

The OBSERVER

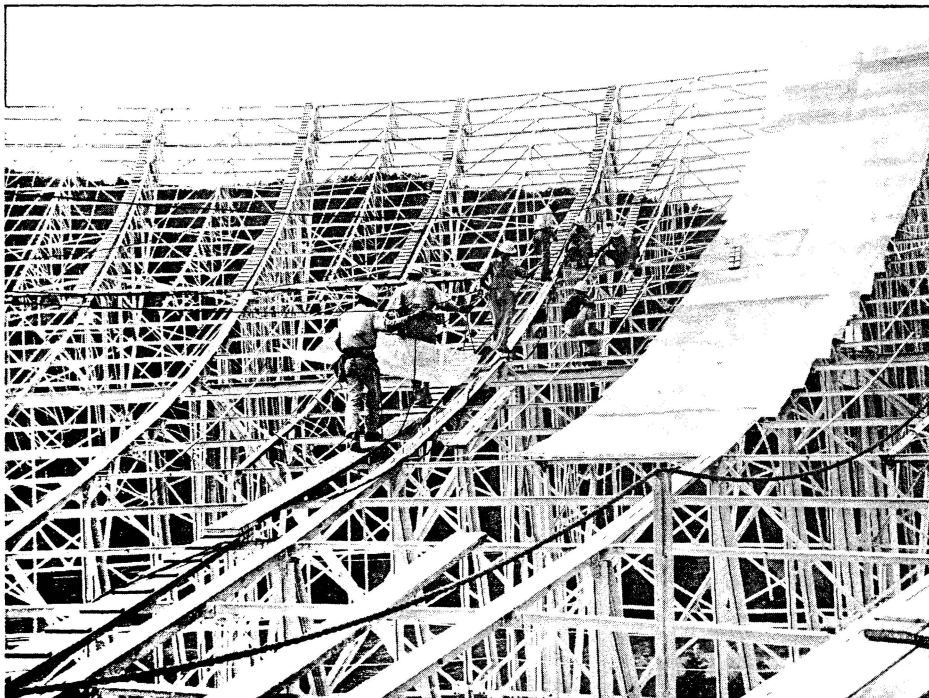
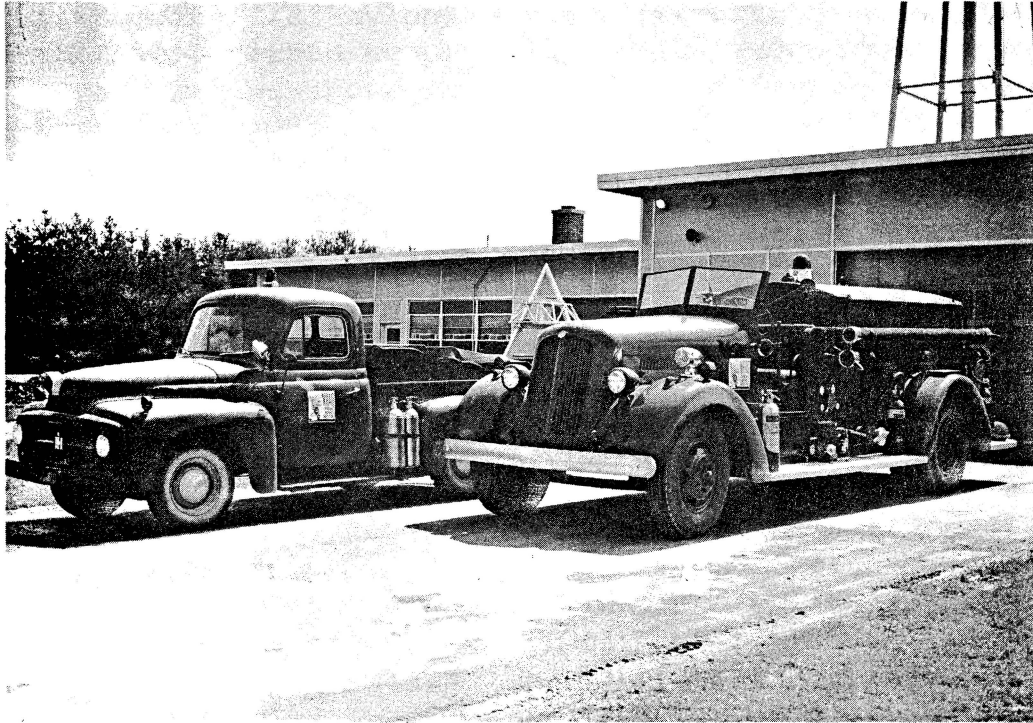
Volume 1, No. 8

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OUR SAFETY PROGRAM IN ACTION

See stories on Page 2



OUR SAFETY PROGRAM IN ACTION

In the picture on page 1 showing the 300-foot telescope, you will see the overhead guy wires of 3/8" cable. To this cable the worker attaches a snap on the end of a 1/2" nylon safety line that is attached to his safety belt. This enables the worker to walk the cantilevers with freedom of his hands, and also to move from one cantilever to another. Should the worker fall, the safety line limits his fall to about 5-feet.

This safety measure was designed by Spencer Greenwood, Engineer, and Paul Devlin, Safety Officer, and has been highly approved by the iron workers and their officials.

All workers are required to wear hard hats, both on the scope and on the ground. There have been no accidents or injuries since these safety measures have been initiated.

The other picture shows the NRAO fire truck and emergency equipment truck. The fire truck is a Seagrave tank and pump unit. The booster tank carries 1,250 gallons of water, is equipped with 150-feet of one inch booster line and fog nozzle, one extension ladder, two sections of four inch drafting or hydrant hose and first aid fire fighting equipment. The pump unit on this truck will pump 750 gallons of water per minute through three 2½ inch hoses or six 1½ inch hoses.

The equipment truck carries 600 feet of 1½ inch hose, first aid equipment, stretchers, mask and portable oxygen breathing unit.

Paul Devlin, Safety Officer, has recently returned from a weeks schooling at the West Virginia Fire School at WVU, Morgantown. Paul reports that studies were made in: advanced methods of fire fighting, fire prevention, arson work, fundamentals of water fog, brush and forest fire control, salvage operations, gasoline fires, pre-planning fire attacks, effective communications, common and special hazards with recommendations for safeguards, radiation and the fire service. They studied a special course in "Arson for Firemen", which included, detection, search and preservation of evidence, determination of origin, scientific aids and testimony.

In the past two weeks the fire truck has been called out for two Green Bank emergencies: Robinson's home and a barn filled with hay belonging to Charles Lightner.

In case of fire or emergency, the following extensions should be called, in the order listed:

- 1) During Working Hours--8:00 A.M. to 4:30 P.M., Ext. 262.
If the line is busy, Ext. 260.
- 2) Outside of Working Hours -- 4:30 P.M. - 8:00 A.M., Ext. 242.
If no answer, Ext. 262. If no answer, Ext. 259.

PUBLIC EDUCATION VISITOR'S PROGRAM

Over 1500 visitors went on the Observatory guided tour this past month. These visitors represented 28 states and 1 foreign country. 83 percent of the visitors were from West Virginia and Ohio. West Virginia was easily the most represented state with 69 percent of the total.

The new guided tour signs are working effectively in guiding the visitors to the south side of the Lab and into the basement conference room. Very little public traffic is now coming through the main Lab entrance.

A pop vending machine has been installed at the basement reception desk. Efforts have been made to obtain a candy and stamp machine. A fine collection of books on astronomy, radio astronomy, and space are available to the public, and are on sale at the reception desk.

Comments from the visitors ranged from raving about the scenic beauty of the site to what do we think of the Sugar Grove "shut-down".

Have you noticed that Dr. Drake hasn't been driving his little car much since the new road was completed. Do you suppose he's afraid he might get off the berm and hi-center?

New Home Phone Number for Hugh and Jeanette Johnson: 456-4777.

VOICE OF THE READERS (OBowyer)

"Use Your Head (?)"

As I use or look over some of the facilities that the Recreation Association is providing for our enjoyment, I see and hear incidents like, and I quote, this:

I saw a member drive his car onto the tennis courts -- and, if the driving range is full with some waiting, couldn't we sorta take turns, say after each basket -- with softball, do they have to provide gloves for all members kids -- and is it really true that some of the tennis rackets have already been destroyed by some of your younger members -- end quote.

I would think if these offenders care nothing for their fellow members they would care for themselves. Because the Recreation Association must know these things and are up to their necks in setting hard and fast rules to deter such misdemeanors.

I believe anyone "using his head" while using the Recreation Association's facilities will have fun and help others to have fun too.

AUGUST BIRTHDAYS

- 1 - John Matheny
- 3 - Dick Bird
- 5 - Dewey Ross
- 19 - Henry Taylor
- 23 - Phyllis Jackson
- 30 - Wally Oref

LAB GAB

July 20th, the Electronic Technicians held their monthly meeting at the Valley Restaurant in Arbovale. Attendance and food was good. After dinner, Jack Plunkett outlined portions of AUI policies pertaining to personnel management. A question and answer period brought out several good points which were beneficial to everyone.

The 20-foot dish was mounted on its pedestal the 25th, and the 6-cm receiver is being subjected to final tests. It looks as if Warren and "Cheef" will be busy for a while.

Someone said Ruben and Emilio have a fast car -- but not fast enough to get away from the revolving red light.

Bert Hansson and Bertil Höglund, of Chalmers Institute of Technology, Gothenburg, Sweden, have arrived at the NRAO. Mr. Hansson is an engineer and will work in the Lab. Receiver front-ends are his specialty. Mr. Höglund is working with the Basic Research Group, and has the multi-channel experiment.

Does anyone know how John Parker flips the coins to keep from paying for the coffee?

Bill Waltman spent a week at the University of Illinois working with the 611 Mc receiver which was built at NRAO.

Have you heard strange noises coming from the Lab lately? We don't have a dog kennel -- the "bark-bark" that

you heard was automatically triggered by the sound of ladies' heels!

Torleiv Orhaug has returned to Sweden. His name-plate has been mailed to him.

If Carl Davis could find a large thermos pitcher, he might treat the guys in the Lab. Anyway, that was what we were told.

Dr. Hvatum and Jim Dolan were at AIL and Bell Labs last week. Anyone wanting information about finding the Bay Shore Inn should see Jim. He knows all the short cuts, or were they long cuts, Jim???

"Dracula", which was built by Carl Wooddell, failed to keep Turkey in line. But this problem has been solved. It is amazing what a few nuts, bolts and coaxial cable can do.

Born to Mr. and Mrs. Dewey Ross, July 3, 1962, a son, Randall Allen, weight 8 lb 7 oz. Now we know why Dewey is so happy.

DECEASED

Willie Lambert, Jr., died July 4, 1962 in a Washington, D. C. hospital. He is survived by his wife Stella and a son "Tinker". Stella, prior to moving to Washington, was the switchboard operator for NRAO for about 2½ years.

ENGAGEMENT ANNOUNCED

The engagement of Miss Lelia Moore to Fredrick R. McCormick, III, son of Mr. and Mrs. F. R. McCormick, of Huntington, W. Va. has been announced by her parents, Mr. and Mrs. Ernest N. Moore, of Dunmore.

Wedding plans have not been completed.

Lelia is employed as a secretary in the Electronics Division this summer. She also worked at the Observatory last summer.

Lyndell Brooks has enrolled for the second summer school term at WVU, beginning July 23. At the completion of this 5-week term, he will have fulfilled the requirements for his Master's Degree in Industrial Relations. He will return to the Observatory the latter part of August or the first of September.

Naomi Daniels' parents, Mr. and Mrs. Morris Friel, of Marlinton, celebrated their 50th Wedding Anniversary on July 22.

NEW LOCATION

John Gallagher, his wife, Sallie, and two children, Maureen and Jim, have moved from Cass to the "Simms" house in Green Bank.

ON THE ROAD

Arnold Davidson is spending about two weeks at Texas Instruments in Dallas, Texas, learning the operation and handling of a germanium bolometer. This bolometer will operate at 5 mm, and will be the heart of a radiometer to be attached to the 5-foot dish.

The 5-foot dish will be located at the old 12-foot building. Bill Horne has designed an elaborate and precise supporting and driving unit for the telescope. Until it is ready the old 12-foot mount is being readied for use.

Dr. Drake is attending a symposium at the Rand Corporation, Santa Monica, California. The subject of the symposium is "Application of Passive Microwave Technology to Satellite Meteorology".

The purpose of the symposium will be to plan methods of studying the atmospheres of the earth and other planets by using microwave radiometers looking down from an orbiting satellite. Afterwards, Dr. Drake will go to Dallas for a day to review the progress on the NRAO germanium bolometer. (Really stopping to see that A. Davidson is keeping his pitching arm in shape.)

On August 2, Dr. Heeschen will participate as a lecturer in the Summer School of Radio Astronomy being held at the Massachusetts Institute of Technology, Cambridge, Massachusetts.

NRAORA CERAMIC CLASSES SCHEDULED

The NRAORA is sponsoring a series of five ceramic classes. These classes will be under the supervision of Mr. Jim Ellis of the Jim Ellis Art Shop, Roanoke, Virginia. The initial cost of the classes will be paid by the NRAORA. The cost to each NRAORA member will be only for the supplies and paint they use. The NRAORA will bear all the costs for "firing". All employees of NRAO and/or their families are eligible to attend these classes. If any employee not a member of the NRAORA wishes to attend, a fee of \$5.00 will be charged in addition to the purchase of the supplies.

The classes will be held in the Arbogast House (across the road from the Works Area Building). They will be from 7:00 P.M. to 10:00 P.M., on the following dates:

August 13, August 14, August 15, August 20, and August 21

After the five classes have been held, it will be decided when it is most suitable to hold future workshops -- weekly, semi-weekly, daily, or whatever is agreeable with the majority interested.

These classes are for men and women. You do not need any talent to participate. If you are undecided whether or not to purchase supplies, we suggest that you at least attend the first class to see "what it is all about". All interested persons should attend as many (or all) of the five classes as possible. They are scheduled so that each person should have a finished product at the end of the five classes.

We have been advised by Mr. Ellis that it might be better to start with the "greenware" (items already molded), but if anyone is interested, we will also handle clay so you can use your own talents and imaginations in forming whatever objects you desire. At this time, we do not have molds. We will keep a stock of greenware and clay which can be purchased for each individual's use. The greenware includes candy dishes, ash trays, pitchers, wall plaques, trays, covered dishes, spoon holders, decanters, cup and saucer sets, mugs, vases and plates, which vary in price from 40¢ to \$2.85. The clay will be approximately \$1.10 for 5 lbs. The kit will cost \$9.50 each.

So that we can have the necessary items on hand for these classes, it is NECESSARY that the blank attached be filled out and returned to Harry Wooddell no later than Tuesday, August 7.

S O F T B A L L

RED RAIDERS BEAT BLUE DEVILS -----

Softball season is nearly at its halfway point, with each team playing four games. At this point the team standings are:

Team	Game	Runs For	Runs Against
RED RAIDERS	3 for 1	27	18
BLUE DEVILS	3 for 1	28	23
GREEN HORNETS	2 for 2	59	40
BROWN BOMBERS	0 for 4	31	74

Highlight of the week was a 5-4 defeat suffered by the no longer invincible Blue Devils, captained by Tom Carpenter. This was a superb pitching duel between Howell and Simmons, with Howell credited with the win. The Blue Devils led 1-0 into the fifth inning, but a Red Raider rally scored two runs. In the seventh the score was tied up again 3-3. The Red Raiders scored two runs in the eighth, with the Blue Devils fighting back with one run in the ninth. This was their first defeat. These two teams are now tied for first place.

they were forced to play most of the game with eight players. The Hornets scored almost at will against the Bombers.

Bill Meredith will captain and pitch for the Bombers during Davidson's absence.

If anyone hasn't been playing for any team, but wants to, see Bill Meredith, and he will arrange so that you can play.

The Brown Bombers exploded (or fizzled) as the Green Hornets stung them 29-6. With Davidson and Brooks absent from the Bombers

RECREATIONShooting Range

Through the efforts of Paul Devlin and many others, the shooting range at the Hannah House has been moved to a safer location where it is being greatly improved.

The range is now located at the southwest end of the Hannah House field. Bunkers have been dug. Range markers start at 100 feet and go to 300 yards. Plans call for bench rests at appropriate places.

The range is now high and dry, and will not require wading through six inches of water to check the targets as was necessary at the old location.

There are two small drawbacks at the range. One, late afternoon sun may cause some squinting, and two, the range elevates perhaps less than 5 degrees from rest to target. This last drawback may have some of the shooting perfectionists computing gravitational effects, but the effect should be practically nil.

Just behind the shooting rests is a good location for shotgunning clay pigeons. Those of you shooters who haven't tried this sport are missing out on some good shooting (and embarrassing) exercise. The NRAORA has two hand traps for throwing clay pigeons. They may be checked out and used at no cost. The shooter has to pay for his clay pigeons. Now if a good source of clay pigeons could be found...

The reloading boys figure that ammo will cost them \$5 per hundred

or perhaps a little more, compared to almost \$5 per twenty for factory ammo. Even at \$5 per hundred, shooting is still fairly expensive. But our point is, with the reduced cost in ammo, there will be a lot more activity at the range.

One more thing--the Recreation Association has spotting scopes that may be checked out for use at the rifle range. Since plans for their use are not complete, you can see Paul Devlin or Bill Meredith for checking-out details.

Remember SAFETY, be careful and obey rules.

ATTENTION GIRLS

Beginning Wednesday, August 1, 5:30 P.M. all NRAORA female members and wives of members are urged to meet at the Hannah Bottom for recreational activities. We hope to have enough gals out for two softball teams.

For those who don't care for softball, there will be horseshoes, badminton, tennis, volleyball, etc., but come on out, this is OUR night.

NRAORA ACTIVITIES

The following recreational facilities at the Hannah farm are currently in full-time or part-time use:

Tennis Courts -- although not fully complete, are available for

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use in the evenings and on week-ends. Final completion will be in about two weeks.

Croquet, Badminton, Horseshoes -- expected to be completed by the end of this week.

Playground equipment will be ordered this week, with delivery expected in 2-3 weeks.

Outdoor Basketball and Volleyball Court -- should be completed by the end of this week (except fences).

Golf driving and Softball goes on as usual.

AUI TO OPERATE OBSERVATORY FOR FIVE YEARS

On Monday, July 30, 1962, Associated Universities, Inc. and the National Science Foundation executed Amendment #15 to Contract NSF C-50. By this amendment the Foundation has retained AUI to operate the Observatory for another five years.

THIS AND THAT

A crew will be here Saturday to do a film story on the Observatory for WSAZ-TV, Charleston. They will also go to Sugar Grove to photograph a program of "The Price is Right" (or is it the last episode of "Adventures in Paradise"?)

Russell Clarkson filled in for some of the janitors on the night shift while they were on vacation. Russell reported that he was glad to return to the day schedule because he never saw a paycheck for three weeks -- his wife, Pearl, got them all.

The Receiving Department has been very lucky in locating the proper requisitioner on orders coming in. That is, until last week. They received a package addressed to the National Radio Astronomy Observatory, containing three maternity dresses. After some very careful "observing" the proper owner was located. Watch out telescope operators, you may lose your jobs.

Several people have asked Scotty what happened to his proposed riding school, and horses at the "Lazy-S". While Scotty was finding out the interests in such an adventure, the lady who owned the horses signed a contract with the City of Roanoke's Recreational Department, and could not furnish horses to the "Lazy-S". However, Scotty assures us that he will do all he can to get horses for next summer.

VISITORS

Dr. J. P. Wild, of the C.S.I.R.O., Sidney, Australia, visited us one day last week. Also, Dr. and Mrs. Jennison of Jodrell Bank were here last week to visit the Observatory for one day.

Louis Skiba and family visited the Observatory July 20, on their way for a vacation in Michigan. Mr. Skiba is with the GAO. He and Mr. Taylor spent several weeks here two years ago.

THE SECRETARY

The typographical error
Is a slippery thing and sly--
You can hunt until you're dizzy
But somehow it gets by.
Till the forms are off the presses
It's strange how still it keeps,
It slinks into a corner
And never stirs or peeps.
The typographical error
Is too small for human eye,
Till the ink is on the paper
When it grows to mountain size.
The boss, he stares in horror,
Then tears his hair and groans;
And your Editor who okayed the proofs
Just drops her head and moans--
For all the other printing
May be clean as clean can be,
But the typographical error
Is the only thing you see!

Guess Who...likes bagels and
doughnuts...German ancestors...
moves from house to house...works
with numbers????

NOTICE TO ALL MALE EMPLOYEES

Please take this copy (and all future ones) of the Observer home so that your wives and families can enjoy reading them. We hear all sorts of rumors that they never see one -- don't know what they are -- you never tell them any news, etc.

NEW BOOKS IN THE LIBRARY

"Physics and Astronomy of the Moon"
Z. Kepal
"Science in Space", L. Berkner
and H. Odishaw
"The Universe", O. Struve
"Automatic Data Processing Systems", R. Grogory and R. VanHorn

Note: Two of these books were written by former employees of NRAO -- Berkner and Struve.

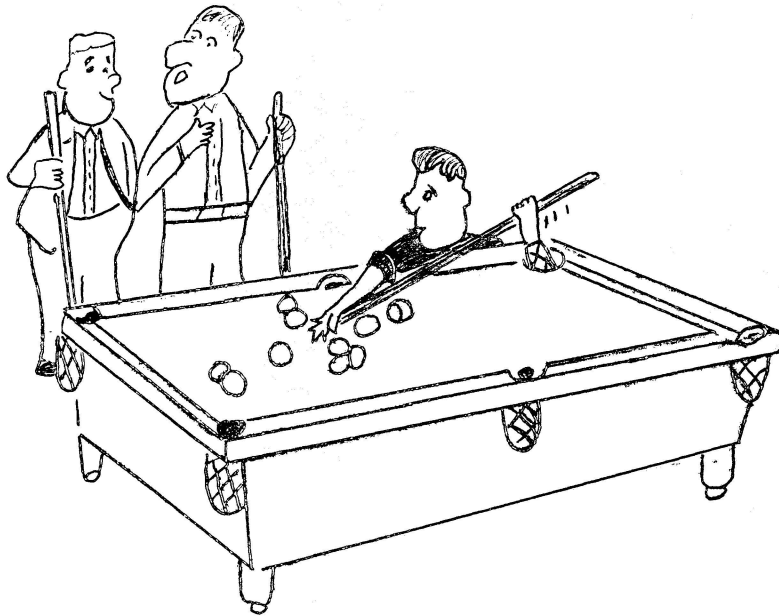
WANTED

Wally Oref would like a growing specimen of a ginseng plant, but he will settle for a foliage specimen.

We want to initiate a "Want Ad" section to the Observer. Do you have anything you want to buy, sell, borrow, or beg? Tell us what your wants are.

FOR SALE

35 mm camera. Contact Mike Waslo, Extension 320.



For a moment, I thought we had Warren Stymied.

This message was recently posted by a business friend on his employees' bulletin board:

"Due to increased competition and a keen desire to remain in business, we find it necessary to institute a new policy, effective immediately. We ask that somewhere between starting and quitting time, and without infringing too much on the time usually devoted to lunch periods, coffee breaks, rest periods, story telling, ticket selling, vacationing, and rehashing yesterday's TV programs, each employee find some time which he can set aside as "Work Break". To some this may seem a radical innovation, but we honestly believe this idea has great possibilities.

A mouse was shot into outer space in the nose of a rocket and returned to Earth scarcely the worse for wear. He was returned to his cage in the medical research laboratory. A mouse in an adjoining cage was full of questions.

"How did you like it?" he asked eagerly.

"Well," replied the rodent traveler, "it's better than cancer.

A minister's son was applying for a job as a policeman and was asked as part of his test, "How would you disperse a mob?" He promptly replied, "I'd take off my hat and start taking a collection.

STUDENT SECTIONA T T E N T I O N ! ! ! !YOUNG SINGLE GIRLS

Nine young gentlemen students living at the Hannah House have been lacking in wine, women and song. To make up for this deficiency the Hannah House will be the site of a dance at 8:00 P.M. FRIDAY, AUGUST 13.

WARNING -- Come at your own risk.

Call 456-4513 for details.

Hua-Feng Huang is working on a laboratory set up for Dr. Vinokur's phase measurement project. His dream is to get a successful result in this research project, but his "ultralinear saw-tooth generator" and "non-error linearity checking circuit" have fallen in love so deeply with him that they will never let him go.

After coming to NRAO, he has found a deep interest in studying low noise microwave amplifiers, and is planning to change his major to microwave engineering after finishing his M.S. Degree at Vanderbilt.

Frank Palluconi, working with William Waltman, has been primarily concerned with making microwave measurements. These measurements are necessary in order to obtain accurate information on the absolute intensity of Cassiopeia A. In addition some correlation studies

have been carried out on the data obtained from this source.

A graduate student at Penn State, Frank plans to return to the Ionospheric Lab at that University. This Lab has just constructed a 30-foot radio telescope which will be used primarily in making solar observations.

John MacLeod is working on a project for Dr. Johnson which involves examining the data on all known supernovae to determine the frequency of occurrence of supernovae as a function of their position in a galaxy. Prior to this, he checked the 40-foot telescope and partly reduced some of its data while Bill Meredith was at Jodrell Bank.

His favorite extracurricular activity is gazing forlornly at the rubber on the tires of his car, and estimating how many more hours it is going to last.

The University of Illinois, his home university, is building a 600' x 400' radio telescope which will survey discrete sources if it ever recovers from a recent flash flood which broke the dam built for just such an emergency.

Robert Haas, working under Dr. Hvatum, spent the first half of the summer making measurements on the Adler Tube. He is currently

studying radiometers and is head of Project Tour-Tel, the building of a radio telescope for use of the tourists. While not hard at work, Bob spends his time caving or disappearing to Pittsburgh on weekends. His school, Penn State University, has recently begun a solar radio astronomy program extending the activities of the Ionospheric Research Laboratory which is the largest research facility at Penn State. Present equipment includes a 30-foot dish and a switched radiometer.

Marvin DeJong is working for Dr. Hogg on observations of supernova remnants with the 85-foot. He is also making 10-cm observations of 3C sources in a joint project with Yervant Terzian.

In his spare time he has enjoyed seeing the sights in Arbovale and Green Bank. This fall he will return to R.P.I., where further work in radio astronomy includes solar flare observations at 500 Mc, with a swept-lobe interferometer and SCNA observations at 18 Mc.

Yervant Terizian has finished observations with the 85-foot of a gaseous nebula called "The California Nebula". Presently he is making observations of some extragalactic sources at 10 cm wavelength in a joint program with Marvin DeJong under the sponsorship of Dr. Heeschen.

Yervant claims that his favorite enjoyment at NRAO, besides caving, is driving the engineers' jeep down to the 85-foot every evening.

It seems that Bill Waltman and Yervant will cooperate in the future since Indiana University will supply the astronomers and Purdue University the electronic engineers to construct a radio telescope in the State of Indiana.

Jimmy Hudnall is working this summer on a broad-band transistor amplifier, under the supervision of Jim Dolan. The amplifier is expected to have a bandwidth of 100 Mc. While at the Observatory Jimmy has enjoyed participating in the softball league, and has also spent much time at the pool tables. Jimmy is a senior in electrical engineering at the University of Mississippi.

Ronnie Barnes, from Vanderbilt University, is presently working with Dr. Hogg on Jupiter reductions at 40 cm, and he is also reducing data on the remains of supernovae (exploding stars).

Ronnie's favorite extracurricular activities here at NRAO are playing touch football with the local yokels and caving in the nearby caves.

Vanderbilt, unfortunately, has no future plans for radio astronomy. It does have a small department of astronomy which specializes in photometry and in the study of eclipsing binary stars.

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Tom Barnett, a recent graduate in physics from WVU, is working with Dr. Vinokur on a study of the effects of tropospheric turbulence on the phase and amplitude of radio signals propagating through the atmosphere. He is presently engaged in reading through the literature on the problem and abstracting important articles from the technical journals. The ultimate goal of the study is to derive a means of predicting the integrated effects of the atmosphere on signals received from radio stars.

His extracurricular activities consist of participating in the various recreations provided by NRAORA, and polluting the air around the Hannah House with his foul smelling pipe.

WVU has a small astronomy department (one course) and caters principally to education majors and jockos (p.e. majors); radio astronomy prospects look dim. His graduate school of next year, Michigan State University, has an excellent physics department, but passes on the astronomy work to the University of Michigan.

John Kirkham, a physics major from Ole Miss, has been working for Dr. Heeschen on 10-cm observations of two spiral galaxies, NGC 253, and NGC 4258. He is also working on Project Tour-Tel, the public education telescope. While at NRAO, John's favorite extracurricular activities (aside from extragalactic nebulae) are softball with the Green Hornets and traveling to nearby spots of interest, such as Washington, Pittsburgh, Cass, etc. While Ole Miss

has the potential for limited radio astronomy, the major interest right now is the installation of a Dynamatron (3 Mev accelerator) this fall. So, the immediate prospects for radio astronomy at Ole Miss look dim.

Carl Heiles is reducing planetary data for Dr. Drake. The most important activity so far has been the measurement of the bright side temperature of Venus and the correlation of Jupiter's centimeter radiation strength with time. He and Ellen Gundermann will figure the surface of the 5-foot millimeter dish when it arrives.

Most of his extra time is spent with his wife and child (age about 14 months). The rest of it is spent listening to music and studying German for a future reading exam.

He is a graduate of Cornell University and had his training in the field of Engineering Physics. Next year he is doing graduate work in astronomy at Princeton University. Cornell is fairly active in radio astronomy, doing solar work with equipment near the campus and is in the process of building a 1000 foot dish in Puerto Rico. This large dish will point by means of a movable focus and will operate at about 500 Mc.

Beth Beyer is working under Dr. Wade, getting the Shapley-Ames list of galaxies ready for observing

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on the 300-foot telescope. She has been measuring the Palomar Sky Survey prints in the library to check discrepancies in positions of some of the galaxies.

In Green Bank, her favorite activities are Corvair washing on sunny weekends and cooking.

In September she will return as a senior to the University of Michigan. The U. of Mich has a twin to the NRAO 85-foot and almost has a new physics-astronomy building -- by June it had grown 7 of its 10 floors. Astronomy will get the top three. Last winter Beth worked on Dr. Wm. Howard's catalog of radio source spectra at Michigan.

James Merritt is spending the summer working on the automatic control system for the 300-foot dish. His two favorite hobbies are cave exploring and tennis.

During the winter Jim attends the Florida State University, and works part-time at the radio observatory studying low-frequency Jupiter radiation.

Ellen Gundermann, assisted by Carl Heiles, spent the first few weeks here frantically trying to reduce data on Venus, hoping to find a temperature for the bright side. This information was required for the Venus space probe. (Note: The probe failed.) Dr. Drake has also had her working on an attempt to find a correlation of Jupiter 10-cm radiation with its longitude.

Her favorite activities are chopping down trees, climbing "mountains", and picking blueberries.

A graduate of the University of Chicago, she has spent one year as a graduate student at Harvard College Observatory. Harvard has a 60-foot dish and a working maser. This equipment is generally used to observe the 21-cm hydrogen line.

Peter Gaposchkin has been working on a project for Dr. Wade to compute the absorption of radio radiation by high energy electron clouds in a magnetic field.

His favorite extracurricular activities this summer have been tennis and driving about the countryside enjoying the scenery.

There is no formal radio astronomy department at the University of California. However, there is a radio astronomy laboratory there, and a radio telescope at Hat Creek, California.

Larry Sutton is working with the Engineering Department under Sidney Smith. His main job is drafting. He attends WVU during the winter.

Larry is on the Brown Bomber softball team, and also plays tennis and golf.

Tom Hall, after the week of introductory lectures, helped position the 60-cm receiver on the 85-foot, and did some reading about galactic background radio emission while waiting for Dr. Johnson to arrive at the NRAO. He is now computing the radial velocities of stars in the Orion nebula and doing some reading about spectroscopy.

Tom's favorite extra-curricular activities are watching television when he is lazy, walking to and from the Hannah House, and caving when he feels energetic, and soaking in the beauty of the region whenever possible.

Tom attends Earlham College in Richmond, Indiana, which is a liberal arts school without undue interest or facilities in astronomy. At present they have a six-inch refractor telescope (the oldest in Indiana), and one astronomy professor, Dr. Crump, nearing retirement. There is little hope for the birth or growth of radio astronomy during the next few years at Earlham.

James (Bugs) Moran is currently working on three projects: building the frontend switch and preamp for the student project; helping Jerry Cohen on data reduction; and constructing a calibration source for the hydrogen line receiver. Almost every evening "Bugs" is out on the tennis court willing to take on all challengers. Dr. Findlay has about destroyed his confidence though.

His main ambition this summer is to climb over suicide falls in Cass cave.

Upon returning to Notre Dame in the fall, "Bugs" will propose that the EE Dept. immediately begin construction of a 600-foot parabolic antenna for astronomical purposes. He thinks that design problems can be overcome rather easily.

Doug Hall has been working under the supervision of Dr. Crampin devising a program which will compute the actual antenna pattern of any radio telescope, taking into consideration surface irregularities on the dish and non-uniform illumination by the feed. This might eventually be applied to the 300-foot.

When Doug is not in the computer room, you can find him either at the Hannah House reading science fiction, at the tavern in Cass, or most probably somewhere in Overholt's Blewing Cave.

His Alma Mater, Swarthmore College, is a small liberal arts college well within suburban Philadelphia. The 24-inch refractor at the Observatory has been used for many decades in the study of the 50 or 60 nearby stars, principally with respect to trigonometric and secular parallax, binary orbits, and the discovery of unseen stellar companions of low mass. Swarthmore is far too small an institution to seriously consider building a radio telescope, and

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Peter van de Kamp would probably be reluctant to abandon his classical methods of long focus astrometry.

Jerry Cohen has been working on several data reduction programs for the 10 cm and 3 cm atmospheric fluctuation studies started by Dr. Orhaug. He is also working on several programs for Dr. Vinokur.

His favorite extra-curricular activity is driving to and from Pittsburgh. He also enjoys working the night shift on the 1620. He says, "It's not smarter than I am; it's just faster."

His school, Carnegie Tech, in Pittsburgh, has a small project in progress to break into the radio astronomy game. It currently consists of modifying a war surplus radar set for conversion into a total power radiometer.

YOU AND I

Population of U.S.	153,000,000
Those over 65	41,000,000
Left to do the work	112,000,000
Those under 21	54,000,000
Left to do the work	58,000,000
Government employed	25,000,000
Left to do the work	33,000,000
In the Armed Forces	10,000,000
Left to do the work	23,000,000
In State or City work	19,000,000
Left to do the work	4,000,000
In hospitals or asylums	3,800,000
Left to do the work	200,000
Bums who won't work	199,998
Left to do the work	2
You and I -- and I'm getting <u>tired</u> .	