



THE HEAVENS DECLARE
THE GLORY OF GOD
STELLAFANE

THE
STAR MONTHLY

Bulletin of the Fairfield County Junior Astronomical Society
Meetings held on the second Friday of each month at the Stamford Observatory
Club address: 117 Highland Ave., Rowayton, Ct. 06853
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STELLAFANE

On Saturday, August 10, the 40th Annual Stellafane Convention will take place on Breezy Hill in Springfield, Vt.

The convention will officially get under way the night before, August 9, at 8:30PM, when a session will be held ~~under a tent~~. This is to give interested amateurs a chance to show any astronomical slides and to share their experiences with each other. Following this, telescopes will be available for all-night observing. The

judging of the homemade telescopes that are entered will take place after 12 noon on Saturday. Talks will also take place, starting at 2PM, under the tent. This year's emcee is Ralph Dakin. Some of the topics to be discussed include "Telescope Design Thoughts and Accessories", and "Reciprocity Failure Unveiled" among others.

The evening program commences at 7:30PM, Robert W. Dunn as the Master of Cerimonies. Govenor Joseph B. Johnson will give the traditional "Words of Welcome", Walter Scott Houston will present "Stellafane Shadowgram", and the Sheep Hill Astronomical Association of Boonton, N.J. will present "The Amateur Observes", a program depicting the trials and tribulations of the amateur astronomer.

Judging for optcal excellence will take place immediatly after the twilight talks, weather permitting. Again, observing will take place all night.

An area is set aside for camping. There is a fee of \$3 per car for camping. Water and facilities are provided. The center of Springfield provides two excellent motels: The Hartness House (30 Orchard St., Springfield, Vt. 05156. attn. Mr. Kingsley Smith for reservations) and a Howard Johnsons, which is right off I91. Reservations should be made well in advance!!!

Registration is \$4 for those over 16 (under 16, there is no fee). You can save \$1 by mailing your registration in early, with your name and address, to Fred Chellis, 476 Elm St., Concord, Mass. 01742, before August 1st.

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Phil Harrington

Planetary Photography

With Jupiter not far from opposition, some members may wish to try their hand at photographing it. Only a few modifications of the lunar eyepiece-projection method (outlined in SM, Nov.1973, pp2&3) will need to be made.

Before explaining the execution of this method, we shall consider the reasons for using eyepiece-projection and the proper selection of film. Eyepiece-projection is



used because the usual planetary detail that is sought would defy the ability of a photographic emulsion to resolve it at the prime focus on account of the low magnification that results (with H&W control film being an exception. However, it tends to be much slower than its ASA rating indicates, thereby lengthening the exposure and introducing other, more mechanical, problems). This idea applies mostly to amateur sized scopes ranging from 6" as a practical minimum to a 12½" as the maximum*. Prime focus images of larger instruments, (F/8 and over) are sufficiently large and bright to facilitate a practicable prime focus method.

As for film selection, Kodak Tri-X developed to its normal speed (400ASA) in a slow developer (I use Microdol 1:3) is an excellent choice and the one used by most beginners as well as those well into the field. It is fast enough to yield a good exposure in ½ to 1 second and the slow developing yields a picture of excellent resolution and detail. Those who have seen the results of this method will attest to that! For those who want color, especially for Saturn, I suggest the use of GAF 500 color slide film (NOT print, as prints involve an extra color reversal and an attendant loss in color rendition) developed to its normal speed. It admittedly gives a greenish sky, but subject color is surprisingly true.

As to method, only a couple of modifications are needed, as noted above. A clock drive should be used because of the magnification and relatively long exposures to be used. The polar axis should be as accurately aligned as possible. A few degrees won't matter; but as a considerable amount of time may be used in framing and other adjustments, declination drift may become annoying as would also would an inaccurate drive. If done with care, exposures of 5-7 seconds are possible, perhaps even permitting the use of slower, high contrast film.

One will quickly find that a great variety of eyepiece magnifications and eyepiece-to-film distances will give a wide range of image sizes. There comes, as a result, the problem of finding the "optimum image size" on the negative (too large corresponds to "empty magnification" — too small already noted). Again for amateur sized scopes, these considerations will concern the atmosphere or "seeing conditions". It is generally agreed that, with good conditions, the optimum image size is one that yields an image on the negative of 3-5 mm. in diameter for the ball of the planet (one of the five major ones) using a 6" F/10 or larger scopes, the negative images can be slightly larger; and for Mars, Venus and Mercury (whose angular size is smaller than that of Jupiter and Saturn), the image size would be on the smaller side. Those possessing SLRs with central circular focusing aids (split-image, etc.), a negative image size of roughly 4mm. corresponds to this area. However, only by experiment can one find the true "optimum" image size for his set of local conditions.

Jupiter has the largest angular (apparent) diameter of all the planets (except of course Earth, which has an apparent angular diameter of 360°!!). This makes it the easiest first target for the planetary photographer. It is loaded with easily captured and interesting detail, the red spot being the most prominent (remember however that Jupiter takes a mere 10 hours to make a complete rotation, with its respective features coming and going — you won't ALWAYS see the red spot!!). Incidentally, the four major Jovian satellites can be captured in 5 seconds with Tri-X at the prime focus. Use the lunar prime focus method . . . and don't forget the clock drive!

GOOD LUCK and GOOD SHOOTING!!!

*NOTE: These sizes refer to reflector telescopes — the usual amateur Newtonian.

Greg Dolan

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Comet Kohoutek

Never let it be said by man nor beast that SM is not full of interesting items. Do you realize that on 1) July 1974 the late Comet Kohoutek (oh come on, you MUST remember it!) was 4.61222 astronomical units away from Earth and 3.66983 A.U. from the Sun!?! And that, on the same date, old 1973f was a brilliant magnitude +14.2094? Now let's see another newsletter have that important data for its readers (I doubt any other would have the nerve to print it if they had!)

* * * * * The H/P Mod. 2100A computer

Club Project—THREE Telescopes

Last issue, it was noted that we had fixed up the old 6" f/10 reflector, with the exception of the finder and the focusing mount. Well, they are both working fine now, and the scope is in great working condition! Members may use it at the observatory whenever they wish. But take heed, it weighs better than 200lbs., so be careful.

The second scope is the planned 6" f/5 reflector that Greg Dolan has been working madly on. He has gone from rough grinding to polishing in three weeks! Peter Shawinsky and Phil Harrington are currently constructing the mount, which will be a fork equatorial mount, similar to those on the Dynamax and Celestron scopes, but made of $\frac{1}{2}$ " plywood instead of metal. If it is finished in time, it will be entered at Stellafane.

The third telescope is a 4" reflector that has been kicking around the observatory for a while. Its optics are in surprisingly good shape and it has been mounted to our Edmund mount to yield a fairly good working telescope. This scope may be borrowed by members for one week by following the procedures to be outlined at our July meeting.

We thank Mr. Scovil for the help he has given us with all three scopes.

July Clusters, Nebulae, and Galaxies

With the bright summer Milky Way up in the early evening, many deep-sky objects are now coming into view.

One of the brightest and most famous globular clusters is now approaching the zenith in early evening. I am speaking of M13 in the constellation of Hercules. Located at R.A. 16h 40m, Dec. +36° 30', this cluster is visible to the naked eye under excellent conditions, being of magnitude +6. In a small telescope, it appears as a dim glow, but in my 8" some of the 100,000 member stars begin to show themselves as individual blueish-white points of light.

Another famous object up at this time lies to the East of M13. I am referring to the Ring Nebula, M57 in Lyra. This object is much smaller and dimmer than the Hercules cluster, being of visual magnitude +9. I have seen this nebula as the remnant of a long-ago supernova explosion, in a telescope as small as a 2 1/2"

(cont'd on pg. 4)

NEW MEMBERS

Since the star party in April, we tripled our membership from 5 to 15. Due to the lack of room, we are not going to list the new members by name. Instead, we will publish a new membership list with the next issue of SM. WELCOME TO ALL!!!

THE CLUB THIS MONTH

July 16/17: An observing session will be held at John Griese's mansion in New Canaan from sunset to sunrise. The main event being the occultation of the planet Venus with disappearance at 4:54 AM and reappearance at 5:45 AM on the morning of the 17th.

July 19: Our meeting is pushed back to this date in order to allow the Senior organization to hold their meeting on the 12th. Phil Harrington is scheduled to give a talk on deep-sky observing.

July 21: The field trip to the Vanderbilt Planetarium will take place. The cost per person will be \$2 to cover the cost of transportation.

July 27/28: Tentative date for the Delta Aquarid Meteor Shower Watch. Location to be determined.

MANY INTERESTING EVENTS.... Don't forget to mark your calendar!!!!

New Format

We are trying this new format this month. It was suggested by our club President, Phil Harrington, in the interest of producing a neater, more professional looking and easier to read newsletter. He points out that the SMs of 10 to 12 years ago, the originals, used this format of double columns.

There will be discussion on format at this month's meeting. Those in favor of either format, the full page line or the double column, are urged to contact the editor, giving reasons for your preference. Thank You.

The Editor

OUR MOTTO:

"Caelum Observamus"
Latin for "We Observe the Heavens"

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STAR PARTIES

As everyone knows, our star party on June 21 didn't work out too well, because of the poor weather. For the duration of the summer we will hold weekly star parties where members are encouraged to bring their own scopes every clear Friday during the public hours of 8-10 and maybe beyond, depending on the circumstances. We ~~hope~~ to continue our series of well publicized star parties, the next to be held on July 26.

July Clusters, Nebulae, (cont from pg3)

refractor (John Giese's Unitron) as a very small, very dim, doughnut-shaped disc. In my scope, it appears similar, being slightly brighter and larger. This object is located at R.A. 18h 52m, Dec. +32° 59'.

Sagittarius holds so many beautiful objects that it would be impractical to list them all here. There are however, some noteworthy objects. M8 and M20 are beautiful examples of diffuse nebulae. They are both visible to the naked eye even a found here! They are quite close together; their location being R.A. 18h 33m, Dec. -24° 00'. Another object is the giant globular cluster M22, which rivals the beauty of M13. Unfortunately, at these northern latitudes, it rarely escapes the haze which hangs on the horizon frequently in the summer; it usually does not reveal its full splendor to us, though it is still quite an object. It's located at R.A. 18h 35m, Dec. -23° 55'.

There are many more objects worth looking at with binoculars and telescopes. Now that school is out, we will be holding many observing sessions where members will get a chance to inspect these objects with various sized telescopes.

Phil Harrington

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PLANETS FOR JULY

Mercury: on ~~the~~ 18th Mercury will be seen, with difficulty, 10° east of Venus at magnitude +1.0. On the 22nd, it will reach greatest elongation, 20° west of the Sun, at mag. +0.5. On the morning of the 24th, it passes close to Saturn, with Mercury 1° 2' to the south. On August 9th it will rise only ½ hour before the Sun, but should be visible at magnitude -1.2.

Venus: Rises about two hours before the Sun all month. On the morning of the 17th, the mag. -3.4 Venus will be occulted by the Moon.

Mars: Is at approximately mag. +2.0 and setting as twilight ends all month; thus it will be difficult to observe.

Jupiter: On July 8, Jupiter rises three hours after sunset. In mid-July, it crosses the meridian before sunrise. By July 31st, Jupiter will rise before twilight ends.

Saturn: Moves into the morning sky this month. On the 22nd, it will be 10° to the lower left of Venus. On the morning of the 31st, Saturn will be only 0° 2' south of Venus— a striking sight for naked eye, binoculars or telescope!

Uranus: Throughout July, Uranus will be at mag. 6.6 ~~21°~~ north-northeast of Spica.

Neptune: On the 13th the planet will pass 4' north of Psi Ophiuchi, and will be at mag. 8.

Greg Dolan

(adapted from Sky and Tell, July 1974)

WANTED: DEAD OR ALIVE
MATERIAL FOR THE STAR MONTHLY

WE ACCEPT ALL ARTICLES, ETC. FOR THE SM DELAY NOT!!! IF YOU ARE THINKING OF GRACING OUR PAGES, SIT DOWN AND WRITE...MAIL IT IN...DON'T WORRY, WE'LL ACCEPT IT!!!!

The EDITOR

The FAIMFCJASFSC was postponed due to rain and a lack of interest.

NASA sent barium carrying rockets into the upper atmosphere at 9:00 PM ~~July 27th~~ were supposed to see something, we didn't.