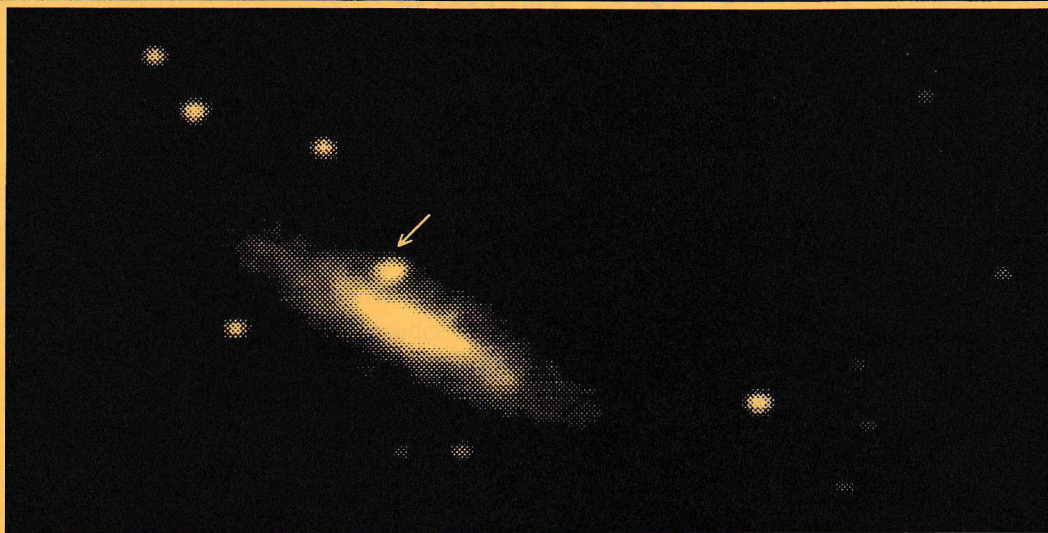


REFLECTIONS



REFLECTIONS

June , 1991

Super Nova 1991t in galaxy NGC4527 in Virgo by R. Tanner

R. Tanner, ed.

University Lowbrow Astronomers

The University Lowbrow Astronomers is a club of astronomy enthusiasts which usually meets in the historic "Detroit Observatory" on the corner of Observatory and Ann Streets in Ann Arbor. The meetings start at 7:30 on the third Friday of each month and are open to the public. For further information, call Fred Schebor at 426-2363.

This Month:

June 21 - Meeting, Peach Mountain Observatory, northwest of Ann Arbor. This meeting will be held at Peach Mountain and will be a **Guided Tour Of The Heavens**. The more knowledgeable members will conduct a group observing session with a list of deep sky objects. Everyone will find each object and then the group will move on. There will be plenty of help for newcomers. There is more detail on the inside under the heading 'This Months Meeting --- Peach Mountain'. Members are requested to bring their telescopes as the 24" is not operational yet.

Next Month:

July 1 - Computer Subgroup Meeting, R. Tanner's House in Canton at 7:30. Demonstrations of a Mac program called **Gravity 4.0** and a PC optics program called **MAX** and some more image processing or imaging if there is time, see Subgroup Report

for more details.

July 6 - Open House, Peach Mountain Observatory, bring scopes.

July 13 - Open House, Peach Mountain Observatory, bring scopes.

July 19, Meeting, Detroit Observatory, Ann Arbor. Roger Tanner will present a slide show and relate the interesting things he saw at this years **Texas Star Party** and **Riverside Telescope Makers Conference**.

Last Issue For Members not Paid Up

Check your mailing label on this issue for the end of your membership period. If it says 4/91, this is your last issue. With the mailing cost of this newsletter taking a large portion of the dues, we cannot afford to mail newsletters out to people who haven't paid their dues. So, if it's your last issue, and you want (or can stand) to receive more of these exciting newsletters, please send some money to our Treasurer.

Club News

This Month's Meeting is a Guided Tour of the Heavens
To be held at the Peach Mountain Observatory.

The regular meeting of the University Lowbrow Astronomers Club will be held at Peach Mountain from 8:30 PM to 9:30 PM if the sky is clear at 7:30 PM. Beginning at 9:30, members will be shown how to polar align their 'scopes and how to use an illuminated reticule. Following that, 10 objects will be observed as a group, that is, only after everyone has found the first object in their 'scope or binoculars, will the second object be attempted. There will be plenty of help for beginners or persons with new equipment to check out. The chosen objects are:

Item	R. A.	Dec.	Type	Mag	Con.
1. NGC 5466	14.032	28.46	Globular Cluster	9.0	Bootes
2. M3	13.399	28.38	Globular Cluster	6.4	Canum Venat.
3. M92	17.156	43.12	Globular Cluster	6.5	Hercules
4. NGC 6543	17.588	66.38	Planetary Neb.	9.6	Draconis
5. M65	11.170	13.20	Spiral Galaxy near Virgo		Leonis
6. M66	11.170	13.20	Spiral Galaxy double with M65		Leonis
7. M95	10.413	11.58	Barred Galaxy		Leonis
8. M96	10.442	12.05	Spiral Galaxy		Leonis
9. NGC 3193	10.157	22.09	Elliptical Galaxy on edge		Leonis
10. NGC 2903	09.292	21.44	Bright, many armed Spiral Galaxy		Leonis

Challenge Object (for scopes 12" or larger)

Wolf 359 10.541 07.19 Nearby (7.75 lightyears) Red Dwarf Mag 13.66

Finder Charts will be available for this star.

If it is cloudy at 7:30PM, the meeting will convene at that time at the Brown Jug Restaurant on South University Street in Ann Arbor.

New 24' Drive and Electronics

Encoder mechanical design is proceeding though electronic work is waiting on telescope reassembly.

Summary of Electronics made for 24 inch Telescope as of 5/17/91	R.A. Guide	Encoders	Dec Slew	Dec Guide	Interface	New Paddle	R.A. Slew	Pwr Supply	R.A. Retrofit
Mechanical Design	✓	Jun	✓	✓	✓	✓	Sep	✓	✓
Mechanical Built	✓	Aug	✓	✓	✓	✓	Dec	✓	✓
Electrical Design	✓	Jun	✓	✓	✓	✓	Sep	✓	✓
Prototype	✓	Jul	✓	✓	✓	✓	Oct	✓	✓
Circuitboard Design	✓	Jul	✓	✓	✓	✓	Nov	✓	✓
Circuitboard Hardware	✓	Aug	✓	✓	✓	✓	Nov	✓	✓
Circuitboard Built	✓	Aug	✓	✓	✓	✓	Nov	✓	✓
Installation	✓	Sep	◆	◆	◆	◆	Dec	◆	◆

Jan, Feb, ... => Item to be finished before this Month's Meeting

✓ = Previously finished. ✱ = Finished since last Meeting. ◆ = waiting for telescope reassembly.

Subgroup Reports

Computers in Astronomy Subgroup

The fourth meeting of the Computers in Astronomy Subgroup was held at my (Roger Tanner) house. The following members showed up;

Bernard Friberg, Roger Tanner, Fred Schebor

Doug Nelle, Stuart Cohen, Ron Avers

At the meeting I demoed two software packages for the IBM PC, EZ-COSMOS and AstrolP.

EZ-COSMOS

The first demonstration was of a sky map style program called EZ-COSMOS. EZ-COSMOS can produce sky maps on the screen showing stars down to 7th magnitude, although my demo version only has stars to 4th magnitude. The constellation lines, NGC objects, Planet moon and sun symbols can be turned on and off. The view can be zoomed from 1 degree to 270 degrees (which let you look over the horizon to see what will come up soon). The program will find an object and center it on the screen. There is a screen cursor which you can move around with the arrow keys and identify any objects on the screen. The program also has a look function which will display a digitized image of several of the deep sky objects which look rather spectacular on a VGA screen. The program will run on a CGA, EGA or VGA screen, but the image files will look best on VGA.

The program has a setup screen where you enter the location, time and date you want to show the sky for. The program has the latitude and longitude for several hundred locations and cities. You can also enter your latitude and longitude for some other location.

After showing how you could show the sky and vary its presentation, two really interesting features of the program were demonstrated, the planetary animation and the simulation of eclipses.

In the planetary animation mode, the planets will show their movement each night against the background stars. Since the symbol is left on the sky map after each time increment, this produces a interesting and colorful display showing the motion complete with retrograde loops, orbital inclination and relative planetary speed.

The eclipse simulation was displayed by setting the screen to show a 2 degree field around the sun at Hilo, Hawaii on the morning of July 11 of this year. The program showed the proper diameters of the sun and moon and showed the moon completely covering the sun for several minutes. Next we checked the simulation of the annular eclipse of May 30, 1984 in Atlanta, Georgia, which it also did correctly.

AstrolP (Formerly ImagePRO)

This is the image processing program that Richard Berry wrote and is sold through Willmann-Bell. The interface to the program uses large block text in a 32 column by 16 row mode and looks rather clunky. While

the program has several unique abilities and is very flexible, it does require reading the manual and playing around with the program for a few hours to utilize its capabilities. At the time I demoed it, I had only used the program for about an hour and the demo didn't show off the program's capabilities very well. The program uses the 256 color or grey scale mode of a VGA display and shows finer greys than the program that comes with the ST-4 camera.

The program's image buffers are fixed to take images from any of the CCD cameras which use the TI 192x165 pixel chip. The program will allow the user to take any image and scale the grey or color scale through several algorithms such as; linear, log, exponential, sawtooth, histogram equalization, and contour line. The image can be added and subtracted from another image and divided by a third image (used for dark current subtraction and flat field equalization). Most of the operations use one of the three image buffers to maintain a copy of the source image so that attempts at setting the parameters for an operation don't lose the original image. I used the software to enhance the visibility of a galaxy with a supernova in two images taken at the Texas Star Party.

The software contains several filters to sharpen the image and perform such operation as unsharp masking. Included with the program are several images to experiment with, including a stunning image of Jupiter taken by Don Parker with the LYNX camera. An attempt was made to use unsharp masking on the Jupiter image but didn't improve it significantly, later attempts after the meeting were more successful.

Overall I would say the software is powerful, but the user interface is primitive and it takes some practice to learn what parameter values are required to produce the desired results.

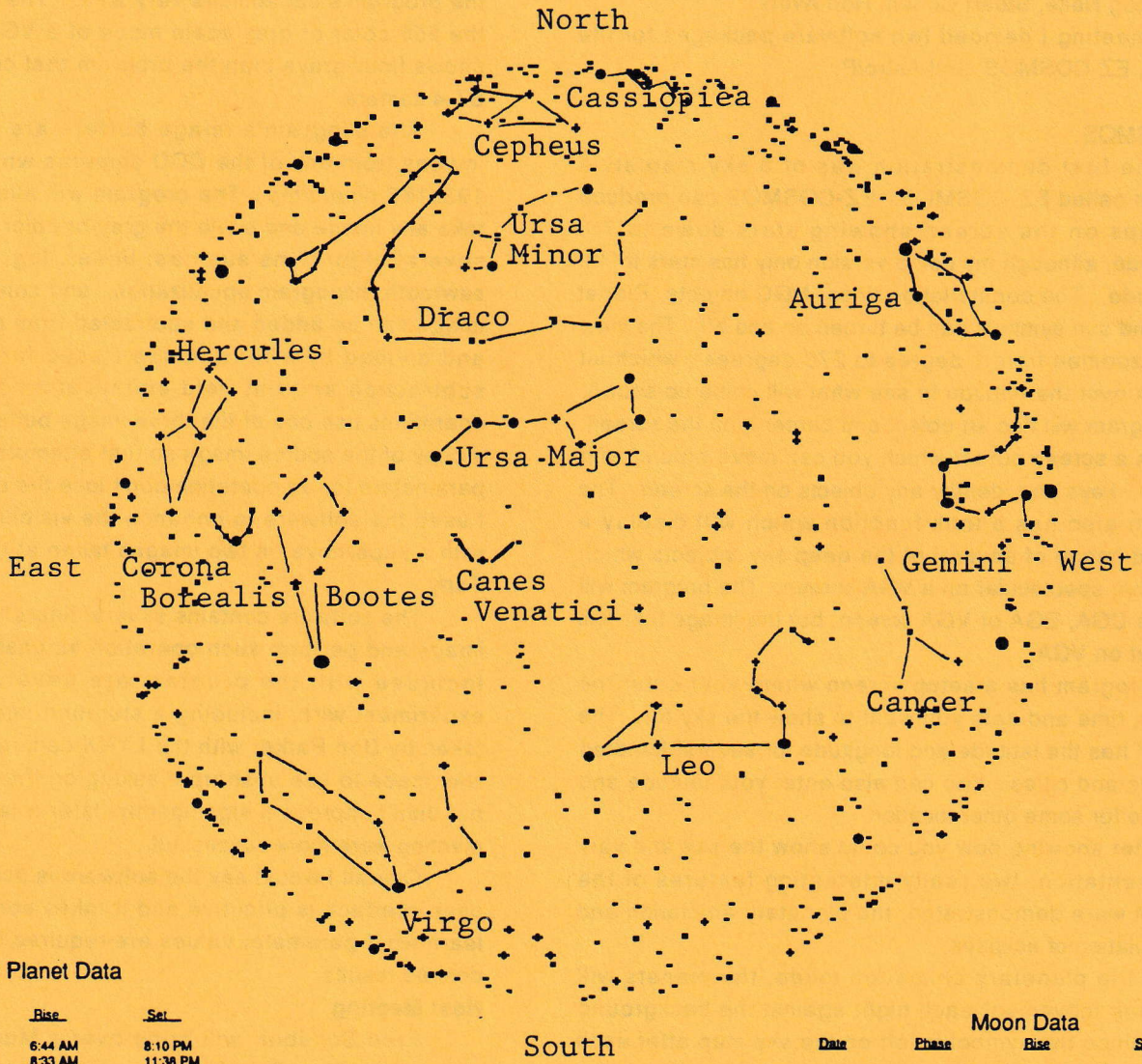
Next Meeting

Fred Schebor will bring over a Mac and demo a program called Gravity 4.0 . This would be a good opportunity for anyone with another Mac program (like Voyager) to demo the program. Then Tom Ryan will demo a very sophisticated optical design program called MAX. This will soon be released as a \$950 program, and (no, Tom didn't win the Lottery) Tom has a demo version . Several experienced opticians at the RTMC who saw it were very impressed. If it is clear the ST-4 camera could be set up to show what it is like to take images.

The location of the next meeting is **Roger Tanner's house** again, on **July 1, (Monday), at 7:30**. You can get directions from Tom Ryan, Doug Nelle or Stuart Cohen or by calling me. Perhaps people can car pool to reduce the expense of driving all the way out to Canton. - R. Tanner (981-0134)

Sky Map Sky Scannings

Map is accurate for:
Midnight on April 15
10:00 p.m. on May 15
8:00 p.m. on June 15



Visible Planet Data

Date	Planet	Rise	Set
04-15	Mercury	6:44 AM	8:10 PM
-	Venus	8:33 AM	11:38 PM
-	Mars	10:46 AM	2:18 AM (16)
-	Jupiter	1:06 PM	3:15 AM (16)
-	Saturn	3:48 AM	1:25 PM
05-15	Mercury	5:22 AM	6:27 PM
-	Venus	8:47 AM	12:26 AM (16)
-	Mars	10:12 AM	1:23 AM (16)
-	Jupiter	11:23 AM	12:01 AM (16)
-	Saturn	1:52 AM	11:32 AM
06-15	Mercury	5:46 AM	9:10 PM
-	Venus	9:30 AM	12:14 AM (16)
-	Mars	9:46 AM	12:18 AM (16)
-	Jupiter	9:46 AM	12:14 AM (16)
-	Saturn	11:46 PM	9:26 AM (16)

Rise and set dates for mid-month, April, May, and June, 1991.
Setting dates in () are in the AM on the following day.
All times are Eastern Daylight Time.

Moon Data

Date	Phase	Rise	Set
04-07	3rd Qtr.	3:41 AM	12:59 PM
04-14	New	6:38 AM	8:33 PM
04-21	1st Qtr.	1:09 AM	3:46 AM (22)
04-28	Full	8:45 PM	6:48 AM (29)
05-07	3rd Qtr.	3:01 AM	1:54 PM
05-14	New	6:35 AM	9:54 PM
05-20	1st Qtr.	1:23 PM	2:42 AM (21)
05-28	Full	9:36 PM	6:59 AM (29)
06-05	3rd Qtr.	1:50 AM	1:50 PM
06-12	New	6:23 AM	9:46 PM
06-19	1st Qtr.	2:34 PM	1:58 AM (20)
06-27	Full	9:48 PM	7:46 AM (28)

Moon phase, rise, and set data for April, May, and June, 1991.
Setting dates in () are in the AM on the following day.
All times are Eastern Daylight Time.

Sun Data

Date	Sunrise	Sunset
04-01	6:18 AM	7:01 PM
04-15	6:55 AM	8:17 PM
04-30	6:32 AM	8:34 PM
05-01	6:32 AM	8:35 PM
05-15	6:14 AM	8:50 PM
05-30	6:02 AM	9:04 PM
06-01	6:00 AM	9:06 PM
06-15	5:57 AM	9:14 PM
06-30	6:01 AM	9:17 PM

Sunrise and Sunset data for April, May, and June, 1991, given for the beginning, middle, and end of the month. April 1 times are Eastern Standard Time.
All other times are Eastern Daylight Time.

Places:

The Detroit Observatory is at the corner of Observatory and Ann Streets in Ann Arbor, across from the old U of M Main Hospital. The Detroit Observatory is an Historic Building which houses a 19th century 12-inch refractor and a 6-inch transit instrument.

The Peach Mountain Observatory is the home of the U of M radio telescope and the 24-inch McMath telescope used by the Lowbrows. This observatory is located northwest of Dexter, off North Territorial Road, West of Dexter-Pinckney Road. The entrance is just west of Sportsman's party store and is marked by a small maize and blue university sign. Go through the gate and follow the gravel road. Once parked at the observatory parking lot, follow the path away from the radio telescope and around the fenced in compound to the telescope.

Times:

The monthly meetings are held on the 3rd Friday of each month at 7:30 pm. Meetings are either at the "Detroit Observatory" in Ann Arbor or at the Peach Mountain Observatory. Meetings held at Peach Mountain are cancelled if the sky is not clear at sunset.

Public Star parties (Open Houses) are held on the Saturdays before and after the new moon at the Peach Mountain Observatory. Star parties are cancelled if the sky is not clear at sunset. Many members will bring their own telescopes. Your scope is welcome. Wear warm clothes for the season and bring insect repellent. The next scheduled Open Houses are listed on the first page.

Dues:

Membership in the Lowbrow Astronomy Club is \$20 per year for individuals or families ,and 12 per year for students. Among other things, this entitles you to use the club telescope after some training.

Magazines:

The Lowbrow Astronomy Club offers discount subscriptions to popular astronomy magazines:

Sky and Telescope : \$18/yr.

Astronomy : \$14/yr., 12 issues.

Deep Sky : \$8/yr., 4 issues.

Odyssey : \$10/yr., 12 issues.

Telescope Making : \$8/yr., 4 issues.

All except Sky and Telescope require 5 club members to subscribe for the discounts. Contact Dick Sider (663-3968) for more info.

Sky Scannings:

The *Sky Scannings* and *Sky Map* section in the issues of the *REFLECTIONS* are produced by Matt Linke of the U of M Exhibit Museum.

Newsletter Contributions:

Please send any information, short articles, or drawings to the address below. The closing date is 10 days before the meeting. Currently there are not many people contributing and we could use some fresh observations from the members.

University Lowbrow Astronomers Reflections
1770 Walnut Ridge Circle
Canton, Mich. 48187

Important Numbers:

President: Fred Schebor 426-2363

VicePres: Stuart Cohen 665-0131

Doug Nelle 996-8784

Paul Etzler 426-2244

Treasurer: Richard Sider 663-3968

Observatory: D.C. Moons 429-2196

Newsletter: Roger Tanner 981-0134

Membership: Ron Avers 426-0375

Peach Mountain Keyholders:

Tom Ryan 662-4188

Fred Schebor 426-2363

Doug Nelle 996-8784

Monthly Meeting:

**Guided
Tour of the
Heavens**

At the
Peach Mountain
Observatory

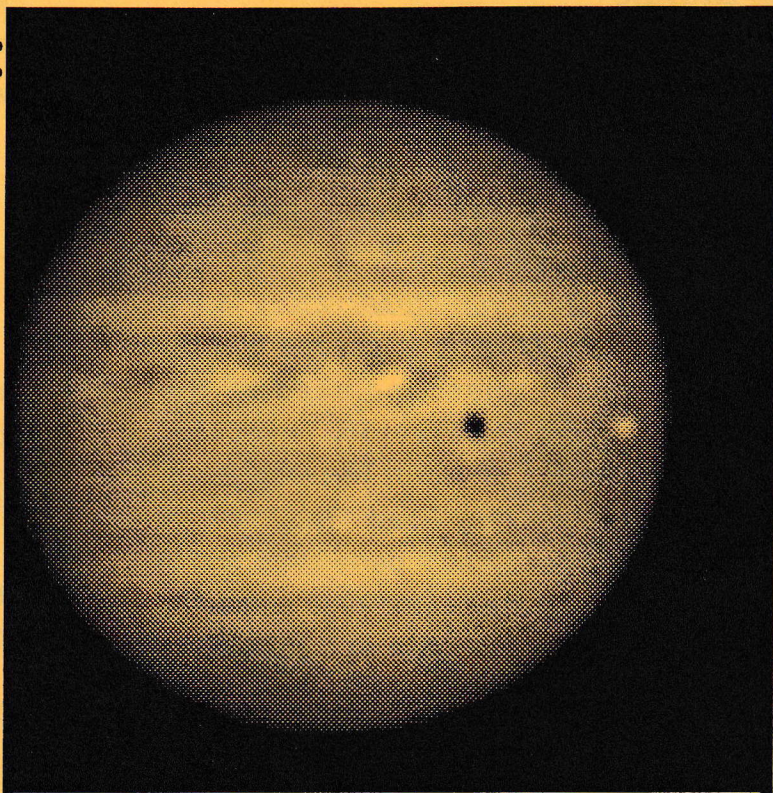


Image by Don Parker taken on a Lynx CCD camera with a 16" telescope from his backyard observatory near Miami, Florida. The exposure is approx .2 seconds, and the image was processed with the AstrolP software using unsharp masking.

University Lowbrow Astronomers
9287 Chestnut Circle
Dexter, MI 48130