

REFLECTIONS / REFRACTIONS

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University Lowbrow
Astronomers

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Image by Michael Jaeger 08.02.08

Comet 6P d'Arrest - Number 435 ... Countdown to 500 by Alan Hale

(an excerpt from Alan Hale's online log – www.earthriseinstitute.org)

People who follow astronomy, and especially cometary astronomy, probably know most of the story: on the night of July 22-23, 1995, during a break from our normal summer monsoon season here in southern New Mexico, I was collecting observations of the two comets I was then following. After finishing with Comet 71P/Clark 1994t (no. 197) just before midnight, I saw that I had perhaps an hour to wait before my next target, Comet 6P/d'Arrest (no. 198) rose high enough above my house in order to be able to observe it easily; I was especially interested in observing this object, since it was my planned topic for the next edition of my weekly newspaper column "In Our Skies." While waiting for Comet P/d'Arrest to climb higher in the sky I decided to pass the time on that beautifully clear summer night by observing some deep-sky objects, but when I turned the telescope towards the globular star cluster M70 in Sagittarius I immediately saw that there was a dimmer, fuzzy "something" in the same field of view. That "something" turned out to be Comet Hale-Bopp C/1995 O1 (no. 199) and the rest, as they say, is history . . .

And now, exactly thirteen years later to the night, I again pick up comet 6P/d'Arrest on a new return. I didn't plan or contrive it this way; it's just that the monsoon season this year has been quite intense, and the night of July 22-23 was the first clear night we'd had here in about two weeks. I had tried for the comet on a couple of occasions in early July, but had not seen anything convincing, and after that it was simply a waiting game until the skies were again clear enough to make a further attempt. It's a fitting, almost eerie, coincidence that that finally occurred on the anniversary night of the Hale-Bopp discovery.

This comet was discovered as long ago as June 1851 by the Prussian astronomer Heinrich d'Arrest, who is best known for being Johann Galle's assistant on the night that that astronomer visually discovered Neptune as a result of a mathematical prediction by the French mathematician Urbain Le Verrier. Its orbital period has varied between 6.2 and 6.7 years (currently, 6.54 years), and it has been observed at most of its returns since then. During the early 1990s two independent teams of European astronomers determined that a dim naked-eye comet observed by the French astronomer Phillipe de La Hire in September 1678 was in fact P/d'Arrest during a close approach to Earth. Including that return, the current return is the 19th at which this comet has been observed.

During the 1930s Comet 6P/d'Arrest played an important role in our understanding of the phenomenon known as "non-gravitational forces" that act on comet nuclei. More recently, during its excellent return in 1976 (when it passed 0.15 AU from Earth and reached 5th magnitude) it became the first comet to have its rotation period measured by direct photometric (i.e., high-precision brightness) observations of its nucleus (as opposed to observing the evolution of jets in the coma, as had been done for earlier comets).

Following its 1995 return P/d'Arrest was observed in 1999 when only 3 1/2 months past aphelion, and thus it is appropriate to consider it an "annual" comet. The first observations at the current return were obtained on April 26, 2008 by Wesley Ryle and Larry Wasserman at the Anderson Mesa Station of the Lowell Observatory in Flagstaff, Arizona, and three days later by J. Hobart at the private Kachina Observatory, also near Flagstaff.

Historically, 6P/d'Arrest has shown a brightness behavior that is strongly asymmetric with respect to its perihelion passage. Specifically, it tends to remain quite faint until shortly before perihelion, and then it brightens almost explosively, finally reaching a peak brightness some two to three weeks after perihelion. From that point it slowly fades away over the subsequent months, growing larger and more diffuse all the time. Not surprisingly, it seems to be doing just that this time around; when I saw it on the evening of July 22 it appeared as a small, condensed coma near magnitude 13 1/2 (despite being only 0.39 AU from Earth). I expect it to brighten rapidly over the coming weeks, becoming as bright as 8th magnitude, possibly even 7th magnitude, by late August and early September. (The geometry is, in fact, very similar to that of the 1976 return, but an approach to Jupiter (0.30 AU) in 1979 increased the comet's perihelion distance from 1.164 AU to near the present significantly larger value.) It should fade slowly from this peak brightness, perhaps remaining visually detectable until almost the end of this year.

The comet went through opposition in mid-July and is currently located in central Aquila seven degrees south of the bright star Altair. It remains an evening-sky object from now on, for the time being traveling towards the south-southeast and passing through Sagittarius, Capricornus, and Microscopium, until it reaches a peak southerly declination of -39 degrees in early October when it will be located in Grus. It then begins traveling towards the northeast, and will be in southwestern Cetus near the star Beta Ceti (or Diphda) at the end of 2008.

This is the fourth return at which I've observed 6P/d'Arrest. In addition to the return in 1995 I also saw it during the extremely favorable return in 1976 (no. 23) as well as at the subsequent return in 1982 (no. 51). In both 1976 and 1995 perihelion passage took place during the northern hemisphere's mid-to-late summer and under excellent geometry -- and, in what almost seems too eerie to me to be coincidental, both of these returns corresponded to changes in my personal life that essentially turned it upside down. In 1976 I had just graduated from high school and was getting ready to leave for the U.S. Naval Academy in Annapolis, Maryland; in fact, my first observation of P/d'Arrest on that return came only three days before my departure. Because of the "plebe summer" basic training I was undergoing at the Naval Academy I essentially missed that entire return; the only observations I was able to obtain were those I made on two consecutive nights just before I left New Mexico.

As I've already indicated, the 1995 return is closely connected to my discovery of Comet Hale-Bopp (which took place, incidentally, only four months after I had moved to my present residence here in Cloudcroft). It goes without saying that that particular event had an incredible impact upon my life.

The geometry at this return in 2008 is very similar to those in 1976 and 1995, and once again my life is set to undergo some very dramatic changes. I've been hinting at these in some of my earlier comet descriptions, and although I'm still not quite ready to announce them publically, it now appears that these changes will be coming into fruition within the next two to three months. There is actually a fair amount of uncertainty as to exactly what lies ahead of me, although I can say that I fully expect to continue with my comet observing (and, of course, "Countdown") and in my efforts to fulfill the Earthrise vision. I will probably have to wait until I've added a couple of more comets to my tally before revealing what these changes are.

The next return of 6P/d'Arrest, in 2015 (perihelion early March), is very unfavorable and I will almost certainly not be able to observe it. The return after that, in 2021 (perihelion mid-September), is moderately favorable and in fact is almost identical to the return I observed in 1982; since my personal life was comparatively quiet at that time perhaps the same might be true in 2021. There is another "late summer" return in 2047, at which time I would be 89 years old; I'm not sure I even want to speculate about any "upheavals" my life might conceivably undergo at that time . . .

Invasion of the Lowbrows 2008

By Mark S Deprest

In 2006 a number of University Lowbrow Astronomers made the long trek to the wilds of Potter County, PA and the annual Black Forest Star Party presented by the Central Pennsylvania Observers. That particular year the Lowbrows were represented very aptly by no less than 24 of its members. The Star Party turned out to be a bit of a wash out with regards to the weather and actual observing, however it was a rousing success in regards to the morale of all participants. I personally can not remember ever having such a great time “not observing”! Sitting in the middle of “Scope-Henge” laughing and telling stories with great friends!

Prior to that trip, Robert Wade came up with an idea that seems to be becoming a tradition ... that idea was for everyone to choose a couple of astronomical objects and create an observing list for the event. The items on the list could be challenging or easy “eye-candy” and everyone would try to complete the list during the Star Party. We did the same thing for the 2007 Okie-Tex Star Party and now the tradition is continuing for the 2008 Black Forest Star Party. Below is the list as compiled by Doug Scobel.

2008 BFSP / The Invasion of the Lowbrows II

An Observing List

Comet Boattini (C/2007 W1)	comet	submitted by Mark Deprest
Comet Boattini (C/2008 J1)	comet	submitted by Mark Deprest
NGC 246	pl. neb	submitted by Chris Sarnecki
PK 47+42.1 (Abell 39)	pl. neb	submitted by Chris Sarnecki
M33 (Pinwheel) unaided eye	galaxy	submitted by Nathan Murphy
NGC 6822 (Barnard's)	galaxy	submitted by Nathan Murphy
PK 80-6.1 (Egg Nebula/Murphy's Bane)	pl. neb	submitted by Nathan Murphy
NGC 2237-2239 (Rosette)	nebulae	submitted by Yasu Inugi
Zodiacal Light		submitted by Yasu Inugi
NGC 6960, 6992, 6995 (Veil)	SN rem	submitted by Lee Vincent
M31 (Andromeda) unaided eye	galaxy	submitted by Lee Vincent
Stefan's Quintet (NGC 7320 et. al.)	gal cl	submitted by Robert Wade
Abell 2151(Hercules cluster)	gal cl	submitted by Robert Wade
NGC 7000 (N. America)	nebula	submitted by Doug Scobel
Barnard 33 (Horsehead)	dark nebula	submitted by Doug Scobel
NGC 752 (BASS)	cluster	submitted by Jim Forrester
NGC 6905 (Blue Flash)	pl. neb	submitted by Jim Forrester
NGC 6334 (Cat's Paw)	nebula	submitted by Yumi Inugi
NGC 7293 (Helix)	pl. neb	submitted by Yumi Inugi
IC 342	galaxy	submitted by Mike Radwick
Abell 426 (NGC 1275 et. al.)	gal cl	submitted by Mike Radwick

July 2008 Lowbrow Meeting Minutes as submitted by Mike Kurylo

(all images were provided by Mike Kurylo)

7:30pm meeting at the Eastern Michigan University Sherzer Observatory

Hosted by Norbert Vance

1903 – EMU Sherzer Observatory was founded

1991 – Acquired an Astrophysics 254mm (10”) APO refractor

Roof-mounted Meade LX200 also available for use after the general meeting.

35-40 members in attendance

President Charlie Nielsen

Asked if a member would contact Rachel from the Student Astronomical Society

Has asked his campaign manager to do an optics talk in the future

Possibility of having astronaut Jack Lousma for a presentation in November, and would require a larger meeting room for the anticipated crowd

V.P. Paul Walkowski

Raised a motion to donate \$250 for 2008 to GLACC and was approved by a majority vote of the membership

V.P. Mike Kurylo

Arranged for the pizza, drinks, and snacks for the annual equipment review

The ATM group has transferred the 17.5” mirror from the home of Arthur Suits to Doug Nelle’s home to continue the refinishing work.

V.P. Jim Forrester

The open houses have been well attended when the Michigan weather cooperates

Treasurer Yasu Inugi

Stated membership at 96 with \$7717.45 in the account

Newsletter Editor Mark Deprest

The lowbrows have received the latest Night Sky Network toolkit on supernovas

The newsletter desperately needs articles!!!

Webmaster Dave Snyder

Goals of International Year of Astronomy 2009

Increase scientific awareness among the general public.

Promote widespread access to new knowledge and observing experiences.

Empower astronomical communities in developing countries.

Support and improve formal and informal science education.

Provide a modern image of science and scientists.

Facilitate new astronomy networks and strengthen existing ones by connecting amateur astronomers, educators and scientists through local, national and international activities.

Improve the gender-balanced representation of scientists at all levels and promote greater involvement by underrepresented minorities in scientific and engineering careers.

Facilitate the preservation and protection of dark skies.

Guest speaker was John Kirchhoff from Rider's Hobby in Livonia, MI

As usual he had a wide assortment of items for our annual equipment review:

Orion Star Blast 6", f/5 with two eyepieces \$289

Celestron Sky Scout and now two SD update cards are now available

Meade MySky can link to ETX scopes

Orion Resolux 7x50 binoculars \$299

Vixen Foresta triplet 7x50 binoculars \$299

Orion Star Shoot Autoguider \$249

Unihedron Sky Quality Meter 45 degree ½ angle \$119, 15 degree ½ angle \$139

Orion adjustable drawtube focuser \$169

A plethora of eyepieces such as the Televue Ethos 13mm

Orion Star Blast Astro Imaging System with DMK USB CCD webcam \$399

Orion SkyView AZ Mount, 50 Lbs rating, w/Vixen style dovetail mount \$399

Orion 5-Filter Wheel \$169



Additional speaker was Mark Deprest presenting an enjoyable photo sequence

Trip to the Green Bank Star Quest #5 in West Virginia

Met with fellow Lowbrows Yasu and Yumi Inugi who were able to run a 40' dish

There is the world's largest equatorial mounted scope at 140' diameter with a 16' diameter steel ball bearing

August speaker is scheduled to be Tom Trusok

Remember, to see more details of our meetings please stop by in person and bring a guest. It's better than your job, and it's an adventure! GO LOWBROWS!



Night Sky Network Update

By Belinda Lee

Well, this actually a good time for the Night Sky Network we have the open houses! But, I'm trying to do more! So, what is on the working on list, a program with the Whitmore Lake Library. Apparently, the Lowbrow's have hosted events there in the past. If you know anything about these event please let me know. The hope is to have several evening star parties. The library has a couple telescopes of there own. Even better is there is a coffee shop across the street from the library. Wouldn't be great to have a fresh latte while looking at the stars! Oh and there is the Whitmore Lake Tavern nearby for a of the night beer!

Another good thing is the community is considering a light ordnance. Part of the argument against it is it benefits just us folks who think look at the heavens is worth while. Well, we know that isn't the case, but it is a great chance to point out the benefits of dark skies.

So there are some positive things about this event! However there is a limitation. Namely the location is not a truly dark spot, darn.

No dates are set yet, but you'll hear more soon!

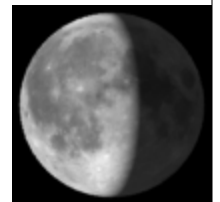
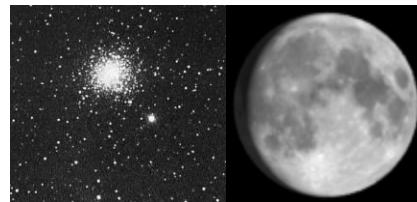
The Further Adventures of Amateur Astronomers and Jr. Lowbrow's

by George Ferrier

After several nights of the sky being Overcast or having a Magnitude of 2 or 1 we spent a lot of time studying types of clusters, and the life of stars

On July 4th we were able to watch the following satellites; 2224 MetOp-A and at 2243hrs3hrs Envisat pass at 65* overhead passing SSE to ENE for 3 minutes at a magnitude of 3.0, there were 4 of use viewing this.

On July 5th 1040 P.M. we did some 7x50 binocular viewing of Arcturus and Saturn and Mars. I had 4 adults and 5 Children with me The Sky was at magnitude 6 and we were able to make out Six Stars of Ursa Miners little dipper, Saturday July 5, 2008—2 day old, Waxing Crescent



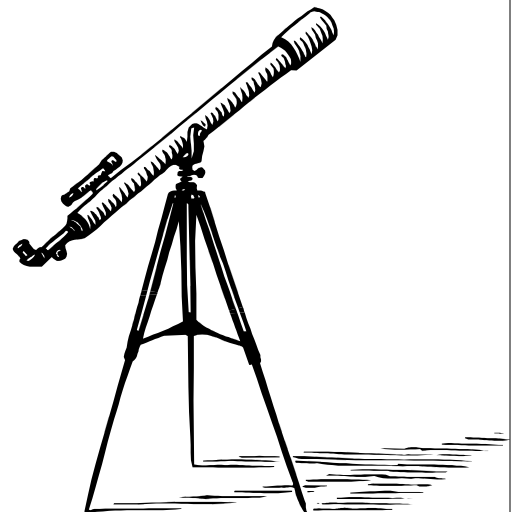
On July 6th 10:30 P.M. we again viewed Saturn at 4.3 magnitude, mars @2 magnitude & Regulus @ 4 magnitude. July 6, 2008—3 day old, Waxing Crescent

July 15th I was out with 3 children & 4 adults looking at Scorpius with Binoculars and we were looking at Antares, Alpha Sco, Beta Sco and just scanning the area. I viewed Two Bright stars about 10* South East of Beta Sco and observed a gray Fuzzy Glow around them. Of course the kids asked what that was so I looked in my Library and check I thought it may be M80 but some books says it's not visible thru Binoculars so I thought it was the double below Beta Sco W1 & W2 ' but doing a search on the net (see picture) I found a shot of M80 with 2 bright stars so I am assuming what we seen was M80 July 15, 2008- 12 day old, Waxing Gibbous

July 23rd I had 6 others with me and we used the 4 1/2" Newtonian telescope and viewed Jupiter we could not see any details of the surface due to Jupiter's Brightness -2.7, but he Four Moons were in-line with each other. I don't know if it was because of the Atmosphere or if I need a filter maybe someone will help us. I think I's because that Jupiter was so high it is reflecting more of the Sun. Callisto, Ganymede, Io, Europa . July 23, 2008 - 20 day old, Waning Gibbous.

University Lowbrow Astronomers Schedule

- **Friday, August 15, 2008.** (7:30PM). Monthly Club Meeting.
- **Saturday, August 30, 2008.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Friday, September 5 and Saturday, September 6, 2008.** (6:00 PM to Midnight). The 12th Annual "Astronomy at the Beach" at Kensington Metropark. Hosted by GLAAC (the Great Lakes Association of Astronomy Clubs).
- **Friday, September 19, 2008.** (7:30PM). Monthly Club Meeting.
- **Sunday, September 21, 2008.** (2:00-4:30PM). Open house at the Radio Telescope at Peach Mountain (hosted by the University of Michigan Astronomy Department).
- **Saturday, September 27, 2008.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Saturday, October 4, 2008.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Friday, October 17, 2008.** (7:30PM). Monthly Club Meeting.
- **Saturday, October 25, 2008.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Friday, November 21, 2008.** (7:30PM). Monthly Club Meeting.
- **Saturday, November 22, 2008.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Saturday, November 29, 2008.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Friday, December 19, 2008.** (7:30PM). Monthly Club Meeting.
- **Saturday, December 20, 2008.** *May be cancelled if it's cloudy or too cold.* (Starting at Sunset). Open House at Peach Mountain.
- **Saturday, December 27, 2008.** *May be cancelled if it's cloudy or too cold.* (Starting at Sunset). Open House at Peach Mountain.
- **Saturday, January 3, 2009.** *May be cancelled if it's cloudy or too cold.* (Starting at Sunset). Open House at Peach Mountain.
- **Friday, January 16, 2009.** (7:30PM). Monthly Club Meeting





M51
60x60s
TV Genesis Scope
SVX MX716 Camera

Above: From upper left, Saturn, Mars, Regulus, and the Moon—taken by Doug Scobel at Clay Kessler's Seven Sisters Observatory on 7/5/08.

Left: M51—by David Tucker.

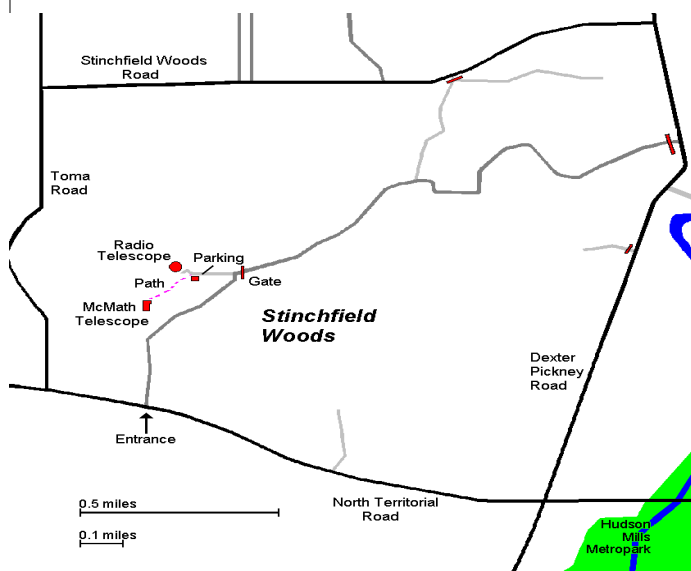
Below: Jupiter & Io— By Doug Scobel



Places & Times

Dennison Hall, also known as The University of Michigan's Physics & Astronomy building, is the site of the monthly meeting of the University Lowbrow Astronomers. Dennison Hall can be found on Church Street about one block north of South University Avenue in Ann Arbor, MI. The meetings are usually held in room 130, and on the 3rd Friday of each month at 7:30 pm. During the summer months and when weather permits, a club observing session at the Peach Mountain Observatory will follow the meeting.

Peach Mountain Observatory is the home of the University of Michigan's 25 meter radio telescope as well as the University's McMath 24" telescope which is maintained and operated by the Lowbrows. The observatory is located northwest of Dexter, MI; the entrance is on North Territorial Rd. 1.1 miles west of Dexter-Pinckney Rd. A small maize & blue sign on the north side of the road marks the gate. Follow the gravel road to the top of the hill and a parking area near the radio telescopes, then walk along the path between the two fenced in areas (about 300 feet) to reach the McMath telescope building.



Public Open House / Star Parties

Public Open Houses / Star Parties are generally held on the Saturdays before and after the New Moon at the Peach Mountain observatory, but are usually cancelled if the sky is cloudy at sunset or the temperature is below 10 degrees F. For the most up to date info on the Open House / Star Party status call: (734)332-9132. Many members bring their telescope to share with the public and visitors are welcome to do the same. Peach Mountain is home to millions of hungry mosquitoes, so apply bug repellent, and it can get rather cold at night, please dress accordingly.

Membership

Membership dues in the University Lowbrow Astronomers are \$20 per year for individuals or families, \$12 per year for students and seniors (age 55+) and \$5 if you live outside of the Lower Peninsula of Michigan.

This entitles you to the access to our monthly Newsletters on-line at our website and use of the 24" McMath telescope (after some training).

A hard copy of the Newsletter can be obtained with an additional \$12 annual fee to cover printing and postage. Dues can be paid at the monthly meetings or by check made out to University Lowbrow Astronomers and mailed to:

The University Lowbrow Astronomer c/o Yasuharu Inugi

**2918 W Clark Rd #203
Ypsilanti, MI 48197**

Membership in the Lowbrows can also get you a discount on these magazine subscriptions:

Sky & Telescope - \$32.95 / year

Astronomy - \$34.00 / year or \$60.00 for 2 years

For more information contact the club Treasurer. Members renewing their subscriptions are reminded to provide the renewal notice along with your check to the club Treasurer. Please make your check out to: "University Lowbrow Astronomers"

Newsletter Contributions

Members and (non-members) are encouraged to write about any astronomy related topic of interest.

Call or Email the Newsletter Editor: **Mark S Deprest (734)223-0262 or msdeprest@comcast.net** to discuss length and format. Announcements, articles and images are due by the 1st day of the month as publication is the 7th.

Telephone Numbers

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Lowbrow's Home Page

<http://www.umich.edu/~lowbrows/>

Email at:

Lowbrow-members@umich.edu



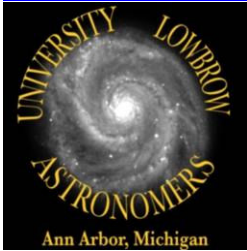


University Lowbrow Astronomers

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Reflections & Refractions



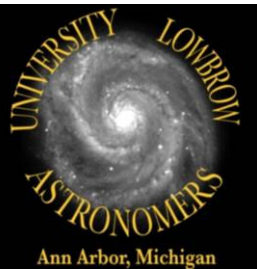
Website

www.umich.edu/~lowbrows/



Veil Nebula in Cygnus
(NGC 4656)

David Tucker does some very nice imaging and every once in awhile he shares! Above: One portion of the Veil Nebula. Wow!!! Nice shootin' Dave



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