MAUNA KEA ASTRONOMICAL SOCIETY NEWSLETTER

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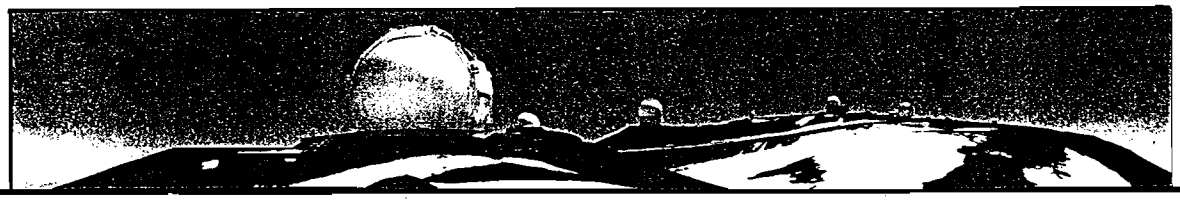


VOLUME XII, NUMBER 4 **APRIL 1992**

GENERAL MEETING / STAR PARTY
APRIL 1992

This month's General Meeting / Star Party will be held on Saturday, the 4th, at 5:30 pm at Hale Pohaku.

A progress report on setting up future general meetings in Waimea will be issued. The difficulty of finding a replacement Newsletter Editor and the future of the newsletter will be important and pressing topics for discussion.

Robert Jedicke, a physicist with the Fermi Lab in Illinois will give a presentation on his work at the Fermi Lab. His presentation will also cover amateur astronomy in Canada, if time permits.

The crescent Moon will set at about 8:30 p.m. and Jupiter will be high in the Southeast at the end of evening twilight. Saturn will rise about 2.5 hours before the Sun and Mars will be faintly visible between Saturn and the Sun.

Ursa Major, Leo, Hydra and Vela will be on the meridian at the end of evening twilight. By morning twilight, the Summer Milky Way will be rising in the East.

For a weather report for Hale Pohaku, call the Visitors Center pay phone (an MKAS member will answer, if present) at 961-9730.

1992 STAR PARTY DATES AT HALE POHAKU

NOTE: ALL DATES ARE ON SATURDAYS

April 4
May 2
June 27
July 25
August 29
September 29
October 24
November 21
December 19

NEW LOOK FOR THE NEWSLETTER

As you may have noticed over the years, the newsletter has gone through many face-lifts. This issue is the beginning of another era. I've upgraded my computer system and am now using WORDPERFECT 5.1 and a laser printer. As I become more and more familiar with the wordprocessing program, the newsletter will change accordingly, hopefully, for the better.

The newsletter still is in need of a name and if anyone has any suggestions, drop me a note. (Last year, a request for a name was made, however, the MKAS officers did not find one that was agreeable). I will suggest at the next general meeting that a one-year subscription to *Sky & Telescope* magazine be awarded to the person whose newsletter name is selected.

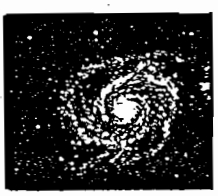
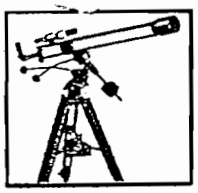
By the way, since I have not succeeded in finding a replacement, I am volunteering to remain as the editor, indefinitely.

Editor

MKAS LIBRARY NEWS
By Wayne Barnes

Computer programs dealing with various astronomical areas are now available to be checked out. Call for a complete selection. All of the current disks run on IBM compatible computers. Math co-processors do help with the speed of the programs.

Books and videos are always available. Please call Wayne Barnes for more information at 324-0705. Donations to the MKAS library are always appreciated.


STAR PARTY REPORT

MARCH 1992

By Howard Yamasaki

At last month's Star Party which was held on the 7th, there were 17 members and about 20 guests in attendance. This was perhaps the largest number of members attending a star party in the last several years. The Fukunagas (Wayne, Sr., Verna and Wayne, Jr.) brought their Meade DS-16A with the SGT-Max and Earl Farnsworth and Bonnie Moffat had their Celestron C-8 set up on one of the permanent mounts. On the other mount was Bill and Beth Robards' C-8. Tim Carroll and Denise Trombla had their friend's Odyssey 1 (13.1 inch) set up next to Don Brooks' and Marcy Strate's Odyssey 1. Gideon Knapp made it a trio of Odyssey 1's when he arrived and I rounded out the Odyssey invasion with my Odyssey 2 (17.5 inch). Jim Skibby was there also and could have added his Odyssey Compact (10.1 inch) to the family, however, he had decided not to bring it along that evening. Robert McCaw, a new member from Virginia, brought his Celestron C-11 with digital setting circles and Bruce Marten had his 3-inch Tinsley refractor. New member, Irene Kannakko, initiated her new Meade 2.4 inch refractor that evening. Don Burciaga, director of the Visitors Center and an MKAS member, showed several videos to the guests and members, beginning at about sunset.

Although the skies were clear until sunrise, the seeing was horrid! It did not get any better than an 8 on a 10-point scale, for short periods of time, with the average seeing being about 6.

On the ground, the Puu O'o vent glowed eerily in the darkness. Also, two wide ribbons of lava could be seen streaming from the vent. Many people spent their time that evening observing both the skies and the eruption.

During the early evening, bright objects like the Moon and Jupiter were observed, although the images were "boiling" due to the poor seeing. Deep-sky objects, such as M-42, M-43, M-51, M-78, M-79, M-81, M-82 and M-97 did not seem to be as affected by the seeing as did the Moon and Jupiter.

Later in the evening and in the early morning hours, some of the more interesting and spectacular objects observed included Omega Centauri, NGC 3242, NGC 4361, NGC 4565, NGC 5128, M-65, M-66, M-95, M-104 and M-105.

This was the chilliest star party this year. The temperature before midnight averaged about 40 degrees F., but by 2:00 a.m. it had dropped to 32 degrees F. The air was so full of moisture that my telescope was covered with ice at daybreak and I even had to scrape the ice off my windshield before departing for home at about 6:30 a.m.. Hope it doesn't snow next month!

ACCESSORIES AVAILABLE FOR LOAN

From the proceeds of the solar filter sale last year, the following accessories were purchased and are available for loan to the membership:

1. Orion 8 X 56 Mini-giant binoculars
2. Meade UWA 6.7 mm eyepiece (1.25 inch)
3. Tele Vue WF 15 mm eyepiece (1.25 inch)
4. Tele Vue WF 19 mm eyepiece (1.25 inch)
5. Tele Vue Plossl 26 mm eyepiece (1.25 inch)
6. Meade SP 40 mm eyepiece (1.25 inch)
7. Lumicon UHC filter (1.25 inch)
8. Lumicon O-III filter (1.25 inch)
9. Lumicon H-Beta filter (1.25 inch)

To be borrowed, any of the above items must be picked up and returned at the star party at Hale Pohaku. If the borrower cannot return the item to the following star party, he or she must make other arrangements to have it delivered so as not to deprive the other observers the use of that accessory. For more information, contact the editor.

COMPUTER FOR SALE

A 386 IBM compatible with color super VGA monitor, 130 key keyboard, 105 Meg hard drive, 5 1/4 floppy, mouse, and programs for only $1,650. Ideal for running the astronomy computer programs. Call Wayne Barnes at 324-0705.

LETTER TO THE EDITOR

Editor:

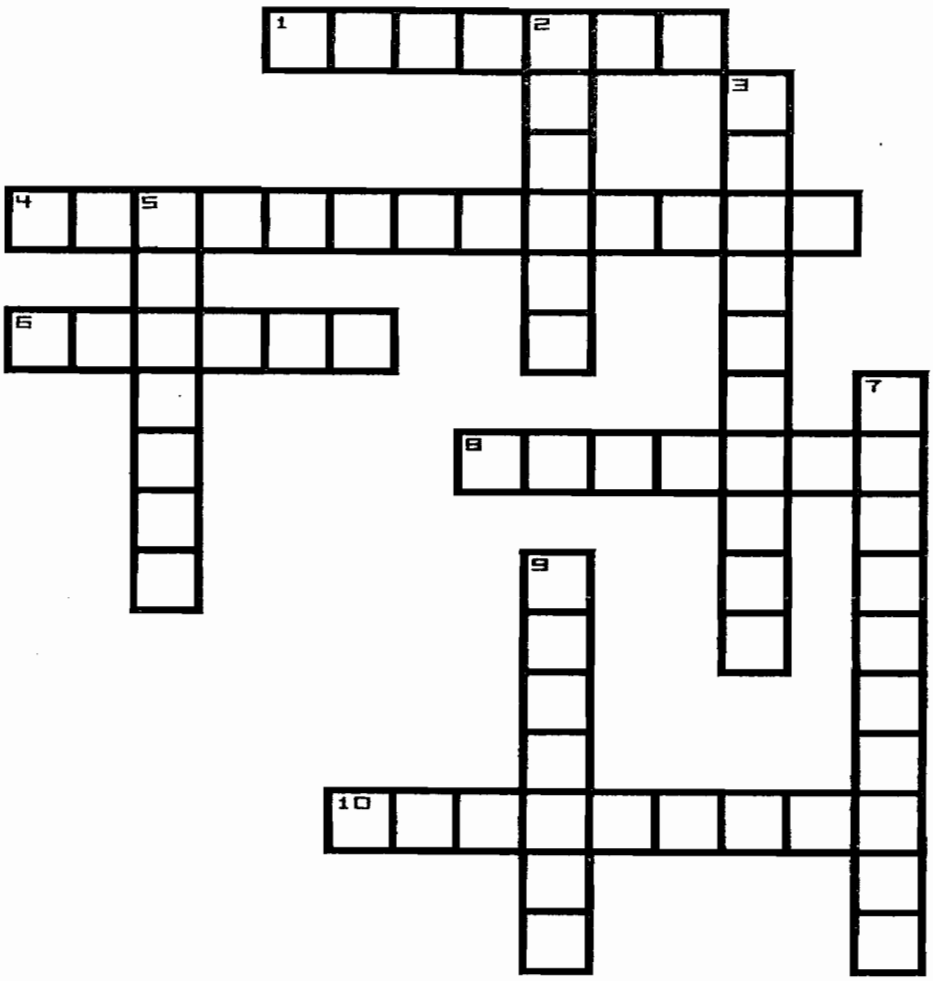
I wish to thank you and all of our fellow members for the honor given me at a recent meeting. I will continue to support the MKAS in any way that I can.

Our officers need the help and guidance from all lovers of astronomy. Involvement is the key to a successful society. Members reap benefits in proportion to expended effort.

Aspira ad astra,
Bill Albrecht

ASTRONOMY CROSSWORD PUZZLE

By Jim Sutherland



ACROSS CLUES

1. The most distant man made satellite in space.
4. Extends far into space and keeps the solar wind at bay.
6. Japanese word for the Pleiades. (It's a car!)
8. Planet visible in Leo this month.
10. A spiral shaped nebulae and estimated to be twice as massive as the milkey way.

DOWN CLUES

2. A picture perfect asteroid as shown by the Galileo spacecraft.
3. Large galaxies are believed to be filled with this hot gas.
5. When the moon is between first quarter and full.
7. A most illusive atmospheric event
9. Bright red star in Scorpius. It's name means "rival of Mars."

See Page 7 for Answers

SGT-MAX$_{TM}$ Telescope-to-PC link with over 45,000 object database.

Full feature desk-top planetarium software with serial interface and encoders for most popular telescopes. Fantastic for observatories and classroom demonstration. New time skip feature allows tracing of planetary and cometary orbits against the stellar background. For IBM PC's with 640K, hard disk, and Hercules, CGA/EGA/VGA.

JMI'S SGT-MAX

Equipment Review

By Wayne Fukunaga, Sr.

Astronomy is a visual pursuit, yet up to now, amateur astronomers pointed their telescopes using Right Ascension and Declination. The skymap metaphor was lost amid the hour angles, degrees, minutes and seconds. Digital setting circles were a quantum leap over the engraved variety in the use and precision, but most people grasped little about where in sky an object was from RA and DEC. JMI's SGT-MAX returns the visual aspect of locating objects by marrying a modern computer sky map to the telescope. Instead of looking for an object via RA and DEC, just push the scope tube and a crosshair will indicate the exact position in the sky you're looking at on the video sky map.

Software Bisque's The_Sky 4.1 program has the routines to interface with optical encoders installed on the telescope's RA and DEC shafts. JMI completes the package with a serial computer interface, wire harness, optical encoders and mounting brackets. There are custom kits for over 60 models of telescopes. There are even models for Alt-azimuth mounts such as dobsonians. I purchased the SGT-MAX for the Meade DS-16A and would like to share my experiences with it.

The documentation is very sparse and disjointed. It consisted of 5 loose pages and 2 booklets: a line drawing with labels pointing out the various parts and their proper locations on the mount; a single page technical note explaining why the software needed the RA and DEC shafts and the optical axis to be "orthagonally" aligned for proper operation; a setup sheet with encoder ratio tables; a checkout procedure for proper encoder function; a note from Tangent Instruments, Inc. about Telescope Computer Accuracy; a booklet for the software; and a booklet covering procedures for linking the software and the encoders on the telescope. In spite of the poor documentation, installation is very simple, requiring few tools and little mechanical expertise. The encoders can be mounted with the included double-sided tape and hose clamp. I preferred to drill the telescope mount and use the (included) optional screws. Two allen wrenches and a simple box wrench tool is included for mounting the shaft pulleys and adjusting the encoders. Cogged belts go on these pulleys and drive the actual encoders. After some fiddling with various belt tensions and pulley positioning, I was satisfied that the job was done. The encoders connect via a provided custom telescope cord and connector (RJ14C) wire harness to a special "BBox". This box converts the encoder output into a serial data format that the software can understand. The "BBox" comes equipped with a 9-volt alkaline battery and an 8-ft serial cable. When ordering the kit you must specify which serial connector your computer has: 9 pin or 25 pin; and which diskette size and format it uses : 3.5 inch or 5.25 inch.

Installing the software on the computer was straightforward. The_Sky is available in three levels, each succeeding level having a larger database. Level three came on five 1.44 megabyte 3.5 inch diskettes. The software is compressed and expands to 9.5 megabytes upon installation. I installed it on a Toshiba T1200XE 286 Laptop with 20 Megabyte Harddrive. Having half of the harddrive taken up by the database was intolerable, but this problem was solved by the installation of Squish Plus 2.1 from Sundog Software. This software utility reduced the storage by about 40%. The NGC, IC and SAO catalogues are in the Level III database for a grand total of over 272,000 objects.

For the actual linking of the software to the telescope encoders, I referred back to the documentation. There were so many parts of the documents which were out of date or out of synch with the actual software operation that they were of little use. Inconsistencies between the manuals, the encoder setup tables and the software operation resulted in trial and error being the rule. After much confusion, I stored the documentation and just pointed the telescope at objects and slewed about the sky and watched what happened on the skymap. From this experiment, I found that the RA and DEC cables to the encoders were hooked up to the wrong shafts (due to an instruction on the line drawing about the longer cable being the Declination). I experimented with various encoder ratios and finally got the feel of how that affected the pointing accuracy of the telescope. There is confusion about whether negative values can be entered into the program for Time Zone from GMT. The program accepts negative numbers , the documents warn against it, yet list negative numbers in the setup tables. The documents refer to a "B-TEST.EXE" program on the diskettes to test the "BBox" which doesn't exist. The various encoder tests mentioned in the documentation do not work as described or at all. After much experimentation, I had the SGT-MAX operating to my satisfaction. It works very well when aligned properly at the initial setup. I've been able to

slew from object to object for hours using just the crosshairs on the skymap. The results were worth all the hassel. Absolute novices can walk up to the telescope and after a little experimentation, they can locate objects in the sky. The Skymap metaphor is intuitive and easy to grasp.

The_Sky has a search function which accepts most of the common names of objects, such as "Saturn Nebula" or "Horsehead" or "Polaris", as well as all the Messier numbers, IC, NGC and SAO numbers. A few common names, such as "Omega Centauri", were omitted (Northern Hemisphere chauvinism). Labels can be turned on and off for Messier and NGC objects making cruising about the sky very enjoyable and educational. The map can be zoomed in and out to give better perspective of the sky and exactly where you are looking. The zoom is very helpful in locating dim, difficult objects.

On the negative side, there is one glitch in the present software which may or may not be due to the T1200XE computer. In "Guide To" mode, the screen gets multiple crosshairs on it, most of which do not update with the telescope motion. The screen becomes cluttered and unreadable. This software also uses some obscure constellation line drawings. Every experienced amateur astronomer that has viewed the screen has commented on that.

The_Sky uses symbols to represent deep-sky objects which indicate only position and magnitude, not angular size. Stars are accurately located and sized by magnitude. Screen updates for telescope moves are very fast. When the crosshairs go off the screen, a new skymap is drawn with the crosshairs centered within 2 or 3 seconds. The software on a Color VGA screen on a 386 computer is very beautiful. Various objects are plotted in different colors. The star sizing is realistic. The_Sky will print star charts on an HP laser or Epson dot matrix printer which is a nice feature to have, but Uranometria 2000.0 or Sky Atlas 2000.0 has more information. When zooming in on an object, the database of 272,000 plus objects becomes a limitation, and the screen becomes progressively blank with smaller fields of view. The eyepiece always has more stars in it than the computer displays. To its credit, The_Sky comes with a programmable database parser to read other databases from diskette. A dedicated amateur could type in all the data for dim stars around difficult objects and create custom databases.

SGT-MAX represents the state of the art for Amateur Astronomers at this time. I highly recommend it even with the poor documentation.

Editor's Note:
The SGT-MAX is currently listed at $759 for the Level III package, exclusive of the required computer.

OBSERVER'S CORNER

Conducted by Howard Yamasaki

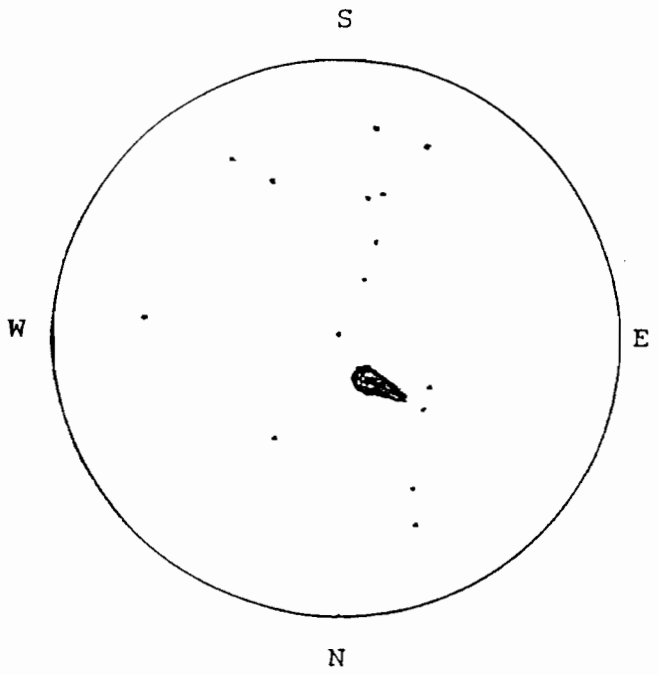
Observers who draw sketches or take astrophotos may submit them to the editor for publication in this column. Include all pertinent details, such as date (U.T.), time (U.T.), place, telescope size and f/ratio, ISO speed, exposure time, etc. Also, include a short caption for each sketch or photo.

Below is a sketch by the editor of Comet Zannotta-Brewington (1991g1):

Date (U.T.): January 30, 1992
Time (U.T.): 05:15 - 05:40
Place: Honaunau, South Kona
Elevation: 1,100 feet
Weather: clear, seeing (8)
Telescope: 17.5-inch f/4.5 dobsonian
Eyepiece: Meade SWA 13.8 mm
Magnification: 145 X
Filter: None

Comments:

1. Easily visible in 8 X 56 binoculars
2. Measured coma diameter 2', estimated magnitude +7.0
3. Distinct nucleus & round coma
4. Short, faint tail visible, pointing Eastward



PLANETS * COMETS * METEORS

APRIL 1992

NOTE: ALL DATES AND TIMES ARE HAWAIIAN STANDARD TIME (HST).

** **MERCURY** (magnitude +3.1 on the 1st) will be barely visible during the month at sunrise. This is a very unfavorable elongation and will test your observing skills to find it in the murky atmosphere low in the Eastern horizon.

** **VENUS**(magnitude -3.9 on the 1st) will be visible very low in the Southeast just before sunrise.

** **MARS** (magnitude +1.3 on the lst), in Aquarius, will be visible very low in the Southeast just before sunrise.

** **JUPITER**(magnitude -2.4 on the lst), in Leo, will be high in the Southeast at sunset and will set before sunrise. Its apparent diameter will continue to decrease until its next opposition. For occultations, eclipses and transits of its moons, consult a standard handbook or call the editor.

** **SATURN** (magnitude +0.8 on the lst), in Capricornus, will rise about 2.5 hours before sunrise.

** **URANUS** (magnitude +5.7 on the lst), in Sagittarius, rises before sunrise. It will be located about 2 degrees South and 2 degrees East of Pi Sagittarii on the lst and moves Eastward during the month. It will be stationary on the 21st.

** **NEPTUNE** (magnitude +7.9 on the lst), in Sagittarius, rises before sunrise. It will be located about 0.2 degree South and 2.5 degrees East of Pi Sagittarii on the lst and moves Eastward during the month. It will be stationary on the 20th. Neptune will be occulted by the Moon on the morning of the 23rd.

** **PLUTO** (magnitude +13.7 on the lst) will be visible on the Libra-Serpens border. Use a finder chart and sketch or photograph its location over at least a two-day period to verify its movement relative to the background stars.

** **COMET MUELLER** (1991h1) moves from Pisces to Pegasus during the month. It will be visible in the morning sky at about 10th magnitude.

** **COMET BRADFIELD** (1992b) moves from Aquarius to Pisces during the month. It will be visible in the morning sky at about 9th magnitude.

** **LYRID METEOR SHOWER** will be visible between the 19th and the 25th and peaks at 11:00 a.m. on the 21st. The zenithal hourly rate is 10 - 15. The members are generally swift and brilliant and are associated with Comet Thatcher 1861 I. The Moon rises at about 10:40 p.m. on the 20th and sets at about 9:40 a.m. on the 21st and will be 78% illuminated.

** **PI PUPPID METEOR SHOWER** peaks at 2:00 p.m. on the 22nd. The zenithal hourly rate is about 10. The Moon rises at about 11:30 p.m. on the 21st and sets at about 10:35 a.m. on the 22nd.

NOTE: For updated comet positions, contact the editor.

APRIL

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

CALENDAR OF EVENTS

APRIL 1992

NOTE: ALL DATES AND TIMES ARE HAWAIIAN STANDARD TIME (HST).

1st Venus 7° South of Moon at 9:00 a.m.
Mercury 4° South of Moon at 10:00 p.m.
2nd **NEW MOON** at 7:01 p.m.
5th Mercury 2° North of Venus at 1:00 p.m.
4th **GENERAL MEETING / STAR PARTY** at Hale Pohaku at 5:30 p.m.
7th Mercury stationary at 3:00 p.m.
10th **FIRST QUARTER MOON** at 12:06 a.m.
12th Moon at perigee (228,497 miles) at 9:00 p.m.
13th Jupiter 6° North of Moon at 6:00 a.m.
16th **FULL MOON** at 6:42 p.m.
20th Neptune stationary at 1:00 a.m.
21st **LYRID METEOR SHOWER** peaks at 11:00 a.m.
Uranus stationary at 3:00 p.m.
22nd **PI PUPPID METEOR SHOWER** peaks at 2:00 p.m.
23rd **OCCULTATION OF NEPTUNE BY THE MOON.** Disappearance on the bright limb will occur at 1:35 a.m. and reappearance on the dark limb will occur at 2:48 a.m.
Uranus 1.8° South of Moon at 2:00 a.m.
Mercury at greatest Western elongation (27°) at 5:00 a.m.
24th **LAST QUARTER MOON** at 11:40 a.m.
Moon at perigee (251,159 miles) at midnight 24th/25th.
25th Saturn 5° South of Moon at 4:00 p.m.
28th Mars 7° South of Moon at 9:00 p.m.
30th Mercury 8° South of Moon at 11:00 a.m.

OBJECT OF THE MONTH
NGC 4565

Classification: Edge-on Type Sb Galaxy
Constellation: Coma Berenices
Position (epoch 2000): R.A. 12 hrs. 36.3 mins.
DEC. +25° 59'
Visual Magnitude: +9.6
Visual Size: 16.2' X 2.8'
Visibility: Large binoculars, telescopes

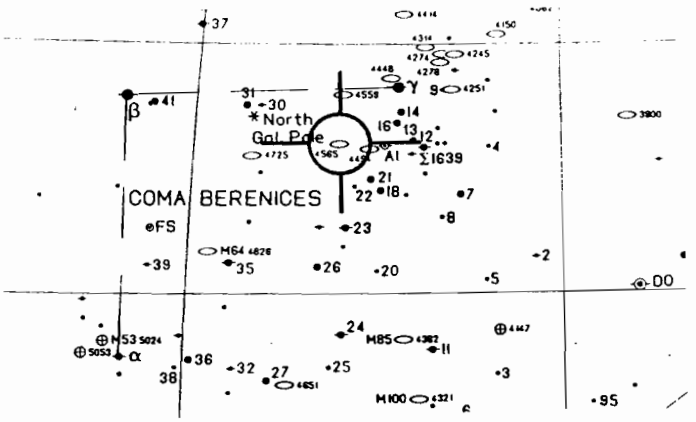
The following are excerpts of the descriptive notes from BURNHAM'S CELESTIAL HANDBOOK, REVISED EDITION, 1978, p. 688:

"....The largest of the edgewise spiral galaxies, and undoubtedly the most famous object of its type. It is located 1.7° east of the star 17 Comae, and less than 3° from the North Galactic Pole. The galaxy is possibly an outlying member of the Virgo Galaxy Cluster, although it lies some 13° north of the main concentration.

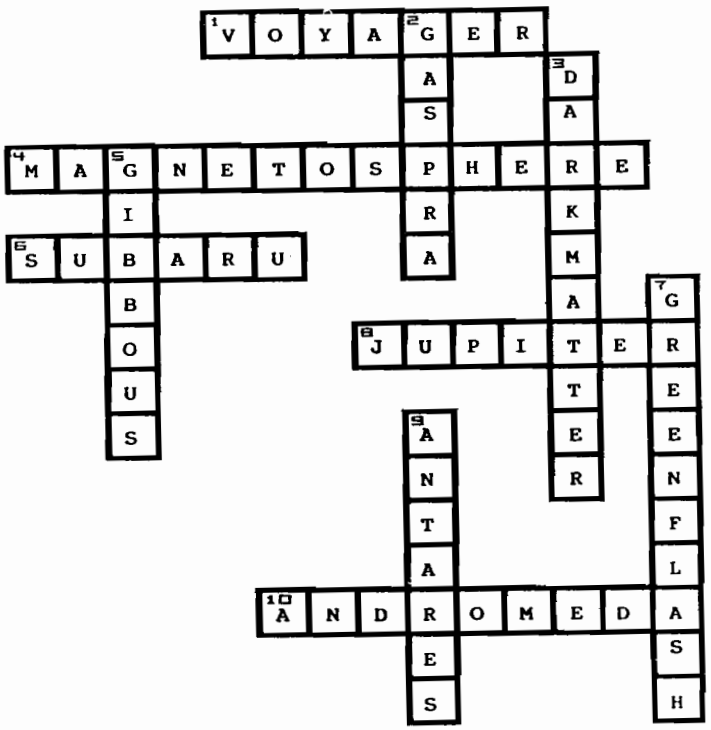
NGC 4565 is an interesting object for the small telescope, and appears as a bright narrow streak in a good 6-inch glass. With a 10-inch and dark skies it is a perfect little needle of light which can be traced out to nearly its full photographic diameter of 15'. At the central hub the thickness is about 1.4', and the total magnitude is about 10 1/2. The very small bright nucleus is mentioned in the NGC catalog as a 'central star'. Lord Rosse (1855) described the system as 'a beautiful object, very well seen in the finding eyepiece; the whole nebula is much broader at nucleus than elsewhere, narrowing off suddenly, and the nucleus projects forward into the dark space....'. Rosse's drawing was made with his 6-foot reflector and shows the dark absorbing lane running the full length of the system. Such drawings, of course, convey no hint of the true complexity of bright and dark material which is revealed by modern photography. These dark bands of absorbing matter appear to be a standard feature of spiral galaxies, and are prominent in other similar systems such as NGC 891 in Andromeda and NGC 4594 in Virgo. A similar absorption lane in our own Galaxy is undoubtedly the cause of the 'Great Rift' in the Milky Way. ...."

FINDER CHART & PHOTOGRAPH

Source (Finder Chart): NORTON'S 2000.0, Map 9
Source (Photograph):
BURNHAM'S CELESTIAL HANDBOOK, REVISED EDITION, 1978, P. 689



Answers for crossword puzzle:



TELESCOPE ACCESSORIES FOR SALE

Lee Testorff is offering for sale a tube and dobsonian mount for a 16-inch telescope, excluding the primary mirror. Also included are the secondary mirror and spider, all for $100.

Also for sale are an 8-inch Parks f/10 primary mirror with a mounting cell. Also included are a focuser, spider, secondary mirror and tube, all for $500.

Call Lee at 885-3423.

MEMBERSHIP RENEWALS

Renewal of MKAS membership should be done before the expiration date as shown on the mailing label to avoid a lapse in the newsletter and *Sky & Telescope* magazine. Annual dues are $10 and, if desired, an additional $18 for *Sky & Telescope* magazine. Additional family members are $1 each.

Please remit all dues to the treasurer:

Jim Skibby, MKAS Treasurer
P.O. Box 383311
Waikoloa, Hawaii 96738

EDITOR'S NOTES

Howard Yamasaki, Editor (Ph. 328-9201)

If you have any suggestions for meeting topics or activities, or if you would like to volunteer to help organize and/or implement various society activities, please contact any MKAS officer.

Monthly column writers are needed to add variety to the newsletter. If anyone is interested in becoming a monthly contributor, contact the editor. Others who would like to submit articles on astronomy on a random basis, please send all items to the editor (address in the newsletter header) by the **15th of the month.**

Also, astronomy-related classified ads by members are welcome. Send all ads to the editor by the **15th of the month.** All ads will run for one newsletter, however, you may call to extend an ad before the **15th of the month.**

NEWSLETTER SPONSOR

1992 MKAS OFFICERS

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