

# OBSERVER

## VIRGO GALAXY CLUSTER

The "Alien Face" is prominent in this image of the "heart" of the Virgo Galaxy Cluster (the west end of Markarian's Chain), taken by Darrell Dodge in May 2011 at the EGK Dark Site and recently reprocessed. From right, the major galaxies are M84, M86, "The Eyes" (NGC 4438 & 4435) and the NGC 4461 and 4458 pair (top left). Darrell used a modified Canon 450D through an AstroTech 8-inch f/4 imaging Newtonian. He shot approximately 90 minutes of RGB and then processed with Nebulosity 3.1 and CS5.

Image © Darrell Dodge

## Calendar

5.....	First quarter moon
12.....	Full moon
19.....	Last quarter moon
21.....	Summer Solstice
27.....	New moon

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## JUNE SKIES

by Dennis Cochran

**H**ercules, the Strong Man, is chasing Boötes, the Herdsman, across our zenith this month, a scene that features the bright star Arcturus at the bottom of Boötes's elongated kite shape. Cute little Corona Borealis is tucked in between the two big guys. Hercules brings us M13, the huge globular cluster along the west side of his four-sided body—I call this the "Chinese take-out box" because of its tapered shape. If you can't eyeball M13, it's at 16<sup>h</sup> 44<sup>m</sup> +37°. Serpens Caput, the head of the serpent being wrestled by Ophiuchus, intrudes into this overhead region from the south. Another serpent of sorts, Draco the Dragon, coils in the north between Hercules and Boötes and the North Celestial Pole. The pole is identified by the star Polaris at the end of the Little Dipper's handle. There's a lot of good circumpolar

stuff goin' on and you don't even need a telescope to enjoy it.

Along the celestial equator is the globular cluster M5 at 15<sup>h</sup> 20<sup>m</sup> +2°, below Serpens Caput and a hair farther west. Compare these two bodacious globular clusters and, like, space out! Imagine what your sky would be like if you lived in one of these mini-galaxies. Continuing with our slight-west-of-south drift we will come down to Saturn—it's in the south this evening in the constellation Libra the Scales. Slanting down and to the left from Saturn one sees the big red star Antares marking the heart of Scorpius, and just west of that star is yet another globular, M4. We are in the "Realm of the Globulars," it seems. More of these mini-globulars await us in Ophiuchus, the guy with the snake problem.

Continued on Page 3

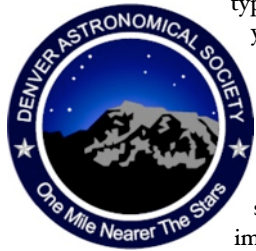
# PRESIDENT'S MESSAGE

by Ron Hranac

I've written several times about the volunteer and public outreach culture of the Denver Astronomical Society. Volunteers are the heart and soul of the DAS, and public outreach is a huge part of what we do. Our outreach efforts range from sharing views through the eyepiece to making prepared presentations at open houses, public nights, and many other venues. Those presentations more often than not involve good ol' public speaking.

Some people seem to be naturals at getting up in front of a group and talking, and others are petrified by the very thought of doing so. Public speaking is a powerful skill that can be used to communicate important topics, share information, teach, and is even beneficial career-wise. How does one become a good public speaker? Classes at a local community college, church, at work, or programs in organizations such as Rotary International are options to consider. Practice is key, though.

I was a member of my high school's debate and declamation teams, and the coach—Mr. McGee—also taught the school's speech class. I had an elective slot to fill in my senior year, and was contemplating taking either introductory typing or speech. I asked Mr. McGee for his opinion, and he said something along the lines of, "You can always hire someone to do your typing. Speech class will give you tools that you'll be able to use throughout your life." Well, I signed up for speech to fill that elective. Looking back, Mr. McGee was right. Public speaking skills certainly have been an important asset in my career.



DAS President Ron Hranac during Solar Day at the Denver Museum of Nature & Science.

Photo courtesy: Jeff Tropeano

I've had the opportunity to give hundreds of work-related lectures and presentations during the past several decades to groups ranging in size from four or five people to more than 2,000. That experience has carried over to the non-work side of things, too, in scouting, ham radio, and astronomy.

Mr. McGee taught the basics of public speaking, and students in the class had to get up in front and practice what was learned. One of my favorite parts of his speech class was impromptu speaking each Friday. Mr. McGee would write down a bunch of different words or phrases on small pieces of paper, put them in a hat, and let us draw one. We had to speak for two

*Continued on Page 5*

## DAS SCHEDULE

### JUNE

- 7 Open House (Begins at 8:30 P.M.)  
*Jupiter, Saturn, Mars!*
- 13 DAS General Membership Meeting at Olin Hall (Begins at 7:30 P.M.).  
Speaker: A visit from Software Bisque
- 20 E-Board Meeting at Chamberlin (Begins at 7:30 P.M.)
- 25-29 Rocky Mountain Star Stare
- 27-29 EGK Dark Sky weekend

### JULY

- 11 DAS General Membership Meeting at Olin Hall (Begins at 7:30 P.M.).  
Speaker: A visit from Software Bisque
- 18 E-Board Meeting at Chamberlin
- 19 120 the Anniversary Celebration and Open House (See Page 3.)
- 25-26 EGK Dark Sky weekend

*Open House costs: If the skies are clear, \$2 per person (\$5/family), and \$1 per person in the event of inclement weather.*

*Public nights are held at Chamberlin Observatory every Tuesday and Thursday evenings beginning at the following times:*

*March 10 - September 30 at 8:30 P.M.*

*October 1 - March 9 at 7:30 P.M.*

*Costs to non-members are: \$3.00 adults, \$2.00 children and students with ID.*

*Please make reservations via our website ([www.denverastro.org](http://www.denverastro.org)) or call (303) 871-5172.*

### Society Directory

**President:**  
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Denver, Colorado 80210

*The Executive Board conducts the business of the DAS at 7:30 p.m. at Chamberlin Observatory. Please see the Schedule of Events for meeting dates. All members are welcome.*

[www.denverastro.org](http://www.denverastro.org)

# JUNE SKIES

(CONTINUED FROM PAGE 1)

I've always thought that Ophiuchus has a bell-like shape. This huge constellation lies between Hercules (to the north) and Scorpius (to the south). There is a faint globular, M107, just below the bell at 16<sup>h</sup> 30<sup>m</sup> -13°. Bigger Messier object globulars M10 and M12 are above M107 in the body of Ophiuchus at 16<sup>h</sup> 57<sup>m</sup> -4° and 16<sup>h</sup> 46<sup>m</sup> -2°, respectively, with M12 being slightly the larger.

Farther north than the North Star, if you can imagine that, Camelopardalis the Giraffe is being stalked by Lynx, who sports a double star A6012 at 7<sup>h</sup> 23<sup>m</sup> +55°. Rather than deep-sky objects in this region, there are three magnitude 4-5 multiple stars clustered widely around 6<sup>h</sup> 50<sup>m</sup> +50° just over into Lynx's space south—no, north—of the giraffe. I am easily confused about directions up here. Aieeeah! Anyway, east of Camelopardalis, towards Cassiopeia, are several objects of interest: IC 342 (a.k.a. Caldwell 5) is a large spiral galaxy at about 3<sup>h</sup> 48<sup>m</sup> +68°. Below that is an open cluster NGC 1502 at 4<sup>h</sup> 7<sup>m</sup> +62.5° and below that at 61° is the oval, dim planetary nebula NGC 1501.

Closer to home Mars joins Saturn and essentially replaces Jupiter in the planet parade. It is farther west than Saturn along the ecliptic, west of Spica, under the shoulder of Virgo.

The June Lyrid meteors whiz by on Monday the 16th; they were discovered in 1966 and may have fizzled away, so don't hold your breath for these. On the 21st we have the Summer Solstice, for which we should send a delegation to sacrifice a chicken at Stonehenge. On Friday the 27th, the June Boötid meteors come by. These are slowdrag meteors, just cruising. The moon will rise at 5 A.M. that morning. Venus is the Morning Star these days. Speaking of slowdrag: there used to be a dixieland bass player called Slow-Drag Pavago. Has there ever been a cooler name in the history of jazz? ★



**M3 (NGC 5272)**

This cluster was the first "original" discovery by Charles Messier when he logged it on May 3rd, 1764, according to [seds.org](http://seds.org) (Students for the Exploration and Development of Space). It lies about 33,900 light-years away. Kyle used a Canon EOS 600D/Rebel T3i on an AstroTech AT81N telescope. See him for more information.

Image © Kyle Williams

## 120TH CHAMBERLIN OBSERVATORY ANNIVERSARY CELEBRATION



### The University of Denver's Historic Chamberlin Observatory 120th Anniversary Celebration

Saturday, July 19, 2014  
Observatory Park  
2930 E. Warren Avenue  
Denver, CO 80210

*Join us to celebrate 120 years since Chamberlin's magnificent telescope saw first light in 1894.*

**9 A.M. – 1 P.M.:**

- Professional photo shoot with the telescope
- Period or steampunk costumes encouraged!
- Kids activities
- Astronomy lectures and workshops
- \$5-\$10 suggested donation

**After dark (8:30 P.M.), come back to see the stars**

- Monthly Open House and Public Star Party
- Viewing through the Chamberlin Telescope

At left with Chamberlin's 120 year-old telescope, DAS Outreach Coordinator Naomi Pequette is in costume gearing up for the anniversary celebration.

Photo courtesy: Zachary Singer

## ABOUT THE DAS

Membership in the Denver Astronomical Society is open to anyone wishing to join. The DAS provides trained volunteers who host educational and public outreach events at the **University of Denver's Historic Chamberlin Observatory**, which the DAS helped place on the National Register of Historic

Places. First light at Chamberlin in 1894 was a public night of viewing, a tradition the DAS has helped maintain since its founding in 1952.

The DAS is a long-time member in good standing of the **Astronomical League** and the **International Dark Sky Association**. The DAS's mission is to provide its members a forum for increasing and sharing their knowledge of astronomy, to promote astronomical education to the public, and to preserve Historic

Chamberlin Observatory and its telescope in cooperation with the University of Denver.

The DAS is 501 (c)(3) tax-exempt corporation and has established three tax-deductible funds: the Van Nattan-Hansen Scholarship Fund, the DAS-General Fund and the Edmund G. Kline Dark Site Fund.

More information about DAS activities and membership benefits is available on the DAS website at [www.denverastro.org](http://www.denverastro.org) ★



# MEET YOUR FELLOW ASTRONOMER

by Dena McClung

June's featured DAS member is Isaac Fluss, an enthusiastic and imaginative amateur astronomer who loves sharing all things scientific with others.

As a youngster growing up on Long Island, Isaac was a fan of Star Wars and Star Trek until he received a set of a dozen Estes model rockets. When he and his stepfather spent a day launching them, Isaac's world was turned on its head as he discovered that science was something that he could personally experience, rather than just a subject to study in class, read about in books, or see movies about. While he was a fan of children's science educators such as Bill Nye, he came to understand the importance of popularizing science among adults when he saw Neil deGrasse Tyson speak during one of his visits to the Hayden Planetarium.

During his pre-teen years, Isaac's interests shifted from science fiction to science. Not only did he decide he wanted to be a scientist when he grew up; he decided that he wanted it to be interesting. The conversational presentation offered by Brian Greene in his book "The Elegant Universe" was a relief from typical dry and technical textbooks for Isaac, and helped to further mold his desire.

When Isaac's mother moved to Colorado when he was ten years old, he began splitting his time between New York and Colorado. During a stay at the Ranch of the Rockies with his outdoorsy stepfather, Isaac saw the Milky Way for the very first time, and wondered, "What is THAT?" Having been raised in an area with a lot of haze and light pollution, it was his first dark sky experience. Isaac and his stepdad used field glasses to look at planets and stars that night, and his fascination with astronomy began.

Isaac earned a B.S. in physics and computer science engineering along with an associate's degree in mathematics at Arizona State University. While in the state, he made his first visit to an observatory, the Lowell Observatory in Flagstaff. But as Lowell was easily accessible to him at the time, it was a limited experience.

Isaac's degree is similar to an electrical engineering degree, which is optimal for his position as the man-

ager of an American Power Systems warehouse. The company provides battery backup and DC power supplies for everything from cell phone towers to data centers. Isaac works with high voltage and high current electricity, and electrical and chemical safety are of utmost importance.

But it's Isaac's avocation that demonstrates his zest for all things scientific. He enjoys recreating historic experiments using replicas of antique equipment, and often involves his daughters Kate (nine years old) and Bekah (seven years old) in carrying them out. Isaac dons the persona of the Cardinal of Crime: Science Villain to make presentations about science to teen and pre-teen audiences wherever the opportunity arises, such as at Anomaly Con and Comic Con. He also works with a cooperative of artists and designers who build fully functional props for science fiction and post-apocalyptic movie productions, even appearing with his daughters in one.

Last year, Isaac lost a close friend named Andrew Varnes, who was an astronomy enthusiast and founder of the comedic Church of Sagantology. In retrospect, Isaac found himself wishing he had discussed it more with Andrew. At the invitation of Andrew's



Pictured with Isaac Fluss is his daughter, Kate, and his CPC 800 Celestron 8-inch Schmidt-Cassegrain on an alt-azimuth mount. This photo was taken at the DMNS Space Day outreach event.

Photo courtesy: Chuck Habenicht

partner, Isaac came to Chamberlin Observatory for a public night program. He was immediately gratified to see the range and depth of DAS's outreach programs, as well as how accessible the club makes it for the public. Since becoming a member, Isaac has already done volunteer outreach with his telescope at Anomaly Con, Starfest and DMNS's Space Day.

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## PRESIDENT'S MESSAGE

minutes on the word or phrase, even if we didn't know anything about it. "Make something up," he said. Some of the speeches were hilarious, and had nothing to do with the actual word or phrase. The idea was to get us to think on our feet and make a smooth and confident-sounding presentation.

If you've never participated in public outreach because you're uncomfortable about speaking in front of a group, I encourage you to reconsider. Pick a topic with which you're familiar (back to basics and how-to material always goes over well), then take some time to learn even more about it. Read about the topic, listen to presentations about it, watch videos, ask questions. Try to become as much of an expert about that topic as you can.

Put together an outline of what you think the presentation should cover, keeping in mind that it should be general interest enough for an audience that might include a mix of children, teenagers, and adults with different levels of knowledge about the subject, or maybe no knowledge at all of the subject.

*(CONTINUED FROM PAGE 2)*

Rehearse the presentation in front of a mirror. Ask a family member or friend to listen to your presentation and provide constructive feedback. Record yourself doing the presentation, play it back, and see if there is anything missing from your material, or too much use of "uh," "um," and so on (it's best to just pause momentarily instead of going overboard with too many of these fillers). Then practice some more.

When you're confident that you have a good understanding of the material, can answer general questions about the topic, and are able to make a practice presentation that follows your outline without having to actually read that outline, you're just about ready. Get in touch with our external outreach coordinator, Naomi Pequette, or our public night head honcho, Hugh Davidson, and let one or both of them know you're interested in helping out.

When an opportunity avails itself, go for it. Yes, there will be a few butterflies, but that's normal. Welcome to the world of public speaking! ★

# THE DAS AT STARFEST

by Sorin

Following our successful outreach at AnomalyCon (see the May *Observer*), members of the DAS also had a presence at the Starfest convention (<http://starfestdenver.com>) that was held May 2-4, 2014. For any of you unfamiliar with Starfest, it is a science fiction and fantasy convention held every year at the Denver Tech Center Marriott.

We set up a DAS table Saturday and Sunday, and had telescopes out Saturday evening. DAS member volunteers included Dena McClung, Naomi Pequette, Isaac Fluss, and myself. Ed and Linda Scholes also stopped by Friday to set up a scope, but the clouds were too thick that evening.

Saturday, in costume as the 4th Doctor Who, I gave a panel presentation titled "Our Wild and Wonderful Universe" to an audience of about 40 attendees. This was a pretty good turnout for a convention panel, and a science panel is a bit different than the norm at these conventions. I had



In full Dr. Who regalia, Sorin presents "Our Wild and Wonderful Universe" at the Starfest convention.

Photo courtesy: Naomi Pequette

several of the attendees stop me in the halls later that day and the next to say how much they enjoyed the presentation.

We were scheduled for telescope viewing Friday and Saturday evenings. Friday was too clouded over to bother setting up scopes. Saturday still had plenty of clouds, but Isaac and I set up our scopes and managed to keep Jupiter, Mars, or Saturn mostly in view from dusk until 11 P.M. We had somewhere between 100-150 people come out and take a look, and some that stuck around for an hour or more for many looks and calls to their friends to come out and take a peek.

It is always a wonderful feeling to give someone his or her first view of Saturn and its rings, Jupiter and the Galilean moons, the Orion Nebula, or numerous other bright and beautiful objects through a telescope. The reactions really are priceless!

Over the weekend, we handed out approximately 135 fliers for the DAS and the upcoming Chamberlin 120th Anniversary. I'm hopeful we will be able to have a similar presence at MileHiCon (<http://milehicon.org>), a Sci-Fi and Fantasy Literary Convention October 24-26th.

If you would be interested in participating in future convention outreach events, please e-mail [sorin@soggyastronomer.com](mailto:sorin@soggyastronomer.com). ★



The DAS table at the Starfest Convention. Sorin is at left and Dena McClung is right.

Photo courtesy: Naomi Pequette

## DAS OUTREACH OPPORTUNITIES!!

by Naomi Pequette

- The DAS has been invited to participate in the Majestic View Park's Trail Days on **Saturday, June 7th from 10 A.M. – 2 P.M.** We are looking for volunteers to bring solar scopes for public viewing and to help at a club table as well.

- The DAS is participating at two events on Mt. Evans:

- The first is a public event on **Thursday, June 19th starting at 8 P.M.** The theme of the event is "Cosmic Connections." They will have several "stations" that attendees visit. They are looking for three volunteers and telescopes for the event. Due to limited parking on the mountain, **volunteers need to arrive at 6:30 P.M. at Echo Lake to carpool up to the location of the event.** Since we are carpooling, the more manageable the telescope is, the better. The event should end by 9:30 P.M., but they will

allow us to stay on the mountain until midnight (at the very latest) if volunteers would like to do some observing on their own.

- The second event on Mt. Evans is for the volunteers. It takes place **Friday, June 27th at 8 P.M.** At this event, volunteers are allowed to bring three guests each. Again, due to parking limitations and forest service restrictions we are limited to three volunteers and their guests. They are asking us to provide telescopes for night-sky viewing.

Volunteers for the Mt. Evans events will be decided by who is the first to email me. For the second event, please include the number of guests you plan to bring.

- We are also looking for volunteers to bring scopes for daytime viewing of the moon and Venus, as well as solar scopes at an event for pre-

school to elementary-aged school children at Wulf Recreation Childcare Center in Evergreen on **Monday, June 23rd at 10 A.M.**

- Volunteers are needed to help with the **120th Anniversary Celebration at Chamberlin Observatory** to be held **Saturday, July 19th 9 A.M. – 1 P.M.** We are looking for volunteers for presentations, to help with activities for kids, and crowd control. We are also looking for help before the event to construct a small booth and "Canada Arm" to have a kid-centered activity similar to a fishing booth where kids throw a fishing rod in and receive a small (in this case space-themed) prize. If you are interested in volunteering, please let us know how you'd like to participate in the email. See Page 3.

If you are interested in participating in any, or all, of these events please contact our External Outreach Coordinator, Naomi Pequette via email at [m63.sunflower.galaxy@gmail.com](mailto:m63.sunflower.galaxy@gmail.com). ★

## NASA'S Space Place

## THE HOTTEST PLANET IN THE SOLAR SYSTEM

by Dr. Ethan Siegel

A Space Place Partners' article

When you think about the four rocky planets in our Solar System—Mercury, Venus, Earth and Mars—you probably think about them in that exact order: sorted by their distance from the Sun. It wouldn't surprise you all that much to learn that the surface of Mercury reaches daytime temperatures of up to 800 °F (430 °C), while the surface of Mars never gets hotter than 70 °F (20 °C) during summer at the equator. On both of these worlds, however, temperatures plummet rapidly during the night; Mercury reaches lows of -280 °F (-173 °C) while Mars, despite having a day comparable to Earth's in length, will have a summer's night at the equator freeze to temperatures of -100 °F (-73 °C).

Those temperature extremes from day-to-night don't happen so severely here on Earth, thanks to our atmosphere that's some 140 times thicker than that of Mars. Our average surface temperature is 57 °F (14 °C), and day-to-night temperature swings are only tens of degrees. But if our world were completely airless, like Mercury, we'd have day-to-night temperature swings that were hundreds of degrees. Additionally, our average surface temperature would be significantly colder, at around 0 °F (-18 °C), as our atmosphere functions like a blanket: trapping a portion of the heat radiated by our planet and making the entire atmosphere more uniform in temperature.

But it's the second planet from the Sun – Venus – that puts the rest of the rocky planets' atmospheres to shame. With an atmosphere 93 times as thick as Earth's, made up almost entirely of carbon dioxide, Venus is the ultimate planetary greenhouse, letting sunlight in but hanging onto that heat with incredible effectiveness. Despite being nearly twice as far away from the Sun as Mercury, and hence only receiving 29% the sunlight-per-unit-area, the surface of Venus is a toasty 864 °F (462 °C), with no difference between day-and-night temperatures! Even though Venus takes hundreds of Earth days to rotate, its winds circumnavigate the entire planet every four days (with speeds of 220 mph / 360 kph), making day-and-night temperature differences irrelevant.

Catch the hottest planet in our Solar System all spring-and-summer long in the pre-dawn skies, as it waxes towards its full phase, moving away from the Earth and towards the opposite side of the Sun, which it will finally slip behind in November. A little atmospheric greenhouse effect seems to be exactly what we need here on Earth, but as much as Venus? No thanks!

Check out these "10 Need-to-Know Things About Venus":

<http://solarsystem.nasa.gov/planets/profile.cfm?Object=Venus>.

Kids can learn more about the crazy weather on Venus and other places in the Solar System at NASA's Space Place: <http://spaceplace.nasa.gov/planet-weather>. ★

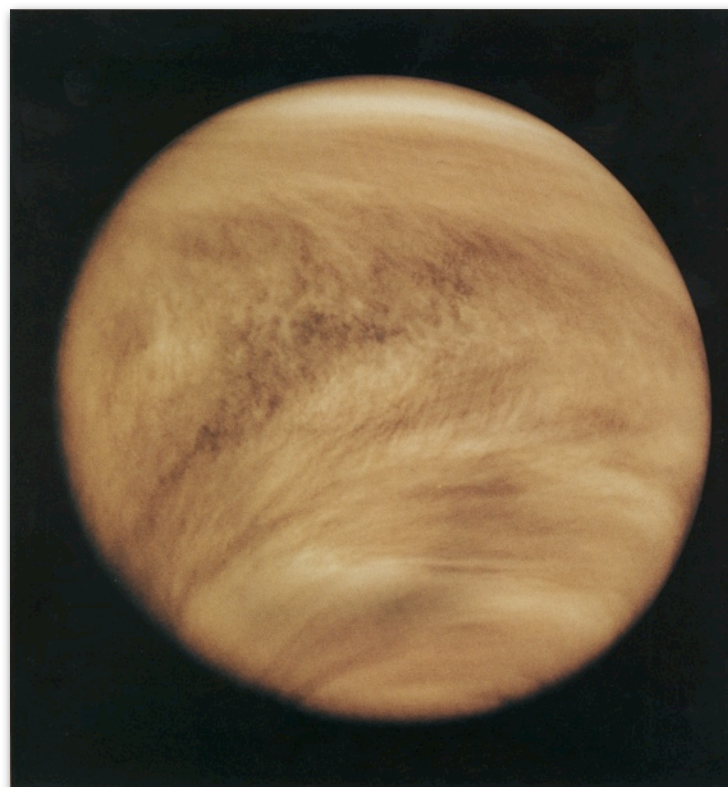


Image credit: NASA's Pioneer Venus Orbiter image of Venus's upper-atmosphere clouds as seen in the ultraviolet, 1979.

## JOB JAR

## MERCHANDISE SALESPERSON

The DAS has a new goal for 2014. There's a supply of small club merchandise, such as mugs and pins and possibly t-shirts (in the future), that we'd like to sell at Open Houses. Technically they've been available at the ticket desk, but it's time to advertise them more openly on their own table, as a means to support our non-profit organization. If you're looking for a way to participate in Open House, mingling with club members and the public in a lighted room with very little physical activity required, this spot is for you! Let any of your officers know if you'd like to man the "trinket table" for the club, and perhaps work with quarter-master Ed Scholes whenever we need to get some new stuff made.

## FINANCE COMMITTEE MEMBER

A volunteer is needed to become the third member of a new finance committee which provides financial oversight and guidance to DAS.

**If you would like to volunteer for any of these positions, please contact [president@denverastro.org](mailto:president@denverastro.org).**

## YOUR FELLOW ASTRONOMER (CONT. FROM PAGE 4)

Although Isaac found a lot of satisfaction in visual observing, he's recently begun doing astrophotography. He has plans to launch a website, which will combine artistic skyscapes with educational information. He has already produced a poster of photographs taken during the recent total lunar eclipse. He is looking forward to capturing the upcoming 2017 total solar eclipse from somewhere in the vicinity of Yellowstone.

Isaac has also been experimenting with turning ordinary webcams into a planetary imaging camera, using tools and a workbench that occupy a prominent spot in his living room. His further attempts will focus on ironing out some minor design flaws that surfaced in the original project. ★

# SPACE DAY!!!

On May 10, DAS members helped the Denver Museum of Nature & Science with its annual Space Day and Urban Advantage Science Celebrations. Photos were shot by Naomi Pequette and Chuck Habernicht. Clockwise from upper right: the DAS table is staffed by Jim Pequette, Johnny Barela, and Greg Wimpy; Dan Wray shows off the sun; DAS volunteers on the patio at the museum; the DAS table inside the museum at the space exhibit; Digby Kirby sharing views through his telescope; and Naomi Pequette presenting “Astronomy of the Maya” at the Space Day event. The DAS table was also staffed by Eileen Barela, Ed Scholes, Darrell Dodge, Dennis Cochran and Naomi Pequette but aren't pictured.



# JUNE SPEAKER: DANIEL BISQUE

Daniel R. Bisque (BSc. Geophysical Engineering, Colorado School of Mines, 1989) has been a Software Bisque team member since 1990.

As Vice President he is responsible for product development, documentation and technical support. Dan's hobbies include fatherhood, bicycling, archery and star gazing.

At the meeting, Dan will:

\* Take a brief look at Software Bisque's 30 year history.

\* Discuss the benefits and challenges of both developing software and manufacturing hardware.



\* Talk about their new products and their application.

\* Look at where Software Bisque is headed.

\* Q&A

Software Bisque produces the high-end Paramount telescope mounts and "The Sky" planetarium, star chart and telescope/observatory control software at its headquarters in Golden, Colorado.★

## ANNOUNCEMENT:

Stuart Hutchins was selected by the DAS's Executive Board at its May meeting to fill the position of Vice President for the remainder of the term, due to the vacancy created by the resignation of Lisa Judd.



## WELCOME NEW DAS MEMBERS!

*Correction from last month: Rolland Browning (not Brown)*

- Stephany Brown
- Ian Clark
- Rosemary Guthrie
- Brendan Loy
- Bert Paredes



The Denver Astronomical Society  
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