

Johnson Space Center Astronomical Society

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## JSCAS Needs YOU!

Ken Lester

In November 1997 I was fairly new to JSCAS. Elections for new officers were held and Hernan Contreras was elected to replace Becky Ramotowski. Hernan was the Starscan Editor at the time, so a call was made for a new editor. I felt that the club was giving me a wonderful experience and I wanted to do my part, so I stepped up and volunteered. I remained the editor until January 2002 when I became Vicepresident of the club. In January 2004, I once again volunteered to be editor.

In March of this year, I took a position at Fort McKavett with Texas Parks and Wildlife. While I really enjoy the peace and quite of the country, I find that my job as editor is severely impacted by my living so far away.

I am no longer able to attend the meetings and other events which I can report back on in articles or maybe take some pictures which I can include in the newsletter. I am also not around to gently prod people to write articles. I sometimes travel at the end of the month or have other activities going on which prevent me from publishing the newsletter in a timely manner. This month's Starscan is the latest I've ever published because I made trips to Houston on back to back weekends when I normally would have been working on the newsletter.

It is with reluctance that I have asked Bob to find a volunteer to replace me.

For those who might want to consider stepping up to the plate I want you to know that as editor, the newsletter is what you want to make it. I know I expanded the newsletter to include lots of news from NASA, JPL or other non-copyrighted sources. As editor, its up to you to keep that same format or go back to a simpler reporting of the news of the club and its membership.

I would be glad to continue to convert the newsletter to .pdf format and upload the file to the Internet each month. There may be months that I might be unavailable the first week of the month but those times can be planned for in advance.

I would like to encourage each and every one of you to consider volunteering for this unique opportunity. I'm sure that you will find it as rewarding as I have all these years.

## Honk if you still want Pluto to be a planet!

## Good Bye to the Danciger 32

Al Kelly

Jim Roe of the Alliance for Astronomy completed the purchase of the Danciger 32" telescope and picked up the scope the week following Labor Day. Before the scope left we decided to have a "One Last Hurrah" star party at Danciger, using the scope to show the JSCAS members some fine visuals one more time.

Fourteen of us met at Danciger on Friday night, August 18: Chris Randall, Chris Wells, John Erickson, Charlie McLeod, Charles Hudson, Hernan Contreras, Dennis Webb, Ken Proctor, Bob Taylor, Triple Nickel, Fred Henderson, Glenn Schaeffer, Jim Cate, and Al Kelly. Becky and Shane Ramotowski joined us from Albuquerque via cell phone. Although the weather mavens had forecast gloom and doom for that night, they were wrong (what a shock!). The daytime cumulus clouds evaporated and we had clear sailing all night! Seeing was fair to good, as was transparency.

The 32 performed for us all night, giving us great views of the following list of objects (as noted by Chris Wells):

Jupiter M4 M22 NGC6522 and NGC6528 in same FOV M15 M17 M20 (Trifid nebula) M8 and hourglass Arp 74 - Dennis's request. "a piece

Arp 74 - Dennis's request. "a piece of flea detritus". Averted imagination helped for this object. Some of us nearly broke out into verse with "fuzzy wuzzy".

NGC6543 (Cats eye nebula) - "someone left the light on"

M11

NGC6761 PNEB

M2 - "billions of stars" in a Carl Sagan sort of way

M31 - Andromeda Galaxy

M57 - the central star was more on that off when viewed with the 9mm Nagler.

Stephans Quintet NGC7331 and companions.



Silhouette - Credit: Dennis Webb



Through the Looking Glass — Credit: Dennis Webb



Last Star Party — Credit: Chris Randall

Dennis captured two "art" views which deliver a bit of the essence of the evening. Chris Randall recorded the images of the crowd with the scope.

There was commentary to the effect that it was a bit sad to see the scope go, but my feeling is delight in the 17 years we had with the 32 at Danciger and pleasure in seeing it go to a new home where it will be used more frequently for youth and general public education.

#### Danciger 32 Images From Andy "Yoda" Saulietis







## Danciger Memories

Dennis Webb

Danciger was where I first got hooked on the night sky and Danciger (and you) will live forever in my heart. Several years ago I wrote up that first night from memory and my modest log:

An astronomical observer is a person who looks at the sky with purpose. The observing and the purpose can take many forms. At the start, one looks at the sky with wonder at its appearance. The looking expands with binoculars, telescopes, and cameras that show more things with more detail. The looking also expands with increasing personal skill and experience. The purpose expands with study, increasing knowledge and personal goals. The goals arise, grow, and change through observing experience, selfchallenge, and sharing with other observers. This is no different from any human endeavor. By this definition, I observed the first time I saw the sky as a child. I had seen the planet Saturn in a neighbor's telescope, and had started study of the constellations from my backyard. However, these experiences were only incidental to some other purpose.

I count October 13, 1990 as my first whole night as an astronomical observer. Coworker AI Kelly had invited me to accompany him for a Saturday night of observing. He had an observatory a couple hours drive out of Houston where the darker skies would show more stars. I would also observe through his big telescope and spend time with astronomers. Al had been an astronomical observer since his youth in the Midwest and he seemed to know everything. My purpose this night was astronomical observing. This night opened a door to a world with many new friends and experiences.

Al and his partners had recently finished the Danciger observatory. An observatory is a place for observing, configured according to the desires and means of its builder. The Danciger observatory featured a very large (32-inch diameter) Newtonian telescope in a building with a roll-off roof. While they could dismantle, transport and reassemble the telescope at a remote location, the partners had achieved the observer's dream of a permanent structure in the darkest sky in our part of Texas. The partners had found an agreeable rancher who would share a pasture. Through their hard work and expense over a several years, the partners had built and maintained the large telescope and its building. In addition, they had a separate small Fiberglas dome meant for a smaller telescope called a Schmidt camera and a cement pad for visiting telescopes. It was a startling sight at the end of a dirt road.

Al cranked the roof off the observatory building to reveal the telescope resting under its dust cover. After inspecting the building for snakes and rodents, he unveiled the instrument. The optical assembly was about eight feet long and three feet in diameter with

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#### More Danciger 32 Images From Andy "Yoda" Saulietis









(Continued from page 4) tubular trusses fore and aft. This rigid structure holds the optics in the precise and secure arrangement necessary for good images. The optical assembly rests on a cradle that tracks the rotation of the sky and allows the observer to point it anywhere in the dome of the sky. To direct the telescope, Al would grab one of the truss members and push the massive but delicately balanced structure around as he peeked in the finder telescope to select a tiny piece of sky. "How about the dumbell?" Al asked. Hoping he was not referring to me, I stepped up the sturdy ladder and peeked into the eyepiece. A pale transparent green dinner mint floated in a field of pinpoint white stars of various brightnesses. This unearthly sight challenged my untrained eyes. "It is a giant space lozenge!" I called out. Al chuckled back "Well, actually it is a bright planetary nebula, known as Messier 27 or the Dumbell Nebula."

I retired to a folding lawn chair with my day planner and flashlight. An astronomy book had suggested keeping an organized log of all observations. At work, I had learned the importance of recording and dating significant events, commitments and information for later reference so this was a familiar discipline. I found a blank page, noted the date and location and penciled in the entry: "Dumbell (M27)", holding the flashlight in my other hand. I had now started the log, which was to be an essential piece of observing equipment.

To prepare for this expedition, I had bought an inexpensive pair of 10x50 binoculars from a sporting goods store. I pointed them to a starry area in the southwest. I was observing from my own personal lawnchair observatory! I noted and logged a cross-shaped group of stars. If I had brought a more detailed star chart, I would have determined that this interesting sight included Messier 8, the Lagoon Nebula. With that additional information, I could have looked for the soft glow of the nebula, brightening the center, and possibly its companion, Messier 20, the Trifid nebula. I was still pleased that so early in this special evening I had observed both a planetary nebula and, on my own, a star cluster.

I reviewed the night sky. The faint shape of the Milky Way rose to my right shrouding familiar Aquila and Cygnus, near bright Vega, the beacon of faint Lyra. To the east, Capella shone in Auriga. I was pleased to make sentences with these names, the arcane language of astronomers now and in the distant past. I struggled to identify the familiar constellations among the many stars not visible from my suburban back yard. The south was a new frontier with the clear horizon showing constellations hidden in my back yard by trees. On another night, I will make sense of that part of the sky.

"I have a really great view with a lot of galaxies in it," AI called. I hopped up and climbed the ladder to his eyepiece. Unlike the obvious Dumbell view, this sight was a subtler. I could make out two or three faint glows among the stars. "I can clearly make out 5 or 6 little galaxies and a few out of the field to the east. Go ahead

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and push the scope over to see the others", Al suggested. I tentatively pushed the telescope a little and decided to stick with the main view. "Use your averted vision," he suggested, referring to the increased sensitivity of the eye away from the "worn out" center of our gaze. Compared to the easy dazzle of the Dumbell, this observation was challenging. I had thought a big telescope would show everything as a bright sight. It turns out that no matter how big your telescope or how excellent your skills; there are always objects just beyond the threshold of visibility. Observing skill and experience does make a difference. I was looking for galaxies that Al was seeing. I squinted, averted my gaze, stared, and found no additional galaxies. It was still remarkable and I can add a galaxy cluster to my log! I climbed down with a renewed appreciation for Al's skill.

"What is this called?" I asked, mindful of the log entry I would want to make. Al frowned in the dark and said, "It is some galaxy cluster next to Algol. First time I saw it, I called Barbara Wilson and she knew all about it, rattling off the types and names of the galaxies. It is just amazing what she keeps in her head. I think it is an Abell cluster." I logged some of this information and the rest stuck in my mind. I was startled to realize that there were people to whom Al looked for guidance and information. The potential depth and breadth of astronomical knowledge "telescoped" out before me. A few years later, when I was interested in galaxy clusters, I researched and observed this cluster, known as Abell Galaxy Cluster 426, in the constellation Perseus, just to the east of the bright star Algol, known to the ancients as the "demon" star for its maddening varying brightness. I love these sentences, which mix recent astronomical research with the beautiful and ancient names.

I watched AI work the telescope and the sky. For many objects, he would start moving the telescope after deciding what to observe, make a brief peek in the finder scope and leap up the ladder to exclaim, "You gotta come see this!" He seemed to know the whole sky. For obscure objects, he would glance at a star chart, glance at the sky, and in seconds, we were looking at another object. I looked forward to mastering that skill, with little understanding of how slowly that graceful observing develops for normal people.

By the end of the observing session, I had looked at 15 objects through Al's telescope and five through binoculars. Here is that first log:

Danciger Observatory Oct 13, 1990 : Starting at 7:30PM - Viewing at Al Kelly's 32-inch

M11 - filled view of big telescope (globular) Saturn - saw Cassini division on the ring (Al was disappointed but it looked great to me) Lagoon Nebula filled the view, saw texture M22 cluster Omega Nebula - checkmark or swan Ring Nebula - no center star visible - very green Dumbell Nebula - more like a square Saturn Nebula - more like a smudge but very green Andromeda Galaxy - saw dust lane and its neighbor galaxies Andromeda Gold-Blue double star Mars (gooey blob - Al said it was swimming in grease) Galaxy cluster near Algol (saw five galaxies as fuzzy spots) Orion Nebula: Great! Saw red and threads Crab Nebula M1 (fuzzy patch) Double open cluster below/right of Cassiopaiea - lots of red stars 1:00 AM Mars again - saw Africa-shaped surface feature [Two gold-blue double stars - Cygnus nose and one to east]

In Binoculars:

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*(Continued from page 6)* M6 (?) star form. Below right of Sagittarius Trifid and Lagoon Nebulae mass above right - Sag Andromeda galaxy Orion Nebula

It was interesting to compare the views of the same objects through the giant telescope and the binoculars. Perhaps I do need a telescope.

Four months later, I bought my first of many telescopes...

## Watching Space Debris From The International Space Station

#### **By Paul Maley**

There have been 38 objects released into space from the International Space Station (ISS) since it was placed in orbit. Most were unintentionally released but a couple were planned for jettison. One was the Floating Potential Probe and the other called SUITSAT. At the August 11 JSCAS meeting I described the opportunity to see the last visible pass of SUITSAT from the Houston area. SUITSAT is a real Russian Orlan spacesuit that was released intentionally into Space by the ISS crew on February 3, 2006 on EVA #15. It has a transmitter onboard that sent signals so that amateur radio operators could receive them. In particular SUITSAT was supposed to allow students to hear a

message from other students around the world. Though the original thought was that the radio transmitter would operate for about 6 days and the suit would stay in orbit about a month, the transmitter appeared to have a signal for at least 10 days and the suit has remained in orbit for about 6 months. The suit itself (called "Ivan Ivanovich") is Russian in origin and was decommissioned.

Amateur satellite observers have watched SUITSAT sporadically and on this last Houston pass Sunday night August 13, I was able to videotape it at about magnitude 5.5 moving southwest to northeast in a moonless clear sky at 9:18pm. It reached a maximum elevation of 76 degrees above the northwest horizon at a distance of about 170 miles and was rather easily visible in binoculars from my site in Clear Lake.

SUITSAT was the largest object to be jettisoned from ISS. The next one is the Early Ammonia Servicer and is way more massive. EAS is the size of a refrigerator and is roughly  $1.4 \times 1.6 \times 0.8$  cubic meters in size. It weighs 635kg full (about 1300 lb) and 500kg empty and will be tossed overboard during the ISS mission 13A. One stage period after the Shuttle has left the station which is now set for sometime next summer.



## Visual Observing September 2006

Chris Randall

**★SSO**: (Solar System Objects) Summary for the 15 Sep 06

Object	Const	Mag	% III	Rise Time	Transit	Set Time	
Sun	Leo	-26.7	100	07:05	13:15	19:24	
Moon	Gem		33	00:39	08:06	15:33	
Mercury	Vir	-0.6	93	08:05	14:03	20:04	
Venus	Leo	-3.9	98	06:18	12:38	19:03	
Mars	Vir	1.7	100	08:03	14:02	20:04	
Jupiter	Lib	-1.8	99	11:11	16:36	22:05	
Saturn	Leo	0.9	100	04:33	11:12	17:51	
Uranus	Aqr	5.7	100	18:52	00:40	06:24	
Neptune	Сар	7.8	100	17:36	23:04	04:29	
Pluto	Ser	13.9	99	13:52	19:20	00:45	

Highlighted times denote daylight events.

#### Lunar phases for September 06

Full 💛	Third 🜗	New 🛡	First 🗣
7 <sup>th</sup> 13:42	14th 06:15	22nd 06:45	30th 06:04

#### **★BSO**: (Bright Sky Objects)

**31 Cygni (Omicron1)** – Triple star in Cygnus, magnitudes 3.8, 6.7, and 4.8, separation 107" and 337". Coordinates are 20h 03.6m +46° 44'.

NGC 7078 (M15) – Globular Cluster in Pegasus, magnitude 6.4, size 12'. If you have a very large scope in exceptionally good dark spot try and find Pease 1, a planetary nebula, in foreground (1" in size).

NGC 7089 (M2) - Globular Cluster in Aquarius, magnitude 6.5, size 13'.

NGC 6885/2 - Open Cluster in Vulpecula, Magnitude 8.1, Size 18', ~30 Stars.

#### ★DSO: (Dark Sky Objects)

NGC 7009 (C-55), Saturn Nebula – Planetary Nebula in Aquarius, Magnitude 8.3(P), Size 70", Central Star Magnitude 12.7.

NGC 7006 (C 42) – Globular Cluster in Delphinus, magnitude 10.6, size 10.6. Very distant globular.

NGC 6888, Crescent Nebula – Bright Nebula in Cygnus, Magnitude ?, Size 20'..

NGC 7023 (C-4) – Bright Nebula in Cepheus, Size 14'.

★CDMP: (Chris' Don't Miss Pick)

NGC 7293 Helix (C-63) – Planetary Nebula in Aqr, Magnitude 6.5, Size12' x 16'.

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The Helix Nebula, discovered by Karl Ludwig Harding before 1824, is one of the closest of all planetary nebulae. Its distance is approximately 300 to 450 light years; it is the only planetary nebula for which a parallax could be obtained by ground-based observations. The popular name Helix Nebula refers to the nebula's appearance on photographs.

It is also one of the largest known planetaries in apparent size; covering an area of 16 arc minutes. That's more than half the size of the full moon. Its halo extends even further to 28 arc minutes or almost the moon's apparent diameter. Although the nebula is quite bright, its light is spread over this large area so that it is not an easy object for visual observing. It can be can easily be seen even in small binoculars despite it's low surface brightness if observed under a dark and transparent sky. Binoculars or an extra wide field scopes work best for this object. The central star is 13.3 magnitude. Further info go <a href="http://www.seds.org/">http://www.ngcic.org/</a> for more information.





The 16" scope and mount are being assembled in my shop. The 16" and 6" scopes should be on line in Sept, weather permitting.





## Star Party News

Lisa Lester

Our final star party at Moody Gardens for 2006 was unfortunately, a wash. Last Saturday morning it rained hard at Moody Gardens. Then it stopped and the rest of the morning was cloudy but pleasant. Right around lunchtime, the rains started up again. It would sprinkle for a little while and then stop only to start up again a few minutes later. I talked to Johanna then Ken and I checked several weather websites. We waited an hour, checked the websites again and called down to Galveston. Although it had just stopped sprinkling, we went ahead and made the decision to cancel the Star Party.

We still have several more events to look forward to this fall. Saturday, September 23<sup>rd</sup> we will be at the Haak Winery. If you haven't made it out there you should try to come this time! We have had more than 100 people show up even if it's been cloudy all day! Ken and I were at the winery recently and the staff was talking to people about our star party as one of their upcoming events!

In October, we will hold our semiannual trip to Fort McKavett. The event starts Thursday, October 19 and ends on Sunday, October 22. I will be scheduling a school visit for Friday around noon. When we return, Ken will take anyone interested on a tour of Officer Quarters 6, 8, 9 and 10, which are decorated in period furnishings but are normally locked. Friday evening we plan to have the grills hot so bring something to put on the grill and a side dish to share. We'll eat around sunset so we won't interfere with observing time. On Saturday, we will have the noon BBQ and then the Friends of Fort McKavett Annual Meeting. This is a good time to pay your dues and don't forget the organization is nonprofit which helps out a little at income tax filing time! On Saturday the fort will also be holding a Town Reunion for the people who lived in Fort McKavett when the fort was a town. It's very interesting to talk to the people who lived there and look at all the old photographs! There will be a silent auction too! If you have anything to donate for it just let me know! Saturday night we will have our public Star Party and hopefully the skies will cooperate!

Don't forget Astronomy Day at the George Observatory on Saturday, October 28<sup>th</sup>. This is a wonderful family event that starts about 3:30 and goes until 10:30 or 11:00p.m. There are a variety of talks scheduled in the afternoon and early evening and activities for the kids. In the evening, a ton of scopes will be set up on the upper deck. So, if you are thinking about buying a scope there will be plenty of different types to test out & lots of owners to talk to about the pros & cons of the various scopes.

We have also added a daytime solar viewing event at Space Center Houston on December 14<sup>th</sup> from 9:00am — 3:00pm. There should be between 300 to 400 children at this event.

2007 Star Party Dates:

Moody Gardens: February 17<sup>th</sup>, August 11 (unconfirmed), September 15<sup>th</sup> Fort McKavett: March 15 - 18, October 11-14<sup>th</sup> Haak Winery: April 14<sup>th</sup>, September 8<sup>th</sup>, November 10<sup>th</sup>

Event	Date	Sun Set	Moon		Jupiter		Saturn		Mars		Venus		
			Illum.	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2006													
Haak Winery	Sep 23	19:13	1%	08:05	19:48	10:44	21:37	04:05	17:20	07:53	19:45	06:28	18:52
Fort McKavett	Oct 19 - 22	19:02	6%	05:28	17:47	09:48	20:28	02:52	16:08	07:51	19:09	07:35	19:03
Astronomy Day	Oct 28	18:35	36%	13:31	23:46	08:59	19:42	02:02	15:12	07:22	18:30	07:30	18:38
Haak Winery	Nov 11	17:25	61%	23:17	12:33	07:18	17:54	00:11	13:20	06:12	17:04	06:58	17:38
SCH	Dec 14	Solar Viewing											

## Brian Marsden Retires From the Minor Planet Center After 28 Years

Brian Marsden, MPC 57381-57382

This is the last batch of Minor Planet Circulars to be published during my directorship of the Minor Planet Center: I shall retire at the end of the IAU General Assembly in Prague later this month. When I took over the reins in 1978 from Paul Herget, the first director of the Minor Planet Center, There were just 2060 numbered minor planets (of which about 20 were lost), and the observation file amounted to some 200,000 entries. Now there are 134,339 numbered minor planets (all of which are very precisely predictable) and a total of almost 40,000,000 observations. In 1978, (1566) Icarus was famous for having an orbit that took it to within 0.19 AU of the sun; now there are four numbered minor planets that go in closer, and two multiple-opposition objects have just under half the perihelion distance of Icarus. Then, (2060) Chiron, the sole centaur, was by far the most distant of the numbered objects, ranging from near Saturn at perihelion to near Uranus at aphelion; now the number of known centaurs is dwarfed by the wealth of transneptunian objects that have been found, one of them, (90377) Sedna, notably having perihelion and aphelion distances of 75 and 900 AU. More than 100 multiple-opposition objects have orbits showing the same 2:3 mean-motion resonance with Neptune that is characteristic of Pluto. Two of these ``plutinos" have diameters that are more or less half that of Pluto, raising anew the question of why Pluto was catalogued as the ``ninth planet"---a problem now brought to a head with the recognition last year of 2003 EL61, 2003 UB313 and 2005 FY9, more esoteric transneptunian objects that are indeed very comparable to Pluto in size.

The Minor Planet Center could not have succeeded during the past 28 years without the two people who have served as associate directors, and I wish to pay tribute to them here. Conrad Bardwell moved with the Minor Planet Center to Cambridge from its previous home in Cincinnati. As the first person to computerize the search for identifications between minor planets having short observed arcs at their discovery oppositions and objects generally observed on two nights at a different opposition, he had already in Cincinnati been able significantly to increase the production of multiple-opposition minor planets beyond the efforts of astronomers who had attempted such work by hand; his pursuit of this activity in both Cincinnati and Cambridge very specifically resulted in the recovery of numerous lost numbered minor planets, many of which had previously only been definitely recorded at their discovery oppositions.

Thanks also to his meticulous involvement in the preparation of the MPC's, this allowed an increase in numberings from (2061) to (4295)---with only two of the earlier ones still lost---and the number of completed pages of the MPC's from 4391 to 15,600 by the time he retired at the end of 1989. Bardwell has also maintained a subsequent interest in minor planets, a noteworthy contribution by him being the identification 1950 DA = 2000 YK66, which led to the numbering of this near-earth object as (29075) and the recognition that there is a 1-in-300 probability that it will strike the earth in 2880. Bardwell still visits the MPC for a couple of hours most Saturday afternoons and will be celebrating his eightieth birthday on Aug. 11.

On succeeding to the position of associate director, Gareth Williams continued and considerably extended the automation of MPC activities, something that was becoming very necessary as the CCD succeeded the photographic plate, and a new era of sky surveys began with the specific aim of dramatically increasing the rate of discoveries of near-earth objects. The deep searches necessary for making substantial numbers of discoveries in the outer solar system also began. The combination made it desirable to introduce the series of Minor Planet Electronic Circulars} in 1993. To ensure the rapid follow-up of candidate near-earth objects, ``The NEO Confirmation Page'' was developed in 1996, another service that quickly proved highly successful.

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Although the MPC's themselves continued to be published monthly, the concomitant increase in observations of main-belt minor planets resulting from the use of the CCD made it necessary to transfer the publication of the observations themselves to a supplement series in 1997 that has only electronic distribution. The computer software necessary for arranging these new features was conceived and developed by Williams, who also in 1997 arranged for the automatic preparation and distribution, at 2 a.m.\ local time, of the ``Daily Orbit Update" MPEC} containing all the orbits computed during the previous 24 hours. By 2000 it became necessary to transfer the monthly MPC publication of orbits to another electronic supplement. By 2001 the observations supplement was appearing more frequently than monthly, and since mid-2003 Williams has single-handedly been ensuring that it appears weekly. Although the number of basic MPC's published is still only some 57,000, there have been more than 175,000 pages of observation supplements, more than 100,000 pages of orbit supplements and well over 12,000 MPEC.s. Williams' impressive efforts at automation also include the checking of observations directly from e-mail messages as they reach the MPC's computers and in most cases the actual computation of orbits.

He has also attended to the difficult task of the automatic coherent extraction of information about the observers and instrumentation used, so that the actual publication of this information (which is very necessary in order to give credit where it is due) can be made after very limited further manual editing. Williams also found the last two of the lost numbered minor planets, (878) Mildred and (719) Albert, in 1991 and 2000, respective.

Brian G. Marsden

#### Deimos

MGS MOC Release No. MOC2-1551, 11 August 2006 Credit: NASA/JPL/Malin Space Science Systems

One might say that today is Deimos' birthday. To celebrate, we present here the first and only Mars Global Surveyor (MGS) Mars Orbiter Camera (MOC) image of this tiny moon. Deimos was discovered 129 years ago on 11 August 1877 (U.S. time, it was 12 August UTC), by U.S. astronomer Asaph Hall. It was the first of two major discoveries that he made that month; less than a week later, he found the other, inner Martian satellite, Phobos.



About a month before the 129th anniversary of its discovery, on 10 July 2006, Mars Global Surveyor was pointed away from the Martian surface, out toward distant Deimos. Imaging the smaller of the two Martian moons was the result of a combined effort between MGS engineers at Lockheed Martin Astronautics and MOC operations engineers at Malin Space Science Systems. When the picture was acquired, Deimos was about 22,985 kilometers (14,285 miles) from MGS. This results in an image of approximately 95 meters (about 312 feet)

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per pixel. Higher resolution images were obtained by the Viking orbiters in the 1970s—some of those pictures were so good that boulders could be resolved on the moon's surface. While the MOC image is at a lower resolution than the Viking data, acquiring an image of Deimos helps refine the understanding of the tiny moon's orbit and geography. The two craters, Voltaire and Swift, are presently the only craters with names on all of Deimos. Author Jonathan Swift, in his 1726 Gulliver's Travels, had coincidentally surmised that Mars has two moons. Sunlight illuminates the scene from the upper right.

MGS previously imaged the inner, larger moon, Phobos, on several occasions in 1998 and 2003. In 1998, MGS was in an elliptical orbit that permitted the spacecraft to actually fly past the moon; this was not done for Deimos because MGS hasn't been out past the orbit of Deimos since it arrived at the red planet in 1997.



#### Dark Streaks On Mars MGS MOC Release

No. MOC2-1556 16 August 2006

This Mars Global Surveyor (MGS) Mars Orbiter Camera (MOC) image shows some dark slope streaks in the Phlegra Dorsa region of Mars. Of particular interest is the split streak near the center of the image, which diverted around a rounded hill as the material was sliding down the slope. Slope streaks occur in regions of Mars that are mantled by fine, bright dust. They do not occur on slopes that have no dust coating. They are therefore suspected to form by dry avalanching of the dust, despite their somewhat fluid appearance.

## FBAC History CD

DJ McCracken Fort Bend Astronomy Club

The Fort Bend Astronomy Club (FBAC) was formed in 1984. Twenty-two years of history have now passed, most of it recorded in the club newsletter, The FBAC Observer. I joined FBAC in October 1987, the first month that the Observer was published. I realized that I had accumulated most of the issues and decided to scan them as a historical record. I found that copies of the Observer had been spiral bound through 1996 and located them through a club member. Reading through the issues brought back many memories and illustrated how the club has changed in some ways, and in other ways remained the same.

The Index to the Observer in Folder 03 lists the named articles and others that highlighted particular events in FBAC history. I consolidated a few of these on the CD in Folder 06, Miscellaneous Files", but rediscovering most of them will be left to you. We have had some wonderful writers in the club; Angie Benavidez, Mike Windland, Judy and Mike Dye, Barbara and Buster Wilson, Richard Nugent, Amelia and Steve Goldberg, Tracy Knauss, Keith Rivich, Dennis Borgman, Bill Dillon, Leonard Patillo, Pierre Dessemontet, Cynthia Gustava, Joe Dellinger, and most recently Wes Whiddon. Their articles and in some cases series of articles have provided the observing reports and other interesting information that made me look forward to the newsletter each month. I encourage you to search the pdf index for these names and reread some of their articles. Some of the series of articles contributed to the newsletter were "Going Deep" by Paul Downing and Keith Rivich, "Astronomy through the Ages" also by Keith Rivich, "Deep South" by Pierre Dessemontet, "Tales from the FBAC Belt" by Bill Dillon, and "Lunar Observing with Dennis" by Dennis Borgman.

In addition to the formal articles submitted to the newsletter, there were other regular monthly columns that provided news from the past month and alerted members to upcoming events. The history of Astronomy on Wheels, the purchase of the 18" telescope for the East Dome, the subsequent 18" telescope automation project, the activities of the various research groups, Telescopes-For-Telethon, and the struggle to get dark sky legislation passed in Fort Bend County are just a few of the stories that are found in "The Presidents Corner", "Secretary's Report", "Mother's Helpful Hints, "What's Happening...", "East Dome Doin's" and other monthly columns.

The CD is organized into a number of folders:

01 – FBAC Incorporation and Bylaws – The original Articles of Incorporation and Articles of Organization (Bylaws) are included. The Bylaws have been revised only once, to require membership approval for expenditures of more than \$250.

02 – FBAC Officers – Microsoft Word and pdf files are included, listing, to the best of my knowledge, all the elected officers and also those serving as newsletter editor, ALCOR representative, and novice presentation coordinator/presenter.

03 – The FBAC Observer 1987-2006 – Adobe Acrobat pdf files are included for all but two of the newsletters published between October 1987 and June 2006. In addition, an Index is included as an Excel file that can be searched and sorted and a pdf file that can be searched.

04 – FBAC Novice Notebook – This is a notebook of 20 articles included in the newsletter, which are of interest especially to those beginning in astronomy. Mike Windland wrote most of these, with Dennis Borgman, Don Edwards, Tammi Kennedy, and Judy Dye also contributing articles.

05 – The FBAC Observer Masthead – Michael Rapp suggested that it might be interesting to see the various mastheads used by the seven editors over the years. It was surprising to me that 61

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different mastheads (albeit some with rather slight changes) were used in the 213 newsletters. A pdf file of the 61 front pages is included in the folder. Also included are jpg files, which can be viewed as a filmstrip with the right arrow to more easily see the differences from start to finish.

06 – Miscellaneous Files

First some files of FBAC history:

01 – "In the Beginning" – A history of the founding of FBAC by Angie Benavidez.

02 – "The George Observatory Origins" by Angie Benavidez.

03 – "History of the East Dome" by Leonard Patillo.

Secondly, pdf files for three series of observable objects that can be printed if desired.

04 – "A Tour of the Constellations": 2000 Novice Observing Program.

05 – "Lunar Observing with Dennis": Eleven installments of a lunar observing program by Dennis Borgman.

06 – "Going Deep": Nine installments of deep sky observing by Paul Downing and Keith Rivich.

07 – "Deep South": Nine installments of deep sky observing in the more southern constellations by Pierre Dessemontet.

07 – Musical Selections – As a tribute to Leonard Patillo, who was the newsletter editor for more than eight years, two albums by Enya in mp3 and wma format have been included for your listening pleasure while viewing the newsletters. Some additional selections by Isao Tomita including the theme for Jack Horkheimer's show are included with Tomita's electronic version of Holst's "The Planets". For those who prefer the classical version, you're on your own.

The CD will be available at the FBAC meetings, and copies will also be available at the George. If you aren't able to attend the meetings and don't get out to the park, just send your name and address to me at djmcc@wt.net and I'll mail you a copy.

There are probably former members around town who might enjoy the CD.

#### Space Physicist James Van Allen Dies

Published: 08/09/2006 09:53 AM Updated: 08/09/2006 10:37 PM By: Tom Walsh - Special to The Gazette

IOWA CITY, IA - University of Iowa space physicist James A. Van Allen died Wednesday morning at University Hospitals. He was 91.

Van Allen was internationally renowned for 60 years of pioneering involvement in space physics research. He designed the scientific instrument carried into space by America's first satellite, Explorer 1.

Launched on Jan. 31, 1958, Explorer 1 was the U.S. response to Sputnik. The world's first satellite, Sputnik was launched by the Soviet Union on Oct. 4, 1957.

Instruments aboard Explorer 1 confirmed Van Allen's earlier upper atmosphere research and resulted in discovery of a phenomenon later named the Van Allen Radiation Belts -- huge regions of space in which electrons and protons are trapped within the earth's geomagnetic field. That discovery put him on the cover of the May 4, 1959, issue of TIME

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*(Continued from page 16)* magazine.

Van Allen made a second appearance on TIME's cover in January 1961, when, at age 46, he was among 15 U.S. scientists collectively named by the magazine as "Men of the Year." Space, he told TIME then, "is the hole we are in -- a vast area of human ignorance. The history of the world shows that attacking ignorance is fruitful."

Explorer 1 was the first of 30 space missions involving scientific payloads designed by Van Allen and his UI colleagues to explore the physical properties of the solar system. Van Allen's contributions to the Pioneer 10 and Pioneer 11 deep space probes provided 30 years of data transmitted back to Earth during those spacecrafts' long journeys to Saturn, Jupiter and beyond. Now more than 7 billion miles from earth,

Pioneer 10 is among the most remote man-made objects in the universe.

"I want to find out how the solar system originated, how it works, what its future is," Van Allen told an interviewer in 1974. "I'm not claiming it will do anybody any good. It's a matter of intellectual endeavor."

Van Allen was a vocal opponent of manned space exploration, which he considered "of dubious efficacy" and a drain on limited federal funding for space exploration. He believed strongly that space science is best conducted by unmanned, automated spacecraft that can be remotely commanded from earth.

In 1987, Van Allen received the National Medal of Science from President Ronald Reagan at a White House ceremony. In 1989, he received the prestigious Crafoord Prize from the Royal Swedish Academy of Sciences, an award presented by King Carl XVI Gustaf of Sweden. He was also presented the 2004 National Space Grant Distinguished Service

Award by the National Space Grant Foundation, a lifetime achievement award recognizing his efforts to support and promote aerospace technology, science and education.



Van Allen spent most of his professional career as a professor of physics at the University of Iowa. He chaired the UI's Department of Physics and Astronomy between 1951 and his retirement in 1985 at age 70. In June of 1982 the building that now houses the UI physics department was dedicated as "Van Allen Hall."

Despite his prominence within the international space physics community and the demands of his research, Van Allen treasured his interactions with UI students at all levels. During his 34 years as a faculty member, he taught a wide range of courses, including general physics, general astronomy, electricity and magnetism, introduction to

modern physics, radio astronomy, intermediate mechanics and a specialized course in solar-terrestrial physics.

"Perhaps my favorite," he said in 1990, "was General Astronomy, an introductory but rigorous course on the solar system, with laboratory, which I taught for 17 years."

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Although he officially retired in 1985, Van Allen continued his research up until the time of his death. He maintained an open-door policy while working in his office on the top floor of Van Allen Hall and was always accessible to a loyal following of faculty, students and staff.

Born in Mount Pleasant, Iowa, on Sept. 7, 1914, Van Allen was the second of four sons of Alfred Morris and Alma Olney Van Allen. As a child he was fascinated by mechanical and electrical devices and was an avid reader of Popular Mechanics and Popular Science magazines. He once ``horrified" his mother by constructing a coil that produced foot-long sparks and caused his hair to stand on end.

He was valedictorian of Mount Pleasant High School's class of 1931. He went on to study physics, chemistry and math at Iowa Wesleyan College in Mount Pleasant, graduating suma cum laude in 1935. He enrolled in graduate school at the University of Iowa in 1935 and completed his master's degree in 1936. A fellowship allowed him to continue studying

nuclear physics at the Carnegie Institution in Washington, D.C., where he also became immersed in research in geomagnetism, cosmic rays, auroral physics and the physics of Earth's upper atmosphere.

With the outbreak of World War II, Van Allen was appointed to a staff position with the National Defense Research Council in Washington, D.C. His work in a laboratory in Silver Spring, Maryland, resulted a new generation of radio-proximity fuses used for anti-aircraft and shore bombardment.

He was commissioned as a U.S. Navy lieutenant in 1942 and worked on a succession of Pacific Fleet destroyers, instructing gunnery officers and conducting tests on his artillery fuzes. He was an assistant staff gunnery officer on the battleship USS Washington when the ship successfully defended itself against a Japanese kamakazi attack during the Battle of the Philippines Sea. He was promoted to lieutenant commander in 1946.

"My service as a naval officer was, far and away, the most broadening experience of my lifetime," he wrote in a 1990 autobiographical essay.

Between 1946 and 1950 Van Allen worked at Johns Hopkins University in Maryland, where he pioneered the use of German V-2 and other early rocket systems in high-altitude research. An international effort to study the physics of the solar system began in 1950 at a dinner party at his Maryland home. At that party, Van Allen and his guests conceptualized the International Geophysical Year, a global research effort that involved 60,000 scientists from 66 nations in 1957 and 1958.

Between 1949 and 1957, Van Allen led four scientific expeditions throughout the world that used ship-launched, sub-orbital rockets to study cosmic rays and the earth's magnetic field.

Van Allen returned to Iowa from Johns Hopkins in 1951 as professor and head of the UI's Department of Physics, a position he held until his retirement in 1985. Between 1985 and 1990 he was the Roy. J. Carver Professor of Physics, Emeritus, at the UI and, after 1990 was a Regent Distinguished Professor.

Van Allen is survived by his wife of 60 years , Abigail Fithian Halsey, and five children: Cynthia Van Allen Schaffner, Margot Van Alen Cairns, Sarah Van Allen Trimble, Thomas and Peter.

Since 1961, the Van Allens have lived in a home at 5 Woodland Mounds Road, Iowa City.

	Houston Area Astronomy Clubs	<ul> <li>Brazosport Astronomy Club Meets the Third Tuesday of the month, 7:45 p.m. At the Planetarium 400 College Drive Clute, Texas For more information, contact Judi James at the Planetarium 979-265-3376</li> <li>Fort Bend Astronomy Club <u>http://www.fbac.org/</u> Meets the third Friday of the month, 7:00 p.m. First Colony Conference Center 3232 Austin Pkwy Sugar Land, Texas</li> <li>Houston Astronomical Society <u>http://spacibm.rice.edu/~has/</u> Meets the first Friday of the month, 8:00 p.m. University of Houston, University Park Science and Research Building, room 117</li> <li>North Houston Astronomy Club <u>http://www.astronomyclub.org/</u> Meets the fourth Friday of the month, 7:30 p.m. In the Teaching Theater at Kingwood College 20000 Kingwood Drive Kingwood, Texas</li> </ul>			
Upcoming Events The Enchanted Skies Star Party is September 20-23. It features observing atop Magdalena Ridge (Elevation 10,000 ft), lots of guest speakers and presentations, the use of Etscorn Campus Observatory at New Mexico Tech, a cowboy cookout, and dark New Mexico Skies. Those are just some of the highlights. For more info, just check out <a href="http://www.socorro-nm.com/starparty/">http://www.socorro-nm.com/starparty/</a> . The Enchanted State School Star Party. Kelley Knight and her friend Eileen and others at the Richmond State School (Richmond, TX) are working with about 30 residents so they can be ready for a star party on November 4. Says Kelley: "Yes, we know the Moon is very full. Most of the residents are older adults with moderate to severe mental retardation so we wanted a target that can be seen without a telescope. The staff are literally using astronomical themes in almost every activity to help the residents. People are donating goodies and food for the event so it is quite a big thing for the school." "If things go okay there might be special music/presentation by Deborah Moran from HAS and the Houston symphony. She's been helping the staff by giving them various pieces of music to play with astronomical themes/names. She may have to play that night so she may record some special music."					
y'all would help out. I know that closer to the date that some of y'all will probably volunteer but I'd feel a little more at ease if I had a few more hands go up now. " If you can help, contact Kelley Knight.					

### Help turn off the lights ...

Join the International Dark-Sky Association (IDA) <u>http://www.darksky.org</u> "To preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting."



Visit the homepage of the Texas IDA affiliate of the International Dark-Sky Association. Their web site is at: <u>http://www.texasida.org/</u>.

August 28, 2006

Last week the HCA network responded quickly and successfully in partnership with Scenic Texas. Digital Display Billboards (Las Vegas, Times Square) are off the table at TX Dot...for now. Our friends at Scenic Texas alerted HCA about a Transportation Commission agenda item to discuss the use of LED signs in Texas. If TX Dot changes existing rules to allow these digital display billboards there is currently no county authority to limit them on rural Texas roads.

HCA Board Member, Colleen Gardner with Bamberger Ranch in Blanco County was responsible for gathering over 50 signatures in one day demonstrating a quick response and united opposition to these kinds of signs. Scenic Texas, Executive Director Margaret Lloyd spoke to the Transportation Commission last week and has reported that no action was taken to direct staff to revise the current rules. Margaret presented petitions with 130 names that had been gathered in a 24-48 hour period, many by HCA.

This is a great example of how neighbors can work together to effectively protect our Hill Country from the extreme pressure we are under to urbanize. See <u>http://www.scenictexas.org/</u> for more. For those of you unfamiliar with LED technology, go to the movie link at: <u>http://www.lamaroutdoor.com/index.html</u>.

## Member Recognition

**Ed Grafton**'s images of Uranus were featured in an article by Richard Schmude Jr. and Frank Melillo of ALPO (Association of Lunar and Planetary Observers) titled *Observing Uranus and Its Moons*. The article appears on page 75 of the October Sky & Telescope.

## Sky & Telescope and Astronomy Magazine Subscriptions – Don't Forget about the Club Discount!

Sky & Telescope offers a "Club Discount" on subscriptions. You can subscribe to Sky and Telescope for \$10 off the normal price (\$32.95 with the club discount). Astronomy magazine is also offering a club discount. JSCAS members can subscribe to Astronomy for \$34 a year. We need to have a minimum of five subscribers to take advantage of the discount. If you are a current subscriber, *please* contact me so I can put you on the list for the club discount when your subscription is due for renewal!

Contact me by the email listed on the JSCAS web site, catch me at a meeting, or send your check and renewal form to my home address: 2407 Elkton Ct., Pearland, TX, 77584. I'll put your renewal in the mail within 48 hours after I receive it.

David Haviland Vice-president and Secretary

# MEMBER'S GALLERY



#### ◄ Crab Nebula ©Charlie McLeod

A supernova remnant in Taurus. Created by the supernova of 1054 A.D. I did not capture many images due to this object was setting in the west.

Technical Information: Optics: Meade LX90 8" SCT @ f/3.3 Camera: Meade DSI Date: April 24th, 2006 Location: Ft. Davis, Texas (2006 TSP) Exposure Details:22 x 20 seconds Acquisition: Meade AutoStar Envisage Processing:AIP4WIN, Photoshop CS

#### M 13 ► ©Charlie McLeod

Very bright and large globular cluster in Hercules. One of my favorite clusters.

Technical Information: Optics: Meade LX90 8" SCT @ f/3.3 Camera: Meade DSI Date: April 25th, 2006 Location: Ft. Davis, Texas (2006 TSP) Exposure Details: 82 x 15 seconds Acquisition: Meade AutoStar Envisage Processing: AIP4WIN, Photoshop CS





#### ◄ M 51 ©Charlie McLeod

Spiral galaxy in Canes Venatici. Interesting interaction with a smaller galaxy.

Technical Information: Optics: Meade LX90 8" SCT @ f/3.3 Date: April 28th, 2006 Location: Ft. Davis, Texas (2006 TSP) Exposure Details: 119 x 15 seconds Acquisition: Meade AutoStar Envisage Processing: AIP4WIN, Photoshop CS

#### **Johnson Space Center Astronomical Society**

An association of amateur astronomers dedicated to the study and enjoyment of astronomy. Membership is open to anyone wishing to learn about astronomy.

#### **OFFICERS**

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#### Starscan Staff

Editor Associate Editors

Ken Lester Sheila Steele Ken Steele

#### Cover Image Mars **Credit: Dale Evans**

Moon and Venus at Sunrise over the Davis Mountains, July 22, 2006. Shot from Dale's front porch.

## September Meeting Agenda

September 8th, 7:30 p.m., Center for Advanced Space Studies/Lunar Planetary Institute, 3600 Bay Area Blvd. (at Middlebrook Drive).

- Welcome!!! •
- Guest Speaker: Break
- SIG reports, Star Party News
- Astronomical Oddities Hernan Contreras .

Any unfinished discussions can be continued over food and beverages at a location to be announced at the end of the

Original articles of astronomical interest will be accepted up to 6 P.M. Sep-

The most convenient way to submit articles or a Calendar of Events is by electronic mail, however computer diskettes or CDs will also be accepted. All articles should include author's name and phone number. Also include any picture credits. The recommended format is Microsoft Word. Text files

Submitter bears all responsibility for the publishing of any e-mail addresses

Binocular Observing Telescope Making Bob Taylor Deep Sky Observing Chris Randall