

The O B S E R V E R

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COME ON, BROWN, MOVE 'EM OUT!

WALLY SAYS, "COME HELL OR HIGH WATER, THE SHUTTLE HAS TO BE THERE ON TIME!"

August 31, 1966

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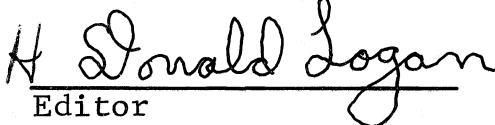
In the early days of N. R. A. O. there was little to write about and few to do it. But, we have grown considerably. Now there are many interesting and humorous events taking place. While I was in Green Bank, every day produced its noteworthy feature, many of which became famous over coffee amassed thru the spoils of gambling, a few of which are not suitable for discussion here. The point is, that since there is so much activity, I can't understand why we encounter so much difficulty in producing OUR Observer.

Are we afraid of criticism or kidding? If so, try looking at it this way; the person who is willing to accept disapproval as well as acceptance of his work is sure to learn more and do a better job the next try. So it would seem that this person has improved himself. Trial and error is a valid means to an end, even when it's not the easiest route. It's like someone once said, "I'll try anything twice; I might even perfect it the second time."

Having mentioned the early days of N.R.A.O., I am going to use this opportunity to express my personal appreciation to one of the original members of the Observatory who we are unfortunately losing in September. Dewey Ross was one of the first people to be employed in the Electronics Division, back around 1956. Harvey (as he is affectionately known around the Low Noise Lab, and elsewhere) is probably responsible for more receivers (and coffee, bought) than anyone else. Since I don't want this to sound like a eulogy, I won't attempt to mention all that Dewey has contributed, but I will say that any time help was needed you could always depend on him, and with good results. When the members of the Millimeter Lab first learned of Mr. Ross' impending departure, we attempted to immortalize him by attributing credit to him for a series of atmospheric studies. This he accepted in good faith and even offered a reward to participants.

We sincerely wish you good fortune, Dewey, and all those who had any connection with you will surely miss you. I hope school goes well, and all that I can say now is, Hurry Back! (Why I'll even buy the first round!)

Respectfully submitted,


Editor

Comments on Charlottesville

When the move to Charlottesville was first rumored, and then officially announced, there was much speculation about what life would be like for those involved in relocating. Well, here is a first hand report.

When discussing Charlottesville, one must keep in mind that it is a College town, in a traditional and older section of Virginia. Consequently, one is immediately aware of the more urban ways than can be found in Green Bank. For example, students' ways might be shocking to a native Green Banker, in that they openly engage in Matriculation. Now I know this is a family paper, but I call em the way I see em. Of course, this Matriculation often leads to difficulties with the Syllabus, about which I know very little. You should realize that any University is going to be very large, and this means a lot of people too. For example, the Medical School has a Staph problem, it just can't get to all the students. It seems as though every one who stays four years, however, does wind up getting a baccalaureate. Once this happens you are immediately marked as an alumnus, which I guess goes back to your old bout with the Syllabus. The law students really stick together over here and they all live together in Paternity houses. They get away with a lot too, because they write dirty Greek sayings all over these houses. They may be fooling the Chief of Police, named Dean something or other, but they're not fooling me. I will say that they are very strict with the girl type students; they must have to take some kind of test, but if they pass it they're known as sobriety sisters. This must be very reassuring to their parents, especially with all these Paternity houses and all.

Living in a Confederate State has been very enlightening for a Northerner like me. I find most Southerners are only thinking of Heaven, because they frequently say "Forget Hell." Probably they are studying Geology; you know, the works of God. The school of Aeronautical Engineering is apparently quite interested in Religion too. I've heard those guys talk about Angular Momentum.

You all (no colloquialism intended) remember Art Shalloway? Well, he is working on a device for the Highway Patrol (I don't know what its got to do with Radio Astrology, though). It's called an Auto Correlation Receiver, to detect accidents, I suppose.

Well, I have to run now, because I heard about a lecture on children's toys I want to attend. It's something about Vector Sets. So, write if you get word.

73's

hdl

Lab Gab

by Mike ("SS") Byorick

Receiver Lab - The back end crew is hard at work on the new NRAO Standard receiver which was designed by Dr. Weinreb. Two new technicians, Lewis Beale and Steve Mayor, and Jerry Turner, a summer student are valuable additions to the Lab. (Students are valuable additions anywhere).

Low Noise Lab - The Low Noise boys are working on the 21 cm front end for the 300' autocorrelator, as well as front ends for the VLB (Very Long Baseline interferometer).

Digital Lab - Congrats to Bill Vrable for his promotion to Senior Technician. Bill is trying to get the autocorrelator running, and the rest of the Lab is constructing logic blocks and encoders for the interferometer and the 36' telescope.

Electro-International is still keeping the Lab's equipment in great (electrical) shape. Sam Blount's comment for Lab Gab was unfortunately unprintable.

Behren's Lab - Larry Bowles, who transferred over from the Low Noise Lab, is assisting George with the 6 cm front end for the 140'.

Misc. Department - Mike Balister, Rolfe Utz, a new technician, and Curt Knight, a summer student from MIT, are working on the front end and cabling for the 42' "portable" telescope which will be used with the interferometer system.

Potato rot seems to be spreading around Green Bank.

Val Boriakof is working on 139 MHz front end for the 300', and an analog buffer for the interferometer.

Bob Mauzy is "intruding" in the digital lab and working on an analog (!) clipper for the autocorrelator.

Summer Students - Ted Reiter (Ohio State) has finally perfected (he hopes) an audio monitor for telescope interference. It will give a loud audio indication (i.e., noise) to the scope control room whenever the radiometer picks up interference.

Jim Cook (also from Ohio State) is constructing a multiplexer for the interferometer.

Phillip Honsberger (yes-Ohio State!) is presently working on a phase-locked loop system for the interferometer.

Wen-Pin Ou ("Wally"), a student from Vanderbilt, is now working on a temperature control system, after trying to build an original parametric amplifier (!).

Interferometer

from Bill Kuhlken

The system is finally going off the air after a pretty good run.

Exhumation of the old buried cables has been started in preparation for a new system of cabling to be added for the third 85-ft. dish. (There's something here covered by the Finagle Factor, telling to how many nth powers troubles can go up.)

Bill Shank objects to living in the high rent district in Cass now; some people are never satisfied.

Looks like Bill Kuhlken is finally losing respect for his Honda Motorhertz. They are fun tho -- ask the nicest people who drive one. B.K. is still looking for a black jacket with an eagle on the back. (No Boots?)

Bill O'Neill has another few weeks with us. He's the old commuter -- goes between Pittsburgh and the metropolis of Arbovale every week. Hope he doesn't learn bad habits, like trimming trees.

Bernie Pasternak has perfected his temperature controller. It's quite a feedback servo system. (Hasn't he ever heard of a simple on/off switch?) He has been aided and abetted by the able George Patton.

The CHIEF has been growing a beard, but won't tell if it is to make him appear more dignified or if it is because he lost a bet. (Perhaps it's a windscreen for riding in his "lil Jagger".)

L&M (Leon Morrison) is leaving, or by the time this is read, has left. At least we won't have to duck from those buzzing little aeroplanes. You know, I wonder if they didn't cause some of the interference with their mighty motors. Ha, Ha.

Carl Cooper can't quite keep his hearts score to a low point, but that's o.k. He has developed some mighty fine schemes for making money. Pasternak and Ervine are his co-designers. Now anybody got a few million they'd like to invest for a modest return?

So for now -- remember the mighty triple platters -- hears all, sees all, and says 1001110010101₊ 0110121000.

More on Interferometer

by Robert P. Nichols

The interferometer was shut down at 0800 hours on July 27. This was only slightly late since we were supposed to shut down on June 1.

In my short time here, I have noticed that a schedule is not something to accomplish work by, rather simply an item to show how late the project is. Anything within a month of its schedule is considered good.

Of course, the Observatory isn't all to blame. We have had trouble with the contracted companies being late to start the new interferometer system.

The latest official estimate is that the new three element interferometer, computer controlled from the new building, should be completed and on the air by the first of the year.

To date, we have received the new feed/support legs for 85-1 & 2, portions of 85-3, and the construction of the new control building is well under way.

Even the operators are in the working class these days. Some changes in the base-line cabling have been started and the removal of portions of the cables on the telescopes. There are several other projects on the road as well, such as, drawing the electrical schematic for the new system, junction box construction, filtering network construction, communications system construction, and numerous more projects coming up.

"Ramblings" for the Observer by Howard

The term "dirty rat fink" is no longer an appropriate expression in NRAO language. We now have an employee in Charlottesville by the name of James Finks. Needless to say, he may not appreciate the term.

Ray Hunter - wagonmaster - may be seen on numerous weekends with his clan in his Falcon wagon headed for the country. He heads up a group that loves camping. If you need advice on the spot to look for when you go camping, just ask Ray.

J. Marymor is about to partake of the luxuries of the State of Virginia. By that we mean he is about to spend some loot for State license plates, city license tags and three State drivers licenses for himself and family. That will just cost you about \$40.00 J. Welcome to the club.

There'll be a new TV show originating in Charlottesville this fall. It's to be called the "Complainers". This is intended to be a story about working people who constantly complain that they are overworked and that no one else does anything. It won't be based on anything new. The plot is ages old - just the characters are new.

I once knew a Navy Lt. who was newly married. After about six months he had to spend \$400 to fix up his wife's teeth. He said he hadn't paid much attention to her mouth before they were married so he didn't know all her teeth were rotten. The same type of story might apply to Al and Sandy Braun, who are newly weds - although theirs is no joking matter. Sandy underwent surgery on 8/3/66 for gall stones. We hope that she recovers quickly and is soon back on the job. We miss her smiling face and Al is such a sourpuss when she isn't around.

Another NRAO casualty is Lil Van Liew, our Charlottesville switchboard operator. Lil is a live wire - the only one at the switchboard that is live all the time. The other wires are more often dead than alive. Anyway, Lil just underwent surgery to have her wisdom teeth removed. To further complicate matters, the drug store mixed up the labels on her pain tablets and penicillin. As a consequence, she has the healthiest pain of anyone we know. And now, dear readers, it is thought that she has the mumps in addition to her other problems.

What the heck?

There are occasions when all the donuts aren't eaten in the canteen at this office. After a couple of days, wouldn't they be o.k. for low profile tires on GTO's? No, they won't work on VW's.

Incidentally, if any of you are wondering about living costs here compared to what they are in Green Bank, just move over for a few months. That's all the time it will take before you wish you were a \$20,000 a year man instead of what you are. Really, the highest cost is housing. For me, it's exactly double what I was paying in W. Va., and I was buying a home there - not renting.

"Wild Life In The Hills of West Virginia"

Tuesday afternoon, August 2, Wally Oref received a telephone call from his wife, Dorothea. Wally rushed out the door, jumped into his station wagon - nearly crashing into another vehicle in the process - and took off for the Hardy House (his place of abode). The story goes that Richie, his 5 year old son, was playing, as youngsters will, straddling the bannister on the porch when he spied a big snake crawling toward the house from a nearby field. He ran into the house yelling at the top of his lungs, "Mommie, there is a big snake in the yard." He went on to say he thought it was a rattle snake like the one Mr. Dolan killed on July 4.

By the time Wally got home the kids were keeping an eye on the snake from an upstairs window. Mind you, they didn't want it to get away before Daddy got home. It had crawled on the porch and was trying to get behind the freezer. Wally, by now, was armed with a 10-foot clothes prop and a 22 automatic rifle. He got the prong of the prop around its neck and deftly flipped it into the yard. He again got it around the neck with the prong of the prop and called for his wife, Dorothea, to come hold the prop on its neck, and while she held him (Wally -I mean the snake) he accurately put a bullet through its head.

Wally can't seem to understand why folks don't want to visit him. Is it any wonder???

* * * * *

Wally requested this special ad be placed in the observer:

"Highly experienced snake killer for hire. Rattle snakes a specialty. Have gun and clothes prop - will travel. Expenses and \$20 per killing."

While we are on the subject of Wild Life - I'm sure you have all heard the men bragging about whose fish was the largest. Now it is Jim Dolan and Wally Oref coming to blows over who killed the largest snake. Here are the statistics"

Wally

1 - W. Va. native timber rattler
38" long
2 1/2" diameter
10 rattlers
1 button

Jim

1 - W. Va. native timber rattler
42" long
2 3/4" diameter
11 rattlers
1 button

* * * * *

You've heard of children crashing through plate glass doors? Well, one of our students placed a beautiful salamander on Janet Giordano's desk the other day and she just about went through the front plate glass doors.

"Farewell"

It is with regret that we say "goodbye" to Norma S. Brockway. Norma will terminate her employment with the NRAO August 12.

She came to the Observatory in December 1962 as Secretary to Mr. Jack Plunkett, who was then the Observatory's Administrative Services Officer. After Mr. Plunkett's departure, Norma was placed in charge of Personnel.

Norma will be accompany her husband, Dick, to the campus of the University of Michigan where he will be enrolled in the School of Forestry.

Only the best is our wish for the Brockways.

The evening of August 3rd, the Hermitage at Bartow, West Virginia, was the setting for a "farewell dinner" in honor of Norma Brockway. Those attending were: Norma, of course, "Beaty" Sheets, Kay Sheets, Jane Carpenter, Naomi Daniels, "Snookie" Rider, Pearl Clarkson, Harry Wooddell, Ruth Anne O'Brien, Janet Giordano, Carolyn Dunkle, "Kim" Dunkle (Carolyn's daughter), "Toby" Mann, "Sis" Michael, and Connie Phillips. (The steaks were yummy).

"Personal Events"

Chris Rehr, of Carlisle, Pennsylvania, is visiting his brother and sister-in-law, John and Sherry Rehr, who are summer students at Green Bank from the University of Michigan.

Mr. and Mrs. W. W. Powell will accompany their daughter, Susan, (a Mary Baldwin Student) to New York the week of August 22, where Susan will leave by boat enroute to Madrid, Spain, where she will enter college for the winter.

On July 23, 1966, a party was given by Janet Giordano and Kay Sheets at the recreation area.

This was a peculiar party indeed. It was a Welcome Back Weekend Party for Bob Swensson and a "Farewell" to Leon "Pappy" Morrison.

The boys particularly enjoyed the name dance as they got to dance with different young ladies.

Sandy Sandqvist, Ele Von Hoerner, Jackie Plyler and Bob Swensson did their best "Hanky Panky" to win the dance contest. I'm sure they thought it was well worth their effort. What prizes! (They consisted of grass, rocks, paper, straw, pine cones, a golf ball and a box of delicious cracker jacks.)

* * * * *

"For Sale"

At Charlottesville, in employ it seems,
Is a bright young gal,
Known as Peggy Weems.

She has for sale, a GTO,
With lots of pep,
And lots of go.

Just call her up,
Most any old time,
The number is 295-5639.

"HL"

The Observatory Tours

The summer tourist season for 1966 is well underway. By now, most "Tourist Attractions" have had their share of visitors and the Observatory Tour Center is no exception. Since we opened on June 8th, we have had over 7,000 tourists come to see the sights. They have come from 42 different states -- as far west as Washington, Oregon and California, and as far east as Maine and Massachusetts. We find most of the people who come are from West Virginia and the neighboring states of Virginia, Pennsylvania, Maryland and Ohio. Some think that it is remarkable that we have as many tourists as we have.

Our best and biggest day was just recently, July 27th, with 340 people. Three weeks previously, we had our highest week's total of 1,463. Mr. Wallace Oref, Director of the Tour Center, predicted a 10 - 15% rise in the number of tourists over last year and already we are 1,400 ahead of them.

The Tour Center is located in the basement of the Green Bank High School where all guests are registered by the receptionist, Miss Dianne Williams, before starting the tour. They have an opportunity to purchase post cards, pamphlets and books concerning radio astronomy, and our Observatory, sale of which benefits the NRAORA.

The first part of the two part tour is a 15 minute color movie entitled "The Observatory", shown by Mr. June Riley, Math Teacher at the High School. The movie explains a little about radio astronomy, the Observatory, and the telescopes on the site. They then board the busses, driven by Mr. Grover Barkley and Mr. Harlan Tallman, and are taken around the site to see the actual telescopes. The tour takes one hour and tours are given Wednesday - Sunday at 11:00 a.m., 1:00 p.m., 2:00 p.m., 3:00 p.m., and 4:00 p.m.

Under the direction of Mr. Oref, there have been several changes in the set-up this year which have indicated an improvement over last year's program. Last year there were only three tours a day and this year we have five tour times available to the tourists. This, of course, accommodates more people and provides a greater number of "well-informed public."

The acquisition of the movie was also an improvement over last year's presentation. In the past year, slides were presented with a taped narration. The tourists have commented on how much they enjoy the movie and they seem to obtain a better understanding of radio astronomy after having seen it.

The tours are scheduled to end on August 14th and we hope to have had about 9,000 - 10,000 tourists by that time. Why don't you come to see us at the Observatory Tour Center -- you'll enjoy it and you will help us reach our goal!'

"Idle Time Spent Writing Rhyme"

The Shuttle

by "HL"

Bradford comes, and Bradford goes,
Through sun, through rain, through snows,
On shuttle run, up hills and down,
To meet that fellow, known as Brown.

They eye each other, across the road,
Will they change cars, or change the load,
They just change cars, they don't turn round,
Just hit the gas, and homeward bound.

It takes three hours, or less than four,
To make the trip, from door to door,
They don't get donuts or coffee breaks,
They drive and drive, that's all that it takes.

What would we do without these men,
Who bring us dollars, lire, or yen,
On the most important run of all,
The day they make the payday haul.

They bring that green stuff over here,
Where we all watch, and wait, and cheer,
Then take it out, and sweat and strain,
And helplessly watch it, down the drain.

Archery Club

A new club has been started among the employees, "The Deer Creek Archery Club." There are two single girls in this club so wives beware, especially if the husbands take it upon themselves to teach these young females to shoot.

Rifle & Pistol Club

The Green Bank Rifle & Pistol Club has increased its membership to more than 40 members, with new officers for the 1966 year. Jim Dolan was somewhat pleased to be honored with the rank of Chief Honcho or President. Dave Williams was voted in as Vice President. Don Logan began the year as Executive Officer but relinquished to Fred Crews, because of inability to attend meetings; from Charlottesville. Sam Blount was honored with the real fun job of: Secretary-treasurer-correspondent, Public Relations, Targets, and Morale - Officer.

The club participated in the W. Va. Conservation Camp Program by sponsoring & selecting a child to attend this camp. She is Barbara Hill.

The club has also taken measures to provide qualified marksmanship training for youngsters under 18 years of age, and plans are now being acted upon to begin with a Boy Scout Troop.

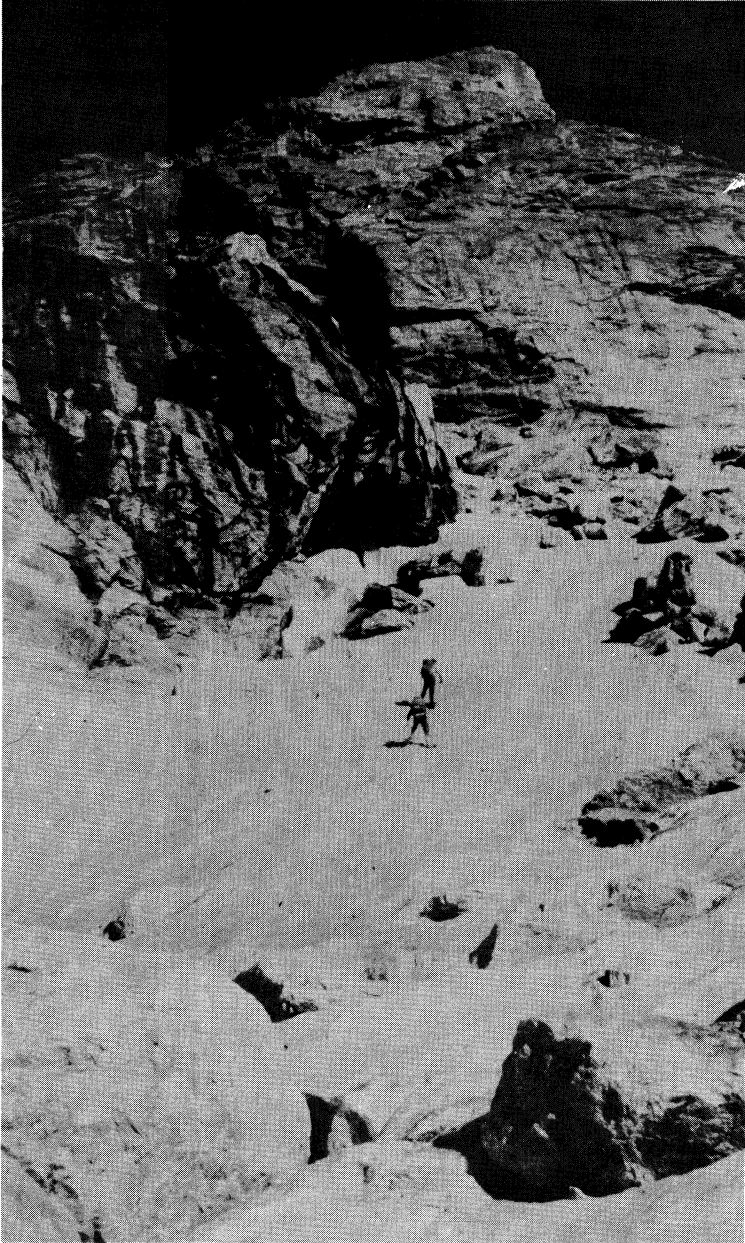
The Green Bank Rifle & Pistol Club has recently begun classes in reloading rifle, pistol and shotgun ammunition, using the equipment presently available in Green Bank, on the site. Anyone interested may contact Jim Dolan or Sam Blount. There is no danger in reloading your own ammunition when a few simple procedures are carefully followed, and it adds enjoyment to the sport and saves money.

Club members also participate in the Department of the Army's, Director of Civilian Marksmanship Program, in which official classifications are awarded by the Government. The weapons are issued to the club as is the ammunition, so there is no expense to members.

A simulated running deer target is under construction for use by NRAORA members, and this too, is being promoted by the club.

And finally, the club meets the first Wednesday of each month in the conference room, and each meeting is highlighted with a moving picture, color & sound, pertaining to the gun sports. All interested persons are cordially invited to join.

Co-Op Mountaineering Expedition to Wyoming
By Michael ("Motley Mountaineer") Byorick



Gary Bream and I - Co-Op students at NRAO-and Charlie Buhrman (who used to co-op at NRAO) recently journeyed out to Wyoming to climb in the Grand Teton Mt. range.

The Tetons rise abruptly from the flat 6000 ft. valley of Jackson Hole to an altitude of nearly 14,000 ft. The peaks are very alpine and rugged in appearance and routes of nearly any difficulty may be taken to the summits of the higher peaks.

After registering at Mountaineering Headquarters (a requirement for climbing in the National Park), Gary, Charlie and I started our climb of Middle Teton Mt. Most of the high peaks require two days for climbing, so a base camp must be established somewhere along the route.

With packs weighing 50 lbs. each and containing dehydrated food, sleeping bags, ponchos, ropes, cameras, extra clothing for cold weather, metal pitons and karabiners for rock climbing, we reached base camp at about 8400 ft. after a 5 mile hike.

Early the next morning the climb up to the base of Middle Teton was begun. This involved climbing rather steep (up to 45°) snow slopes. On

the last snowfield before the rock climbing began (approx. 9500 ft.), Charlie slipped and fell over 100 ft. down a steep snowfield into some boulders and completely severed a tendon from his kneecap. We strapped his ice axe to his leg to act as a temporary splint and began the long process of lowering him down the snowfields on the end of a rope. After we had descended the snowfields, there remained a mile of boulder fields to cross and 5 miles of trail down to the nearest car. After helping Charlie another half mile, we had the good fortune of meeting a Swiss guide who carried Charlie on his back for a half mile and a lady who let us use a horse to get our injured companion the rest of

the way down the trail. (Charlie was successfully operated on and was put in a cast from his hip to his foot).

Gary and I made it back up to the base camp the next day. Since our time was running short, we decided to direct our efforts toward the Grand Teton, the highest in the range.

We then headed for camp II, located between the Middle and Grand Teton Mountains on what is called the Lower Saddle. We encountered little difficulty in reaching about 10,000 ft., but as the air began to get thin, climbing became progressively harder. We would take about 20 or 25 steps and then have to rest for a minute until we could get enough oxygen for our lungs. After each short rest we would feel relatively fresh, but it was only a matter of a few short steps before we were again gasping for air. After six long hours, we reached the Saddle, just in time to see a glorious sunset.

The next morning we crawled out of our sleeping bags before 4:00 A.M., after a short night's sleep and started the climb to the summit. An early start is necessary so the summit can be reached before noon, when electrical storms usually strike the higher peaks. The route we took was along a ridge called the Exum Ridge and was strictly a rock climbing route. Only two moderately difficult pitches were encountered and the route-finding was more of a problem than the actual climbing. Near the summit, we carefully traversed the upper edge of a steep snowfield to the final short rock pitch. As we reached the top, we could see a complete panorama of the world below us, from an altitude of 13,766 ft!

FOR SALE

1959 Jaguar 3.4 Litre
Recent Engine Overhaul
EXCELLENT CONDITION

CONTACT

Stephen Mayor, NRAO - Green Bank
Ext. 231 or Arbovale, W. Va., 456-4342

HORSEBACK RIDING LESSONS

Twelve (12) lessons for \$20.00 at the exclusive Lendare Riding Club, Dunmore, W.Va. For information or appointments, contact Dare Scott, 456-4380.

PAT WASLO CHOSEN MISS POTOMAC HIGHLANDS

Patricia Waslo,
daughter of Mike Waslo,
represented
Pocahontas County
in the
Miss Potomac Highlands
competition and was
crowned Queen on
August 5
at Romney, W. Va.



She received many
gifts including a
\$50 U. S. Savings
Bond, \$50 check,
and all expense paid
trips to the various
counties of the
Potomac Highlands.
Congratulations, Pat!
.....

The Potomac Highlands consist of the following counties: Berkeley, Jefferson, Morgan, Mineral, Hampshire, Hardy, Grant, Tucker, Pendleton, Randolph and Pocahontas.

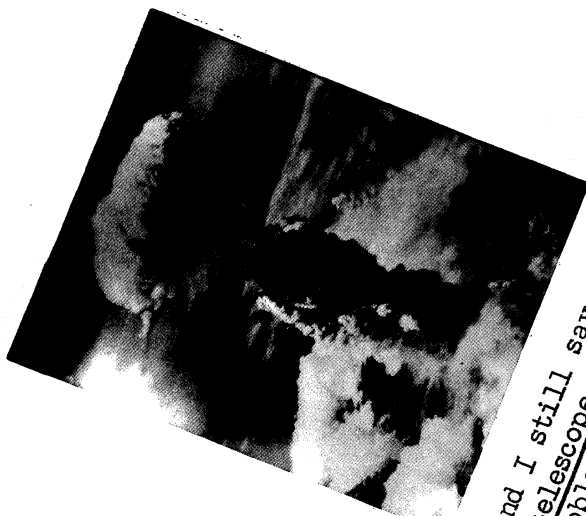
Pat's dad, sisters, and brothers attended the Queen's Ball and everybody thought they were a swell family.

Present plans for her are to attend the West Virginia State Fair (where she will meet Governor Smith), the Forest Festival, the Apple Blossom Festival, the Black Walnut Festival, the Poultry Festival, and the Alpine Festival.

The judges were impressed with Pat's congeniality, poise, and ability to intelligently and rapidly answer the questions asked. She is a lovely queen and Pocahontas County should be proud of her.

Pat was also rewarded the AUI scholarship earlier this year. Looks as though everything is comin' up roses.

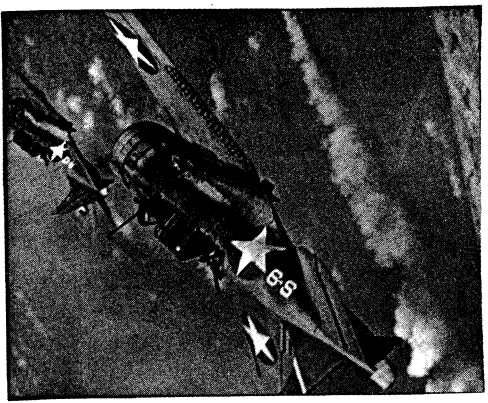
.....



"and I still say it's a telescope cabling problem, Howard!"



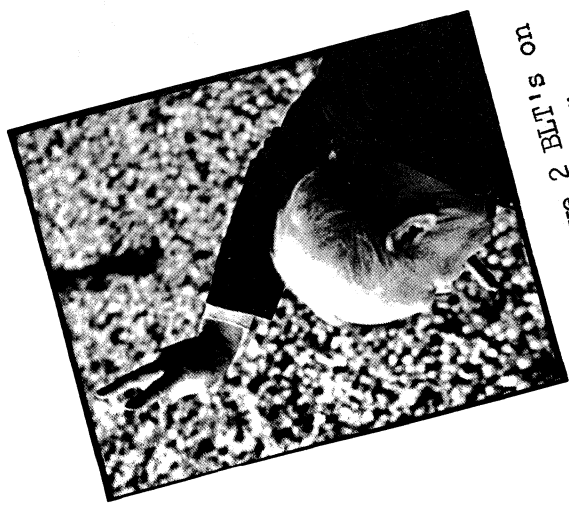
"Damn Sterling Mount!"



"...Charlotteville, this is 73-Whiskey, what's a radio telescope look like?"



"Come on now fellow students, let's really hear it for Dr. Howard."



"I'll have 2 BRT's on toast, Walt!"



"O.K. Odell, one tube of RTV coming up."



"We finally found the interference, Warren, - the 150th harmonic of a broadcast station in Tulsa beating with a citizens-band transceiver owned by a nine-year old in Cleveland, and heterodyned against someone calling for an air strike against an ammo dump."