers on his T. V. that drove him out of his hole

300'

On February 4th and 5th two new systems were installed at the 300'. This gives the telescope a complement of six receiving systems 1400 mc, 1400 mc east, 1400 mc west, 750 mc, and the new units 405 mc, and 234 mc. Six receivers utilize the scopes potential to near maximum capability.

The additional receivers have compounded the problems maintenance and observing wise, but everything has worked out satisfactorily. The two new systems are in the range where interference is a critical problem, but no serious trouble has been detected.

Three astronomers have programs on the 300' at this time. They are Marvin DeJong, Yervant Terzian, and Dr. Bertil Høglund. DeJong, and Terzian are graduate students in astronomy and are doing research on their doctorates. DeJong is studying select galaxies to detect radiation halos. Terzian is investigating ionized hydrogen clouds to determine structure density and temperatures. Dr. Høglund is filling in open observing time with a survey of the Northern sky.

Bob Viers, head pusher at the 300', is back after an extended vacation and is a welcome sight.

BASKETBALL STANDINGS

	<u>Won</u>	<u>Lost</u>
Blue	7	3
Yellow	5	5
Green	5	5
Red	3	7

INDIVIDUAL STANDINGS

C. Cassell	180 points
J. Cassell	165 points
R. Monk	155 points

FOR SALE

25' Broken Arrow Camp Trailer 1961

Includes Electric brakes
2 new heavy duty truck tires
2 butane tanks
4 burner and oven gas stove
gas heater floor
ice box
toilet, wash bowl with 40 gal.
septic tank
butane light
40 gal. stainless steel water storage
tank
outside connections for lights, water,
and sewer

\$75.00 trailer hitch included

Price: \$1,200.00
(Sleeps four)

Bob Martin, PC&R
Telephone 456-4200
140' Telescope

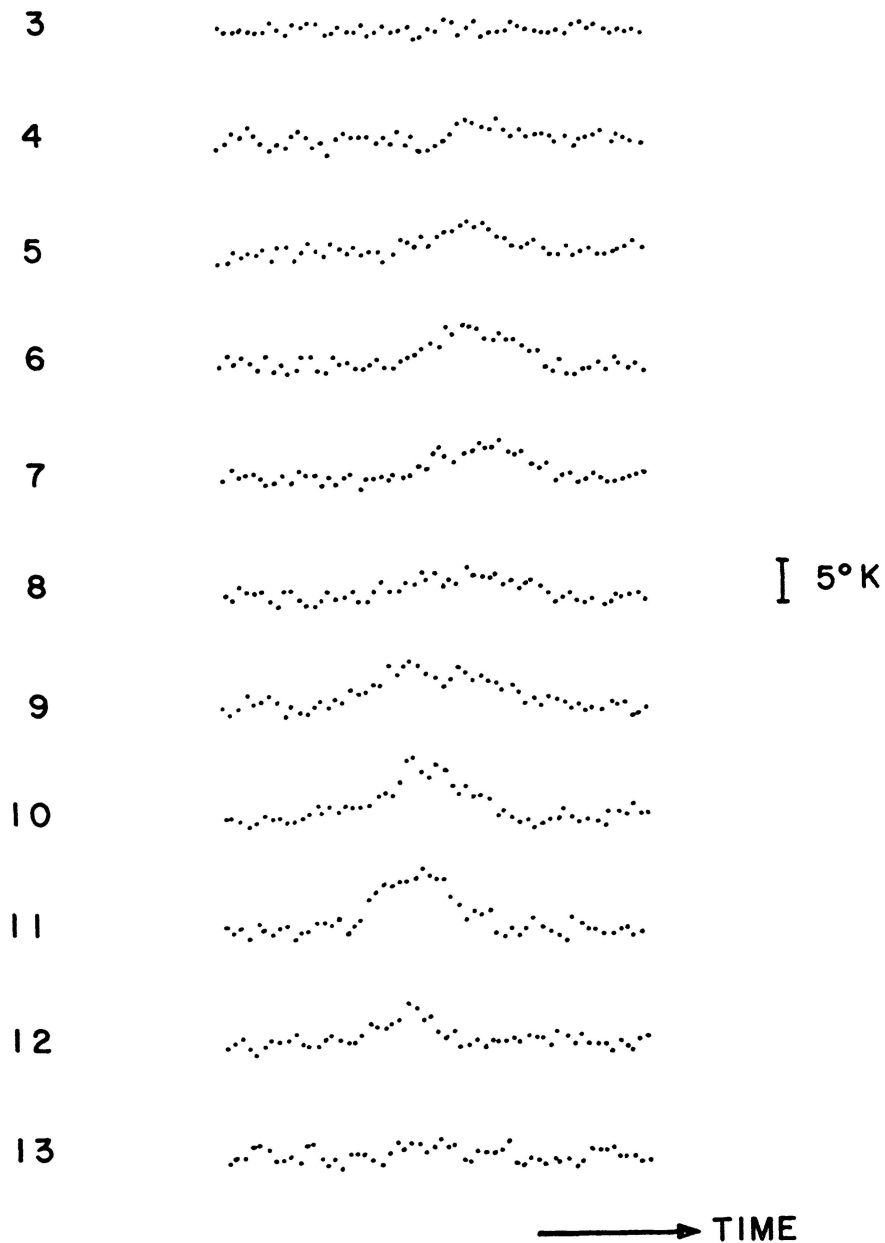


Fig. 5c. Transit of M 101 Sept. 8, 1963 in channels 3 through 13. Local oscillator frequency 1389.51 Mc/s. Interval between points 10 sec.

The above is from Bertil Høglund's "Internal Report No. 20", which inspired the transcription to music, followed on the next two pages.

4/4

Hogland's Celestial Beat

Symphony Of M101 - (Pony Island)

Key:
 applies
 throughout } All Measures
 shown are TREBLE }

 FIN. *Tony Mason,*
page 2.

March is

MOTION PICTURE MONTH!

at the NRAORA . . .

3

BIG CINEMA
GREATS . . .

for your springtime

ENTERTAINMENT . . .

— March 2nd —

The Marx Bros.

IN

"A Night at the Opera"
"funniest film in a decade"

— March 16th —

GREGORY PECK
AUDREY HEPBURN

IN

"ROMAN HOLIDAY"
"completely charming"

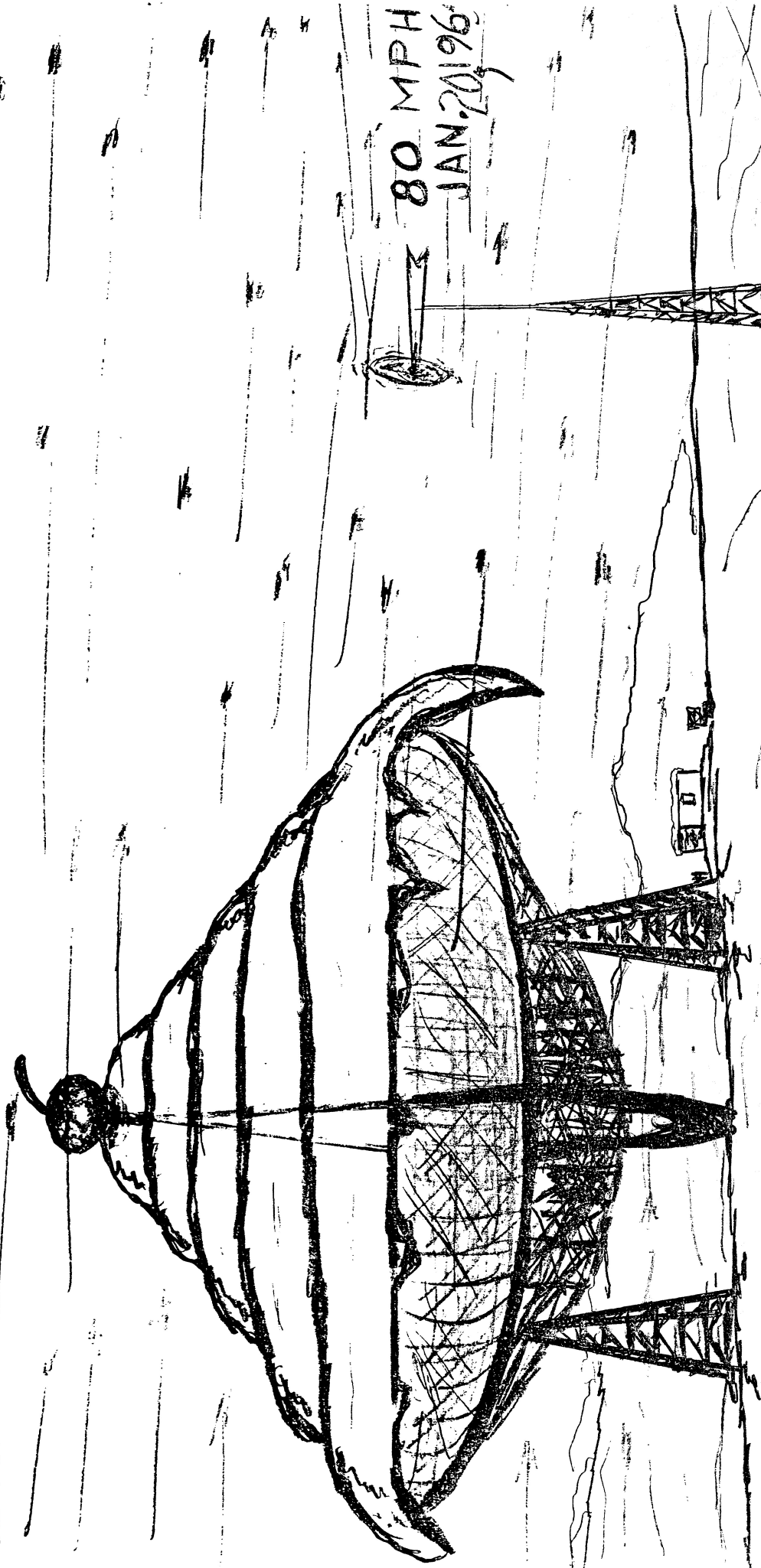
— March 30th —

KIRK DOUGLAS

IN

"LONELY are the BRAVE"

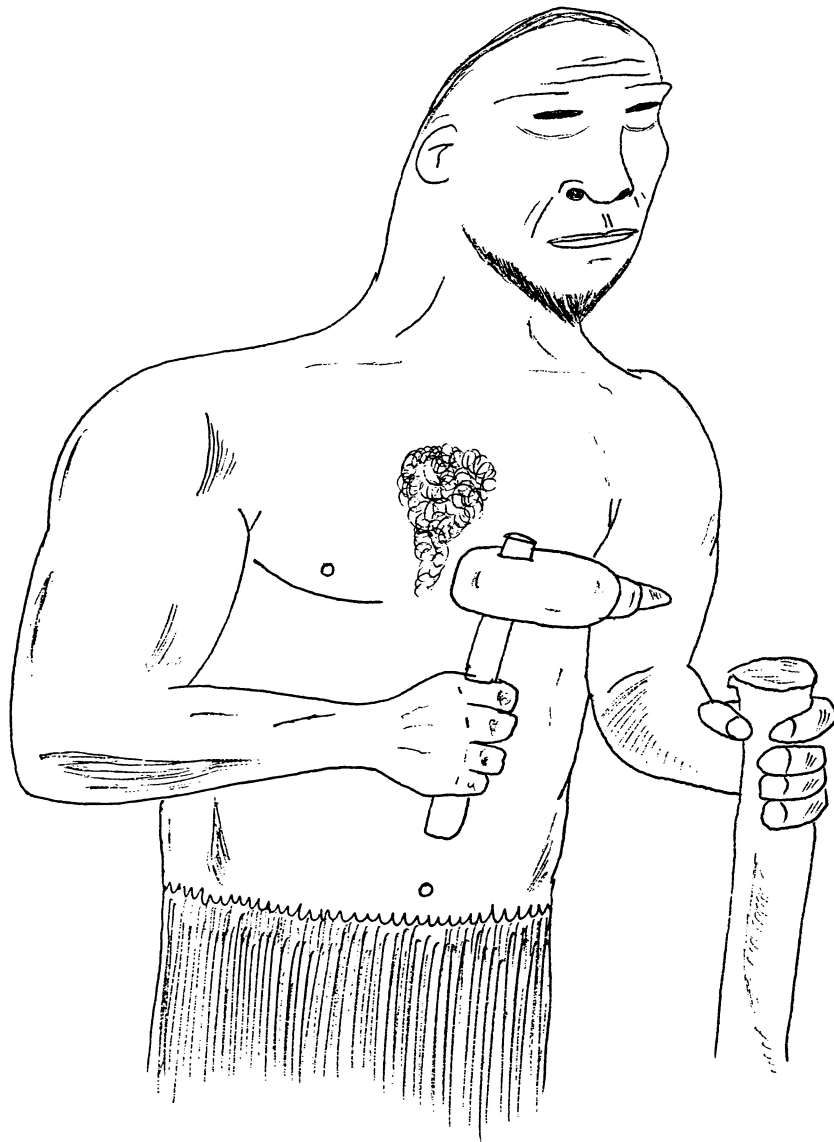
"ONE OF THE MOST TALKED ABOUT FILMS OF OUR TIMES"



80 MPH
JAN. 20, 1966

"...ALSO DESIRABLE THAT THE OBSERVATORY BE SITUATED IN
A LOCATION WHERE NATURE IS NOT UNDULY SEVERE....."

Smart Parts
From Graphic Arts. - Idea by: V. S. Scott



"Think I'll build me a Radio Telescope."