

San Diego Astronomy Association

Celebrating Over 50 Years of Astronomical Outreach



November 2020

<https://www.sdaa.org/>
A Non-Profit Educational Association
P.O. Box 23215, San Diego, CA 92193-3215

SDAA Update

In keeping with state and local mandates in regards to social distancing, the **SDAA has cancelled all public outreach and club events** for the foreseeable future. These include our regularly scheduled monthly meetings at Mission Trails Regional Park.

Look for updates on the Lipp telescope.

Since TDS is private space there is no reason to lock down the facility but there are actions you can take to help keep the site safe for all of us. If you plan to visit and use the facility, please bring along some disinfectant wipes or disinfectant spray cleaner. When you finish using the restrooms or the warming room, please wipe down the areas that you touched in order to help prevent the spread of any viruses. As much as we love sharing the views of the night sky, try to maintain the recommended 6-foot social distance guideline.

Next SDAA Business Meeting

November 10th at 7:00pm
10070 Willow Creek Rd
San Diego, CA 92131
Via Zoom

Next Program Meeting

November 18th at 7:00pm
Live Stream

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November 18th Program Meeting

Ryan Rubenzahl - Caltech



Talk: Measuring the Speed of Stars More Precisely Than Your Car's Speedometer

Contact: rrubenza@astro.caltech.edu
rrubenza@caltech.edu

Abstract: The "doppler method" of detecting planets orbiting other stars, requires precise measurements of the speeds of those distant stars. If we can see a star oscillating towards and away from us, we can infer that an unseen planet is tugging on its parent star as it orbits. This method successfully found the first exoplanet, 51 Peg b, a discovery which earned the Nobel Prize this last year. In this public talk we will learn just how hard it is to precisely measure the speeds of stars to the precision of 0.2 mph necessary for finding these Earth-like planets. Next-generation instruments capable of these discoveries may finally be able to answer the question of how common planets like Earth really are in the galaxy

YouTube: <https://youtu.be/7A9c5IEzM0w>

Newsletter Deadline
The deadline to submit articles for publication is the **15th** of each month.

[Link to SDAA Merchandise Store](https://www.sdaa.org/merchandise)

<https://sdaa28.wildapricot.org/SDAA-Store>

[Link to Outreach Calendar](https://www.sdaa.org/calendar)

[https://calendar.google.com/calendar/embed?src=g-calendar@sdaa.org&ctz=America/Los](https://calendar.google.com/calendar/embed?src=g-calendar@sdaa.org&ctz=America/Los_Angeles)



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San Diego Astronomy Association Board of Directors Meeting

13 October 2020 – Unapproved and subject to revision

1. Call to Order

The meeting was held via Zoom and was called to order at 7:03pm with the following board members in attendance: Dave Wood, President; Steve Hallman, Vice President; Melany Biendara, Treasurer; Gene Burch, Recording Secretary; Alicia Linder, Corresponding Secretary; Dave Decker, Director; Hiro Hakozaiki, Director; Mike Chasin, Director; Pat Boyce, Director, Webmaster; Jeff Stevens.

2. Approval of Last Meeting Minutes

September meeting minutes approved.

3. Priority / Member Business

None.

4. Treasurers & Membership Report

The treasurer's report was approved. Mel said we have a plan to grade and repair the roads and walkways at TDS and estimates the cost will be about \$18,000, which is significantly less than the previous two bids, each of which were about \$48,000. The board approved the plan.

5. Standard Reports

- a. Site Maintenance Report: Brian McFarland installed vents and repaired the door in the shower area. There is a section of the fence on the north side that has been damaged, apparently by someone climbing over it.
- b. Observatory/Loaner Scope Report: Once again thank you for approving the re-opening plan. The daily infections count is down and the county is opening up many more activities. I believe the county guidance allows for small outdoor groups like our Lipp star parties. I intend to run a "soft opening" of the Lipp Telescope at the October 17th Member Only Star Party. Attendance is generally less than Public nights and members should be more compliant with the re-opening plans. To set a minimal attendance, we will not advertise other than the notice in the current newsletter. I will also limit the duration to three hours. We will utilize the approved plan and record lessons learned for the improvement of the site process and consideration with other public outreach plans. Holding outreach programs is in direct support of our non-profit charter. The time feels right and the plan is a good one.

We have had a lot of activity in the loaner program. Nearly all the scopes are in use. Members are very appreciative of the program. Thank you to the board for support through thinner times. The program is a great benefit of contributing membership.

- c. Private Pad Report: We had one pad returned that I added to the list of pads for lease. We currently have 7 free pads and 12 people on the waiting list, including 2 people looking to upgrade their locations. I expect to be leasing at least 3 pads in the next week, which will take us down to 4 free pads and 9 on the waiting list. Assuming I can verify membership of the last person (I'm working with Melany on it), we will have every pad leased except for 36, which I never expect to lease, as it was never improved. The club has two loaner pads (56 and 52) that are chronically underused. Pad 52 has a dome and scope on it, but 56 could easily be converted to a paying pad. I've suggested that in the past, but I may suggest it again. Both 52 and 56 are in the best parts of the site.
- d. Program Meetings Report: 16 Sept 2020 Speaker / Topic:
 - Speaker: Steve Hallman
 - Presentation: Dark Matter & Dark Energy
 - Attendees: 39Current Program Meeting Petty Cash as of 6 Aug 2020 = \$524
Expenses Since Previous Report - None
Steve will review future meeting highlights in person.
- d. AISIG Report: Last months AISIG meeting had various club members show various ways of capturing and processing the Pelican Nebula. 15 club members participated in the meeting showing some outstanding results given the poor weather conditions over the last 45 days.
- e. Newsletter Report: Current issue looks good – thanks to Andrea for all the great work.



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- f. Website Report: Jeff Stevens briefed the board on the work he and Hiro are doing to redesign the website using WordPress. He shared the work they've done so far and it will be a significant upgrade to what we currently have. Many thanks to Jeff and Hiro!
- g. Social Media: People are visiting our YouTube channel and we currently have 35 subscribers.
- h. Outreach Report: We have completed 3 virtual classes in "Stellar Evolution" for Helix Charter H.S. Each of these one-hour classes was hosted by Helix H.S. science teacher, Jessica Elliott. I provided the presentation visuals and narrative. One of the classes served as a primer for a few teachers and was conducted from Mt. Helix Park using their excellent WiFi connectivity. The other classes were for 9th grade students with interactive chat managed by Ms. Elliott and answers provided by yours truly. We consider the experiment very successful with many lessons learned.

Re: public outreach programs, I have continued to work with SDAA Member Gary Hawkins and his YouTube Live channel, to explore and test various capabilities and challenges to hosting live, virtual, viewing sessions. Again, we have many lessons learned, and Gary has advanced his skills in managing the observing and hosting environments. Currently, the YouTube sessions provide as much technical information on how to host, as it provides observing opportunities and discussion about celestial objects. We will soon be hosting events that are more focused on the outreach goals of sharing the sky with public audiences over virtual connections. One of our first public efforts will use the venue at Mt. Helix, now that we know their network will support virtual programming. We hope to offer these live events via the SDAA YouTube channel, either live or recorded, and via the SDAA Zoom account to smaller audiences.

- i. TARO Report: The frequent power outages have caused a possible malfunction of one of the power distribution units. Operations have been suspended until the PDU can be tested.
- j. Cruzen Report: The Cruzen observatory is nearly ready to go. Melany, Brian, Gene and Ed are working on an operations manual and a training program.
- k. Merchandise Report: No sales this past month.
- l. Astronomical League Report: The story about SDAA member Vivek Vijayakumar and his Astronomical League awards, has now been published in our October newsletter. The article includes a photo of Vivek and one of his winning photos of the Pacman nebula. Vivek has continued to host virtual outreach meetings with support from the Curiosity Peak Observatory, Julian.

The Astronomical League annual conference, ALCON, will be held next August 4-7, 2021, in Albuquerque, NM. This will probably conflict with our own Julian StarFest.

- m. JSF Report: No Report – JSF canceled until 2021.

6. Old Business:

- a. Site Grading – Mel has arranged to have the site graded and new gravel spread on the areas that need it. Total cost estimated to be around \$18,000.
- b. Observatory/Warming room – The wire to the lights in the ceiling of the warming room is 14 gauge and needs to be upgraded to 12 gauge. Dave W and Gene are going to rewire and replace the existing fluorescent lights with canned lights. Once that's done we'll have the drywall repaired and repaint the interior.

7. New Business:

- a. Dave W, Mike C, Jeff Herman and Gene will be on a committee to decide how to best use a possible donation to the club.
- b. Pat Boyce mentioned that there is a problem with outdoor lighting at the residence to the west of TDS. We will try to make contact with the owner to resolve the issue.

8. Adjournment:

The meeting was adjourned at 8:29pm.



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2020 Star Party Schedule

Date	Hours	Type	Sunset	Twilight	Moonrise(set)	Illumination
11/7/2020	5:30 to 8:30 PM	Public	4:52 PM	6:16 PM	10:46 PM	61%
11/14/2020	5:30 to 8:30 PM	Member	4:47 PM	6:12 PM	6:48 AM	0%
12/5/2020	5:30 to 8:30 PM	Public	4:42 PM	6:09 PM	9:42 PM	76%
12/12/2020	5:30 to 8:30 PM	Member	4:43 PM	6:11 PM	5:34 AM	0%



Hubble Views a Galactic Waterfall

In this spectacular image captured by the NASA/ESA Hubble Space Telescope, the galaxy NGC 2799 (on the left) is seemingly being pulled into the center of the galaxy NGC 2798 (on the right).

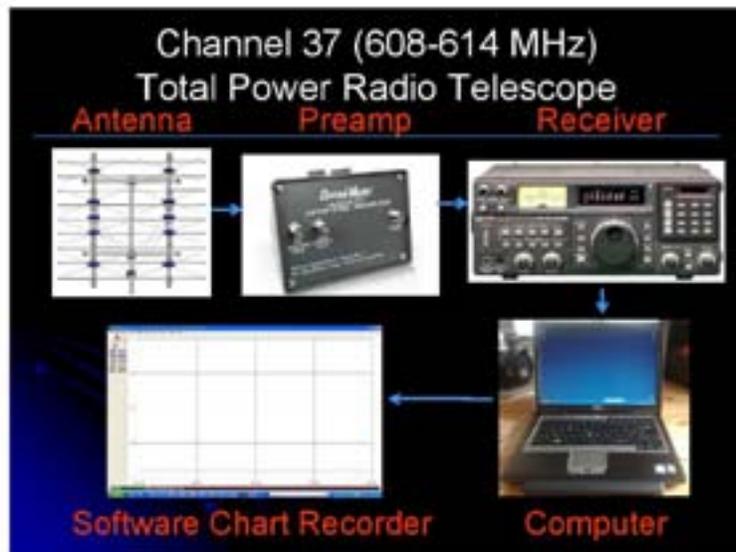
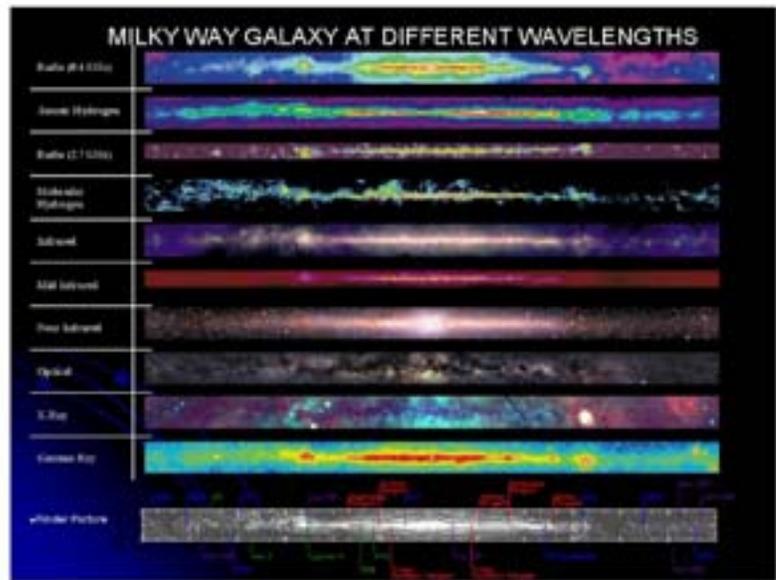


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Broaden Your Spectrum – Radio Astronomy

When we think of astronomy we typically think of looking with our “optical eyes” through optical telescopes or at Hubble telescope images. But, the universe can be seen in all frequencies, not just optical ones. In fact, much of what we know about the universe has come from radio astronomy! The bulk of this work has been done by professional astronomers. Yet, you might be surprised at the significant contribution of amateur radio astronomers.

You might be amazed at how easy it is for amateurs to make powerful radio telescopes for viewing the sky and doing real science just as professional and amateur optical astronomers do. You can do radio astronomy with simple equipment any time of the day or night regardless of weather. Here’s Curt Kinghorn’s system using a TV antenna for the 608 MHz (49 cm) band.



We are starting an informal group to explore building a radio telescope at Tierra Del Sol capable of being run remotely, producing “cool” images (the sky and celestial objects seen with “radio eyes”) and being powerful enough to do real science. We are looking for people interested in this different way of practicing astronomy. We need a range of skills to build our team. There is room for anyone with interest or even just curiosity.

Please email Curt Kinghorn at curtkinghorn@gmail.com if you are interested in our endeavor or have any questions.



San Diego Astronomy Association

You are invited to join your fellow astronomy enthusiasts at the following online events:

General Meeting

Friday November 13th, 7:30pm PST

Dr. James Tuttle Keane from NASA Jet Propulsion Laboratory will give a talk on "NASA's New Horizons Mission to Pluto and Beyond"

<https://ocastronomers.org/calendar/general-meeting-november-2020/>

Open Spiral Bar

Saturday November 14th, 10:00pm PST

Come and present your club, astrophotos, activities, etc. or not, ask your astronomy questions and socialize.

<https://ocastronomers.org/calendar/open-spiral-bar-november-2020/>

Beginner's Class

Friday November 6th, 7:30pm PST

David Pearson will talk about the different methods of finding objects in the night sky.

<https://ocastronomers.org/calendar/beginners-class-november-2020/>

Ventura County Astronomical Society's General Meeting (held by OCA)

Friday November 20th, 8:30pm PST

Speaker & Title To Be Announced

<https://ocastronomers.org/calendar/vcas-general-meeting-november-2020/>

All meetings are free and open to the public. To attend please register with zoom in advance by visiting the respective webpage for each event.

Reza AmirArjomand
Vice President
Orange County Astronomers

For Sale: Celestron GPS-11 GoTo Telescope. This is an old model, purchased in 2001. Everything works perfectly, there is some cosmetic damage. Excellent optics. Motor control firmware and hand control firmware have been updated to the latest versions released by Celestron for this model. Can be completely computer controlled, using Celestron NexRemote software in place of hand controller. Sold with many accessories, you're all ready to go. (2" Star diagonal with one 2" eyepiece, finder, f/6.3 focal length reducer, computer cables, "landing pad", tripod foot pads, wheeled platform, etc.)

Celestron's current GPS 11" SCTs sell for \$3,000, without accessories. With the upgrades, there will be very little difference between the new scope and this one. Asking \$1,800. Contact Robert Sheaffer, Robert.Sheaffer@gmail.com.

<https://www.celestron.com/products/cpc-1100-gps-xlt-computerized-telescope>



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SDAA Contacts

Club Officers and Directors

President	Dave Wood	President@sdaa.org	(858) 735-8808
Vice President	Steve Hallman	VicePresident@sdaa.org	(858) 371-9706
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Director Gamma	Dave Decker	DirectorGamma@sdaa.org	(619) 972-1003
Director Delta	Hiro Hakozaiki	DirectorDelta@sdaa.org	(858) 869-9507

Committees

Site Maintenance	Bill Quackenbush	TDS@sdaa.org	(858) 395-1007
Observatory Director	Ed Rumsey	Observatory@sdaa.org	(858) 722-3846
Private Pads	Mark Smith	Pads@sdaa.org	(858) 484-0540
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S. County Star Parties	-Vacant-	SouthStarParty@sdaa.org	
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Field Trips	-Vacant-	FieldTrips@sdaa.org	
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Publicity	Jeff Flynn	Publicity@sdaa.org	(619) 806-6505
Loaner Scopes	Ed Rumsey	loanerscopes@sdaa.org	(858) 722-3846
Governing Documents	TBD		
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Amateur Telescope Making	-Vacant-		
ALCOR (Astronomical League Correspondent)	Dave Decker	ALCOR@sdaa.org	(619) 972-1003

SDAA Editorial Staff

Editor - Andrea Kuhl

newsletter@sdaa.org

Assistant Editor: Craig Ewing

Have a great new piece of gear? Read an astronomy-related book that you think others should know about? How about a photograph of an SDAA Member in action? Or are you simply tired of seeing these Boxes in the Newsletter rather than something, well, interesting?

Join the campaign to rid the Newsletter of little boxes by sharing them with the membership. In return for your efforts, you will get your very own byline or photograph credit in addition to the undying gratitude of the Newsletter Editor. Just send your article or picture to Newsletter@SDAA.Org.



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NASA Night Sky Notes

November 2020



This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

The International Space Station: 20 Continuously Crewed Years of Operation

David Prosper

Did you know that humans have been living in the International Space Station, uninterrupted, for twenty years? Ever since the first crew members docked with the International Space Station (ISS) in November 2000, more than 240 people have visited this outpost, representing 19 countries working together. They have been busy building, upgrading, and maintaining the space station - while simultaneously engaging in cutting-edge scientific research.

The first modules that would later make up the ISS were launched into orbit in 1998: the Russian Zarya launched via a Proton-K rocket, and the US-built Unity module launched about a week and a half later by the Space Shuttle Endeavour. Subsequent missions added vital elements and modules to the Space Station before it was ready to be inhabited. And at last, on November 2, 2000, Expedition-1 brought the first three permanent crew members to the station in a Russian Soyuz capsule: NASA astronaut William M. Shepherd and Russian cosmonauts Sergei Krikalev and Yuri Gidzenk. Since then, an entire generation has been born into a world where humans continually live and work in space! The pressurized space inside this modern engineering marvel is roughly equal to the volume of a Boeing 747, and is sometimes briefly shared by up to 13 individuals, though the average number of crew members is 6. The unique microgravity environment of the ISS means that long-term studies can be performed on the space station that can't be performed anywhere on Earth in many fields including space medicine, fluid dynamics, biology, meteorology and environmental monitoring, particle physics, and astrophysics. Of course, one of the biggest and longest experiments on board is research into the effects of microgravity on the human body itself, absolutely vital knowledge for future crewed exploration into deep space.

Stargazers have also enjoyed the presence of the ISS as it graces our skies with bright passes overhead. This space station is the largest object humans have yet put into orbit at 357 feet long, almost the length of an American football field (if end zones are included). The large solar arrays – 240 feet wide - reflect quite a bit of sunlight, at times making the ISS brighter than Venus to observers on the ground! Its morning and evening passes can be a treat for stargazers and can even be observed from brightly-lit cities. People all over the world can spot the ISS, and with an orbit only 90 minutes long, sometimes you can spot the station multiple times a night. You can find the next ISS pass near you and receive alerts at sites like NASA's Spot the Station website (spotthestation.nasa.gov) and stargazing and satellite tracking apps.

Hundreds of astronauts from all over the world have crewed the International Space Station over the last two decades, and their work has inspired countless people to look up and ponder humanity's presence and future in space. You can find out more about the International Space Station and how living and working on board this amazing outpost has helped prepare us to return to the Moon - and beyond! - at nasa.gov.



San Diego Astronomy Association

NASA Night Sky Notes

November 2020



The ISS photobombs the Sun in this amazing image taken during the eclipse of August 21, 2017 from Banner, Wyoming.

Photo credit: NASA/Joel Kowsky More info: bit.ly/eclipseiss

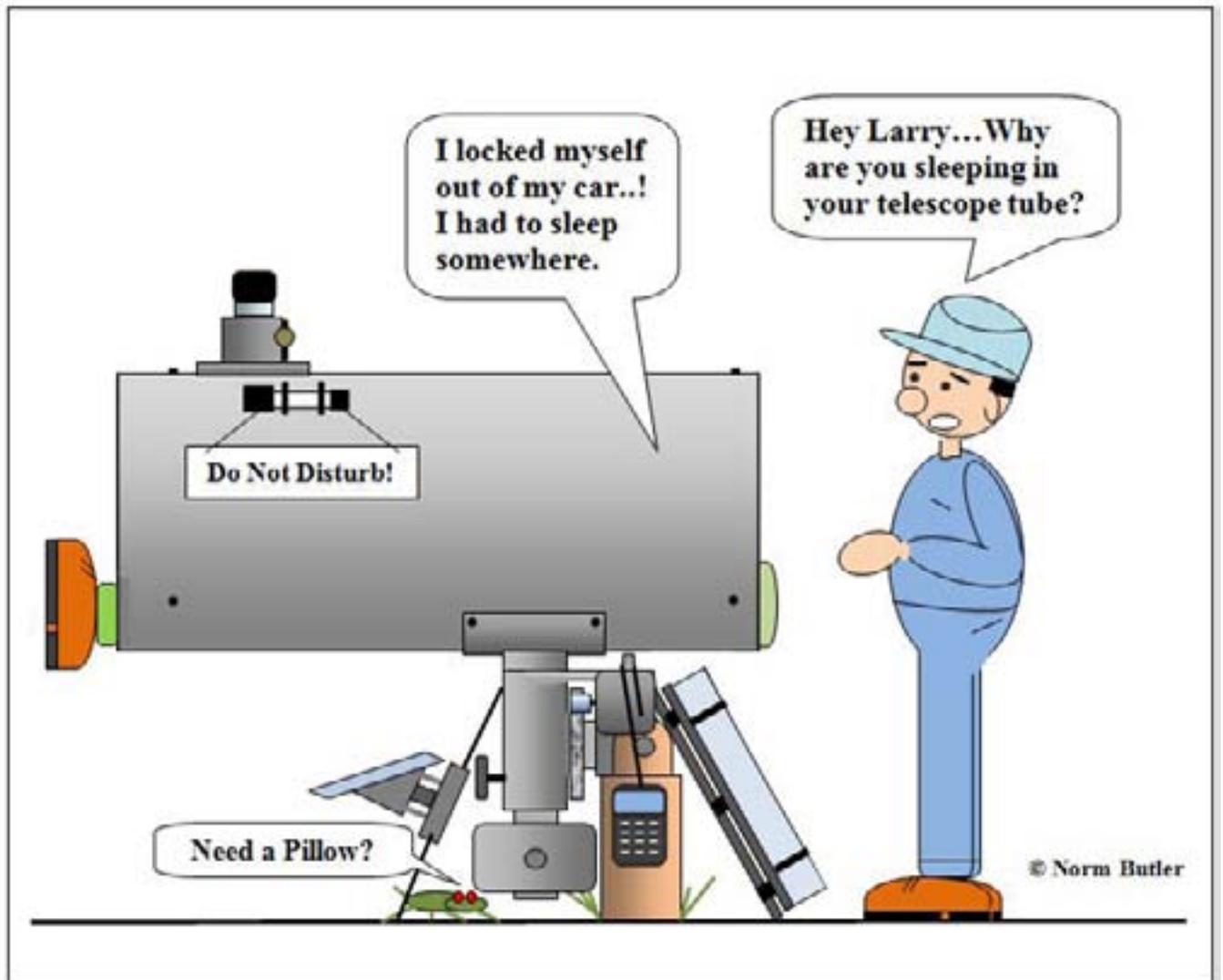


A complete view of the ISS as of October 4, 2018, taken from the Soyuz capsule of the departing crew of Expedition 56 from their Soyuz capsule. This structure was built by materials launched into orbit by 37 United States Space Shuttle missions and 5 Russian Proton and Soyuz rockets, and assembled and maintained by 230 spacewalks, with more to come!

Credit: NASA/Roscosmos More info: bit.ly/issbasics



San Diego Astronomy Association



MEMBERSHIP INFORMATION

Send dues and renewals to P.O. Box 23215, San Diego, CA 92193-3215. Include any renewal cards from Sky & Telescope or Astronomy magazine in which you wish to continue your subscription. The expiration date shown on your newsletter's mailing label is the only notice that your membership in SDAA will expire. Dues are \$60 for Contributing Memberships; \$35 for Basic Membership; \$60.00 for Private Pads; \$5 for each Family membership. In addition to the club dues the annual rates for magazines available at the club discount are: Sky & Telescope \$32.95 and Astronomy \$34. Make checks payable to S.D. Astronomy Assn. PLEASE DO NOT send renewals directly to Sky Publishing. They return them to us for processing.