

REFLECTIONS SNOITTECTIONS REFLECTIONS

of the University Lowbrow Astronomers

July 1998

GIANT "TWISTERS" AND STAR WISPS IN THE LAGOON NEBULA

This NASA Hubble Space Telescope (HST) image reveals a pair of one-half light-year long interstellar "twisters" -- eerie funnels and twisted-rope structures (upper left) -- in the heart of the Lagoon Nebula (Messier 8) which lies 5,000 light-years away in the direction of the constellation Sagittarius.

(Credit JPL / NASA and the Hubble Space Telescope)



Lagoon Nebula • M8

HST • WFPC2

PRC96-38a-S4561 GR0-0300-22 4997
A. Couat (European Southern Observatory) and NASA

The University Lowbrow Astronomers

is a club of enthusiasts which meets on the third Friday of each month in the University of Michigan's Physics and Astronomy building (Dennison Hall, Room 807). Meetings begin at 7:30 PM and are open to the public. Public star parties are also held twice a month, weather permitting, at the University's Peach Mountain Observatory on North Territorial Road (1.1 miles west of Dexter-Pinkney Road; see inside for directions) on Saturday evenings before and after the new moon. The event may be cancelled if it is cloudy or very cold at sunset. For further information, call (313) 480-4514.

This Month

- July 17 Meeting at 807 Dennison.
7:30 pm
- July 18 Open house at Peach Mountain.
- July 19 ATM meeting.
Time and location TBA
- July 25 Open house at Peach Mountain.

Next Month and Beyond

- August 14 Lowbrows at the Leslie Science Center
Starting time is sunset.
- August 15 Open house at Peach Mountain.
- August 21 Meeting at 807 Dennison
- August 22 Open house at Peach Mountain.
- August 23 ATM meeting. Time and
location TBD.

Star party announcements:

> **The Ontario StarFest** is August 20-23 ?

Submitted by Brian Ottum via Doug Scobel

> It is only about 4 hours away, northeast of Port Huron.
(Just south of > Lake Huron)

> Sponsored by the North York Astronomical Assn,
Andreas Gada > River Place Campground

> Mt. Forest, ONT

> (519) 665-2228 campground

>

> I am planning on going, and will bring my family.

1998 Astrofest

Submitted by Doug Scobel

The 19th Astrofest convention will be held September 11-13 on the 130 acre Camp Shaw-Waw-Nas-See 4H campground near Kankakee, Illinois (about 30 miles south of Chicago). Hosted by the Chicago Astronomical Society, this is the biggest annual star party/convention in the midwest. Astrofest features guest speakers, telescope judging, a flea market, commercial vendors, observing, photography and art contests, and more. See Doug Scobel at the July meeting for info and a registration form.

Headlines

Credit JPL / NASA

C/1998 M6 (Montani)

Last Updated: 6 July 1998

IAU Circular 6960 (July 1, 1998) reports the discovery of comet by J. Montani, Lunar and Planetary Laboratory, on the image display monitor of the 0.9-m Spacewatch telescope. The comet is about 19th magnitude. IAU Circular 6965 (July 3, 1998) gives a very preliminary parabolic orbit with a perihelion date of November 16, 1997 at a distance of 5.7 AU. Not surprisingly, this comet

is expected to fade (very slowly).

C/1998 M5 (LINEAR)

IAU Circular 6959 (July 1, 1998) reports the discovery of comet by the Lincoln Laboratory Near-Earth Asteroid Research (LINEAR) project. A parabolic orbit on IAU circular 6961 (July 2, 1998) indicates that perihelion will be on January 24, 1999 at a distance of 2.1 AU. The comet is currently about 12.8 magnitude and is expected to brighten because it is moving as it approaches the Sun. This comet will drift westward and northward. By August, the comet will be in the midnight sky with Northern Hemisphere observers favored. The comet will continue moving west and north. By September, it will be a Northern Hemisphere evening object. The comet will move under the North celestial pole in February, 1999 and will then move north, coming within 6 degrees of the pole in early April, 1999. The comet could reach magnitude 10.5 and is expected to be near peak brightness from November 1998 into March 1999.

Gee, is there a pattern of comet discoveries developing here?...csm

C/1998 M4 (LINEAR)

IAU Circular 6953 (June 27, 1998) reports the discovery of comet by the Lincoln Laboratory Near-Earth Asteroid Research (LINEAR) project. A parabolic orbit on IAU circular 6954 (June 27, 1998) indicates that perihelion will be on December 2, 1998 at a distance of 2.5 AU. The comet is currently 16-17th magnitude and is not expected to brighten because it is moving away from the Earth as it approaches the Sun.

C/1998 M3

IAU Circular 6941 (June 25, 1998) reports the discovery of comet by J. Larsen, Lunar and Planetary Laboratory, using the 0.9-m Spacewatch telescope. A parabolic orbit

on the same circular indicates that perihelion will be on June 28, 1998 at a distance of 5.8 AU. The comet is currently 18th magnitude and is not expected to brighten.

SOHO Comets

IAU Circular 6952 (June 25, 1998) reports the discovery of nine additional comets by SOHO between April 10 and May 30, 1998. All, but one of these are apparently Kreutz sungrazers and none of them survived.

C/1998 M2 (LINEAR)

IAU Circular 6949 (June 20, 1998) reports the discovery of comet by the Lincoln Laboratory Near-Earth Asteroid Research (LINEAR) project. A parabolic orbit on the same circular indicates that perihelion will be on August 10, 1998 at a distance of 2.7 AU. The comet is currently 13th magnitude and is not expected to brighten because it is moving away from the Earth as it approaches the Sun.

C/1998 M1 (LINEAR)

IAU Circular 6940 (June 16, 1998) reports the discovery of comet by the Lincoln Laboratory Near-Earth Asteroid Research (LINEAR) project. A parabolic orbit (MPEC 1998-M05, June 19, 1998) indicates that perihelion will be on October 29, 1998 at a distance of 3.1 AU. The comet is currently 15th magnitude and is not expected to brighten because it is moving away from the Earth as it approaches the Sun.

C/1998 K5 (LINEAR)

IAU Circular 6923 (May 30, 1998) reports the discovery of comet by the Lincoln Laboratory Near-Earth Asteroid Research (LINEAR) project. A parabolic orbit on the same circular indicates that perihelion will be on July 17, 1998 at a distance of 0.96 AU. The comet is currently 15th

magnitude and will brighten as it approaches both the Earth and Sun. The comet should reach 13.5-14.0 magnitude when it passes about 0.19 AU from the Earth in mid-June. It will fade after that. The comet, which is currently visible from both hemispheres, is moving northward and will be a northern circumpolar object by the beginning of July.

Note: With an absolute magnitude of about 17.0, this is the most intrinsically faint comet, I can recall. It will be interesting to see what happens as the comet approaches perihelion...will it survive perihelion passage?...csm

C/1998 K4 (Mueller 3)

IAU Circular 6919 (May 26, 1998) reports the recovery of comet P/1990 S1 by J. V. Scotti, Lunar and Planetary Laboratory with the Spacewatch Telescope on Kitt Peak. The comet's nuclear magnitude is about 21. It is not expected to become bright enough to be seen visually.

C/1998 K3 (LINEAR)

IAU Circular 6916 (May 26, 1998) reports the discovery of comet by the Lincoln Laboratory Near-Earth Asteroid Research (LINEAR) project. A parabolic orbit on the same circular indicates that perihelion was on March 3, 1998 at a distance of 3.5 AU. The comet is 18th magnitude and should fade.

C/1998 K2 (LINEAR)

IAU Circular 6915 (May 26, 1998) reports the discovery of comet by the Lincoln Laboratory Near-Earth Asteroid Research (LINEAR) project. A parabolic orbit on the same circular indicates that perihelion was on September 3, 1998 at a distance of 2.3 AU. The comet is 13th

magnitude and should brighten slightly over the next month. It is moving south and the Southern Hemisphere observers are favored.

C/1998 K1 (Mueller)

IAU Circular 6908 (May 18, 1998) reports the discovery of a comet by Jean Mueller in the course of the second Palomar Sky Survey. The comet will reach perihelion on August 27, 1998 at a distance of 3.5 AU. There is a report that this comet was picked up visually at $m_1 \sim 15$. The comet is expected to fade.

My personal congratulations to my good friend Jean... This is number 13 for her (to go along with 96 supernovae discoveries).

C/1995 O1 (Hale-Bopp)

Last Updated: 24 June 1998

Reported observations:

1998 Mar. 26.402 UT: $m_1=8.4$, Dia.=-, DC=5, Tail: trace...10x50 B...Terry Lovejoy (Moranbah, QLD, Australia) 1998 Apr 13.50 UT: $m_1=9.2$, Dia=4', DC=3...20x80B...Andrew Pearce (Nedlands, Western Australia)[Observation made with moon visible in eastern sky, however sky at comet's location still relatively dark.] 1998 Apr 19.48 UT: $m_1=9.2$, Dia=3.8', DC=3...20x80B...Andrew Pearce (Nedlands, Western Australia) 1998 Apr. 20.427 UT: $m_1=8.7$, Dia.=-, DC=5, Tail: -...10x50 B...Terry Lovejoy (Moranbah, QLD, Australia) 1998 Apr 20.50 UT: $m_1=9.2$, Dia=3.6', DC=3...20x80B...Andrew Pearce (Nedlands, Western Australia) 1998 Apr 22.46 UT: $m_1=9.1$, Dia=2.0', DC=6, tail 3' in PA ~ 75 deg...20cm L(x45)...Michael Mattiazzo (Wallaroo, South Australia) [fan like tail] 1998 Apr. 26.385 UT: $m_1=8.8$, Dia.=8', DC=5, Tail: -...10x50 B...Terry Lovejoy (Moranbah, QLD, Australia)[Still fairly easy to see in binoculars with an extended coma] 1998 May 17.92 UT: $m_1=9.6$...23cm L...J. G. de S. Aguiar (Campinas, Brazil) 1998 May 18.88 UT: $m_1=9.6$, Dia.=5'&...23cm L...J. G. de S. Aguiar (Campinas, Brazil)

1998 June 15.43 UT: $m_1=9.8$, Dia=1.0', DC=5...20cm L(x45)...Michael Mattiazzo (Wallaroo, South Australia) 1998 June 17.38 UT: $m_1=9.8$, Dia=2.0', DC=5...20cm L(x45)...Michael Mattiazzo (Wallaroo, South Australia) *1998 June 22.44 UT: $m_1=9.8$, Dia=2', DC=4...20cm L(x45)...Michael Mattiazzo (Wallaroo, South Australia)

C/1997 J2 (Meunier-Dupouy)

Last Updated: 2 July 1998

Reported observations:

1998 June 2.08 UT: $m_1=11.1$, Dia.=1.5', DC=3...20cm SCT (80x)...Massimo Dionisi (Sassari, Italy) 1998 June 4.59 UT: $m_1=11.4$, Dia.=1.5', DC=5... 25.6cm L (42x)... Nicolas Biver (Koko-Head, Oahu, Hawaii) 1998 June 13.89 UT: $m_1=11.2$, Dia=1.4 DC=3...20 cm L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) 1998 June 17.47 UT: $m_1=11.5$, Dia=1.7', DC=4... 25.6cm L (42x)... Nicolas Biver (Makaha, Oahu, HI) 1998 June 19.91 UT: $m_1=11.1$, Dia=1.2 DC=3 ...20 cm L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) 1998 June 21.38 UT: $m_1=11.5$, Dia=1.8', DC=4...45cm CASS/ST6...Tom Johnston (Sommers-Bausch Observatory, Boulder, CO) 1998 June 21.94 UT: $m_1=11.3$, Dia=1.7', DC=2 ...20 cm L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) 1998 June 21.96 UT: $m_1=11.4$, Dia.=1', DC=1-2...25.4cm L (65x) ...Maik Meyer (Frauenstein, Germany) 1998 June 22.08 UT: $m_1=11.1$, Dia.=2', DC=2 ... 15cm L (100x)...Massimo Dionisi (Sassari, Italy) 1998 June 22.91 UT: $m_1=11.1$, Dia=2.0', DC=2 ...20 cm L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) [Comet had fan - like coma, sky very clear with excellent seeing.] 1998 June 26.056 UT: $m_1=12.1$, Dia.=1.7'... 152cm L (f/8, Thomson CCD, V filter)...Elia Cozzi (Loiano Observatory, Italy) [stellar nucleus, coma elongated in PA 230 deg.] *1998 June 26.93 UT: $m_1=11.4$; Dia=1.5'; DC=3 ...20 cm L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) [Comet was near bright star, star - like nucleus of mag 13.5 (RF: HS), involve in diffuse coma.] 1998 June 27.073 UT: $m_1=12.1$, Dia.=1.7'... 152cm L (f/8, Thomson CCD, V filter)...Elia Cozzi (Loiano Observatory, Italy) [stellar nucleus] 1998 June 28.39 UT: $m_1=12.0$, Dia.=1.5', DC=-6 ... 41 cm L ...Alan Hale (Cloudfroft, New Mexico) *1998 June 30.95 UT: $m_1=11.2$, Dia=2.3. DC=1 ...20 cm

L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) [At the last two week coma increased in size and became more diffuse.] *1998 July 1.94 UT: m1=11.4, Dia=2'.4, DC=1 ...20 cm L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) [Very diffuse coma.]

C/1997 T1 (Utsunomiya)

Last Updated: 18 May 1998

Reported observations:

1998 Mar. 4.60 UT: m1=12.1, Dia. 1.5', DC=2... 25.6cm L (84x) ... Nicolas Biver (Koko Head, Oahu, Hawaii) 1998 Mar. 8.61 UT: m1=12.6, Dia. 1.5', DC=3... 25.6cm (84x) ... Nicolas Biver (Koko Head, Oahu, Hawaii) 1998 Mar. 9.62 UT: m1=12.5, Dia. 1.4', DC=2... 25.6cm L (84x) ... Nicolas Biver (Koko Head, Oahu, Hawaii) 1998 Apr. 22.55 UT: m1=[12.5...20cm L (x158)...Michael Mattiazzo(Wallaroo, South Australia) 1998 Apr. 26.47 UT: m1=13.4, Dia. 0.8', DC=5...25.6cm L (84x)... Nicolas Biver (Dillingham, Oahu, Hawaii) *1998 May 15.92 UT: m1=14.4, dia.=0.3', DC=3, 44 cm L (156x)...Werner Hasubick (Buchloe, Germany)

C/1998 H1 (Stonehouse)

Last Updated: 29 June 1998

Reported observations:

1998 May 15.90 UT: m1=11.6, dia.=1.9', DC=3, 44 cm L (63x)...Werner Hasubick (Buchloe, Germany) 1998 May 16.90 UT: m1=11.4, Dia=3' DC=2/...20cm L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) 1998 May 17.17 UT: m1=11.1, Dia=2.4', DC=2...20-cm L @ 47X...Phillip J. Creed (Massillon, Ohio) [Comet difficult but definite object under suburban skies. NLM= 5.7] 1998 May 17.94 UT: m1=11.6, Dia=2'.5 DC=2...20cm L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) 1998 May 17.95 UT: m1=11.4, Dia.=2.2', DC=1-2...25.4cm L (65x) ...Maik Meyer (Frauenstein, Germany) 1998 May 19.11 UT: m1 = 11.3, Dia = ~2.5', DC = 1...41cmL@70x...J.Bortle (Stormville, NY) [Very diffuse, ill-defined object.] 1998 May 23.12UT, m1 = 11.5, Dia = ~2.0', DC = 1...41-cmL @ 70x...J.Bortle

(Stormville, NY) [Extremely diffuse.] 1998 May 23.92 UT: m1=12.1, Dia=2'.1, DC=2/...20 cm L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) 1998 May 26.31 UT: m1=12.0, Dia.=2', DC=1... 25.6cm L (42x) ... Nicolas Biver (Dillingham, Oahu, Hawaii) 1998 May 28.92 UT: m1=12.3, Dia=1'.8, DC=1 ...20 cm L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) 1998 May 29.94 UT: m1=11.8, Dia=1'.5, DC=3...20 cm L (70x)...Alexandr Baransky (Observatory of Kyiv University, Ukraine) [Possible outburst, coma increase in condensation decrease in size.] 1998 May 30.89 UT: m1=12.2, Dia.=2.3', DC=2...44 cm L (63x)...Werner Hasubick (Buchloe, Germany) 1998 May 30.95 UT: m1=11.7, Dia=1'.5, DC=3/...20 cm L (70x)...Alexandr Baransky (Observatory of Kyiv University, Ukraine) [Outburst in progress] 1998 May 31.99 UT: m1=11.9, Dia=1'.4, DC=3 ...20 cm L (70x)... Alexandr Baransky (Observatory of Kyiv University, Ukraine) 1998 June 17.38 UT: m1=13.6, Dia.=1.5', DC=1... 25.6cm L (84x)... Nicolas Biver (Makaha, Oahu, HI) 1998 June 25.875 UT: m1=16.4, Dia.=10", DC=5, Tail:30" in PA 103 deg... 152cm L (f/8, Thomson CCD, V filter)...Elia Cozzi (Loiano Observatory, Italy) 1998 June 26.866 UT: m1=16.3, Dia.=10", DC=1... 152cm L (f/8, Thomson CCD, V filter)...Elia Cozzi (Loiano Observatory, Italy)

C/1998 J1 (SOHO)

Last Updated: 2 July 1998

Reported observations:

1998 June 10.89 UT: m1=6.5...11x80 B...Willian Souza (Sao Paulo, Brazil) 1998 June 11.29 UT: m1=6.7, Dia=2, DC=4...10x50B...Stuart Rae (Palmerston North, New Zealand) 1998 June 11.89 UT: m1=6.5, Dia=5', DC=4...11x80 B...Willian Souza (Sao Paulo, Brazil) 1998 June 12.94 UT: m1=6.8 ...11x80 B...Willian Souza (Sao Paulo, Brazil) 1998 June 14.45 UT: m1=6.7, Dia=6.3', DC=5...20x80B...Andrew Pearce (Nedlands, Western Australia) 1998 June 14.89 UT: m1=6.7, Dia.=4', DC=4...20cm SCT (77x)...Helio C. Vital (Rio de Janeiro, Brazil) 1998 June 16.40 UT, m1=7.5, DC=6...32cm L...Peter Nelson (Ellinbank, Australia) [Comet=SAO198193 (H/T seq), Bobrovnikoff method.] 1998 June 16.91 UT: m1=6.9, DC=3, Dia=5'...11x80 B...Willian Souza (Sao Paulo, Brazil) 1998 June 17.89 UT: m1=7.1, Dia.=4', DC=4...20cm SCT (77x)...Helio C.

Vital (Rio de Janeiro, Brazil) 1998 June 17.92 UT: m1=7.1...11x80 B...Willian Souza (Sao Paulo, Brazil) 1998 June 18.32 UT: m1=7.0, Dia=4, DC=4...10x50B...Stuart Rae (Palmerston North, New Zealand) 1998 Jun. 19.31 UT: m1=7.1, Dia=4, DC=4...10x50B...Stuart Rae (Palmerston North, New Zealand) 1998 June 19.92 UT: m1=7.2...11x80 B...Willian Souza (Sao Paulo, Brazil) 1998 June 20.28 UT: m1=7.3, Dia=5', DC=3...10x50B...Stuart Rae (Palmerston North, New Zealand) [A star was nearby (SAO 198518, mag 7.9) which may have affected observation] 1998 June 20.87 UT: m1=7.2, Dia.=3'...11x80 B...J. G. de S. Aguiar (Campinas, Brazil) 1998 June 21.44 UT: m1=7.5, Dia=6.8', DC=4...20x80B...Andrew Pearce (Nedlands, Western Australia) 1998 June 21.87 UT: m1=7.3, Dia.=4'...11x80 B...J. G. de S. Aguiar (Campinas, Brazil) 1998 June 22.43 UT: m1=7.5, Dia=4', DC=4...20cm L(x45)...Michael Mattiazzo (Wallaroo, South Australia) [observation made difficult due to close proximity to mag 8.0 star] 1998 June 22.89 UT: m1=7.4, Dia.=4', DC=4...20cm SCT (77x)...Helio C. Vital (Rio de Janeiro, Brazil) 1998 June 23.31 UT: m1=7.5, Dia=4', DC=3...10x50B...Stuart Rae (Te Awamutu, New Zealand) 1998 June 23.44 UT: m1=7.7, Dia=6.5', DC=4/...20x80B...Andrew Pearce (Nedlands, Western Australia) 1998 June 23.91 UT: m1=7.6, Dia=3', DC=4...11x80 B...Willian Souza (Sao Paulo, Brazil) 1998 June 23.91 UT: m1=7.5, Dia.=3', DC=4...20cm SCT (77x)...Helio C. Vital (Rio de Janeiro, Brazil) 1998 June 24.46UT: m1=6.8, Dia=7', DC=5...20x80B...Andrew Pearce, Nedlands, Western Australia [The comet has undergone a mini-outburst in brightness over the last 24 hours or so. The central condensation has undergone a very slight increase in intensity, however it appears that the increase can be attributed to an overall increase in the surface brightness of the total coma.] 1998 June 24.80 UT: m1=7.5, Dia=4', DC=4...10x50 B...Mario J. Avila-Sobarzo (Santiago de Chile) 1998 June 26.92 UT: m1=7.8, Dia=3', DC=4...11x80 B...Willian Souza (Sao Paulo, Brazil) *1998 June 26.92 UT: m1=7.8, Dia.=3', DC=3...20cm SCT (77x)...Helio C. Vital (Rio de Janeiro, Brazil) 1998 June 27.28 UT: m1=7.2, Dia=4', DC=5...10x50B...Stuart Rae (Te Awamutu, New Zealand) 1998 June 28.28 UT: m1=7.6, Dia=3', DC=4...10x50B...Stuart Rae (Te Awamutu, New Zealand)

C/1998 K2 (LINEAR)

Last Updated: 29 June 1998

Reported observations:

1998 May 26.46 UT: m1=12.7, Dia.=0.7', DC=6... 25.6cm L (84x)... Nicolas Biver (Dillingham, Oahu, Hawaii) [Small, condensed, relatively easy] 1998 May 27.21 UT: m1=12.5, Dia=1.2', DC=2 ... 38cm L (245x)... Bob King (Duluth, MN) [Somewhat condensed, faint hazy glow. Coma circular, no tail seen. Motion to southwest easily observed over 45 minutes. Comet at low altitude but sky very clear with excellent seeing.] 1998 May 31.27 UT: m1=13.1, Dia.=0.81', DC=3.5...51cm L (185x)... Charles S. Morris (Lockwood Valley, CA) [Comet had a stellar condensation of m2~15.0. Corrected for extinction.] 1998 June 2.64 UT: m1=12.6, Dia=1.5', DC=4...20cm L (158X)...Michael Mattiazzo (Wallaroo, South Australia) [first observation, reasonably condensed object] 1998 June 4.56 UT: m1=12.6, Dia.=0.8', DC=5... 25.6cm L (84x)... Nicolas Biver (Koko-Head, Oahu, Hawaii) 1998 June 15.44 UT: m1=12.7, Dia=1.5', DC=3...20cm L (158X)...Michael Mattiazzo (Wallaroo, South Australia)

CLASSIFIEDS :

8" dob for sale

From: jridley@newsguy.com (John Ridley)

To: lowbrow.astronomers@umich.edu

I sold my Orion 8" dob a couple of months back. Now, the person who I sold it to has run across some unexpected expenses (\$50K houseaddition turned into \$68K addition) and could use the \$\$.

Mark did a star test on this one once and said the mirror was "very good, possibly as good as 1/20 wave" It's got the original helical focuser. I added one of Mark's hand-machined aluminum spiders, a gunshot velcro counterweight, teflon bearings, and a telrad. There's a hard plastic pistol case for the accy's. Other stuff in there are the original 25mm orion "sirius plossl" eyepiece, a

televue 7.4mm plossl, a televue 2.5X barlow, a moon filter, a 2AA cell Maglite with the white bulb removed and an LED/resistor installed. I also sold her a brand new (never in the field) laminated, field edition of the Sky Atlas 2000. The Sky Atlas she paid full price for, \$70; the rest of the stuff she paid \$500 for the lot. I'm assuming she'd be willing to sell for the same price.

Contact — jridley@newsguy.com ,
John Ridley (734) 475-8648 , or
leave a message (734)-480-4514

Announcements:

Do you have E-mail capability and you do not receive the Lowbrow E-mail messages? Please notify Kurt Hillig (khillig@umich.edu) , Doug Scobel

(djscobel@ann-arbor.applicon.com) or Bernard Friberg (Bfriberg@aol.com)

Dues:

Membership dues are \$20 per year for individuals or families, and \$12 for students.

Checks made out to: University Lowbrow Astronomers and mailed to Doug Scobel, 1426 Wedgewood Drive, Saline MI 48176 .

Magazine Subscriptions :

As a member of the Lowbrows, you are entitled to substantial discounts on *Sky and Telescope* and *Astronomy* magazines. To qualify for the discount, however, you must submit all subscription requests through the club treasurer. Make the check payable to "University Lowbrow Astronomers."

The current magazine subscription rates are:

	<u>Normal</u> <u>Rate</u>	<u>Club</u> <u>Rate</u>	<u>Savings</u>
<i>Astronomy</i> *	\$34.95	\$20.00	\$14.75
<i>Sky and Telescope</i> **	\$36.00	\$27.00	\$9.00

*Club rate allowed on 1 or 2 year subscriptions.

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<http://www.astro.lsa.umich.edu/lowbrows.html>



Eta Carinae

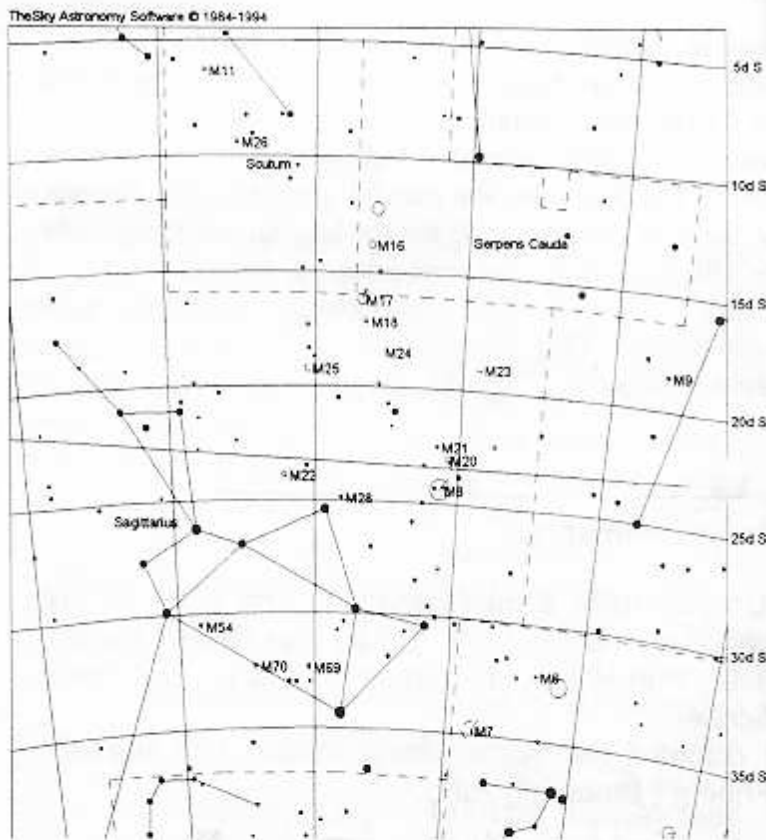
HST · WFPC2

PRC96-23a · ST ScI OPO · June 10, 1996
J. Morse (U. CO), K. Davidson, (U. MN), NASA

Monthly Meeting: July 17, 1998 @ 7:30 pm

Room 807 Dennison Hall (Physics and
Astronomy Building) at the University of
Michigan

July's speaker will be Andy
Tomasch, Department of Physics,
University of Michigan. The title of
his talk will be: "Tracking Down
Antimatter at 120,000 Feet:
Astro-Particle Physics Aboard
High Altitude Balloons".



M objects in Sagittarius

University Lobrow Astronomers
3684 Middleton Dr.
Ann Arbor, MI 48105

Check your membership expiration
date on the mailing label!



11/1998