

# Saguaro Astronomy Club



# SACnews

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## In Memoriam - David Herman Fredericksen

July 7, 1953 - April 10, 2010



Long time SAC member & friend David Fredericksen passed away April 10th after a battle with stage 4 brain cancer. His passing has left a huge void in our club as David was deeply involved in all aspects of the Saguaro Astronomy Club. He truly loved Observing with Club members and talking astronomy with anyone who'd listen. We all extend our deepest sympathies to his wife Olga and their sons Chris & John and all who loved him. He will be deeply missed.

May he Rest in Peace

# NASA Space Place

## A Rock Hound is Born

It's tough to be a geologist when you can't tell one rock from another. Is that a meteorite or a chunk of lava? A river rock or an impact fragment? Houston, we have a problem!

It's a problem Spirit and Opportunity have been dealing with for the past six years. The two rovers are on a mission to explore the geology of the Red Planet, yet for the longest time they couldn't recognize interesting rocks without help from humans back on Earth.

Fortunately, it is possible to teach old rovers new tricks. All you have to do is change their programming—and that's just what NASA has done.

"During the winter, we uploaded new software to Opportunity," says Tara Estlin, a rover driver, senior member of JPL's Artificial Intelligence Group, and the lead developer of AEGIS, short for Autonomous Exploration for Gathering Increased Science. "AEGIS allows the rover to make some decisions on its own."

Estlin and her team have been working for several years to develop and upload increasingly sophisticated software to the rovers. As a result, the twins have learned to avoid obstacles, identify dust devils, and calculate the distance to reach their arms to a rock.

With the latest upgrade, a rock hound is born.

Now, Opportunity's computer can examine images that the rover takes using its wide-angle navigation camera (NavCam) and pick out rocks with interesting colors or shapes. It can then center its narrower-angle panoramic camera (PanCam) on targets of interest for close-up shots through various color filters. All this happens without human intervention.

The system was recently put to the test; Opportunity performed splendidly.

At the end of a drive on March 4<sup>th</sup>, the rover settled in for a bit of rock hunting. Opportunity surveyed the landscape and decided that one particular rock, out of more than 50 in the NavCam photo, best met criteria that researchers had set for a target of interest: large and dark.



*Opportunity spots a rock with its NavCam that its AEGIS software says meets all the criteria for further investigation.*

"It found exactly the target we would want it to find," Estlin says. "It appears to be one of the rocks tossed outward onto the surface when an impact dug a nearby crater."

The new software doesn't make humans obsolete. On the contrary, humans are very much "in the loop," setting criteria for what's interesting and evaluating Opportunity's discoveries. The main effect of the new software is to strengthen the rover-human partnership and boost their combined exploring prowess. Mindful that Opportunity was only supposed to last about six months after it landed in 2004, Estlin says "it is amazing to see Opportunity performing a brand

new autonomous activity six years later."

What will the rock hounds of Mars be up to six years from now? Stay tuned for future uploads!

Learn more about how the AEGIS software works at <http://scienceandtechnology.jpl.nasa.gov/newsandevents/newsdetails/?NewsID=677>. If you work with middle- or high-school kids, you'll find a fun way to explore another kind of robot software—the kind that enables "fuzzy thinking"—at [http://spaceplace.nasa.gov/en/educators/teachers\\_page2.shtml#fuzzy](http://spaceplace.nasa.gov/en/educators/teachers_page2.shtml#fuzzy).

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

## My Friend, David Fredericksen

### By Steve Coe

It is difficult to remember a time before I knew David Fredericksen. We met at a Saguaro Astronomy Club meeting in 1981 and both of us felt like we had known each other for decades before that. We were both only children and people thought we were brothers. I can think of nothing more wonderful in my life than to have someone think that David was my brother. We might not have been born that way, but we often lived our life like we were family.

I know David Fredericksen as a happy man who enjoyed life. He cared for his family in every way possible. He had fun doing whatever he was doing.

In the early 80's I had purchased a Shoptsmith tool for making telescopes and we certainly did make lots of scopes out of my garage. You pass it every time we drive to the restaurant after a meeting. My home at that time was at 39<sup>th</sup> Ave. and Northern, David and others dropped by to make some cuts in a piece of plywood or drill some carefully made holes that would lead to a telescope. I treasured those times working on telescopes and laughing about what we were doing or what we would observe with this scope once it was done. Without planning to do it, we all created our own special color of scope. Mine were blue, George DeLange's were red, Bill Anderson's were green and David's were yellow. I knew you would have guessed that.

David just loved the Messier Marathon and enjoyed the triumph of getting all the Messier objects in one night. AJ Crayon can tell you how many times he participated, I know it was at least 10 or 12 evenings going after

those bright and famous objects and enjoying the view. At his last Messier Marathon in 2009, he used the big 32 inch scope and got about 60 objects done before getting too tired to go on. I am certain that moving up and down that ladder all night was a strain. David decided not to put in the paperwork for that evening. He could have received a certificate; the rules are you get a certificate for over 50 objects. I have a selfish reason that I chided him about that. I have the award for over 50 objects with the least aperture, my 8X42 binoculars. If David would have put in the paper work, he could have had the award for the most aperture used. I know it is silly, but it was a dream of mine.

The other gathering that David loved to attend was the Riverside Telescope Makers Conference. He went every year; I went along about every third year. David did not mind the driving and I was happy to chip in for gas and buy us an ice cream along the way. We would leave on Thursday evening and then be in line for the gate opening on Friday morning. As we drove along I-10, we talked about everything astronomical from scopes, eyepieces, filters and cameras all the way to string theory and the Big Bang. It always passed the time and soon we were climbing the mountain to Big Bear and the conference. We always had the joy of showing each other the nifty gizmo we had found at the swap meet.

But most of all, David really loved to view the night sky. He made drawings of a few things which he had observed, I felt privileged that he only showed them to me or AJ. I know that he was almost done with the list of

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Here is David in 1981 at a SAC star party in Sedona.



Here is a photo of David and his yellow 12 inch scope. This is from an observing session of Comet Hale-Bopp in 1996.

## Call For Observations—David's Favorites

By A.J. Crayon

First, thanks to all that responded to this late hour request. We all knew David as he knew no stranger. Yet each of us will miss him in our own way. I thought it would be a nice tribute to him for a special Call for Observations to contain a few of his favorite deep sky objects.

The list of object come from his room, which was adorned with many get well cards and notes. Amongst them were very large pictures from the Hubble Space telescope of M104, M51, NGC2392 and NGC1300. It is a fitting reminder of him that we submit our observations of these celestial gems.

A special thanks to those submitters. They are, beginning with Dick Harshaw, whose observations are mostly from urban locations. Steve Coe supplied numerous observations of each object in telescopes ranging from 6" to 36". One, from Pierre Schwaar's 20", just had to be included. Charlie Whiting can always be depended on to submit observations. He submitted multiple observations from urban and dark sites. Only the dark site ones were used. Paul Lind, our ATM guy, astrophotographer and, lest we forget, deep sky observer submitted his observations. As for me, I have included some of my first observations in the 8" f6 Newtonian from the early 1980's and followed that up with one from my Dobsonian.

In the past, many folks have spoken to me about the success and interest of this column. It is successful only because it is supported by SAC observers who have a variety of telescope sizes, a variety of observing experience and are willing to share with everyone. They are the ones to thank.

**M104**, called the Sombrero Galaxy because of the dark bisecting dust lane. A remarkable object that is also on the Herschel 400 list. It is a member of the Virgo Cluster of Galaxies, located near Corvus, and a Seyfert galaxy. Pierre Mechain was the first to record an observation in May 1781 after which Messier added to the 1784 version of his *Connaissance des Temps*. Herschel was, probably, first to see the dark lane bisecting the face.

**14x70 Binos**; Dick Harshaw: Fairly conspicuous smudge on the hypotenuse of a right triangle.

**6" f/8 14mm**; Steve Coe: bright, large, much elongated 3X1, suddenly much brighter middle with a stellar nucleus. The dark lane is easy and the stellar nucleus "sits on it". A great view of a favorite.

**8" f6, Newtonian at 50X**; AJ Crayon: extremely elongated, very faint with a suddenly much brighter small middle and one edge is better defined than the other.

**8" f6, Newtonian at 60X**; Charlie Whiting: I saw M 104 as a spindle galaxy. It appeared to be 5' or 6' long by 1' or 2'

wide. It has a stellar nucleus. The halo shows texture or mottling. It is aligned E-W. At 150X I could see a very faint star close by due north. I got the impression that the nucleus is sitting on the south side of the galaxy. In this eyepiece the galaxy looks even more elongated, maybe in a ratio of 7 to 1.

**8" SCT at 83x**; Dick Harshaw: Bright, with dust lane (high powers) and E-W axis. A 13<sup>th</sup> mag star is 2 min north and a knot of four 9<sup>th</sup> mag stars and is twenty arc-minutes west of northwest.

**13" f/5.6, Newtonian at 100X**; Steve Coe: 11x80 finder - easy, somewhat elongated. At 100X-bright, large, very much elongated 4X1 in PA 90, suddenly much brighter of the middle, core "sits" on the northern edge of the dark lane. At 150X-nice view, averted vision doubles the size of the galaxy, both in length and width. There is a 13<sup>th</sup> mag star to the north side, centered above the core. At 220X-shows a little scalloped detail in edges of dark lane. The core area shows a small stellar nucleus about 20% of the time. At 330X-no more detail seen in dark lane, too much power, this gets rid of the galaxy to the south of the dark lane. At lower powers there is some mottling across the face of this galaxy, but as I get to 220X and above it appears smooth.

**14.5" f5.2, Dobsonian at 220X**; AJ Crayon: This magnificent galaxy very large, very bright, extremely elongated in an easterly position with an obvious central dust lane that is more to the south, not quite bisecting the galaxy. The bright middle is elongated and on the northern side of the dust lane. There is a 10<sup>th</sup> mag star to the southwest and a 13<sup>th</sup> mag star to the southeast.

**14.7" f4.7**; Paul Lind: Large edge-on, Beautiful.

**Jay LeBlanc 32" 14mm EP**; Steve Coe: a Great view of the Sombrero. Lots of internal detail, drawn. The dark lane is prominent for 75% of the length of the galaxy and the core sits right on top of the dark lane. Wow.

**16" f4.4 Newtonian**, Rick Rotramel: G - L, B, very elongated with bright round core & dust lane across it. Nice!!

**David Fredericksen's 32" f4.5, Dobsonian at 255X**; AJ Crayon: the view was breath taking! Never before have I seen the galaxy on the other, south, side of the dust lane so prominent. It stretched for almost 3/4 of that on the north side with a small elongated little brighter middle. Match that in your 14.5-inch!

**36" f/5, Newtonian TSP 1996**; Steve Coe: WOW, the core "sits" on top of the dark lane and averted vision makes the galaxy about twice the thickness with direct vision, lots of faint outer section. At 330X with 14mm, the galaxy is about 80% of the field of view of the 14mm EP. The galaxy can be seen to turn around the central core on either side of the galaxy, somewhat an elongated horseshoe.

**M51**, the Great Spiral Nebula in Canes Venatici. Great

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details in spiral arms show up as mottled and splotchy. Can you see the 14<sup>th</sup> mag star just to the north of the brighter middle? Messier discovered this galaxy on October 13, 1773 while observing the Comet of 1773 and added it to his catalog on January 11, 1774. He wrote, *it is double, each having a bright center, separated by 4'35". The two atmospheres touch each other. One is fainter than the other.*" It was named *Whirlpool* by Lord Rosse in 1845.

**14x70 Binos;** Dick Harshaw: Faint, with a very gradually brighter middle. On a leg of a small triangle of 8-9 mag stars.

**8" f6, Newtonian at 135X;** AJ Crayon: small brighter middle, outer edges visible. At 50X it is better and with companion.

**8" SCT at 104x;** Dick Harshaw: It is mottled and splotchy; even the spiral arms are discernible (at high power). (Both Messier and Herschel missed the spiral structure.) The connecting bridge is also visible. At the Texas Star Party in 2001, I got the chance to view M51 through the 36-inch Cassegrain reflector at McDonald Observatory and clearly saw the two spiral arms and bridge (or arm extension) that cuts in front of NGC 5195. There is a 12 mag star just SW of the nucleus. Steve Coe points out that this has been turned in as a superva many, many times, so don't bite the b a i t !

**11" SCT at 193x;** Dick Harshaw: The nucleus looks comma-shaped; the galaxy is heavily mottled and in moments of good seeing, spiral structure is suspected.

**13" f5.6, Newtonian at 135X;** Steve Coe: the Whirlpool was super. It was very bright, very large, irregularly round and very bright in the middle. I could see it easily in the 11 X 80 finder. The spiral structure and the connecting bridge were unmistakable.

**14.5" f/4.7 at 200x;** Paul Lind: Spectacular, lots of spiral structure.

**14.5" f5.2, Dobsonian, at 290X;** AJ Crayon: Oh my! This view is an excellent example of the grand design! Where to start? Very very large, very very bright, face on spiral with very easily detected spiral arms! The drawing just doesn't do justice; neither can words. The brighter spiral arms wrap around the outside and are especially easily seen along the south, east and north sides. The very large suddenly much brighter middle dominates the view. See what I mean? Go out and look for yourself!

**36" SCT, McDonald Observatory;** Dick Harshaw: clearly saw the two spiral arms and bridge (or arm extension) that cuts in front of NGC5195. There is a 12<sup>th</sup> mag star just SW of the nucleus. Steve Coe points out that this has been turned in as a supernova many, many times, so don't bite the bait!

**NGC2392**, the Eskimo Nebula or Clown Face Nebula. Belongs to the 110 Best NGC, Herschel 400 and Caldwell lists. How many of its shells have you seen? It was discovered by William Herschel in 1787. He called it, *a very remarkable phenomenon.*

**4" 12mm;** Steve Coe: pretty bright, small, round, an obvious planetary nebula at this power. The central star is seen 100% of the time on a mediocre night.

**8" f6, Newtonian at 80X;** AJ Crayon: with averted vision this planetary is round and extremely faint. At 115X the middle star is seen with filter and, with averted vision, it is round and very faint. At 175X it has a very bright stellar nucleus.

**8" f6, Newtonian at 38X;** Charlie Whiting: This PN was visible, but only very faintly. It does look non-stellar. Tiny, under 10" at this magnification. At 67X it was better, a little more defined. Round. It is either very much brighter in the middle, or else I am seeing a central star peeking through. It is not steady. The bright area or star seems to dance around. At 96X while staring directly at it, it seems to grow dimmer. Using averted vision seems to work better. It brightens and steadies a bit. At 120X there is an 8<sup>th</sup> mag star due north of the PN. By comparison to this star the central star, or bright area, is 2 mags dimmer. I tried narrow band and OIII filters. They both dimmed the PN as well as the neighboring star. At 240X and with the use of the broad band filter, the best view was found. The neighboring star was dimmed only slightly and the central star or bright area was also dimmed slightly. This allowed me to see some of the detail in the PN. The sky was hazy. But in moments of better seeing it appeared that there was two bright areas imbedded in the nebula. About 15 minutes later the sky cleared a lot. The PN definitely had 2 bright parts to its middle. They were aligned roughly E-W. With the improved seeing the nebula grew quite a bit in size. It now has an outer ring that looks like a wreath of gray cotton fibers.

**8" SCT at 206x;** Dick Harshaw: Very large and bright and seen face on. The central star (10.5 mag) is visible at high powers. It has a distinct green tint. Try "blinking" this nebula— that is, look directly at the central star, then use averted vision to see the nebula. The effect can be fascinating as you bring different parts of your retina into use. A bright star lies a little N.

**14.5" f5.2, Dobsonian, at 440X;** AJ Crayon: with the UHC this is an exceptionally large and bright planetary nebula and is roundish. The outer ring is brighter in some parts and has some dark curving rectangular areas paralleling the inside. The inner part is very suddenly much brighter, somewhat irregular and shows some mottling with averted vision. The central star just about disappears with the filter; otherwise it is NOT mistakable!

**14.7 inch f/4.7, 192x;** Paul Lind: bright and mottled.

**Pierre Schwaar's 20" Newtonian, at 330X;** Steve Coe: really shows this planetary to its best. The amount of detail across the "face" of this object is fascinating. There are several dark markings that surround the central star and there is an obvious gap between the central disk and the "hood" of material that forms an annulus around the outside. Installing a UHC filter makes several of the markings really prominent and enhances the outer "hood" quite a bit.

**16" f4.4 Newtonian,** Rick Rotramel: PN - pL, pB, round, with

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## President's Corner

### A Time to Reflect

By Dick Harshaw



The last 30 days or so have been hard on this club. We watched helplessly while the hideous disease of brain cancer slowly and inevitably took one of our best and brightest—David Fredericksen. Elsewhere in this newsletter, others have eloquently written about David's significance to this club, and I will not add to the impressive outpouring of love and remembrance for our fallen brother and comrade. (For those who do not subscribe to our e-lists, you did not receive my post about a tribute I wrote to David on my blog. If interested, go here to read it: <http://www.lodestarconsultinginc.com/tribute-to-my-friend/>)

But I do want to use this column to encourage us and motivate us with David's wonderful memory. I first met David in the mid-1990's while on a visit to Phoenix on business. I arranged to attend a meeting of SAC and stay over the weekend to finally meet Steve Coe face to face (we had been corresponding by e-mail for months), and (I hoped) to meet some of the people he often mentioned in his notes to me—A J Crayon, David Fredericksen, and Pierre Schwaar. I was thrilled that night to be able to meet Steve and all three of these people and thought to myself, "A finer group of people does not exist anywhere!" I was particularly impressed by David's boyish friendliness and "what you see is what you get" transparency.

Two years later, on another trip to Phoenix on business, I was able to attend a Saturday star

party at Flat Iron and was able to share the wonderful Arizona skies through Steve's and David's twin 11-inch SCTs (as I had to travel without a scope). Despite the light pollution at Flat Iron, I still recall how stunned I was at the skies compared to our Kansas City pea soup! I recall David joking and giggling that night more than observing, but then isn't that what David was about at our star parties?

Two years after that, I was fortunate enough to join SAC at the Sentinel Stargaze where I again shared the skies through Steve's and David's 11-inch SCTs and AJ's 14" Dob. By this time, Pierre had departed us. (Which always struck me in a painful way as I was preparing to order a 13-inch mirror from him when I learned from AJ that he had passed.)

After I moved to Phoenix in June, 2007, David became a close and valued friend. I always appreciated his youthful enthusiasm and non-stop sense of humor, always funny and always in good taste, never off-color. Over time, he became a very good friend under the light of the stars and a dear brother in Jesus Christ.

Let us go forward as men and women who love the skies and rededicate ourselves to that spirit that David so wonderfully exuded—to be true friends and comrades who love each other and support one another, helping each other to explore all the glory over our heads, and stopping along the way to laugh and joke and have a good time, living life together in the moment to the fullest. David would have it no other way, would he?

Live well and keep looking up, friends!

# May 2010

| SUN | MON | TUE   | WED  | THU  | FRI                            | SAT                                       |
|-----|-----|---|------|------|--------------------------------|---|
|     |     |   |      |      |                                | 1   |
| 2   | 3   | 4   | 5 ☾  | 6    | 7                              | 8<br>SAC Star Party<br>at Saddle Mountain |
| 9   | 10  | 11  | 12   | 13 ● | 14                             | 15<br>DOTM Star<br>Party @ Antennas       |
| 16  | 17  | 18  | 19 ☽ | 20   | 21                             | 22  |
| 23  | 24  | 25<br>ATM Meeting<br>1930, Paul<br>Lind's House | 26   | 27 ○ | 28<br>SAC Meeting,<br>GCU 1930 | 29  |
| 30  | 31  |   |      |      |                                |   |

## Schedule of Events for April 2010

|          |   |
|----------|---|
| May 5th  | Moon is at Last Quarter at 2114mst.   |
| May 8th  | SAC Star Party at Cherry II, Sunset 1919, Ast. Twilight Ends 2054, Moonrise 0245, 5:51 Hours of Dark Time                             |
| May 13th | Moon is New at 1804mst.   |
| May 15th | DOTM Star Party at Cherry II, Sunset 19:24, Ast. Twilight Ends 2102, Moonset 2134, Ast. Twilight Begins 0347, 6:13 Hours of Dark Time |
| May 19th | Moon at First Quarter at 1648mst.   |
| May 25th | ATM/Astro Imaging Subgroup Meeting at Paul Lind's House at 1930   |
| May 27th | Moon is full at 1607mst   |
| May 28th | SAC General meeting at Grand Canyon University at 1930: Speaker: Chris Lugibuhl, Topic: Light Pollution.                              |

## Future Planning

|               |   |
|---------------|---|
| June 5th-12th | Grand Canyon Star Party. For South Rim Info goto:<br><a href="http://www.tucsonastronomy.org/gcsp.html">http://www.tucsonastronomy.org/gcsp.html</a> . For the North Rim: <a href="http://www.saguaroastro.org/content/2010GrandCanyonStarPartyNorthRim.htm">http://www.saguaroastro.org/content/2010GrandCanyonStarPartyNorthRim.htm</a> |
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red stars from the SAC database of red stars. He said he was enjoying looking at something different from all those clusters, nebulae and galaxies he had viewed in the past.

So many times we would take a break from observing around 11 PM and sit around a table, eat a sandwich and chat. We would talk about what we liked to view the most....and the least. The talk would go from astronomical equipment, light pollution, where to go to observe for next month and always, old times. We told of observing sites from years ago, who went and what we saw. One of our favorites was (and still is) going to Five Mile Meadow. David really liked that spot far from the city lights and high in the Rim country near Happy Jack. We had sessions under dark skies with lots of club members enjoying the views.

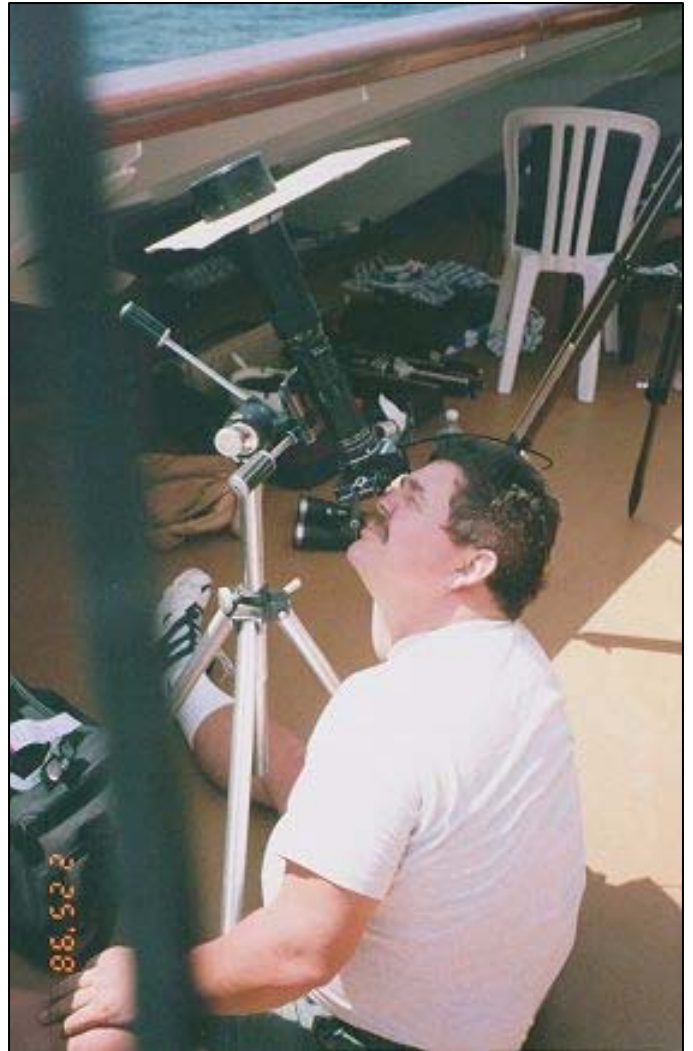
I was fortunate that David and I made two wonderful trips together to view the sky. One was a trip to Australia in 1986 to see Halley's Comet. It was such a joy to see that part of the sky that never rises from Arizona and can only be seen from the southern hemisphere. The comet was great, but the Eta Carina nebula, dark Coal Sack nebula and Alpha Centauri, the nearest star beyond the Sun, were fascinating. Chris Schur, David and I had a grand time viewing the sky and having fun with the Aussies. We always talked about going back, but David never seemed to have the time.

The other trip was the eclipse cruise in 1998. Twenty six members of SAC boarded the Dawn Princess and sailed the Caribbean with a total solar eclipse during the cruise. To say it was fun is to just scratch the surface. The cruise, the food, the exotic locales and an eclipse... what's not to love?

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*David looking at sunspots from Five Mile Meadow.*



*Here is David getting all ready for the Moon to cover the Sun.*



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It is rare to make friends that last most of a lifetime. Friends who enjoy spending their time doing the same things you love doing. I am thinking of the hundreds of evenings David and I have sat watching the setting sun and waiting for it to get dark enough to start observing the wonders of the Universe. We would trade views in each others telescopes, happy to be sharing that clear, dark sky with someone who appreciated it.

I am sad that David has left this world, but that is a fate

all of us will face. I am happy that he lived and that we enjoyed so much time together. Time building telescopes to view and enjoy the sky. Time listening to the music we both loved. Time setting up scopes at a public viewing session, showing the sky to his students and others just learning what the Universe is all about. All of that time was precious. Time spent with a true friend always seems to go too fast.

Good journey, my friend, I hope to see you again.



*Left to right: Me, Jim Barclay (our Aussie friend), David, Chris Schur*



*Left to right: Jim Stevens, David, Walt Thomas and Steve Coe at Riverside 2007.*



*Me, AJ Crayon and David at 5 Mile Meadow*

## For David A.J. Crayon

Here are some thoughts and activities from David, some we did together others not but I thought it would be appreciated.

I first met David in 1980 at a meeting of the Saguaro Astronomy Club. Seems we both joined around the same time – having been bit by the astronomy bug. We quickly became involved with a group of friends that included Steve Coe, Bill Anderson and others. Turns out Bill Anderson taught astronomy at Phoenix College and that is where David caught the bug; and took it hook, line and sinker.

The three of us became involved in astronomy activities weather it was observing, or building telescopes and equipment. The biggest project for David was building a 12 ½" telescope. He wanted it yellow because his vehicle, at that time was yellow, he wanted them to match and we didn't want telescopes of same color. Someone already had red; Celestron Telescopes had orange; Bill had green; Steve had blue and I had white. Hence yellow became David's color. Just look at his truck. Yet you will need to see what Tom Polakis did with Photoshop and his truck's color – a vivid purple!

We went to many observing sites together with our scopes, in small and large groups, in either the desert or forests. Over the years we had several different types of scopes. Dave and his 12 ½ inch, 11 inch dark blue and his big baby the 32 inch. And me with my 8 inch. He would be happy to look through my smaller telescope any time I called him over.

We have been to many-a place down long dusty desert roads in Arizona. Places like Fessler's Ranch, now called Anthem.

Sun Valley, now called Tarteso. It's on the other side of the White Tank Mountains.

Places up on the rim in the Coconino National Forest, where my observing notes indicate the most beautiful rainbow ever seen, its base seemed 50ft away from us. The place is described as 7300 ft elevation, good summer observing site, bring winter clothes. But not David, he was in shorts all the time, even during the winter at Fairbanks, Alaska.

We were doing a Messier Marathon in 1996. This marathon was an all night telescope session to observe all galaxies, clusters and nebula in a catalog created by Charles Messier during the 1700's from Paris, France.

The marathon began almost as soon as it got dark and continued all night until darkness started to brighten the next morning. So, on this particular night, David was setup about 200 ft from me and we were waiting for the last object to pop up above the horizon at the end of darkness. Just then David's voice breaks the silence with an exuberant, "AJ I've got it, come over quickly and see it for yourself." Before I could deny the request David, disappointedly, says, "it's gone!" It took a while for us to realize that, even if I had tried to get there to see it, it would have been gone. That was the year he was the only one to see everything in the Messier Catalog. In fact a few years later it was determined he had completed seeing all objects in the Messier Catalog during Messier Marathons more than anyone else.

The 2006 we saw the alignment of Saturn and Mars from south of Sentinel, AZ.

We've been under dark skies to see the comets Hale-Bopp and Hyakutake, both Great Comets from the last decade. You didn't have to be an astronomer to see these as they were visible over the lights of Metro-Center and were in the headlines many times.

Even those evenings when the clear skies abandoned us to cloudy skies. David was always one to keep our spirits up with laughter.

He has been to places I haven't. For instance Riverside Telescope Makers Conference in CA. He has attended this world renowned conference for years, enjoyed meeting old friends and making new ones. Another place he went to was Enchanted Skies in New Mexico. Both places he took Chris and Johnny.

There was a trip to Australia to see Halley's comet, a Caribbean cruise with his wife to see an eclipse near Aruba.

There's a grouping of reasonably bright stars on the border of the constellations Andromeda and Lacerta. It is called Frederick's Glory, named after a Prussian ruler. It is the closest astronomical object to our friends name and we shall remember it and him for a long time.

He also loved sports, but I remember him and football most. He coached the team while at Independence High School. Back when the Oakland Raiders were so good and my beloved New Orleans Saints were terrible, he gave my wife and I a set of 6 Raiders goblets. And

*(Continued on page 11)*

*(Continued from page 10)*

we all 3 got a great laugh. Now there's only one left, I think we will make a Crayon's Smithsonian and that will be the first entry.

I also learned from David to appreciate a great play by an opposing team, especially when the Dallas Cowboys beat the Raiders during the last 2 minutes in one of their games.

I just started teaching, got some advice from David. Told him my current class just seems to want more and more work – and they are good at it. He said something like this comes along every 10 years or so. So enjoy it. And I have been at it less than a year.

There are a couple of verses from the Bible that I think David would like for us to share. Naturally they have to do with the heavens. The first is from Job chapter 9 verses 8 – 10.

*Which alone spreadeth out the heavens, and treadeth upon the waves of the sea;  
Which maketh Arcturus, Orion and Pleiades, and the chambers of the south;  
Which doeth great things past finding out; yeah, and wonders without number.*

And, one of my favorites, a psalm of praise, Psalm chapter 19 first verse;

*Let the heavens declare the glory of God and the firmament showeth his handiwork..*

About 20 years ago David said, "AJ I want to tell you about this lady I met at our church camp, her name is Olga. She is so nice, but boy does she know how to put me in my place. And. And. And I love it!" Then came marriage, Chris, Johnny and many years. Many wonderful years. During this time we not only talked about astronomy, we also talked of wives, children, families and life, many, many times. And over these years he never said a disbarring word about anyone in his family. Never!

May Dave's memory be eternal  
Rest in peace my friend.

## Memories of Dave

The time that I spent with David during his life was precious and I will remember my friend always. He was always fun to share time with under Arizona skies. Rare indeed are the friendships that last 30 years, I am fortunate to have SAC, where I have a room filled up with them. Here's hoping David is viewing the stars from the other side - Steve Coe

At 5MM a couple of years ago, I foolishly neglected to bring gloves - and as "everyone" knows, even in May it can get chilly enough to need them at 5MM. David kindly offered me the use of a "spare" fingerless pair he had on hand. Of course, they were about 19 sizes too big, but completely served the purpose. When I went to give them back, he said just keep them! I did and still have them. "Just a pair of gloves before, they have become one of my most prized pieces of astro gear. -Darrell Spencer

The main thing that I recall about Dave was his effervescent nature. No matter what was going on in the world or in his life, he always had a joke, a firm handshake, and a rude comment or two that made you feel like you were life-long best friends. I only knew Dave for 4 years, but I felt like I'd known him my entire life. - Tim Jones

I always said that David would give you the shirt off his back. Well he really did one night. We were up at Cherry Rd. and it got a bit chilly by Cherry Rd standards, down into the 40's if I remember. I had forgotten to take any warm clothing to layer up, so there I was in shorts & a T shirt (which is what David was wearing quite comfortably), Shivering and ready to pack it in and go home. Dave asked why I was leaving so early as it was a really nice clear night. When I told him, he went into his truck and pulled out a pair of sweats and a hoodie and gave them to me. Well needless to say there wasn't a belt big enough to hold the sweats up and I could've shared the hoodie, but it kept me warm that night. —Rick Tejera

(Continued from page 5)  
bright core in the middle.

**NGC1300**, a beautiful barred spiral nebula and has often been touted as being the most spectacular example of a barred spiral galaxy - and for good reason, the bar in the central portion of this galaxy is larger than the diameter of our own galaxy.

**6" f/8 refractor 14mm**; Steve Coe: pretty bright, pretty large, very much elongated 3X1, much brighter middle. Averted vision makes it "rounder". There is a hint of a spiral arm from one end, but it is extremely faint.

**8" f6, Newtonian at 80X**; AJ Crayon: elongated, very faint and with a gradually brighter middle. The field has 8 stars 9th and 10th mag.

**8" SCT at 65x**; Dick Harshaw: Large, but faint, with an E-W axis.

**13" f5.6, Newtonian at 150X**; Steve Coe: WOW--pretty bright, large, very much elongated 4X1 in PA 90, suddenly

much brighter middle. An obvious barred spiral with the southern arm more prominent. Averted vision helps a lot with the detail in the spiral arms. 220X--too much, the spiral arms almost disappear.

**14.5" f5.2, Dobsonian, at 140X**; AJ Crayon: very bright, pretty large, very elongated in an east southeast position and has a stellar nucleus. There is a very faint fuzziness below and a very very faint fuzziness above, no doubt these are traces of this barred spirals arms.

**17.5" Dobsonian, at 135X**; Steve Coe and David Fredericksen: Pretty bright, large, very elongated and suddenly much brighter in the middle. With averted vision I can just pick out some barred spiral structure.

**16" f4.4 Newtonian**, Rick Rotramel: G - pL, pF, oval glow, low surface brightness.

**36", Ultimate Star Party 1995, 14mm**; Steve Coe. Obviously a barred spiral, the arms wrap around the oval central section. There are 5 other galaxies with one field of view of 1300.

## Bits & Pisces, Minutes of the March 26th General Meeting Recorded by Paul Dickson



Regular meeting started by Richard Harshaw at 1930. There were no visitors attending that introduced themselves.

As David Fredericksen is in the hospital and would not be able to continue as Treasurer, we would need a new treasurer. Chris Hanrahan volunteered to be nominated for treasurer.

Steve Dodder reminded us the club's 50/50 raffle. For the north rim of the Grand Canyon Star party, there is one free cabin available for the week at the Kaibab Lodge. Please contact Steve if you are interested (this is outside the park).

Rick Tejera reported that the Messier marathon was a success and the plaques have been ordered for the awards at the next club meeting. The club purchased 75 t-shirts for the marathon and with only 15 remaining, the club has already made more than \$200. The shirts are now \$10 each for the remaining shirts.

Gene Lucas reported on the then upcoming event at the Riparian Preserve at Water Ranch in Gilbert. The east valley club will be there setup for solar observing. We are invited to assist with showing the sun.

Jack Jones covered the upcoming Thunderbird public star party. The entrance to the parking area to setup is off 67th Avenue, just past the Mt Ridge High School.

Show-N-Tell

Tom Polakis reported on Messier marathon. He reported that Ken Reeves used a 3-in scope for the marathon, mounted on a 20-in telescope. Tom did not perform the Messier marathon, but attempted a Herschel 400 marathon. He saw 387 objects of 388 possible for the night. Yes, a go-to mount was used.

Paul Lind showed images from the SAC ATM/Astro-Imaging subgroup session that takes place on the Tuesday before the club meeting.

Steve Coe had some images to show as well. His first was a rare sight, a fire danger sign road-side sign set to the low danger setting. He then presented a short history of the SAC Deep-Sky Database from the humble beginnings on a Apple II+. The database is now at release 8.1 with more than 10,000 objects. It can found at <http://saguaroastro.org> in the download section.

There was a break at 2020 until 2035. The speaker for the night was Tom Kaye from Sierra Vista on the Spectrashift Project. The goal for the project is for the first exosolar planet to be discovered by an amateur astronomer.

A special note of thanks to Jennifer Polakis for her work in attempting to repair the black smudges the school's projector screen has acquired.

The meeting adjourned at 2125. There were 38 people attending. 18 of which went to JB's afterwards.

## Bits & Pisces, Minutes of the February 26th General Meeting Recorded by Paul Dickson



The meeting was brought to order at 1930 by Tom Polakis, acting for the absent president. As preparation for the meeting, he reviewed the club's constitution and presented his humorous changes he would make with his newly acquired executive powers.

The club visitors were then asked to introduce themselves. We had 14 visitors; nearly all were from Dave Fredericksen's class.

Dave Fredericksen then gave the treasurer's report.

Rick Tejera announced the Thunderbird Public Star Party for April 17. He reminded us that we will be entering from the west entrance of the park. He also asks that anyone not receiving the E-mailed newsletter to please have their E-mail address updated.

Steve Dodder reminded us that the Novice Group is available for assistance on the Saturdays following club meetings. The Grand Canyon Star Party is full but cabins were available at the Kaibab Lodge (17 miles outside park). Steve also reminded us about the 50/50 raffle.

AJ Crayon covered the Messier marathon for March 13. Attendees need to have signed the liability release to attend, which were available. He also had check-off lists for the Messier objects.

Rick Tejera took a vote for t-shirt colors for the Messier marathon. The colors black and blue received the most votes.

Tom Polakis announced that there was \$2700 remaining from the Burnham Memorial Fund and it was decided to provide a one-time scholarship using the funds. Two students were awarded the scholarship to NAU.

Tom also covered the organization of the club field trip to Mt Graham on June 17. It is \$40/person and the trip is limited to 18 people. Attendees would need to get themselves to Safford.

The Show-N-Tell was started with Chuck Conner. He read a poem he wrote, 'Crook Trail Sky', and it was well received.

Steve Coe showed his astronomical images from the Antennae site from the February session that took place there. Ken Naiff also presented images as well.

There was a break at 2025, and then Ted Dunham provided a lecture on the Kepler launch, its commissioning, and science to date. He has provided a quick update on the Sophia telescope.

The meeting adjourned at 2200. There were 62 people in attendance and seats were found for everyone.

## Bits & Pisces, Minutes of the March 26th Board Meeting Recorded by Paul Dickson



Board meeting started 1910.

Board members attending, Richard Harshaw, Tom Polakis, and Paul Dickson. Other members were Rick Tejera.

The subject of the meeting was the constitutional amendment for filling board vacancies. It was read and

approved by the board member to go before the club.

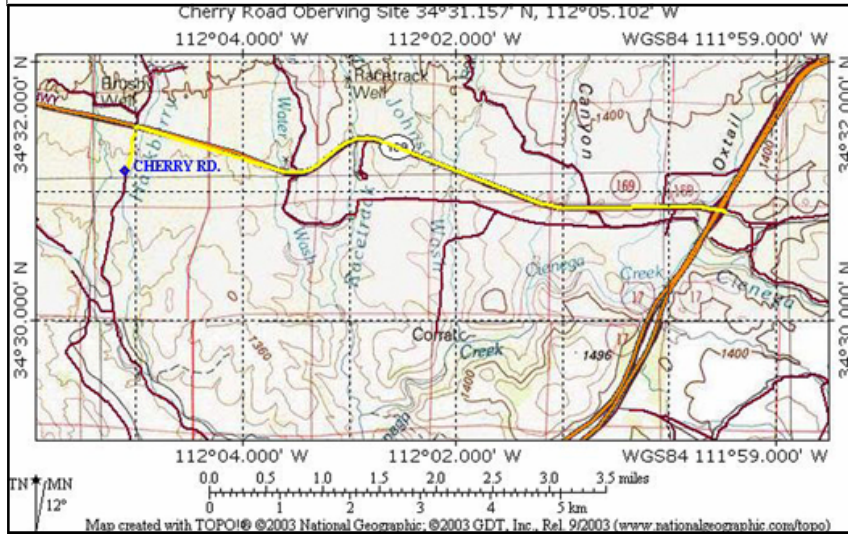
Also brought up by Paul was to check whether the club still has access to the privacy account for the domain-byproxy.com account for SAC's domain name. Will need to contact Peter Argenziano.

Meeting adjourned at 1915.



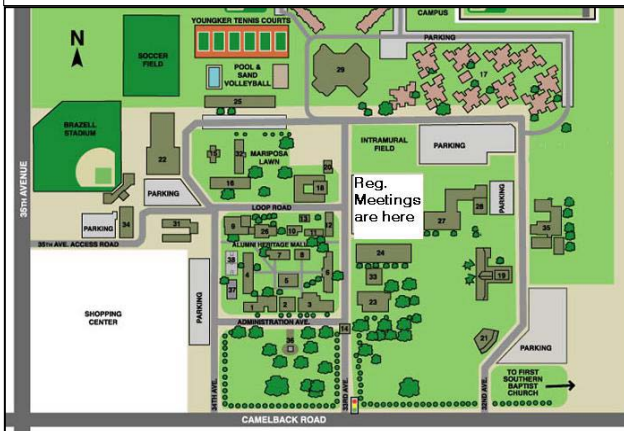
# SAC Member Services

## Cherry Rd. Star Parties



Take I-17 north to the Cherry Rd exit. Turn west (left) and continue on Cherry Rd for about 5 miles. Turn Left on the dirt road just past the sign that says Cherry 6. Note you turn in the direction Opposite the arrow on the sign. The site is 3/4 down the road on the left.

## General Meetings



7:30 p.m. at Grand Canyon University, Fleming Building, Room 105: 1 mile west of I-17 on Camelback Rd., North on 33rd Ave., Second building on the right.

## Dark of the Moon Star Parties-2010

| Date                         | Sunset | Moonset | Eve. Twi. | Morn. Twi./Sun Rise | Location     |
|------------------------------|--------|---------|-----------|---------------------|--------------|
| February 13th                | 1817   | -       | 1941      | TW: 0556            | Antennas     |
| March 13h (Messier Marathon) | 1833   | -       | 1955      | MR: 0548            | Arizona City |
| April 10th                   | 1902   | -       | 2028      | MR: 0424            | Antennas     |
| May 15th                     | 1924   | 2134    | 2102      | TW: 0347            | Cherry II    |
| July 10th                    | 1943   | -       | 2127      | TW: 0341            | Cherry II    |
| August 14th                  | 1829   | 2200    | 2049      | TW: 0417            | Cherry II    |
| September 11th               | 1841   | 2036    | 2006      | TW: 0444            | Cherry II    |
| October 9th                  | 1808   | 1920    | 1930      | TW: 0513            | Antennas     |
| November 6th                 | 1738   | 1756    | 1902      | TW: 0534            | Antennas     |
| December 4th                 | 1726   | -       | 1854      | TW: 0556            | Antennas     |

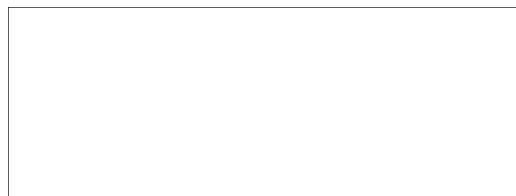
# SAGUARO ASTRONOMY CLUB

April 2010

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*Videmus Stellae*



## SAC Schedule of Events 2010

### SAC Meetings

|                       |                            |
|-----------------------|----------------------------|
| January 29, 2010      | July 23rd, 2010            |
| February 26, 2010     | August 20th, 2010          |
| March 26th, 2010      | September 24th, 2010       |
| April 30th, 2010      | October 22nd, 2010         |
| <b>May 28th, 2010</b> | November 19th, 2010        |
| June 25th, 2010       | 2010 Holiday Party,<br>TBA |

### Future Planning

|                             |                                     |
|-----------------------------|-------------------------------------|
| April 17th, 2010            | Thunderbird<br>Starwatch            |
| <b>June 5th-12th, 2010</b>  | <b>Grand Canyon Star<br/>Party</b>  |
| <b>June 11th-12th, 2010</b> | <b>5 Mile Meadow Star<br/>Party</b> |

### SAC Star Parties

| Date                 | Sunset      | Astronomical<br>Twilight Ends | Moonrise    | Site     |
|----------------------|-------------|-------------------------------|-------------|----------|
| Jan, 9th, 2010       | 1742        | 1910                          | 0351        | S        |
| Feb. 6th, 2010       | 1809        | 1933                          | 0244        | S        |
| Mar. 6th, 2010       | 1833        | 1955                          | 0131        | S        |
| Apr. 3rd, 2010       | 1854        | 2019                          | 0014        | S        |
| <b>May 8th, 2010</b> | <b>1919</b> | <b>2054</b>                   | <b>0245</b> | <b>C</b> |
| Jun. 5th, 2010       | 1939        | 2123                          | 0140        | C        |
| Jul, 3rd, 2010       | 1945        | 2130                          | 2340        | C        |
| Aug 7th, 2010        | 1924        | 2059                          | 0357        | C        |
| Sep. 4th, 2010       | 1850        | 2017                          | 0246        | C        |
| Oct. 2nd, 2010       | 1811        | 1934                          | 0138        | C        |
| Oct. 30th, 2010      | 1742        | 1906                          | 0040        | S        |
| Nov. 27th, 2010      | 1725        | 1852                          | 2339        | S        |

S= Saddle Mountain; C= Cherry Road; A=Antennas