This special HTML version of our newsletter contains most of the information published in the "real" Sidereal Times. All information is copyrighted by TAAS. Permission for other amateur astronomy associations is granted provided proper credit is given.

Table of Contents

Departments

- Events
  - Calendar of Events for May 1998
  - Calendar of Events for June 1998
- Lead Story...Astro-Blast
- Presidents Update
- The Board Meeting
- Observatory Committee
- Last Month's General Meeting Recap: The April Meeting
- Next General Meeting: May Meeting Preview
- Observer's Page
  - June Musings
  - Recent Eclipses
  - Messier Marathon Results
  - Name Gamma Crucis Contest!
  - Updates
  - The TAAS 200
- What's Up for June
- Ask the Experts
Please note: TAAS offers a Safety Escort Service to those attending monthly meetings on the UNM campus. Please contact the President or any board member during social hour after the meeting if you wish assistance, and a club member will happily accompany you to your car.

Events

May 1998

1   Fri  * UNM
2   Sat  * Astronomy Day
3   Sun  First quarter Moon (4:03 am)
4   Mon  Mercury at west elongation
       Neptune Stationary
5   Tue  * Hubert Humphry Elementary
       Eta Aquarid meteor shower
6   Wed
7 Thu  * Board Meeting
    * SFCC
8 Fri  * UNM
    Juno stationary
    Moon at apogee 3 am
9 Sat  * TAAS General meeting (Regener Hall, 7 pm)
10 Sun
11 Mon  Full Moon (8:30 am)
12 Tue  * Mitchell Elementary
    Mercury 0.8 deg from Saturn
13 Wed
14 Thu
15 Fri  * UNM
16 Sat  * GNTO
17 Sun  Uranus & Neptune 3 deg. from moon
18 Mon  Last quarter Moon (10:35 pm)
19 Tue  * Islamic Center Star party
20 Wed  Moon 0.34 deg SSE of Jupiter
21 Thu
22 Fri  * UNM
23 Sat  * Oak Flat
    Saturn 1.7 deg from Moon
    Riverside Telescope Makers Conference
24 Sun  * GNTO
    Mercury 3 deg. from Moon
    Moon at perigee (6 pm)
25 Mon  New Moon (1:33 pm)
    Memorial Day
26 Tue
27 Wed
28 Thu  * GNTO Meeting
    Pluto at opposition
29 Fri  * UNM
30 Sat  * Chaco
31 Sun

Sunrise / Sunset
For Latitude 35.08, Longitude 106.65 (Albuquerque, NM)
Sunrise = upper limb on horizon
Sunset = upper limb on horizon

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June 1998

1 Mon  First quarter Moon at 7:44pm
    Moon 1 deg. SSW of Regulus
2 Tue
3 Wed
4 Thu  * Board Meeting
5 Fri * SFCC
   Moon at apogee (6 pm)
6 Sat * UNM
   TAAS General meeting (Regener Hall, 7 pm)
7 Sun
8 Mon Giovanni Cassini born 1625
9 Tue Full Moon at 10:19 pm
10 Wed
11 Thu
12 Fri * UNM
13 Sat Moon 2.3 deg. N of Neptune
14 Sun Earliest sunrise of the year (5:52 am)
   Moon 3 deg. NNW of Uranus
15 Mon
16 Tue
17 Wed Last quarter Moon at 4:38 am
   Jupiter 0.8 deg SSE of Moon
18 Thu Jupiter at west quadrature
19 Fri * UNM
   Rio Rancho Library
   Moon 1.9 deg. SSE of Saturn
20 Sat * Oak Flat
   Moon at perigee (11 am)
21 Sun Summer Solstice at 8:03 am
   Mars farthest from Earth (2.518 au)
22 Mon
23 Tue New Moon at 9:51 pm
   Beginning of lunation 934
24 Wed Moon 0.34 deg SSE of Jupiter
25 Thu * ASTRO Blast
   Pluto at opposition
26 Fri * UNM
   Charles Messier born 1730
27 Sat * GNTO
   Starfire tour
   Latest sunset of the year (8:25 pm)
28 Sun Moon 0.8d SSW of Regulus
29 Mon
30 Tue Yunguska event, 1908

Sunrise / Sunset
For Latitude 35.08, Longitude 106.65 (Albuquerque, NM)
Sunrise = upper limb on horizon
Sunset = upper limb on horizon

   6/01/98  5:54 / 20:16 (MDT)
   6/15/98  5:52 / 20:22 (MDT)
   6/30/98  5:56 / 20:25 (MDT)

NOTES:
* = official TAAS Event
GNTO=General Nathan Twining Observatory. Call Robert Ortega @891-7847 to confirm.
SFCC=Santa Fe Community College. Call Brock Parker @ 298-2792 to confirm.
UNM=UNM Observatory observing nights. Call the TAAS Hot Line to confirm @ 296-0549
ATM=Amateur Telescope Making. Call Michael Pendley for information @ 296-0549.

All times MST before 4/5/98, MDT after 4/5/98

~Astro-Blast~
The TAAS Star Party of the Year
by Brock Parker
Astronomy Day Committee Chair

As a direct result of the success of Be-Bop with Hale-Bopp, Astronomy Magazine has asked us to co-host Astronomy's twenty-fifth anniversary star party. Called Astro-Blast, this event is beginning to take on a life of its own. All of the preparations are going extremely well. The Parks and Recreation Department of Rio Rancho has rented a 100'X 80' "big-top" to house some of the day-time events. While all of the details have yet to be finalized, it appears the tent will be well populated with local and national vendors and exhibits. The Albuquerque Rocketeers will launch rockets beginning at 2:00 PM and Astronomy Magazine has agreed to sponsor an appearance by John Dobson. Food will also be available on sight this year. All of the print media have press releases, and plan several articles concerning both Astro-Blast and the annual meeting of the Astronomical Society of the Pacific.

The radio and television stations have been particularly cooperative in promising to publicize Astro-Blast: KOB-AM has given us an hour with the Larry Ahrens morning talk show. We are also negotiating for TV interviews between QRE (TV-13), KOB (TV-4), and KOAT (TV-7) and Patti Kurtz / Bonnie Bilyeu Gordon of Astronomy Magazine and Lurie Keechler from the Astronomical Society of the Pacific.

Now, the gory details: The Rio Rancho Balloon Park is a rectangular field that measures approximately 2000' x 550' with the long axis east and west. The field is bounded on the west by Fruta road and on the south by 16th Ave. We will set the telescopes on the east end of the field, in loose arcs facing northwest. The field will be divided by TAAS vehicles and "Dr. Q's" van about 150-200' from the east end. We hope to have a crew that will mark these areas with Luminarias, donated by the Rio Rancho Parks and Recreation Department.

Parking will be handled by three or four troops of explorer scouts from The Great Southwest Council, BSA. Vests and baton flashlights will be provided by RR Parks and Recreation. Entrance to the balloon field will be via Northern Blvd. (now four lanes), turning north on Fruta. The plan is to have cars enter the field from the west side, on 16th Ave. Exit will be on the north side of the field, back to Fruta and out to Northern. Those of you that are familiar with the area are free to come in the "back way", early in the afternoon, but be aware that these roads will be cordoned off by the Department of Safety when the general public starts to arrive. Members who have telescopes etc. can place a sheet of paper on their dash with the letters TAAS printed on it.
This will suffice as a car pass to the telescope areas. Some of our members will also be out with the boy scouts to help with identification, and to assist non-members that bring 'glass.

All that remains is US! A supervising crew to help the Girl Scout Luminaria crew is needed (We have 1100 Luminarias to set), folks to man our information booth, "stand ins" to give telescope operators a break, folks to man "choke-points" and above all, we need TELESCOPES and folks to run them. In addition to the national coverage afforded us by Astronomy Magazine, we will mail invitations to all of the astronomy clubs in the Rocky Mountain region. Several of these organizations have already indicated a desire to join us in this truly national event.

I would like to thank Patti Kurtz of Astronomy magazine, Lurie Keechler of the Astronomical Society of the Pacific, and all of those TAAS members who have put a lot of time and effort into this project. Good Work and Clear Skies!!

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**Presidents Update**
*by Mike Pendley*

www.taas.org

The saga of our web site continues. The alias www.taas.org has been set up to point to the location www.phys.unm.edu/~taas. We did this to make it easier to remember the TAAS address and to make it easier to relocate the site if the need ever arose. Early in April, a massive power outage isolated the TAAS web site from the Internet for several days. More recently, a server failure on April 18Th. on the machine that hosts our web site ("Feathers"), is causing all requests to be rejected. Tom Hess at UNM is working on resolving the problem but has not had much luck. His current plan it to completely remove the server software and reinstall it.

The information on the web site is still available. You just need to access it through the "long" address. Until further notice, please access the TAAS web site via http://www.phys.unm.edu/~taas.

**Solar and Lunar Almanacs**

Many of you may remember the time we published Ray Sterner's Solar and Lunar Almanac information in the Sidereal Times. We decided to stop publishing the information because it consumed an entire page and few members used it. I will continue to send hard copy to anyone that asks but you can now get .GIF images of the almanacs off the web site. For now, follow the newsletter link. All the newsletters since March 1998 have a link to Almanac information. I will try to set up a page just for the Almanacs sometime in May.

**Telescope Curator Update**

Dee Friesen and Jason Vargas, our new telescope curators, will be meeting on April 28th to work out details on the new improved telescope loaner program. It seems we do have one problem
though. A member that borrowed a telescope loaned it to someone else without letting our last curator know. Now we don't know where it is but we are hot on the trail. You can help. If you have a TAAS telescope and you have not been contacted by Dee or Jason, please give the hotline a call.

Dee and Jason will publish a story next month with information on the new telescope loner program.

**Sky Watch**

Those of you that get the morning paper have seen Sky Watch, the column Kevin McKeown is responsible for. I gained a lot of respect for how difficult a job this is by filling in for Kevin when he had to leave town suddenly. Now I find that the company responsible for the weather page is also running Kevin's column in The Rocky Mountain News (the Denver newspaper). Way to go Kevin.

**May Meeting**

Several of this year's Broline award winners will be at the May 9th General Meeting. The students will set up their projects and a few will make short presentations to the society.

It is worth noting that this year, two students that were already TAAS members were among the winners—Beth Fernandez and Seth Richey.

**Astro-Blast**

I will finish up the Presidents Update this month by making a general call for help with the Astro Blast star party. I know it is a little unusual to have a star party like this on a week-night but we had to work within some Astronomy magazine boundaries. Be-Bop was a little disorganized because we did not know how many people would participate. We need all the telescopes on the field we can get and you can help us do a better job of organizing the event by letting us know if you plan to attend. Thanks in advance to all our Astro-Blast docents.

**Random Acts of Kindness:**

Thanks to Kevin McKeown for helping fuel the Astronomy 101 planning meeting by feeding the planers Saggio's pizza.

**New Members:**

On behalf of the Board of Directors and the general membership, I would like to welcome the following new members to TAAS:

Micaela Seidel
Karen Will
We hope your membership in TAAS is pleasant and rewarding. Please contact any board member if you have any suggestions or if you would like to become more involved in Society activities.

Total membership is now 407, up 5 from last month.

Board Meeting

by Robert Williams, Secretary

The April 9, 1998 Executive Board meeting was called to order by President Mike Pendley at 7:01 pm. In attendance were George Pellegrino, Robert Williams, Alan Green, Bruce Levin, Carl Frisch, Dave Blair, Dave Sukow, Gordon Pegue, Ruth Pendley, Robert Ortega, and Kevin McKeown. Also in attendance were Barry Gordon, Brock Parker, and Tom Pannuti (of the Physics and Astronomy Department, UNM).

March Minutes: The minutes of the March 12th Board meeting were read by outgoing Secretary and new Treasurer Robert Williams, and approved, without changes, by the Board.

Treasurer's Report: Robert Williams provided the board with a treasury report. Total funds on deposit were $9,399.42, a decrease of $385.67 from March 1998 (our insurance bill came in this month-ed.). Education funds on deposits were $2,681.62, a decrease of $119.58. Observatory funds on deposit were $5,771.81, with a decrease of $59.34. General funds on deposit were $945.99, a decrease of $206.75.

Observatory Committee: Robert Ortega reported that the GNTO Committee met on April 2, and said there is an April 13th work party scheduled to evaluate repair options for the Isengard 16-inch reflector. He also said that the Society might have 100 hours of donated volunteer time from a Boy Scout to satisfy his Eagle Project requirement. He will attend the scheduled GNTO work party on April 25th to discuss ideas.

Board Member Election: Next, the Board position that opened up when Elinor Gates resigned last March was discussed by Mike Pendley. Since Robert Williams agreed to become Treasurer at the March Board meeting, this left the Secretary position vacant. Mike suggested that a current Board member should replace Robert as Secretary. Kevin McKeown offered to become Secretary with the understanding that another individual pick up the Education Liaison position. Barry Gordon was offered a Board position, and he agreed to serve. The motion to add Barry to the Board was approved unanimously. It was also suggested that the Society should present
Elinor Gates with a going away gift. The motion made to set aside the funds was approved unanimously.

Tom Pannuti was introduced as the new representative from Lodestar to the Society. Tom will replace Elinor Gates.

**Planetarium Committee:** no report

**LodeStar:** No Report

**Calendar:** Carl Frisch had no new calendar items.

**Past Events** were discussed with Mike Pendley reporting that UNM Campus Observatory Night on April 3 was clear, and about 80 people attended. Kevin McKeown reported that the Messier Marathon of March 28-29 had low attendance because of very high winds, despite the clear sky; however, some good deep sky work was done with the 16 inch Isengard scope in the sheltered dome. Robert Williams said the Astronomy 101 class held on April 4th went well, although fewer people attended. Robert Ortega gave the GTNO Nights report.

**Future Events** were next discussed, with Brock Parker summarizing the plans for Astronomy Day—set for May 2nd. Brock said that all the pop up and panel displays are set, and that 17 tables, with skirts, will be needed, along with 20 chairs. Since Coronado Mall only supplies 12 tables and skirts, Rainbow Rentals will be contacted for the additional tables. Mike said that skirts from last year have been saved. Brock said that Robin Marshment of Channel 13 TV will oversee the ¡Explora! exhibit, and Kevin Jarigese will bring about 20 students from Rio Rancho High School for their exhibit. It was uncertain whether Alan Green will be able to provide his presentations because of a lack of a suitable venue. Bruce Levin said he will need additional telescopes for solar observing. Brock said that $105 should cover the Astronomy Day expenses—of which most were for telephone calls to participants. A budget not to exceed $200 was approved by the Board to cover the Astronomy Day expenses.

Brock also updated the Board on Astroblast—set for June 25th. Brock confirmed that John Dobson will attend Astro-Blast, and Dr. Q will provide mood music. Brock also said that Rio Rancho Park and Rec. has agreed to fund the purchase of 85 dozen luminarias. Brock also said he could use several Society volunteers.

Elinor Gates updated the Board on the Acoma Sky City Community School star party. Bruce Levin gave final plans for the Carlsbad Trip, and Barry Gordon said the Placitas Open Space star party is on for April 25th, where preservation of local dark skies will be the theme. Barry also said he is doing an unofficial star party on May 14th, from Placitas. Kevin next updated the Board on the School star parties schedule. Added were the Islamic Center on Tuesday, May 19th, Ray Gabaldon Elementary on Tuesday, October 20th, and Central Elementary on Tuesday, November 17th. The upcoming school star parties at Los Padillas Elementary, Matheson Park Elementary, and Hubert Humphrey are all set to go.
Future Meeting: George Pellegrino said the April 11th regular meeting is all set, and the topic will be Eclipse reports from several Society members. Barry Gordon will write the Trivia contest for the April meeting. The May 9th Regular meeting will feature Society members, and the results of recent club events, ATM projects, observatory trips, and star parties will be presented. George reports that the June 6th Regular meeting will feature lunar astronaut Dr. Harrison Schmitt. Barry Gordon said that the August 8th Regular meeting could feature the well known astrophotographer David Healy, who might be in town at that time. The topic for the July meeting is still open.

Old Business: Mike said that the NM Science and Engineering Fair at Johnson gym went well, and the he will present the winners at the May meeting. Next, Gordon Pegue reviewed the stipulations the Society must follow in order to retain its Gran Quivara permit, issued by the Park Service. The permit cost $100 (thanks Bill Tondreau-ed.) and is good for 5 years. Next, Alan Green said he will organize another Starfire Optical Range tour, and he will write a newsletter article.

New Business: Mike Pendley reported that the loaner scope program is under reorganization. Dee Friesen and Jason Vargas will serve as co-curators. Also, Dave Blair and Brock Parker suggested that the Society should obtain some telescope testing, and collimation tools. No action was taken here, but Dee and Jason will be consulted on the idea. Carl Frisch and Brock Parker are going to meet with the Oak Flat Rangers to discuss aspects of the summertime Oak Flat star party program that include access for docent's vehicles, and the twilight talks. Kevin McKeown reports the Criterion 6 inch is refurbished.

Newsletter assignments were made and the Board meeting concluded at 8:40 pm.

Observatory Committee
by Robert Ortega

No report this month.

April Meeting Recap
by George Pellegrino

In my almost fifty years on this planet I have never seen a total solar eclipse. I have witnessed several partial solar eclipses and, I'm sure, some number of lunar eclipses. I never truly felt I had missed much. "Well, it's like a partial, only darker . . . right?" Wrong!

After attending our April meeting it is abundantly clear that "the difference between a total solar eclipse and a partial is 100%!" This point was made very clear by the members of TAAS who attended this event and their guests, some of who were "first timers."
The attendees included members Jeff Bender, Barry Gordon, Bruce Levin, Lyman Sandy and his wife Alison Schuler and their son Ted Schuler-Sandy. Others in the group were Barry's wife, Jessica, and Alison's parents, Richard and Irma.

The story of this adventure began on February twenty second on the cruise ship Dawn Princess when it set sail from San Juan, Puerto Rico. From there the ship made stops at some of the most beautiful islands in the Caribbean on her way to the centerline of totality.

The tone of this presentation was set by Ted, who read his award-winning essay. Ted logged temperatures before and during the eclipse. His essay was a personal account of seeing a total eclipse for the first time. I personally enjoyed Ted's account and it was well received by all those in attendance.

Ted's dad, Lyman, showed video footage of everything from the ship and the islands on the tour to a side trip to watch migrating whales. The video was augmented by personal accounts given by all who attended.

The real highlight was the slide show provided by Barry Gordon. For Barry, this was the eleventh total solar eclipse. He has literally traveled the globe to witness and photograph the occultation of our star, the sun, and stand in the moon's shadow.

All the members of this expedition agreed without dissent that although these slides were truly spectacular, nothing could take the place of being there. If you think you might like to witness a total solar eclipse, talk to Barry. He's already booked a trip to Turkey for the next one.

Thanks to all for making this presentation so wonderful and informative. It sure beat the heck out of just looking at the pictures in the back of Sky and Telescope of Astronomy magazine.

Ellie Gates and TAAS President Mike Pendley show off Ellie's goodbye cake

Astrophotography
by Shane Hall & Steve Beckwith

Part III will run next month
March Trivia Question
by Barry Gordon

Each month, TAAS holds a trivia contest at the general meeting. This month's winner was Katherine J. Blankenburg.

A Solar Eclipse with a length of totality near the maximum possible (some seven minutes) can only occur:

- c) Near Sun-spot cycle maximum
- a) With the Moon near Apogee
- e) At a very low elevation
- z) In the Torrid Zone
- s) Late in the Saros

Here is the answer

May Meeting Preview
by George Pellegrino

The regular meeting on Saturday, May 9th at 7:00 PM will be held in Regener Hall on the campus of UNM (see back page for map). This meeting will be a presentation by TAAS members for TAAS members. The program will include slides and personal accounts of recent trips; such as, observations and CCD camera images made at Big Bend National Park, Texas; a public star party held at Carlsbad Caverns, New Mexico; Mike Pendley's amateur telescope making class update and show and tell.

Since this presentation is by and for members, you too can be a star. You are invited to present anything of interest you may have that you wish to share. Whether it's a product you found that you think other members might benefit from knowing about or something you built and want to show off, we would be happy to put you on the agenda. Contact Kevin McKeown at 254-9117 or George Pellegrino at 821-8516 and we'll help you to get on the schedule. First come, first served, of course. Those participating will each get five to ten minutes.

We'll also have the usual social hour that includes cookies and other goodies. If you don't have some tasty morsel of info to share, it's ok to bring more cookies!

Observer's Page
by Kevin McKeown
At nightfall in mid June, the constellation of Ursa Minor stands at culmination. Then you can evaluate many interesting aspects of this constellation, whose brightest stars form the asterism known as the Little Dipper. At this time, the Lesser Bear stands on his tail, or the Little Dipper stands on its handle, if you see a ladle. But perhaps you see the Little Dipper sailing high in the form of a Kite, when the square bowl of the Little Dipper becomes a box Kite, and its handle stars become a curved, dangling kite tail. If you grew up along the hazy, light polluted east coast like I did, you may never have known the Little Dipper, for its stars are mostly quite faint. This is too bad, since the stars of the Little Dipper have had a remarkable relationship with that imaginary point in the sky we know as the North Celestial Pole. You probably know that the star alpha Ursa Minoris, or Polaris- the star at the end of the handle of the Little Dipper- presently closely marks the position of the north celestial pole. Even though Polaris sits almost one degree off the true north pole, to the naked eye it quite effectively remains stationary all night. And it is just our shear luck to have a bright star to mark the north celestial pole.

However, stargazers in the northern hemisphere have not always been so fortunate. As you may know, precession causes the imaginary north celestial pole wander amongst the stars of the north polar region. More precisely, it is really the stars of the north polar region that appear to shift with respect to the north celestial pole, because for a any point in the northern hemisphere, the north celestial pole is considerably well fixed within one's geocentric reference sphere. Because of precession, northern stargazers of the past four millennia have mostly felt like our present day southern hemisphere observers- they had no bright pole star. Here's where the Little Dipper comes in.

It turns out that Polaris only became a good pole star at about the mid to late Renaissance- say 1600 AD. By then, Polaris had moved to within about 3 degrees of the true pole. Dialing back the centuries of the last two millennia, we find that the true north pole was always located- or lost- somewhere above, or within the arc of the handle of the Little Dipper. However, around 450 AD, the true pole very nearly sat at the center of curvature of the arc of the handle of the Little Dipper. You mirror grinders can really appreciate this! At this time, alpha, delta, epsilon, zeta, and beta Ursa Minoris all had declinations of about 81 degrees north! Amazing! Thus, the arc of the handle of the Little Dipper would have defined an arc on a circle about 18 degrees wide, centered on the north pole! This relationship probably would have been obvious to a conscientious stargazer of the late Roman empire.

Retreating farther back to 100 BC, it turns out that the true north pole was precisely located along a line from gamma to beta Ursa Minoris extended upwards above the bowl by about three times their distance. Thus, at the time of Christ, the front two stars of the bowl of the Little Dipper served as very good "pointers" to the north pole in the same way the "Pointers" of the Big Dipper serve us today! This curiosity seems to have earned the stars beta and gamma Ursa Minoris the title "the Guardians of the Pole". Such a title seems consistent with the fact that these stars never pointed to a pole star.

Yet farther back in time, to 1900 BC, the true pole lay on the projected arc formed by alpha, delta, epsilon, zeta, and beta Ursa Minoris. This point lies roughly halfway between beta Ursa
Minoris and Thuban, or alpha Draconis. Thuban earned its distinction amongst faint third magnitude stars as being the Pole Star previous to Polaris. For around 2800 BC, when the Egyptian civilization flourished, Thuban lay almost at the exact north celestial pole!

Recent Eclipses

Here in Albuquerque, the itsy bitsy partial solar eclipse of February 26th was seen in clear skies. However, telescopic aid was required. I could not detect anything wrong with the sun, at maximum eclipse, by observing the sun with just a welder's glass. Elinor Gates reports she had a quick telescopic look at the "dented" sun down at the Museum.

The itsy bitsy lunar eclipse- a penumbral event- on the evening of March 12th was seen locally also. I observed the eclipse from Columbia, Pennsylvania, under bitter cold, clear skies. I could definitely detect something wrong with the full moon, but the shading on the southern highlands was delicately slight. Ellie Gates didn't think she could detect anything.

It's interesting that several national sources had the wrong day for the precisely full moon, and hence the eclipse! Apparently they forgot that an early March 13th full moon in Greenwich, England will occur on the night of March 12th, across the pond! C'mon, Paul Harvey!

Messier Marathon Results

Because of high winds and blowing dust, the Messier Marathon was simply not possible to do, even though the skies were very clear and black. As a consequence, many of the usual Marathoners stayed indoors on the evening of March 28th. Those that went out to GNTO found that even setting up a scope was an adventure, given the wind, and the poor horizon transparency thwarted even computerized attempts to locate M 74 and M 77. I did hear that some amateurs using a wind shielded polar aligned Celestron SCT located M77. After a desperate try, I concluded that M 74 was a "no hoper", and by judging the low altitude of M 74 at the end of twilight, along with the bright zodiacal light, I am not sure that M 74 is obtainable on this date even under ideal conditions. Never-the-less, many of those attending got to see at least a handful of M objects. We opened up GNTO and observed about a dozen M objects, along with many fine NGC objects, using the 16 inch Izengard scope. Carl Frisch, Gordon Pegue, Alejandra, Robert Ortega, Robert Williams, and others attended. Robert Williams kindly donated the use of his large mobile home. Carl Frisch also brought along his new trailer. Carl, Robert Williams and Robert Ortega provided some delicious eats- thanks very much guys!

With regards to planning for future Messier Marathons, it seems better to go with a date earlier than March 28th, for the reason that it is easier to recover M 30 lower down, and, or in twilight, that M 74. This is because M 30 is so more conspicuous than M 74. Additionally, M 30 avoids zodiacal light a bit better than M 74. I suggest that a date around March 21 is probably ideal to try for all 110 Messiers.

Name Gamma Crucis Contest!
It's been bugging me ever since I saw the star for the first time, back in early 1996! That is, apparently gamma Crucis, the bright red giant star that marks the top of the southern cross, Crux, doesn't have a given name. It's just called gamma Crucis. This oversight seemed especially unfortunate when I ventured to Big Bend last January, and observed most of the famous luminaries of the southern sky. Achernar, Canopus, Acrux, Mimosa, Hadar, Rigil Kentaurus: these are the names of the great stars of the deep southern sky. Remarkable names for which different feelings arise when we think of them.

Anyway, gamma Crucis is a rich orange colored star of magnitude +1.7. Somewhere, I have seen the name "Gacrux" given to this star. Gacrux is gotten from gamma + Crux, and falls in line with "Acrux" (alpha + Crux), and "Becrux" (beta + Crux). While Acrux is perhaps acceptable, Becrux seems to have been replaced with "Mimosa". But Gacrux is really an unimaginative handle, don't you think? Let's take this approach: first, are there any names for gamma that I'm unaware of? If so, share them with us! If not, let's at least come up with some ideas. Perhaps its unusual color, or its position at the top of the Cross can help yield a name. Let me know your proposals- I'm at (505) 254-9117, or E-mail: kmckeown@compuserve.com, as usual.

Updates

The famous variable star R Corona Borealis was very bright on the evening of April 18th. At magnitude 5.5, R Corona was an easy addition to the Ring. R CrB is a rare type of variable that fades out on an irregular basis.

There is a bright, conspicuous supernove in the galaxy NGC 3877. This is a nearly edge on spiral located very close to 4th magnitude chi ursa Majoris. The supernova appears as an imposter star of about magnitude 12.5, located in the nebula. See the June 1998 Sky and Telescope, page 110, for details.

The TAAS 200

It's May, and the TAAS 200 galaxy quest continues. Let's begin at the Coma Berenices open cluster, located 10 degrees or so northwest of beta Leonis. Also known as Melotte 111, this "constellation cluster" is actually one of our TAAS 200 objects! It, along with the Hyades, is one of the nearest open clusters to Earth, and in a clean black sky, the cluster is impressive. It measures some 5 degrees in diameter. Just on the east edge of Coma Berenices lie two impressive, bright galaxies. The first is NGC 4559 about 2 degrees east of gamma Coma. This TAAS 200 spiral galaxy is a conspicuous, ninth magnitude, grainy oval patch. From this galaxy, move 2 degrees south and recover NGC 4565. This is the famous "Edge-On" galaxy. It is truly amazing. Even a 3 inch refractor shows the long spindle like aspect of this galaxy, and the central core. Of magnitude 9.5, it measures a whopping 16 arc minutes from tip to tip! However, perhaps a 6 inch scope is needed to detect the famous bisecting dust lane. Large scopes reveal a truly grand sight (I can't say enough about this galaxy). Next, move 5 degrees northeast of Coma Berenices and recover two amazing TAAS 200 galaxies. First, NGC 4631 is the famous "Cigar", or "Humpback Whale" galaxy. At magnitude 9.3, it is a very bright, long, thick edge-on Sc spiral that shows much fine detail. It looks its namesakes. Less than a degree to the southeast of NGC 4631, locate NGC 4656, the famous "Hockey Stick" galaxy (one of Lee Mesibov's faves). This is
a perturbed spiral, or an irregular galaxy that appears as a long, thin nebular streak having a "dog leg" bend. It is brighter at the narrower end. It seems that this galaxy was distorted by its bigger, brighter companion.

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**What's Up for June**  
*by Kevin McKeown*

June '98 is a relatively quiet. On the morning of the 17th, the last quarter moon slides about 1.5 degrees underneath Jupiter. With the solstice on June 21st, DSO’s have their shortest night of the year, but since the moon is new on the 23rd, the short night will be a dark one. Look for Venus just below the freshly emerged Pleiades on the morning of the 24th. By latest June, Mercury reappears in the evening sky, due for a July elongation, and Jupiter is once again available for observation.

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**Ask the Experts**  
*by Bruce Levin*

Have a question? Send it to the TAAS P.O. box, call the hotline, or send the editor some e-mail.

**Question:** What power is my eyepiece

**Answer:** A given eyepiece does not, in and of itself, have a set magnification or power. The size of extended objects that we see through telescopes is a function of the complete optical system—both the eyepiece and the telescope. So the real question is "What is the magnification of your optical system?" This is the same whether a person is using a telescope or binoculars.

Both the focal length of the telescope and the focal length of a given eyepiece determines the power of that optical system. To determine the system magnification, divide the focal length of the telescope by the focal length of the eyepiece. In performing this calculation, make sure that the focal lengths are in the same units for both the eyepiece and telescope. The focal lengths are usually expressed in millimeters and sometimes in inches. Make sure that the units are consistent. Given this information, one can see that a given eyepiece will yield different powers with telescopes of different focal lengths. A telescope with a long focal length will provide a
larger image than a shorter focal length telescope using the same eyepiece. A 25 mm focal length eyepiece used with a 2000 mm focal length telescope will yield a system power of 80 times (or 80x). That same eyepiece used with a 1200 mm telescope will bring a distant object 48 times closer. Also a shorter focal length eyepiece will show a larger image of an extended object than a longer focal length eyepiece when used with the same telescope.

Telescope eyepieces are therefore normally expressed in millimeters focal length and not power (e.g., 32mm, 25mm, 18mm) since they can be used with many different telescopes. The telescope focuses an object, located at what is considered an infinite distance, at the focal distance of its optics or prime focus or focal plane. The eyepiece is focused or adjusted so that the eyepiece field stop is placed at the location where the image comes to focus through the eye lens. It is helpful to make a chart on a 3” x 5” card that shows the power of your eyepieces when used with your telescope(s) just in case someone asks you the question!

Clear Skies!—Bruce

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**The Kids' Corner**

_by Lindsay_

This Month's Dumb Joke

Q: What burns the fuel on the Star Trek's Enterprise?
A: Spock Plugs.

_A note from Lindsay's mom:_

The Wood family was sorry to miss Ellie's big send-off at the last meeting. She has been a joy to know and work with. Oddly enough, at the time, we were in the Bay Area, where I grew up, and becoming recently curious about Lick Observatory due to Ellie's new employment there, we decided to make the journey up the mountain. I've also discovered a very interesting opportunity to have your astronomy questions directly answered by 2 grad students at Lick. If you e-mail them at Lick observatory at (fischer@colick.org, neal@ucolick.org) they will answer your questions directly! The program is called "Ask an Astronomer". Or, of course, you can also get the straight scoop by submitting a question to our Ask the Experts column.

**HERE LIES THE BODY OF JAMES LICK**
Over spring break my family and I went to Lick Observatory to go on a tour. Smashed in the back with 3 other people we made the trip up the windy road which I guess was better than by horse and carriage, which would have taken over 5 hours.

James Lick was a wealthy man who lived in San Francisco when he agreed to sponsor an observatory near San Jose, California on top of Mount Hamilton. Lick gave a large portion of his fortune to build one of the largest refractors in the entire world, of its time. The 36’ refractor lenses were polished by Alvan Clark and Sons and the telescope has excellent ability to resolve fine detail. The observatory was finished in 1888 and ready to be used, but James Lick had died almost 12 years earlier on October 1, 1876. James Lick never got to see the telescope on top of Mount Hamilton, but they buried him under the telescope mount. Lick Observatory was the first mountaintop observatory to be used year round.

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**Internet Info**

*by Michael Pendley*

Killer Asteroid! Check out [http://www.astro.washington.edu/deutsch/misc/asteroid](http://www.astro.washington.edu/deutsch/misc/asteroid) for an image of asteroid 1997 XF11, and a movie showing its motion over a 30-minute period. 1997 XF11 is the asteroid due to pass close to the earth in 2028. The images were obtained at Apache Point Observatory by Univ. of Washington astronomers. There is also some additional info there and a link to the IAU press-release.

The Face on Mars: (Taken from a JPL news release)—Well, if you don't already know, Mars Global Surveyor, through the Mars Orbiter Camera (MOC), was successful in capturing an image of the feature known as the Face on Mars. The image was taken shortly after midnight Sunday morning (April 4/5) and played back later Sunday morning. The MOC team assembled the data into a raw image at 9 AM Monday morning. The bottom left hand corner of the image also contains a portion of the feature known as the D&M Pyramid. The targeting for this image was excellent—the Face was right in the center of the image. As we had promised, the raw image was posted on the Project web site ([http://mars.jpl.nasa.gov](http://mars.jpl.nasa.gov)) in mid-morning and an enhanced version produced by JPL's Multimission Image Processing Laboratory was posted shortly after noon. An additional enhanced and geometrically corrected version is being posted late this afternoon. Dr. Mike Malin, the MOC Principal Investigator, is expected to have an enhanced version on his web page later today ([http://www.msss.com](http://www.msss.com)).
For the first time in a long time, the skies were clear all day and all evening. About 80 people came out and enjoyed the good seeing and mild temperatures. Several astronomy students took advantage of the evening to make observations. TAAS docents were kept busy describing not only the celestial sights, but their telescopes as well.

We had another excellent evening for public observing, with clear, steady skies and mild weather. The turnout was even better than the previous week, with about 100 people showing up to view an assortment of star clusters, nebulae, multiple stars, and galaxies (although we were unable to meet a couple of requests for Saturn : Clouded out

The observatory coordinator was bamboozled by Albuquerque weather. In the afternoon, the skies were quite cloudy with scattered rain and snow showers. Both TAAS and UNM cancelled observing, but by nightfall the skies were clear! Apologies to anyone who may have attended. (editor's note: After attending my son's talent show I also found the skies had cleared so I decided to wander down to the observatory. I found Brock set up in the parking lot, surrounded by a crown of about 15 people.)

About 90 people were treated to views of assorted nighttime objects (when the wind died down). Carl treated many to a view of the recently discovered supernova 1998S in NGC 3877 (see Sky and Telescope, June 1998, page 110

Docents at UNM this month were Alejandra Valderrama; Carl Frisch; Robert Williams; Jay Rowse; Mike and Jon, and Steve Pendley; Brock Parker; Dennis Mitchell; Gordon Pegue; Sam & Coral Norris (and Sam's friend Max who was visiting from out of town); Robbin Pimbley; Andy Smith; and John Hockemeier. If YOU are interested in being a UNM observatory docent, please contact me. You don't need to bring a telescope (we have extra at the observatory), just a willingness to share your enthusiasm about the night skies.

School Star Party Update

April 14: Sky City Community School (Acoma) (by Ellie Gates) I would like to thank TAAS for providing a star party at Acoma Pueblo. The kids really liked the telescopes and the Starlab planetarium. This event was planned in conjunction with LodeStar, who set up their display, a couple telescopes, and gave a presentation about the project to the Parent Teacher Organization at the school. For those of you that did not go, the skies were quite dark but the wind was a bit of a problem. Robert Williams gave several planetarium shows. Total crowd was approximately 75.

The following members of TAAS participated in the event and LodeStar would like to thank them for driving the 70 miles to Acoma and sharing their time and enthusiasm for astronomy:
Carl Frisch; Kevin McKeown; Robert Ortega; Mike, Jon, Steve, and Ruth Pendley; Brock Parker; and Robert Williams (particularly for running the planetarium—the kids just loved it!).

LodeStar had a number of people at the event as well: David Beining, Tim and Christine Thomas, Ben Ferrafino, Kimberly Davis, Joe Collins, Andy Rivers, John McGraw, Neb Duric, Vladimir Rekovic, Rich Rand, Aileen and Steve O’Catherine, Scott Weils, Tom Hess, Sharon Janecka, Steve Pompea and Brian Vallo.

The star party gave LodeStar a better idea of what is done at TAAS school events as well as an opportunity to show the teachers and parents what LodeStar is about and how it can improve the science education for the children in NM. The event was a success mostly due to the efforts of TAAS—Thank You!

PS: Sorry for any confusion on the directions to Sky City Community School — everyone made it, but some were a little late—Sorry!

Also, I would like to thank Mrs. Vallo at Acoma for providing dinner to the volunteers. It definitely made the evening more pleasant.

April 21: Los Padillas Elementary: Wind was a bit of a problem but skies were dark and the turnout was good. Robert Williams provided 6 planetarium shows to 105 people. Total attendance was approximately 125.

We received the following letter from Marie Hughes Elementary School (our March 10th School star party):

**Dear TAAS,**

I wanted to thank all the terrific people from your organization who donated their time and expertise to making yet another astronomy night at our school a fantastic event.

As always, everyone from TAAS was so friendly and helpful. Our students, parents and teachers enjoyed the slide show, observing the night sky through telescopes and the planetarium show.

We just can't thank you enough for your willingness to volunteer your time to share your knowledge of and enthusiasm for astronomy. Astronomy night is one of the biggest events of our school year—you really know how to get families out to the school!!

Thank you, again!

Lisa Lundin, Marie Hughes PTA president

P.S. You have the BEST web site—loved it!
Observatory Dedication at Chaco Canyon
by Mike Pendley

You may have heard that there has been quite a bit of activity at Chaco Canyon lately. The Park has recently finished construction on an observatory located next to the visitor's center.

The dome and telescope, donated by TAAS member John Sefick, will be dedicated at the May 30th TAAS Chaco Canyon star party. The photo at the right shows the observatory just after the dome was set into place.

Photo by Carl Frisch.

Placitas Star Party
by Barry Gordon

TAAS' second visit to Placitas took place on Saturday, April 25, starting at 8 PM in the Placitas Community Center. Our host for this event was Las Placitas Association (LPA), a non-profit volunteer group dedicated to the preservation of open space in the Placitas area—and to public education on the value and varied uses of this space.

Despite the discouraging weather, attendance was about 25 people, most of them from the Placitas area. We were welcomed by Clarde Walker of LPA, after which Barry Gordon did his "Intro to the Universe" slide presentation. This was followed by refreshments provided by LPA.

Telescopes were provided by attending TAAS members Dave Blair, Brock Parker, Mike Pendley, and Ruth Pendley. However ...

In keeping with established tradition, the sky was totally overcast.

Astronomy 101
by Robert Williams
On Saturday, April 4th TAAS held its second Astronomy 101 night this year. The first to arrive at the campus observatory were surprised to find the power was turned off! We later learned that a flood in a UNM electrical tunnel caused most of the buildings in the Lomas/Yale area to be without power. The PandA building lights were on so we made a last minute change of venue.

Barry Gordon started the event with a great slide show to about 15 people. Next, Carl Frisch showed his 16" telescope, an equatorial table and CCD imaging equipment to those who moved back to the UNM Observatory after the slide show. I showed a few of the people attending some of the constellations available from the observatory. Unfortunately there is a little light pollution to deal with so it was difficult to see much. I would like to thank all the TAAS members who came out to help answer questions and direct people—Mike Pendley, Bruce Levin, Carl Frisch, Ellie Gates, Barry Gordon, Kevin McKeown, and David Sukow. And thank you to all who attended. We will keep you informed on future Astronomy 101 nights.

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**August Astronomy 101**

*by Robert Williams*

Carl Frisch, Kevin McKeown, Dave Blair, Pete Eschman and I met at Saggio's Pizza Parlor on Saturday, April 11, to discuss the agenda and date for the next Astronomy 101 night. The date we set is Saturday, August 1, 1998. The location is still being worked out, but there is a chance it will be held at Oak Flat. We will know for sure by the July newsletter.

The event will begin at 7:00pm. Carl Frisch will start by giving a demonstration on telescope collimating and will be followed at dusk by Mike Pendley with a slide show. Kevin McKeown will then take the group out under the dark skies for a constellation tour. For those of you who have been to Oak Flat you know how nice the skies are. For those of you who have not, you should make it a point to go out to one of the Oak Flat events or come out for Astronomy 101.

We will have more information for you in the next newsletter, but if you would like to attend or have any questions please call me and I will do my best to answer them. If you are planning on going give me a call and I will put you on the list to keep you informed of the events.

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**The 1998 Broline Award Winners**

*by Michael Pendley*

Each year, TAAS awards 6 prizes at the North West Regional Science Fair in memory of Col. Leonard Broline. The TAAS judges had a difficult time this year choosing from all of the great projects. Here are the 1998 winners:

**Senior Division:**
1st Place Elizabeth Fernandez: Spectroscopy: Unlocking the Secrets of the Universe
HM Lindsay Scott-Florez: Star Light, Star Bright?
HM Danette Clouser: Out of This World

Junior Division:

1st Place Sengdhuan St. John: High Velocity and Population 2 Stars in the Solar Neighborhood
HM Rachel Graham: Telescopes
HM Seth Richey How Many Objects in the Orion Constellation Can be Seen?

Several of the winners will display their projects at Astronomy Day on May 2nd and most will attend the May 9th general meeting. First place winners receive $75 and a one-year membership in TAAS. Honorable Mention winners receive $25 and a one-year membership in TAAS.

1997 TAAS Volunteers Part 1
by Michael Pendley and Robert Ortega

1997 was a busy year for TAAS. None of the events we sponsored could have happened if not for the efforts of volunteers. We scowered the newsletters to put together the following list of 1997 (and a few 1998) volunteers. I ended the title of this column Part 1 because I know we missed a few. For example, our records of who attended Be-Bop with Hale-Bopp are very poor. If your name belongs on this list—or if you know someone who should be on the list—PLEASE let one of us know. We will publish Part 2 next month. To save you time counting, there are 114 names.

We would like to recognize you at the May meeting. If you are on the list, please try to come.

Connie Acosta, Mikia Angel, Carol Baker, Wesley Baker, Stephen Beckwith, Jeff Bender, Dave Blair, Santos Borrego, Bill Bradish, Cris Bradish, Cindy Carlson, Paul Catacosinas, Suzanne Chippindale, Joe Collins, Alexander Comportie, G.B. Cornucopia, Jim Cox, Ann Cox, Jerry Cross, Dave DeLaRue, Peter Eschman, Helix Fairwether, Kevin Ferguson, Beth Fernandez, Dave Finley, Roger Flegel, Dave Flores, Carl Frisch, Dr. Robert Fugate, Ellie Gates, Cristy Glaser, Barry Gordon, Allan Green, Dr. Steve Gregory, Shane Hall, Brad Hamlin, Jay Harden, Dave Haugh, Tamara Hennig, Dr. Patricia Henning, Linda Hixon, John Hockemeier, Marge Hockemeier, Dr. David Hollowell, Lance Hurt, Kevin Jarigese, Kathy Jones, Savvas Khoushrappas, Jesse King, Jim Kunkle, Rick LaBorde, Christina Lacey, Jaclyn Fuller Lane, Richard Lee, Bruce Levin, Michael Lovato, Amos Martinez, Dr. John McGraw, Kevin McKeown, Dennis Mitchell, John Milcoch, Carl Mora, Granvill Morgan, Mark Nagrodszky, Gregory Nelson, Craig Nelson, Dr. Horton Newsom, Katie Noble, Mike Nord, Sam Norris, Aileen O'Catherine, Robert Ortega, Tom Pinnuti, Brock Parker, Gordon Pegue, Mike Pendley, Ruth Pendley, Jon Pendley, Debbie Pendley, Stephen Pendley, Robbin Pimbly, Michael Pulsis, Dr. Q., Dr. Richard Rand, Sharon Rogers, Andrew Rivers, J. Rowse, Karina Running Horse, John Sefick, Robert Semrad, Andy Smith, Steve Snider, Ruthann Soley, Dave Sukow, Van
MARS / FRASC Event

The Mountain Astronomical Research Section (MARS), a sub-region of the Astronomical League which includes the Front Range Astronomical Super-Cluster (FRASC), will hold a regional Meeting on Saturday May 16 in Denver, Co. The main speaker will be Dr. Robert Zubrin, author of "Mars Direct " and "The Case for Mars"—two leading proposals for Mars colonization.

Tentative Program:

1pm   Dr. Robert Zubrin
2pm   Coffee break
2:15pm  MARS business meeting, bylaws, election, club reports
3pm   Added talks, MARS photo of the year and logo contests
4pm   Adjourn for dinner break
7pm   Reconvene at Chamberlin Obs. For starparty (wx permitting)

Directions: Take exit 205 off I-25 in south Denver, to So. University Boulevard. Proceed south past lights on Asbury, Evans, Warren to ILIFF, where you'll turn right. Proceed 2 blocks on ILIFF and you can't miss OLIN HALL with its large copper dome, on the SW of Olin Hall. Park wherever legal to do so and enter the plaza from the north side. Lecture hall is straight-ahead, on the main floor.

For more info, contact Terry Chatterton, MARS Regional Rep by mail at PO BOX 622, Kiowa, CO 80177, by phone at (303) 621-2442 or by -mail at (techatte@du.edu). The MARS website is located at http://www.du.edu/~rstencel/mars.html.

Newton's Aquarium

*By Shawn Leclaire - Eureka Software Inc*

I have recently released a new n-body gravity simulator for Mac OS called Newton's Aquarium: A Solar System Construction Set. The program is a fun and educational tool for exploring Newton's Law of Universal Gravitation. The software may be of interest to someone in your organization. A demonstration copy of Newton's Aquarium can be freely downloaded from my web site at: http://www.eureka.ca/ and independent reviews are available at: http://www.macreview.com/Software/education/NewtonsAquarium/NewtonsAquarium.html and http://macnow.netmug.org/apr98/mcider.html
I am now thinking of porting Newton's Aquarium to the Windows platform. Once a Windows version starts to take shape I will be looking for beta testers. If you would like to see a Windows version developed or if you are interested in beta testing, please drop me a line. I look forward to hearing from you—(613) 546-4818, info@eureka.ca.

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**Letters to the Editor**

I very much enjoyed Bruce Levin's discussion of the question "Is it possible to balance an egg on the vernal equinox"? Although I have to admit that I came away with the distinct impression that Mr. Levin really believes, or wants to believe that supernatural forces are at work here. Actually, the egg-balancing trick is so complicated, this alone might suggest that supernatural or unusual forces or processes are at work. In short, just because prosaic explanations elude you, this doesn't mean that unusual processes then have to be at work!

Anyway, I suppose the best way to "eggspose" Bruce's egg balancing escapades is to comment on those methods that work—methods well known to farmers in the upper midwest with a lot of time on their hands before planting season—and not at harvest time (September 22nd). Bruce mentioned the dented egg technique. Here you place a small dent (usually on the sly) on the end you want to balance. Another method involves breaking the yolk with a sharp shake of the egg. Since the egg yolk is considerably denser than the albumen, the yolk settles to the end you want to balance which alters the center of gravity of the egg, and affords balance. It's unclear Bruce described this method in his article.

But another explanation Bruce offered really needs some clarity. This is the trick where the roughness of the eggshell (or even the surface: the salt technique) is used to produce a tiny three point support system for the egg.

However, this is not a terribly reliable way to balance an egg—especially whenever you want to do so. Bruce spoke of eggs that would balance at one time, and then refuse to be rebalanced. This is understandable, especially when you realize that a yolk can move around inside the egg quite readily, by natural design. Then he observed that eggs couldn't be balanced at arbitrary times. Does this mean unusual forces or phenomena are at work? Of course not.

Bruce makes the curious statement—"My personal experience suggests that a change or increase in gravitational force at a given instant is enough to cause the center of mass of the yoke (sic) and/or albumen to pull down low enough in the vertically oriented eggshell to cause the egg to balance". Bruce makes two serious errors here. First, a change or increase in the gravitational force implies that the gravitational constant "G", has changed! If G could somehow vary greatly over short distances, or change rapidly with time, the consequences on our world would be severe! However, as is presently understood, G doesn't change, although one hypothesis has utilized a very long-term change in G to account for some observations of the expanding universe. Secondly, Bruce apparently isn't aware that the center of mass (or gravity) of any object is independent of gravity! Gravity alone can't alter the center of mass of an object, unless
the internal structure of the object is damaged permanently and redesigned—as in the shaken egg trick I described above.

Furthermore, I have no idea what the "awesome" force is that Bruce describes as being able to pull an egg up to the vertical position at the precise instant of the equinox. If this force exists, then is it likewise easier for a drinking driver to stand on one foot during a field sobriety test? Perhaps Bruce should obtain police department records on the number of DUI arrests at the time of the vernal equinox!

Lastly, in response to Bruce's questions about whether an egg will balance at any time other than the vernal equinox, I suggest that he should formulate models—on paper—that implicate the sun, moon, and tidal forces in vernal equinox "egg balancing".

—Kevin McKeown

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**Trivia Answer**

**Answer to the March Trivia Question**

z) - in the Torrid Zone

[Back to trivia](#)

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**Classified Ads**

**For Sale:** 2-meter Observa-Dome. This dome was the prototype of the whole 2-meter line and is different from the stock domes in that it's completely welded together—not bolted. The shutter tracks have been replaced and all seams have been caulked. $1500. Call Steve Snider at 867-4199 or by e-mail at slsnider@flash.net.

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