

THE FOCAL POINT

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CLUB CALENDAR

Next Meeting: October 21, 8:00 p.m. at Bradley Observatory.
Program: Astronomer Jim Summers from the Atlanta Public School System will present a talk entitled "Astronomy Is A Funny Business." A telescope clinic will be held after the meeting on the upstairs observing area, weather permitting.

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The **Focal Point** is published monthly during the academic year by the Atlanta Astronomy Club, Inc. The AAC is a non-profit organization dedicated to the advancement of amateur astronomy. Meetings are held the third Friday of each month (except the second Friday in December) at the Bradley Observatory on the Agnes Scott campus. Dues are \$25 annually for a single membership and \$30 for a family membership and include a subscription to *Sky & Telescope* magazine and use of club observatory in Villa Rica.

Submissions: Article submissions are welcome, and may be delivered to the editor for consideration. Articles on computer floppy disk are encouraged.

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WHEN IN SUMMER

by Sharone Franklin

It's life's sudden changes that stir feelings of apprehension within me. There is comfort in knowing that certainties exist. If I could only be absolutely sure of future happenings, I would premeditate my reactions and seek proper refuge with complete confidence. But in reality, the only certainty is change. With today's electronic transfer of information at light's speed, the inevitable changes of all our lives come frequently. We are constantly forced to meet new demands. Like a writer, we end one chapter and begin another. It's required. It's the rule of living.

There is something about summer that accentuates the tension in our society. Is it the heat? Is it the longer daylight hours or is it simply a part of life's cycle that commands us to deliver. I recall such feelings of tension last August 13. I had spent the two months prior working longer hours than usual. I was tired. I had not had the opportunity to use my telescope since June. I was feeling irritable.

On that mid-August Saturday morning, the cumulus clouds had already begun to form. The South was in a holding pattern of a drought. Tree foliage appeared juiceless and husky. Grasses were scorched brown from the lack of rain and the sun's penetrating heat. Flowers were scarce. I was surprised that day to see a pair of Tiger Swallowtail butterflies. They were late arriving this year. Noticeably missing from my backyard were the Silver-spotted Skippers -- those butterfly/moth-like creatures that leap lightly while in flight and appear to ricochet from flower to flower. I would have welcomed rain, but I wanted to observe the stars that night.

I watched the sky patiently all day. Clouds would form and then gradually disappear like a life-death metaphor. Then as the sun hung low in the west, the gray-white puffies began to abandon their sky trails.

I gathered several star maps and laid them out on a table. Before my eyes were numerous pages of dots and lines representing what exist in the continuity of space and time; figures depicting globes of stars and amorphous shapes to symbolize gas and dust. These maps would serve as an entrance into one of nature's most complex, yet most beautiful pieces of artwork.

I packed my 10" f/6 reflecting telescope, star maps and related accessories into my car and drove 54 miles west of Atlanta to the Walter F. Barber Observatory. By 10 p.m. the sky had become a showpiece of glowing specks that clung to the backdrop of space like morning dew drops cling to a blade of grass. I turned my telescope toward the southern sky. As I focused on the planet Saturn, the feelings of haste that had dominated my life for the last two months began to withdraw. I was feeling relaxed and calm. At 375x I could easily delineate the orange-brown cloud belts on the ringed planet. Several of Saturn's moons were in my field of view and of course the rings were a special eyecatcher.

After observing Saturn, I focused on the open cluster M16

in Serpens and then maneuvered the scope about 3 degrees south to M17, the Swan Nebula. While using a 14mm ultra-wide eyepiece, I could see the thick dark patch of the swan's face give way to streaks of glowing gas that were marbled in appearance. From M17 I went further south. By now I was excited. I looked at numerous open and globular clusters in Sagittarius and Scorpius:

Oh Sagittarius, the universe is such a busy place,
There are electrons and protons turning into ions
While playing hopscotch across the cosmic causeway.
Oh Scorpius, the universe is such a peaceful place,
No arguments, just the hums of an electrical choir,
The song and poem of the atom and its fire.

It was after midnight and cirrus clouds had begun to invade the southern sky. Perspiration had beaded itself across my forehead. The air was warm and moist. It was a typical summer night in the South. I wiped the sweat from my face and the dew from my telescope's tube and then directed my attention to the zenith. I began a search near Cygnus. I studied the outline of Vulpecula which stretches past Albiero toward Epsilon Cygni. Near the Coat Hanger (Brocchi's Cluster) was a patch of nebulosity that was rectangular in shape. I placed a 9mm eyepiece into the focuser and found this to be a faint open cluster of about 50-60 stars. My maps revealed it to be NGC 6802. It's vapory appearance under low power showed it to be unusual because of its bar shape. The summer milky way is littered with the unusual:

Last night I visited the summer milky way,
I left Earth's frenzy and sat quietly at Quantum Bay.
I scooped some star dust and placed it into my pocket,
When back on Earth, I wore it as a shining locket.

By 2:30 a.m. the cirrus clouds had begun to dissipate in the southern sky and Mars was well placed for a telescopic look-see. I used a 7mm orthoscopic eyepiece and then bravely replaced it with a 4mm. The southern polar ice cap was of course a prominent feature. Lowell's Collar: a dark ring encircling this frosty patch was clearly visible. I also saw the albedo effects of dark shadowy areas nestled with lighter ones. It was a beautiful sight. I find it interesting that from the late 1800's till the mid 1920's the general public was very interested in this red planet. Nearly everyone was sure, if not at least hopeful, that intelligent life forms existed on Mars. This bit of history is entertaining to read about, but present day peoples show little if any interest in Mars or any of the planets (unfortunately this includes Earth.)

After I looked at Mars, Venus and Jupiter were shining in the east-southeast. It was 3 a.m. and I was feeling tired. I packed my belongings, looked up momentarily and left for home.

I watched the sky gradually grow pale and the stars decrease in number as I drove closer to the city of Atlanta. Once I entered the city limits nighttime suddenly became twilight. This of course was due to the light pollution. There were so many unneeded lights shining upward destroying the true picture of the celestial sphere. Cities the world over have caused

their skies to develop cataracts; shrouding as much beauty as one finds in a flower. It's ironic that in the U.S. each state is represented on the American flag by a star.

By 4 a.m. I had retired to my couch. The outside air had chilled and a cool breeze flowed through my window as I fell asleep. I knew that this night I had seen things that very few people had seen and most would never see. And for a short while life seemed unruffled and composed. For a short while summer had a different meaning. And this meaning made the difference.

AMERICA IS BACK IN SPACE! (BUT CAN WE CATCH UP?)

by Hal Crawford

Over 400,000 people were on hand at the Edwards Air Force Base in California as the space shuttle Discovery made a perfect landing -- heralding the re-entry of America in the space program.

Four days earlier, Discovery rose majestically from Launch Pad 39-B and ended 32 months of concern and speculation since the shuttle Challenger exploded in January 1986. Half an hour later, it slipped safely into orbit, where the five shuttle crew members began performing their assigned tasks, beginning with the deployment of a \$100 million Tracking and Data Relay Satellite, and culminating with the testing of \$2.5 billion worth of engineering changes. NASA's new dedication to quality seems to have paid off -- there were very few problems related to the mission, in contrast to earlier shuttle flights.

Numerous challenges remain, however, and every indication shows that NASA has a lot more work to do to keep up with a huge backlog of missions. NASA and federal auditors report that delays and bureaucratic mismanagement has added \$2.7 billion to the cost of several spaces probes set for launch from the space shuttle, including the Edwin P. Hubble Space Telescope. When first estimated, the Space Telescope was to cost under \$700 million. Its price has reached \$1.5 billion, each month of delays adding millions in storage costs. It is now scheduled for launch in February 1990.

The Space Telescope isn't the first in line, however. The Magellan probe to Venus, designed to map the planet's surface, is planned for launch in April 1989. The Galileo probe to Jupiter was originally slated to launch in 1982. It is now set to go in October 1989. Considered to be the most sophisticated planetary mission ever attempted, Galileo will supply the data from which astronomers will learn about the chemical and physical state of Jupiter's atmosphere and selected jovian satellites, as well as study the structure and dynamics of the jovian magnetosphere.

In October 1990 the Ulysses explorer is scheduled to be launched to study the sun's polar regions. The Mars Explorer project, designed to map the geology and climate of Mars, is now set for March 1992. This mission may pave the way for a manned expedition in the next century.

Getting missions into space isn't the only problem. There

are two satellites currently in orbit that must be either redeployed or retrieved. The Long Duration Exposure Facility (LDEF) was sent aloft from the shuttle in 1984, with plans of retrieving it in 1985. Inside the 11-ton mission are 57 materials experiments, prepared by scientists in nine countries. It is scheduled to be plucked from its 250 mile orbit on November 13, 1989. This is a slim time margin, since current estimates expect the \$14 million satellite to tumble out of control into Earth's atmosphere in the last quarter of 1990. Schedule delays could jeopardize the retrieval mission.

In addition, the 2 1/2 ton Solar Maximum Mission Satellite (Solar Max), which was launched from a Delta rocket in 1980, is now in a slowly collapsing orbit 295 miles above the Earth. It was repaired by the shuttle in 1984. Ironically, the solar activity it was sent up to study is hastening the demise of the satellite -- based on its own calculations, NASA scientists expect the Solar Max to re-enter the atmosphere two years early in 1990.

NASA management is currently planning to allow the Solar Max satellite to fall out of orbit. But scientists at NASA's Goddard Space Flight Center are lobbying for a shuttle mission that would intercept the satellite, refurbish it, and then nudge it into a higher, safer orbit, adding new life to the \$130 million project.

NASA has so far scheduled 19 shuttle flights through October 1990, seven of which are Defense Department missions. The next launch is set for November 17, which calls for the shuttle Atlantis to carry a secret Pentagon satellite aloft. According to NASA Administrator James C. Fletcher, many of NASA's most experienced engineers and shuttle program managers will be retiring during the next several months -- most of those have stayed on only to see Discovery safely launched.

With a new direction, and with continued support from the American public, the shuttle program should continue to thrive and stay back on track. There is no question, however, that continued progress will require strong support from the public, the Congress, and most of all, the White House.

OBSERVER'S CORNER

by Richard Jakiel

Pegasus is one of the most dominant Fall constellations now that the star studded summer skies are slowly setting in the west. Perhaps the most spectacular object in Pegasus is M15, a large, highly compressed globular cluster near the Pegasus/Equuleus border. The most notable feature about M15, or NGC 7078, is the extremely dense core, whose very center is unresolvable even at high magnification with the club's 20 inch telescope. Also worthy of attention is PS-1, a tiny planetary nebula located on the northwest side of the cluster. Last year, Rick Clark and I observed this 13.8 magnitude, 1 arc second planetary by using the blink method with a UHC filter at high magnification.

Pegasus is also "home" for a number of large, fairly bright galaxies. One of my favorite areas to sweep with a large telescope surrounds NGC 7331, a 9.6 magnitude spiral galaxy. In an 8 or 10 inch scope, moderate magnification will reveal an elongated oval of nebulosity over 10 arc seconds long, and a tiny stellar

nucleus embedded in a bright central region. Several dark dust lanes are also visible in the club's 20 inch scope. Close scrutiny may also reveal several of the smaller galaxies charted in the Uranometria 2000. The easiest of these is NGC 7335, a 14.2 magnitude patch of light. This galaxy was barely visible in my old 8 inch f/7 reflector. Most of the other dozen or so galaxies visible within one degree of NGC 7331 are in the "small, round, and dim" category, and require a fairly large scope to ferret them out.

South of Alpha Pegasi is NGC 7479, a large loose spiral galaxy that is often neglected because of the brighter, show objects. NGC 7479 has a bright knotty central bar about 3 arc seconds long, with two faint spiral arms that are visible with the 20 inch scope during periods of good seeing. Farther to the east is NGC 7814, a nice edge-on spiral galaxy. Within the bright spindle, a narrow dust lane is visible using averted vision in the club's telescope.

Farther south in neighboring Pisces lies a rather peculiar object, NGC 520. Long exposures reveal a disrupted galaxy, that has been cited by Halton Arp as a possible source for some of the nearby Quasars. This theory is highly controversial, but does reflect the strange appearance of NGC 520. In the 20 inch scope, the galaxy appears as a 11.5 magnitude "twisted" spindle with some slight flaring at the ends. A curved "dust lane" is also visible running along the long axis of the galaxy.



NGC 7479



NGC 7331

**SOUTHEAST REGION ASTRONOMICAL LEAGUE
CONVENTION AND
SIXTH ANNUAL DEEP SOUTH REGIONAL STARGAZE**

On November 3-6 the Pontchartrain Astronomy Society will host the Deep South Regional Stargaze held in conjunction with the Southeast Region of the Astronomical League Convention. The site, as in past years, will be Percy Quin State Park, near McComb, Missouri.

For those unfamiliar with the DSRSG, it is essentially a gathering of amateur astronomers from throughout the southeast for the purpose of observing over 3 nights and exchanging information. This year the DSRSG will be a day longer than usual to accommodate the Southeast Regional Convention.

Tentative Schedule

Thursday, Nov. 3:

Group cabins opened at 11 AM by park ranger; registration Thursday afternoon, observing Thursday evening, door prize award, no formal programs planned.

Friday, Nov. 4:

Registration from 10 AM to Noon, and from 1 PM to 5 PM. Southeast Region Programs from 10 AM to 11:45 AM and from 1 PM to 5 PM in dormitory facility. Lunch and dinner will be served in the cafeteria. Meals are available only through prepayment of registration. Door prize award, observing Friday evening.

Saturday, Nov. 5:

Registration from 10 AM to Noon, and from 1 PM to 5 PM. Informal programs Saturday afternoon on observing field. Judging for the telescope contest begins at 1:30 PM. Judging for the photography contest begins at 2 PM. Group picture at 3 PM on observing field. Raffle tickets available for sale Thursday through 3:15 PM Saturday. Observing Saturday night.

Sunday, Nov. 6:

Door prize presentation and decision on next year's host club in the pavilion by the cafeteria at 9 AM.

Additional Information

1. Those staying in the group cabins are responsible for their own bedding and toiletries. Area motels are 20 minutes away (Holiday Inn - 601-684-6211 and Ramada Inn - 601-684-5566) with double occupancy rates of \$40-50.

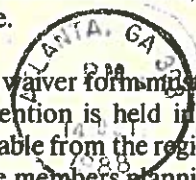
2. Pre-registration forms must be mailed by Oct. 20, with a check payable to Deep South Regional Stargaze, to Barry Simon, 820 Emerald St., New Orleans, LA 70124. Include a SASE if you wish a receipt or raffle tickets by return mail.

3. Registrations costs: \$3 per person, \$5 per family; bunk in cabin, \$6 per night; meals, \$4 each; raffle tickets, \$1 each or 6 for \$5. Winner need not be present to win Meade MTS SN-6 or VCR.

4. Telescope contest open in three categories with prizes awarded in each category: 1) self-constructed telescope, 2) modification of a commercially available telescope, or 3) construction of a telescope accessory

5. Photography contest open in three categories with prizes awarded in each category: 1) Deep Sky-color 2) Deep Sky-black and white and 3) Lunar and Planetary, color or black and white.

6. A waiver form must be submitted with registration since the convention is held in a state park. Copies of this form are available from the registrar or the Atlanta Astronomy Club, for those members planning to attend the convention.



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