

THE FBAC OBSERVER

AUGUST, 2003 VOL 17, NO. 8

Fort Bend Astronomy Club, P.O. Box 942, Stafford, TX 77497-0942

WHAT'S HAPPENING IN AUGUST

Friday, August 1—30 minutes after sunset, use your binoculars to spot Jupiter, Regulus, and Mercury low in the western sky.

Saturday, August 2—Four hours after sunset, look for Mars in the constellation Aquarius.

Sunday, August 3—At dusk, look for Spica about 4° below the Moon.

Monday, August 4—Neptune, at mag. 7.8, is at opposition tonight.

Tuesday, August 5—First Quarter Moon at 2:28 a.m.

August 11-14—Mars, retrograding $<0.2^\circ$ per day, passes between Delta & Tau Aquarius. **Monday, August 11** is also Full Moon which occurs at 11:48 p.m. known as 'Green Corn Moon' or 'Grain Moon'.

Tuesday, August 12—Mars rises before nightfall to the Moon's lower left. Watch as the Moon approaches Mars for the rest of the night. The Moon spoils tonight's Perseid meteor shower.

Wednesday, August 13—30 minutes before sunrise, look for Mars 5° NE of the Moon. Also on this day, look for Mars in the daytime.

Thursday, August 14—Mars and Saturn are 120° apart in the predawn sky. Also check out the planet Mercury 45 minutes after sunset. Mercury is at its greatest elongation, 27° from the Sun.

Friday, August 15—**FBAC meeting and election of officers. Be there: AT 1ST COLONY CONFERENCE CENTR.**

Sunday, August 17—Mars is within 15° of Formalhaut, a rare event as Mars dips as much as 6.7° south of the ecliptic plane August 19-22.

Monday, August 18—Venus at superior conjunction, beyond the Sun, will slowly emerge as an evening "Star" in autumn.

Wednesday, August 20—Last Quarter Moon at 3 p.m. CDT.

Friday, August 22—Jupiter at conjunction, invisible on the far side of the Sun. It will emerge as a morning "Star" in the coming weeks. Saturn, already visible in the morning, will pass 2.8° S of Epsilon in Gemini.

Saturday, August 23—Uranus, at mag. 5.7, is at opposition. Three hours after sunset, use your binoculars to locate Uranus 8° upper right of Mars.

Wednesday, August 27—New Moon at 12:26 p.m. Also on this date is the closest approach of Mars in nearly 60,000 years. Distance from Earth 34.65 million miles, the least distance until the year 2287. So get out your telescopes, binoculars, lawn chairs, mosquito repellent and take advantage of this once in our life time event.

FBAC MEETING FRIDAY AUGUST 15

Once in a lifetime site - Mars & the Moon

Never again in your lifetime will the Red Planet be so spectacular. This month and next, Earth is catching up with Mars, an encounter that will culminate in the closest approach between the two planets in recorded history. The next time Mars may come this close is in 2287. Due to the way Jupiter's gravity tugs on Mars and perturbs its orbit, astronomers can only be certain that Mars has not come this close to Earth in the last 5,000 years but it may be as long as 60,000 years. The encounter will culminate on August 27th when Mars comes to within 34,649,589 miles and will be (next to the moon) the brightest object in the night sky. It will attain a magnitude of -2.9 and will appear 25.11 arc seconds wide. At a modest 75-power magnification Mars will look as large as the full moon to the naked eye. Mars will be easy to spot. At the beginning of August Mars will rise in the east at 10 p.m. and reach its azimuth at about 3 a.m. But by the end of August when the two planets are closest, Mars will rise at nightfall and reach its highest point in the sky at 12:30 a.m. That's pretty convenient when it comes to seeing something that no human has seen in recorded history. So mark your calendar at the beginning of August to see Mars grow progressively brighter and brighter throughout the month. Share with your children and grandchildren. No one alive today will ever see this again. So gather up the family, get your binoculars, lawn chairs and mosquito repellent, find a dark area and have fun.....

MORE MARS STUFF!

Mars in August blazes in the ESE in the early evening. From our area it rises in dark skies $1\frac{3}{4}$ hours after sunset on the 1st of August, shifting earlier in twilight to just 15 minutes after sunset on 31 August. For most of August Mars can be followed with your unaided eyes until sunrise. A fine chance to see Mars during the daylight hours comes on Wednesday, August 13.

The Earth overtakes Mars every 25-27 months. Mars then appears at opposition, 180° from the Sun, and up all night and bright because it is close to Earth. The next oppositions, with distance from Earth in millions of miles, occur:

August 2003—35 mil.	Nov. 2005—43 mil.	Dec. 2007—55 mil.
Jan. 2010—62 mil.	Mar. 2012—63 mil.	Apr. 2014—57 mil.
May—2016—47 mil.	July 2018—36 mil	

August, 28 2003 and July, 27 2018 are perihelic oppositions. Perihelic oppositions occur when a planet has a markedly elliptical orbit, such as Mars, whose apparent size varies considerably depending on whether opposition occurs near time of the planets perihelion or aphelion. Perihelic oppositions are the best times for observing Mars.

Thoughts From The President

Driving Leonard crazy is what I do every month because I usually wait until the 11th hour to send him my monthly contribution for the newsletter. Funny how, when I'm not in a position to do anything about it, I can think of a hundred things to write but when the fingers hit the keyboard, my mind goes numb and I start to stare off into space.

Speaking of staring off into space, the annual Greatwood Star Party at the George was, well, great. Some of this you may have seen on Netslyder but we probably had a total of 150-200 people, including kids, through the observatory during the three nights. I was just reading Barbara's email about how much goodwill we generated during those three days and thinking how much pride we can take in our organization for being "better than the McDonald Observatory." It all happens because club members are willing to show up at times that are not very convenient for them and run the telescopes. Thank you FBACers.

There hasn't been much press about this but it's approaching time for the annual fall FBAC camping trip/star party. At the last club meeting, I did a quick hand count of members that would be interested in going this year. The total wasn't impressive. I think two people raised their hands. A lot of you will remember that for years, we had this event at Krause Springs, about an hour northwest of Austin. Last fall, it was held at Clearwater Ranch in Leakey, TX. There is no doubt that Clearwater Ranch is the best location for observing. The skies are quite dark and the accommodations are not as spartan as Krause Springs. But there's a certain appeal to Krause. It's closer by a couple of hours and there's the feeling of being in the great outdoors, especially when the raccoons break into your tent and steal the bacon right out of your ice chest. The new moon weekend in September will be the 25th through 28th. So, here is what I'm proposing. Let's make another trip to Krause Springs and see how it goes. Elsewhere in this document, you will find a sign up sheet. If you want to be included in the trip, please fill out the sheet and mail it to the address listed on the sheet. There is also an email address listed on the sheet that you can use to sign up. Please get the info in as soon as possible.

Serving as an officer in FBAC is not a burden. It is a privilege. I think. At least that's what they keep telling me. Hee, hee, just kidding. Anyway, elections are next month. Nominations will be taken at the August meeting. Please give serious consideration to serving as an officer in some capacity.

There was a great turnout in July for Telescopes For Telethon with a net of over \$600. Unfortunately, I was out of town that weekend but will be there for the next one scheduled for August 9 from 5-11 PM. Just in case you don't know what T4T is, it's an annual club event held at The Tinsletown Theater on Beltway 8 where we collect money for the Muscular Dystrophy Association (Jerry's Kids). We set up scopes at the theater and solicit donations from passers by. Be there or be square.

Astronomy Day is fast approaching. This year it will be October 4. This is a joint event held annually at the George Observatory with the combined effort of all four Houston area clubs. Astronomy Day is the best chance we have all year to promote the science of astronomy to the public. I don't know yet what role FBAC will play this year but please plan on helping out with this important event.

Wes Whiddon

P.S. Aren't you glad I didn't think up any crazy poems this month.

Krause Springs Sign-Up Sheet

The annual FBAC camping trip/star party will be held at Krause Springs this year. Krause Springs is a private camp ground located about an hour's drive northwest of Austin in the hill country. Tent camping and RV sites are available but must be reserved to get them in the same area. If you plan to tent camp and want electricity and water, reserve an RV slot. This is highly recommended for maximum comfort. This area is great for hiking, hunting fossils and arrowheads, swimming in the spring fed pool and river, or just plain relaxing. An of course, observing the heavens. We will have a club cookout on Saturday evening so plan accordingly. Please plan to attend this year's event.

Yes, I am interested in going:

Name: _____

Telephone _____

Email _____

Reserve for me a:

RV slot for tent camping _____

RV slot for RV _____

Forward this sign-up info to:

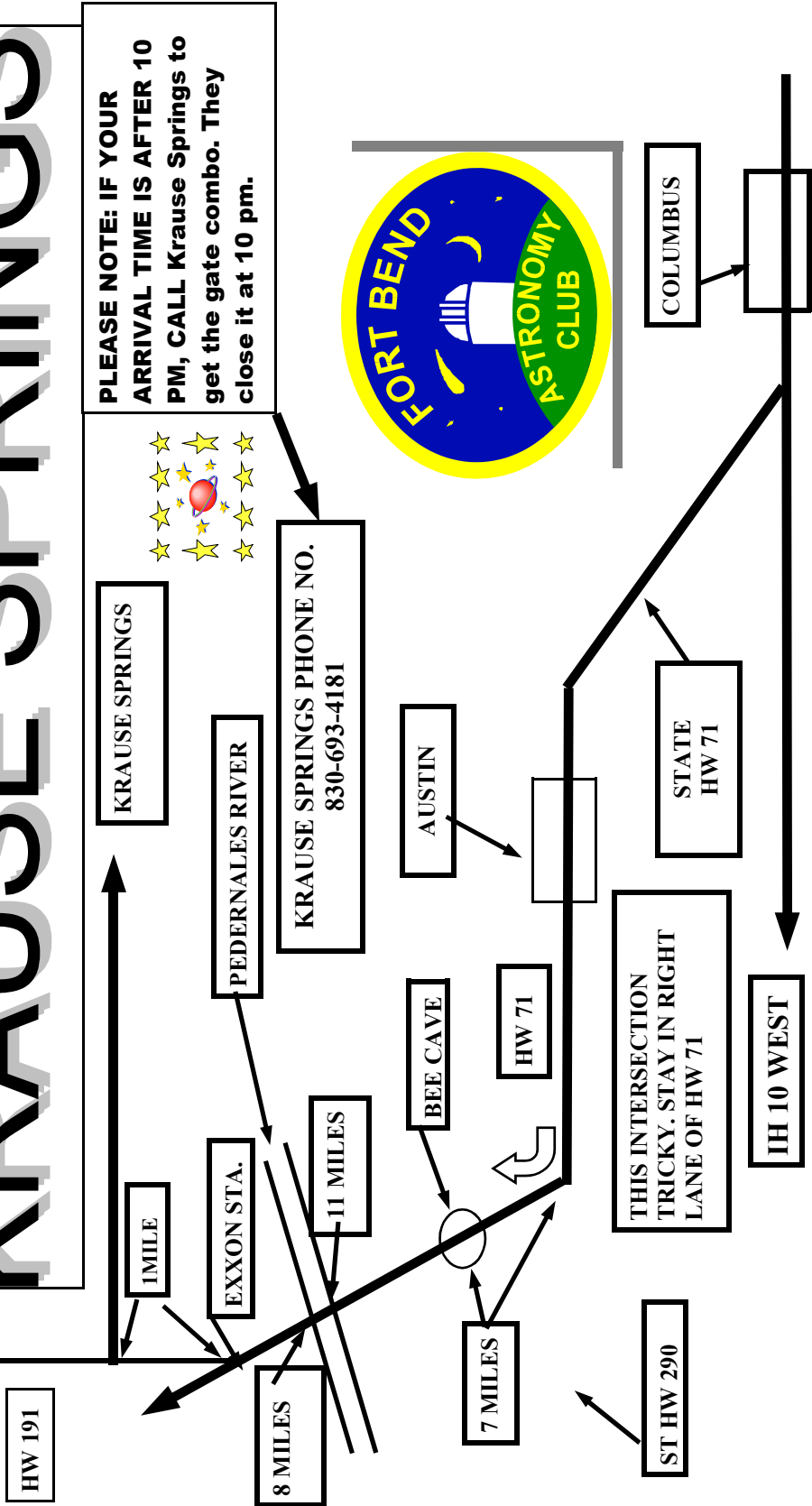
Wes Whiddon
5311 Rebel Ridge Drive
Sugar Land, TX 77478

Or email to:

wwhiddon@concentric.net

Editors note: A map is included in this issue of the Observer to give our members an idea of where Krause Springs is.

KRAUSE SPRINGS



Please note that the mileage's are approximate. Also, at the intersection of HW 71 and 290 is a HEB grocery store that you can stock up on necessary things that you forgot or need. If you have any questions please call Leonard Pattillo at (281)-980-1175, and if you plan to go call Leonard Pattillo at (281)-980-1175 or email at astroto@aol.com and let me know so I will know how many spots to reserve.



Monster Trucks on Mars

by Patrick L. Barry and
Dr. Tony Phillips

We all know what Mars rovers look like now: Robotic platforms, bristling with scientific instruments, trundling along on small metallic wheels. Planetary rovers of the future, however, might look a little different—like miniature monster trucks!

Enormous, inflatable tires can easily roll right over the rocks and rugged terrain of alien planets, just as they bound over old cars like as many speed bumps.

That's the idea behind a novel concept for robotic planetary rovers known as the "big wheels inflatable rover." Unlike rovers similar to the Sojourner robot that explored the surface of Mars in 1997 that depend on instructions sent from Earth or complex programmed intelligence to steer through rough terrain, this rover has three beach ball-like tires roughly five feet across that make it a true off-road vehicle.

"We sent this rover out to Death Valley, to a place called Mars Hill that has a general geological formation like Mars, and nothing could stop it," says Jack Jones, the mastermind of the inflatable rover concept at JPL. "It just kept going and going and going."

Lots of current research is devoted to developing advanced robotic intelligence that allows rovers to detect rocks in their path and maneuver around them. The alternative to such on-the-spot intelligence is tedium: Ground controllers on Earth working out the maneuvers by hand and waiting an hour or more for the instructions to travel to the distant planet.

A "big wheels" rover would need such computer intelligence to avoid very large boulders, but Jones asks, "Why worry about every little rock, pebble, and crack when you can just roll right over most of them?"

Jones imagines a scenario where multiple inflatable-wheel rovers could be sent out to explore the Martian terrain—easily and quickly traversing the rugged terrain. Samples gathered by the rovers could be returned to a central, stationary laboratory module for detailed analysis.

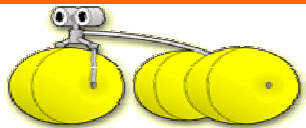
"The Martian surface is really very, very rough with a lot of rocks, and to be banging this laboratory equipment up and down over all of these rocks aboard the rovers doesn't make much sense," Jones says. "I suspect it might be better to leave it in a central location."

At the moment it's all very speculative; NASA currently has no definite plans to send inflatable rovers to Mars. But who knows, one day monster truck-like vehicles could be zipping over Mars' rough, red surface.

Kids can baffle their friends with a robot puzzle (including a "Big Wheels" rover) they make themselves at http://spaceplace.nasa.gov/robots/robot_puzzle.htm ... For adults, find out more about NASA's inflatable rover program at http://www.jpl.nasa.gov/adv_tech/rovers/summary.htm ...

See a picture of the Big Wheels Inflatable Rover on page 7

The "Big Wheels" inflatable rover doesn't mind a few boulder-sized rocks ... no matter what planet they're on!



Big Wheels in Space?!

What do you get when you cross a tricycle with a monster truck? And then replace the truck's body with computers, cameras, and scientific instruments? You get a funny-looking vehicle with beach ball-like tires that can drive around by itself, climb over big rocks, and take notes and pictures of its surroundings. Just the thing for exploring planets such as Mars!

NASA has already tested the Big Wheels rover idea on sand dunes, rocky terrain and even water.



CLUB MEETINGS & FBAC OFFICERS

FORT BEND ASTRONOMY CLUB

The next meeting will be Friday, August 15 at our regular meeting place, 3232 Austin Parkway. The time is 7:15 p.m. Dues are \$30/ year for the first member of a household, \$5 for each additional member at the same address, \$15 for students.

HOUSTON ASTRONOMICAL SOCIETY

The HAS meets the first Friday of the month in room 117 of the University Of Houston Research building. The Novice program begins at 7:00 and the main meeting at 8:00.

JOHNSON SPACE CENTER ASTRONOMICAL SOCIETY

Refer to the JSCAS web site for meeting sites. There is a link on the FBAC web site.

NORTH HOUSTON ASTRONOMY CLUB

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

FBAC OFFICERS AND PHONE NUMBERS

President: Wes Whiddon	265-7614	Newsletter Editor: Leonard Pattillo	980-1175
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East Dome Cord. Keith Rivich (K2)	468-8491	FBAC loaner scopes: Keith Rivich	468-8491

All phone numbers A/C 281 unless otherwise indicated.

FBAC HOME PAGE: <http://www.fbac.org>

THE SECRETARIES REPORT DOES NOT APPEAR THIS MONTH