

The FBAC Observer

VOLUME 17, ISSUE 12

DECEMBER, 2003

An Important Message From The President

A majority of you by now may have heard that the Houston Museum of Natural Science / George Observatory is raising it's Saturday visitor rates at the beginning of the year, and also beginning to charge a minimal fee to access the East & West domes. I want to share some information so that you are informed of what will occur.

The new rates are as follows:

\$3.00 for ages 5-Adult to access the 36" research dome.

\$2.00 for ages 5-Adult to access the East & West domes.

The primary reason for this change is that there has been concerns that the George Observatory was a major revenue loss for HMNS and it had been suggested that some measure would be taken to assure minimal loss of revenue.

Early in the summer, Betty Glass called a building managers (of which not all are FBAC members) meeting to discuss the issues and brainstorm ideas to generate more revenue. After lengthy discussions, the group concluded unanimously that increasing the entry fee and charging a minimal fee for the East & West domes was the only viable and quick means of compensating the deficit.

We also shared regret as to these changes, but the survivability of the observatory was at stake. HMNS is under new directorship and is coming down very hard on all department heads that are under budget. Most of you can understand that in a corporate environment money is the bottom line, and they will do everything at all costs to make ends meet.

Although the rate is increasing, we performed an Internet survey to find out what other observatories around the country were charging, and the George Observatory is still under priced in comparison.

You may ask, "How does this affect the Fort Bend Astronomy Club?" Well, in a way it doesn't. It is true that FBAC owns the 18" telescope in the East Dome of the observatory and some of the equipment within. FBAC is in an agreement with HMNS to staff the telescope during visitor nights and in return we have usage of the dome and facilities. However, it is not our responsibility to staff the door. This responsibility falls on the building manager to schedule a volunteer to staff the dome doors, therefore extra effort will not be expected of FBAC.

The entry to the 36" research telescope will remain the same using group ticketing. Entry to the East & West domes will be monitored by a volunteer (not necessarily an FBAC member) via an ultraviolet hand stamp and light, which will be received at the time of purchase. There is no limit as to how many times the visitors may enter the two domes. If the visitor does not have a hand stamp, the door monitor will direct them to the gift shop for purchase. The hand stamp will be placed below the hand so that the ultraviolet ink will not be washed off by accident.

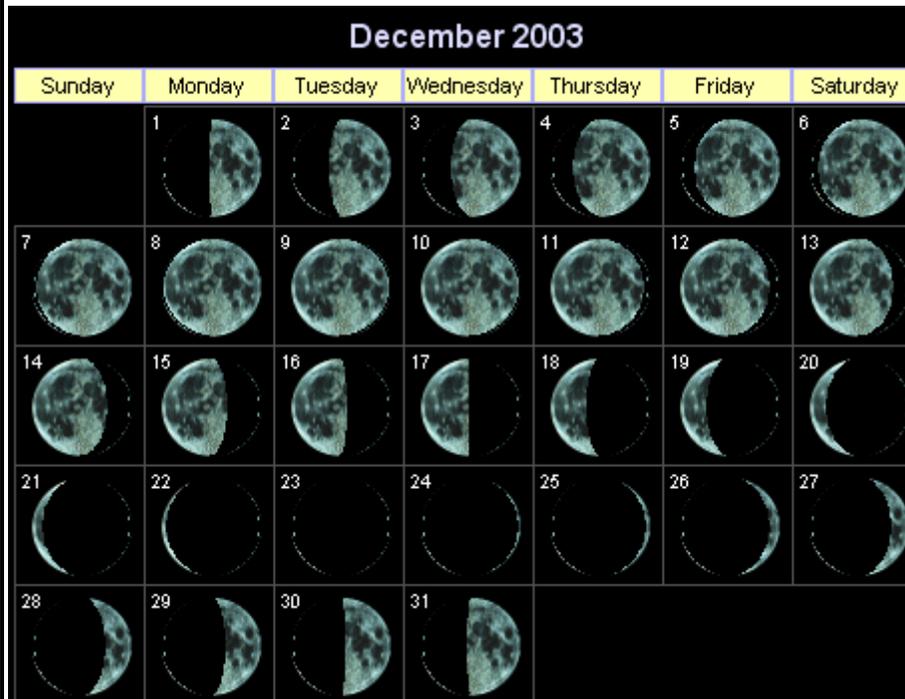
There have been questions by FBAC members and members of other clubs that volunteer at the George Observatory if FBAC was going to get a cut of the \$1.00 fee to enter the East Dome. The answer is an emphatic "NO". FBAC is not out to gain profit from the observatory and it would be ludicrous to ask for a cut. That would be the same as museum members asking for their 20% discount of the current \$2.00 entry fee. Our main concern is that the George Observatory remains open so that we may continue to enjoy the "somewhat" dark skies and convenience of the facilities. It would also be a great loss if FBAC's research teams no longer have a site to continue the great work that is continually achieved. But most of all, it would be a great loss of education to the public with this hobby that we enjoy immensely.

The majority of the FBAC officers and other key contributors to the observatory are in full support in doing whatever possible to insure that the George remains open.

Derek Newton, President, Fort Bend Astronomy Club

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What's Happening In December?

Venus, at a brilliant magnitude -4 will bejewel the sky for the next several months. Compare this "evening star" on various days throughout December as it climbs higher and higher in the evening sky.

Mars, though getting smaller daily, can still be seen in the SSE at dusk. The red planet will be 103 million miles from Earth by the end of the month.

Mag -0.5 **Mercury** can be found about 7 degrees to the lower right of Venus on December 1-7 and will begin to fade to mag $+0.8$ by mid month.

Saturn watchers will find the ringed planet rising earlier and earlier

this month slipping by a half hour each week. Saturn will move in retrograde motion by 2.3 degrees during the month, ending up at mag -0.4 near the star Epsilon in Gemini. Opposition will occur about four hours before we ring in the new year bringing the planet to it's closest approach to Earth until December, 2032.

The bright "morning star" you see this month will be **Jupiter** gleaming at anywhere from mag -2.0 to -2.2 , lagging behind Saturn by about 60-65 degrees.

There are three **naked eye planet combos** during the Christmas month. The first is Mercury-Venus-Mars early on until Mercury disappears after mid-month. Second, Venus-Mars-Saturn in early evening from the second week of December. Then Mars-Saturn-Jupiter near midnight all month. BUT WAIT! THERE'S MORE! During the month of February, 2004, there is a four planet lineup and mid-March till April gives us five planets in sight simultaneously. You can also look for dire predictions by astrologers and other odd-balls when the five planet lineup makes the scene.

Day By Day For December

December 6-Sigma Sgr will shine 2 degrees to the lower left of Venus in the handle of the Sagittarius teapot with Mercury much lower and near the horizon.

December 8-Full Moon, 2:37 PM CST.

December 13-Mars will be near minimum phase, about 87%. Venus-Mars-Saturn span 170 degrees across the sky. The **Geminids** will peak between 10 PM and 5:30 PM local time.

December 17-18-Ceres, the first asteroid discovered, will move NW 0.2 degrees per day, passing 0.3 degrees SW of Pollux. Jupiter will be near it's turning point into retrograde motion and will remain 19 degrees E of Regulus for the next five weeks.

December 20-A sliver of a waning moon will be near the eastern horizon.

December 21-An even thinner slice of the old moon can be seen **above** Antares in the SE.

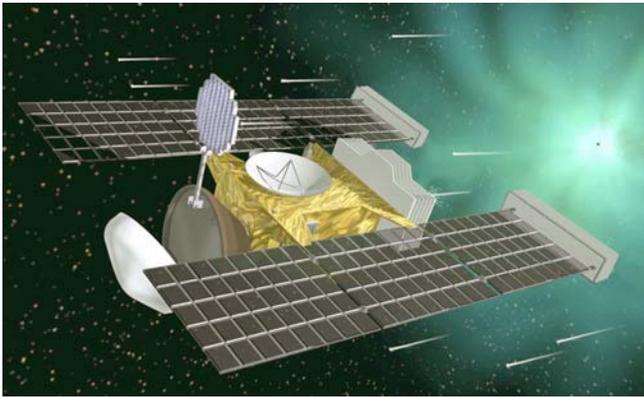
December 22-And if you think that wasn't old enough, go to Florida to see a very, very small sliver shining **below** Antares.

December 23-You probably thought it would never arrive but there's a New Moon at 3:43 CST. You may also view the **Ursid meteor shower** in the predawn hours.

December 25-A young Christmas moon can be seen only a few degrees east of Venus.

December 31-Saturn is at opposition and will be visible all night. Again, this is the closest pass until the year 2032.

Astro Bits: FBAC's very own Keith Rivich was a finalist in the latest issue of Astronomy magazine's "Stupidity Smarts". If you have the January issue, turn to page 16 for Bob Berman's department on not so smart astronomy questions.



Stardust

By Patrick L. Barry and
Dr. Tony Phillips

NASA's Stardust mission will capture dust particles from comet Wild 2 and bring them back to Earth for study.

Philosophers have long sought to "see a world in a grain of sand," as William Blake famously put it. Now scientists are attempting to see the solar system in a grain of dust -- comet dust, that is.

If successful, NASA's Stardust probe will be the first ever to carry matter from a comet back to Earth for examination by scientists. It would also be the first time that any material has been deliberately returned to Earth from beyond the orbit of the Moon.

And one wouldn't merely wax poetic to say that in those tiny grains of comet dust, one could find clues to the origin of our world and perhaps to the beginning of life itself.

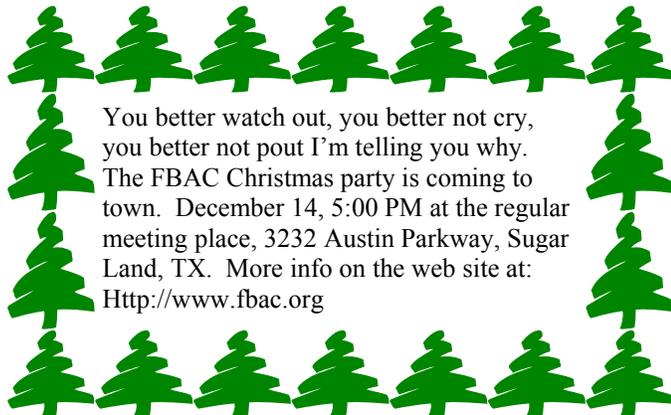
Comets are like frozen time capsules from the time when our solar system formed. Drifting in the cold outer solar system for billions of years, these asteroid-sized "dirty snowballs" have undergone little change relative to the more dynamic planets. Looking at comets is a bit like studying the bowl of leftover batter to understand how a wedding cake came to be.

Indeed, evidence suggests that comets may have played a role in the emergence of life on our planet. The steady bombardment of the young Earth by icy comets over millions of years could have brought the water that made our brown planet blue. And comets contain complex carbon compounds that might be the building blocks for life.

Launched in 1999, Stardust will rendezvous with comet Wild 2 (pronounced "Vilt" after its Swiss discoverer) on January 2, 2004. As it passes through the cloud of gas and dust escaping from the comet, Stardust will use a material called aerogel to capture grains from the comet as they zip by at 13,000 mph. Aerogel is a foam-like solid so tenuous that it's hardly even there: 99 percent of its volume is just air. The ethereal lightness of aerogel minimizes damage to the grains as they are captured.

Wild 2 orbited the sun beyond Jupiter until 1974, when it was nudged by Jupiter's gravity into a Sun-approaching orbit-within reach of probes from Earth. Since then the comet has passed by the Sun only five times, so its ice and dust ought to be relatively unaltered by solar radiation. Some of this pristine "stuff" will be onboard Stardust when it returns to Earth in 2006, little dusty clues to life's big mysteries.

To learn more about Stardust, see the mission website at stardust.jpl.nasa.gov. Kids can play a fun trivia game about comets at spaceplace.nasa.gov/stardust . . .



You better watch out, you better not cry,
you better not pout I'm telling you why.
The FBAC Christmas party is coming to
town. December 14, 5:00 PM at the regular
meeting place, 3232 Austin Parkway, Sugar
Land, TX. More info on the web site at:
[Http://www.fbac.org](http://www.fbac.org)

January FBAC Meeting

Novice: Don d'Entremont and The Ecliptic
(This is not a music video)

Guest Speaker: Larry Mitchell, The Life
And Times Of William Herschel

Aperture Fever, Part 3: Building The Scope Of A Lifetime

By Dennis Borgman

The rocker frame pivots in azimuth on a heavy computer disk drive bearing and is further stabilized by three outrigger bearings fitted into the steel tube "ground board". These 3 bearings ride on the underside of a three inch wide high density polyethylene ring. This ring is fastened to the underside of the rocker frame. HDP was chosen to provide a smooth tough surface for the outrigger bearings. This ring is about .75" thick and proved tough to cut. I finally found the best cutting setup was a jig saw with a very coarse blade, running at it's slowest speed. Friction from the blade even at the lowest cutting speed melted the HDP and welded the kerf back together behind the blade. Boy! Talk about lots of effort and no progress! I finally used a small trickle of water flowing from a garden hose to keep the material cool at the cut. Cutting was still very slow and it took over two hours to cut the inner and outer circles of the 27" diameter ring! Saturday noon rolled around (I've already missed my scheduled travel day to TSP) and I was ready to assemble the telescope to the rocker frame for the first time! I can't remember the last time I was so elated by success! But wait! The mirror box is awful close to the azimuth pivot shaft. Darn*#!@% &! It doesn't clear! I must have missed a calculation somewhere, because I had 1/2" clearance in the CADD drawings! ... PANIC! ... Can I cut some off the mirror box? ... Wait!... If I shorten the azimuth shaft and slightly redesign the clutch pressure adjustment screw it might clear!/? It works! 1/32" to spare! Piece of cake! The worm wheel/clutch assemblies were mounted and the worm wheels temporarily clamped to the rocker frame to provide traditional DOB positioning friction. And so it went to TSP 1994. The drive motors weren't ready yet, no gear covers to keep out the dirt, but at least I could use the telescope as an undriven DOB. By 7:00pm Saturday evening I had packed all in the truck. Now for a good nights sleep! ... Man! I've got enough adrena-

line pumping in me to last a lifetime! Sleep? ... The heck with it! If I leave now, I can be at TSP by Sunday morning! I'll sleep when I get there. And leave I did. I arrived at the Prude Ranch about 4:30 am Sunday. The only thing that kept me awake, was counting the deer along I-10. If I counted 50, there must have been at least 150! This kept the adrenaline going and me awake. TSP 1994 was enjoyed immensely and was a much needed rest from telescope construction.

After returning from the Texas Star Party, I busied myself with completing the stepper motor mounts. The steel worm gear as supplied by Andy Saulietis, was mounted in a block of PVC material machined to very close worm shaft tolerances. The block of PVC was split such that all end play of the worm could be eliminated by squeezing the two halves together against the ends of the worm. I wanted a spring loaded design that would maintain full worm engagement in the PVC worm wheel during the pressures of telescope pointing induced by the friction drive clutches. The PVC worm wheels are rather soft, and I was afraid that it would strip the teeth if the worm wasn't kept fully engaged. The cautious design has apparently paid off in that the worm wheels show no signs of failure after two years of service. The worm is kept centered by Teflon lined guide plates that ride on the faces of the worm wheel. The PVC worm bearing block slides between these same guide plates. Adjustable guides along the edges of the block control radial movement. A heavy spring maintains pressure on the worm bearing block to maintain constant worm engagement. The whole worm/stepper motor assembly pivots laterally to follow any slight irregularities in the flatness or alignment of the worm wheel/clutch assembly. This whole system has worked well, but there is an annoying springiness in the altitude movement. During periods of gusty breezes, it is difficult to hold the telescope stable, especially

at higher powers. Aside from this the drive system has been exceptionally pleasant to use. How sweet it is to walk away from your telescope for a late night snack, and return 30 minutes later to find that faint fuzzy object still centered in the field at 480 power!

Drive enclosures came next. A band roller was designed and built to facilitate construction of the .125" thick x 1.5" high curved walls of the drive enclosures. The back covers are .062" aluminum. Plexiglas front covers were used to complete the enclosures and provide visible access to the drive assemblies. An aluminum enclosure was also constructed for the altitude encoder with a thin Plexiglas front cover for visual access. The azimuth encoder is mounted inside the azimuth drive enclosure, so no separate protection was needed. The azimuth encoder is driven with a thin flat belt from a pulley locked to the stationary azimuth shaft. This allowed the encoder to be mounted off to the edge of and in line with the azimuth worm wheel. This maintained the much needed clearance between the mirror box and the azimuth shaft. With an identical pulley on the encoder, one complete revolution of the rocker frame (with encoder attached) rotates the encoder shaft one revolution.

The only piece of my design that I have yet to complete is the micro-processor drive for the primary collimation stepper motors. Adjustment is currently done by simply reaching into the mirror box from the top and turning the appropriate collimation screw. My idea for the drive is a joy stick control that would be hand held while looking through a collimation Cheshire. I have used a Motorola 6805 CMOS micro-processor coupled to MOSFET drivers in several such projects before and it shouldn't be too difficult to do. Between Club projects and work, there never seems to be enough time to get everything done. But I guess that's why they call this a hobby!

—Dennis Borgman

Diary Of An Eclipse Chaser, Part 3 By Joe Dellinger

We saw a group of Germans on the side of the road and joined them. They were happy and cheerful, looking up at the bright unobstructed sun through their viewers. They smiled at us and pointed up and looked very pleased to have found this spot. I looked at my watch. 5 minutes to go! We were going to make it! Since they didn't have nearly enough eclipse viewers for their group, I handed out my spares to them and spread out a white sheet for seeing shadow bands.

Oops. Did I say 5 minutes? Wrong. I meant 15 minutes! Ack!

Yikes! At the speed that hole is moving we aren't going to make it!

I showed them my printouts and the time. The German fellow said in halting English... "I think not THIS hole, but see, THAT hole, OK." Hmm. That other hole wasn't nearly so nice. 10 minutes to totality. The sun was back in the clouds again.

The light was really getting weird now. To add to the unreality several jets roared loudly overhead, heading East. First what appeared to be some sort of military jet, and then what appeared to be a Concorde. Looking around, there were planes ALL OVER the sky that I hadn't noticed before. All heading East. Chasing the sun.

I announced (too loudly, I'm sure) "Wir gehen!". (We're going!) We exchanged glances and on cue all three groups started throwing their stuff in their respective cars willy nilly and piling in. One group of Germans was fast and got out onto the road, but then slowed down to wait for their friends to catch up. I roared around their car (I had a Mercedes Benz rental car!) and never saw either of them again. (Nor my spare eclipse viewers...)

It was definitely getting darker now. The patches of sunlight creeping across the hills were fading out. The roads were absolutely deserted. We found ourselves in the

clear patch again. My sister had her head almost out the window as I drove, calling out where the sun was located with respect to the largest hole and which way I should go. This task was really stressing her out; there were three layers of cloud, all apparently moving different directions. Fortunately only the lowest layer really mattered. That was the opaque one we absolutely had to keep clear of. Meanwhile I was scanning the landscape as I drove trying to see the outlines of the dimly sunlit patch of ground and where we were within it. On the hillsides I noticed small clumps of people here and there, camped beside their immaculate German cars, all looking up.

We slowed down a bit as we roared through Bissingen. The whole town was out sitting on lawn furniture drinking beer and having a party. Heads turned and looked at us in puzzlement as we went by. What an idiot! Doesn't he know the show's about to happen! And there's the sun, right there, in the clear!

But I wanted to get the sun AHEAD of the hole, not in it! Driving the car at (only very slightly reckless) speed we made time run backwards and pushed the sun back ahead of the hole again. Satisfied, I stopped in Kesselostheim, a REALLY tiny town 6km North of Bissingen, parked by a green grass field by the side of the road, and we both jumped out. Less than two minutes to totality, and the sun was just starting, yet again, its trek back across the long axis of the slowly moving hole. We're actually going to make it! What a great spot too... We're right up on the Ries crater rim, and can see the rolling green hills dotted with towns and towers for a long ways off in all directions.

Venus is briefly visible now, in another crack in the clouds. It looks like a lot of people in the area are going to get some luck... there are rifts in the clouds all over the place now, but only very small ones besides ours.

I hurriedly throw out my white sheet again. (I'd never seen shadow bands before; I forgot to look

down the two previous eclipses I've seen.) Yikes! The eclipse is almost upon us! Not enough time to set up! My tripod has jammed from being thrown back into the car roughly and I can't get the base plate off to mount my camera. Oh well. Screw it. I don't need to take photos. I just grabbed my sun viewer and my binoculars and stood there ready to enjoy the show. In the viewer the crescent was only 30 degrees of arc now and rapidly dwindling. 20... 10... I glanced around. So many dark clouds I can't really see the umbra coming. I think that's it in the South, but no, that's the wrong direction... it's just a darker patch of storm cloud over there.

There is a flash. I think it's lightning but no, it's my sister taking a flash photo.

The crescent has almost contracted to a point and I risk a quick peek at the sun naked eye. Yup, the corona is visible all the way around now as the bright sun becomes a diamond ring. The last bright spot is on the left side of the sun. Huh! That's not what I was expecting! I was so busy just trying to avoid the clouds I have little idea where we are within the path of totality now. Way off towards the Northern edge, obviously. But, still inside!

I put up my binoculars... wow. This is the most active sun I've ever seen. At the previous eclipses I've seen there were 3 or 4 prominences glowing red around the rim of the moon. This time there are too many to count... maybe 19 or 20, fairly evenly spaced most of the way around. The corona is compact and tangled, like a bad hair day for the sun. I just sit and watch through binoculars for a bit, leaning them against the roof of the car for support. Maybe eclipses are starting to get old hat for me. I'm not shaking too much.

My sister has her binoculars up too and remarks "now I see why you told me to bring binoculars". (In Aruba she brought them but forgot to use them!)

Continued on page 6

Eclipse Chaser-continued from page 5

More planes going over, slower ones this time, headed East, chasing the umbra.

Some high thin clouds drift across the sun so I snap some random photos of the landscape, then try balancing the camera on the roof of the car. Well, I'll at least have some really crummy photos to prove I didn't make it all up.

The sun's most of the way across the cloud hole now, although there are mostly thinner clouds on the way for a while... I look with binoculars again. The top of the sun is rapidly getting brighter... the bright yellow-red chromosphere is showing... brighter, bright bright rim... time to take the binos DOWN!

I think my eyes have just had enough sun for a while and I decide I'd better look down for a bit.

Oh yeah... my sheet. I was supposed to look for shadow bands.

Right. Forgot again. But what do you know, as it starts to get brighter there they are. Rather subtle, but they certainly do exist. And boy are they moving fast, North to South towards the sun. I point them out to my sister but she can't see them. (Maybe shadow bands are merely a symptom of bedazzled eyes?)

A very quick glance up at the last fading glimpse of inner corona. The thin clouds in front of and all around the sun are lit again now. There's a rainbow aureole. I look through the viewer. The photosphere is back on the top of the sun now, a

little to the right. Yeah, the first and last spots of sun were only a little more than 90 degrees apart. We were waaaay off from the centerline. No idea how long totality lasted. It seemed like forever this time, coming as it did on the heels of that wild chase, but probably was less than two minutes.

And shortly after totality the sun's back peeping in and out of the thick lower clouds. Show's over. We relax for a bit watching the light return to the landscape. The sun's still a very thin crescent when thick clouds return and blot it out entirely. We drive into the town (such as it is), make a quick celebratory phone call back home to Texas, and head back to Hoechstaedt for lunch. We get one more brief glimpse of the cloud-filtered sun just before last contact.

We ask others around our table

"Sehen sie die voll sonnenfinsturnese?". The answer from people who watched from within the town: "Finsturnese Kaput!" One fellow says he saw it and it was "Sehr Wunderbar!". "Wo?"

From a little town right next to where we were watching it from... he watched through the same portal we did.

Whew. Did we get lucky on THAT one.

(Well, we later discovered we would have seen even more totality if we had despaired of trying to go anywhere at all and simply slept late and then joined the beer party on the roof of our hotel in Augsburg. They got a hole at just the right time, and were nearer the center line too...)

On to Dillingen for more of my sister's genealogical pilgrimage.

A few scattered people in Dillingen tell us they caught parts of totality. Most say they missed all of it. My friend in Karlsruhe says they got 15 seconds' worth at their place. The next day in Weiler, another ancestral town near Karlsruhe, they say they got the whole show; they laugh that their neighbors who drove to Munich for the big party there (and the longer totality) got entirely clouded out. Other people we know who tried to drive down from Frankfurt early early on eclipse morning hit massive traffic jams; they couldn't get across the Rhine river and saw much of the eclipse, but were outside the zone of totality. My Stanford friend heroically drove from Munich to Karlsruhe to get the 75% chance of seeing it predicted for there by the last-day weather reports... and then was clouded out for all but a fraction of a second of totality.

In the end it looks like it was a complete crap shoot no matter where in Germany you were. The Western end was a little better, but not much. You could tilt the odds in your favor, a bit, by last-minute frantic scrambles, if you were lucky and found a hole to scurry into nearby. August 12:

After a cloudy morning it turns clear again on the 12th. As for all three total eclipses I've been to now, eclipse day was by far the cloudiest day of the entire trip, I got rained on during most of the opening partial phases, but miraculously saw totality in the clear anyway.

Is someone up there having fun with me, or what?

—Joe Dellinger

Errors and other goofs are normally corrected in subsequent issues of magazines and newsletters. But I'm going to correct one now before it gets out of hand. On page 2, I wrote about Keith Rivich being a finalist in the "Stupidity Smarts" article in Astronomy magazine. Now don't misread this. Keith isn't the one being stupid—it's the people we deal with asking stupid questions. For example, I was once asked by a science teacher if I thought the moon landing really took place. The only reply I could think of was "Surely you're kidding!" She came back with "But the flag was waving from the wind." It was obvious she had been watching too many Fox television specials.

EAST DOME SCHEDULING KEITH RIVICH

The FBAC owns and operates an 18", fork mounted newtonian telescope which is housed at the George Observatory in Brazos Bend State Park. As part of our agreement with the Observatory we are responsible for supplying volunteers during nights of public use, which includes all Saturday nights and some Fridays. In return we are allowed full access to the scope for personal use. Included with the scope are a full set of Televue eyepieces and filters, several sets of star-charts and reference books, a computer with charting programs and a CCD camera. To have access to this equipment you MUST go through a short training program AND volunteer at least once each quarter. The training can take place on the same night that you volunteer.

During the dark-moon period, which runs from several days prior to third-quarter moon to several days past new-moon, use of the scope is scheduled due to demand. At all other times the scope is available on a first come basis. If you volunteer for a public night, even during the dark-moon period, then the scope is yours for the remainder of the night. To schedule a dark moon night I must be contacted no later than the full-moon prior to the next observing runs. Each month I will publish the current East-dome volunteer schedule, observing schedule, and research team schedule.

NOVEMBER SATURDAY NIGHT SCHEDULE

See <http://users3.ev1.net/~keithrivich/astronomy/eastdome/calender.html> for updates

DARK MOON OBSERVING SCHEDULE

This part of the schedule will be continually updated and posted at <http://users3.ev1.net/~keithrivich/astronomy/eastdome/calender.html> For more information on how to schedule dark-moon nights call me at any of the numbers posted below.

Also available are the clubs 8" dobsonian reflector and the Solaris scope (for viewing sun w/ H Alpha filter).

The clubs Meade 8" and 10" LX-200 loaner scopes are available for use. For an update on availability please call me or go to

<http://users3.ev1.net/~keithrivich/astronomy/eastdome/page3.html>

For more information or to sign up as a volunteer please contact me at: HM 281-468-8491 or WK 713-771-6944 or e-mail at icgalaxies@cs.com

Did You Know: That 30% of M31's stars are young—about 6-8 billion years old. This accounts for the high fraction of heavy elements in the Andromeda galaxy's halo. There appear to be three different ways this could have happened: Small galaxies repeatedly merging with M31, a large galactic collision bringing in many young stars, or a wave of star formation after a large galactic collision. The findings lend support to the view that giant galaxies like Andromeda and our Milky Way have grown by cannibalizing many smaller galaxies throughout their histories. And it appears that M31 has taken part in a major interaction much more recently than has the Milky Way.

Minutes Of The November Meeting

Announcements:

There will be no December regular meeting. Instead, we will have an Xmas party on December 14, at 5PM, at the same place where our usual meetings are held. The club will provide a meat dish and a drink. Others are asked to bring side dishes, desserts, etc. Please e-mail Leonard Pattillo, astrotego@aol.com, and tell him what you would like to bring. We don't want everyone bringing green bean salad. :-)

We are about to run out of "official FBAC apparel". Before ordering new hats, shirts, sweaters, etc, the club wants to survey what people actually will buy. Send an e-mail to Derek Newton, faintandfuzzies@yahoo.com, and let him know what you would buy if it were available.

Steve Goldberg announced that the new Texas Star Party web site will soon be open for business. It is at "texasstarparty.org". TSP starts on May 16 next year. The drawing for housing will be on January 19, so you need to be registered before then.

There is a new club "forum discussion group" available at:

www.astronomyhouston.org/forum

It is intended to supplement NetSlyder, not replace it. NetSlyder is meant for announcements and timely discussions. Anything of "lasting value" might be better for the forum, as posts there are archived and threaded.

Terry Hiserodt's wife is investigating "sprucing up" and modernizing our club logo. If you have suggestions, talk to Terry.

The East-dome committee announced that the East-dome door combo has been changed. If you know the new one, please do not circulate it indiscriminately. We'd rather not have to change the combo again.

Meeting:

Joe Dellinger and Bill Dillon gave the novice presentation on how the asteroid team discovers asteroids, and showed their images of the near-earth-asteroid Hermes.

Peter Nolan was the invited main speaker, who gave his talk "Mesozoic Mass Murder Mysteries", on hunting for fossils, the geological time scale, mass extinctions, and in particular theories as to how and why the dinosaurs went extinct at the end of the Cretaceous 65 million years ago.

He has participated in several digs at the "Judith

River" dinosaur dig site in Montana. It is a late Cretaceous fossil site, but not quite so late as the more famous Hell creek, which is latest Creta-

ceous.

Free bonus material!!!

In his talk, Peter mentioned the K-T (Cretaceous-Tertiary) boundary outcrop exposed in the bed of the Brazos River between Bryan and Waco. I have a paper that describes that outcrop and how to get to it. ("Ostracoda of the Cretaceous-Tertiary contact sections in Central Texas", by R. F. Maddocks.) Here's a summary:

The outcrop takes the form of a sandstone ledge, which "makes a series of riffles in the river bed". The sandstone is bordered by blocky, grey to black claystones on either side. The sandstone ledge is thought to represent a turbidite, a geological name for an underwater landslide. This turbidite is thought to have been initiated by the force of the Chichxulub mega-tsunami. There is an irregular erosional surface immediately below the turbidite, representing a hiatus in sedimentation --- the turbidite scoured out some of the underlying sedimentary layers as it came roaring by. Turbidites progress from coarse rock on the bottom to progressively finer and finer. The heavier stuff settles out first.

The sandstone ledge represents the coarse part of this turbidite.

"The main exposure of this contact is in the West bluff of the river about 300 meters downstream from the FM 413 bridge, across the river and about a mile upstream from the townsite of Eloise, in Southern Falls county. At that point the turbidite ledge is exposed in the river bank. It exposes more than 6 meters of section above the low-water level of the river." (I've been told, only go

when the water level is low, and preferably go in the winter when there aren't biting bugs everywhere in the river-side scrub.)

There are Iridium peaks in the sediments 3-20cm above the ledge. The biostratigraphic contact (meaning, the point at which microfossils characteristic of the Cretaceous disappear and are replaced by transitional "disaster forms") is approximately 10cm above the ledge. The "transitional interval" continues on for about 3 meters above the top of the Sandstone ledge. In the lowest/earliest part of the transitional zone, fossils are much reduced in numbers. Life gradually becomes more abundant towards the top of the transitional zone. Above the transitional zone, the microfauna settles down and looks like standard early-Tertiary stuff, with again abundant microfossils.

You can learn more about Peter's dinosaur-digging trips, and learn how you can also participate, at montanadinosauridigs.com.



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*Dedicated to the acquisition
 and dissemination of
 information pertaining to the
 science of astronomy*

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You are invited to submit your opinions for inclusion on this page. Please be thoughtful and respectful of others in your comments. Rants will not be published. All articles should be 450 words or less and are subject to editing for clarity and length before publication. Please submit in Word format to:
stargazer411@earthlink.net

The Fort Bend Astronomy Club meets on the third Friday of every month except for those months when special meetings are called. The next regular meeting will be at 7:15 PM on January 16, 2004 at the First Colony Conference Center, 3232 Austin Parkway, Sugar Land, TX. Dues are \$30/year for the first member, \$5 per additional household member. Student dues are \$15/year.

The **Houston Astronomical Society** meets the first Friday of the month in room 117 of the University of Houston Research Building. The novice program begins at 7:00 PM and main meeting at 8:00 PM.

For the **Johnson Space Center Club**, refer to the JSCAS web site for meeting times and sites. There is a link on the FBAC web site.

North Houston Astronomy Club meets on the 4th Friday of the month at Kingwood College. The meeting starts at 6:45 PM, main meeting at 7:30 PM.

Why Organizations Succeed: An expression of editorial opinion

Most amateur astronomers I know love to share their passion for the hobby. We collar our family members, neighbors, office mates, just about anybody who will listen to us espouse the glories of the night sky. And it's only natural that we like to congregate with "birds of a feather" so to speak.

I often contemplate the relative success of organizations; how they manage to carry on year after year through thick, thin, and in between. Some prosper, some languish. Some survive, some don't.

I've been around FBAC for about five years. Not a long time compared to many in the club, some of whom are founders and have been here from the beginning. But in those five years, I've seen a lot of change. We have grown and continue to do so. The "technical" level of our observers has increased; many of us are in the advanced category. The success of at least one special interest group has been phenomenal, discovering

over 250 asteroids to date. And we are charitable with our time and our money. The annual "Telescopes For Telethon" MDA event is always a big deal. Astronomy On Wheels brings the science of astronomy to many kids and adults who may have never had a chance to even touch a telescope in their life. We do a lot of stuff. But are we a successful organization?

Since I'm not an expert on anything, especially the organization of clubs, and as I thought about writing this little piece, I decided to do an Internet search on two phrases: "Why Organizations Succeed" and "Why Organizations Fail". When I plugged these into Google, I was amazed at the results. I got 26 hits on success and 209 on failure. Looks like failing is a lot easier than succeeding. And indeed it is.

But I was able to glean some nuggets from all my Googling. I determined that there are four reasons organizations fail: change, performance, vi-

sion, and execution.

Delving into the details of any of these is beyond me and this article. It seems though that problems with any one of the above could wreck an organization.

And maybe we need to be thinking about all four.

Are we dealing with change in FBAC? How well do we perform as club members? Are we good leaders and are we good followers. Are we willing to step into the breach when asked to volunteer.

Without vision, there can be no success. Do we need to question our future as a club. What will we be doing in a year, 5 years, or longer. And when we have that vision, we must execute. Dreams are one thing, action another.

Are we a success? The answer lies within us. Success is the road less traveled. But the load is easy when we all pull together.

—Wes Whiddon