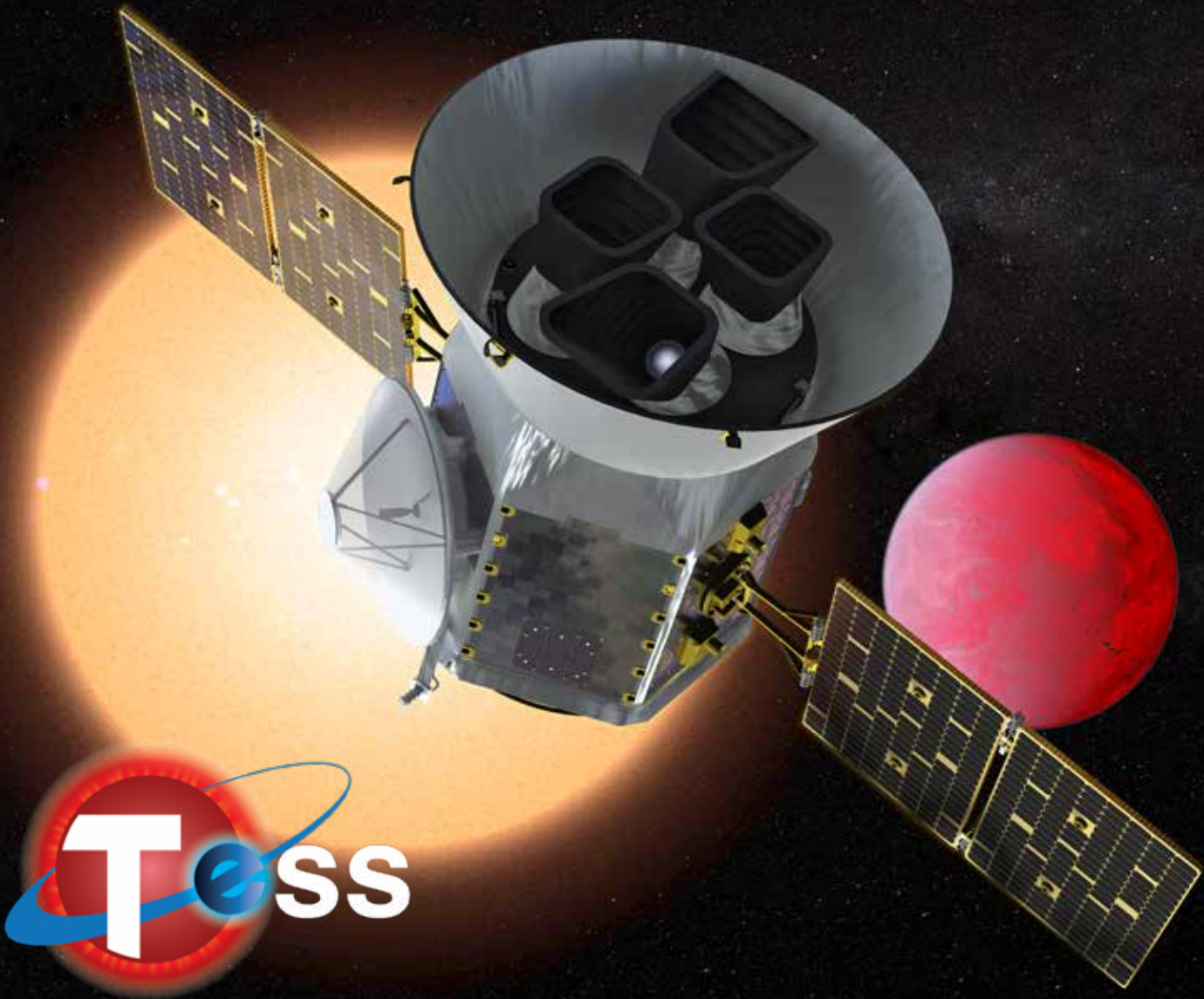




# VATICAN OBSERVATORY NEWSLETTER

*embracing, encouraging and promoting scientific study*



## VATT Scouts Stars for NASA/TESS

The top story in space exploration this year has been the April 18 launch of satellite telescope TESS aboard the Falcon 9 rocket of SpaceX. From a High Earth Orbit, TESS, the Transiting Exoplanet Survey Satellite, will conduct an all-sky survey of more than 200,000 stars searching for temporary drops in brightness caused by planetary transits. The two-year mission is expected to identify thousands of new exoplanets, including about 500 that are close to the size of Earth.

But TESS will get a lot of help from terrestrial telescopes, including the Vatican Advanced Technology Telescope (VATT). For 50 nights a year, beginning this month and finishing in 2020, VATT will train its attention on 311 brightest FGK stars in a sector of the Northern Ecliptic Pole. Equipping VATT via 1/3 mile of optical fiber with a spectroscopic instrument called PEPSI, the Leibniz Institute of Astrophysics Potsdam (AIP) will provide high-resolution spectroscopic characterization of those potential planet-host candidates for TESS. The detailed properties of these potential host stars will provide crucial information for understanding any transiting planets detected by TESS. This time viewers will hope to see a star eclipsed on the biggest stage of all!

*Artists concept of TESS in front of a lava planet orbiting its host star. Image Credit: NASA*



# President's Message

by Brother Guy Consolmagno, S.J.



Look who Br. Guy and Dr. Charles Camosy of Fordham University ran into at the Sheen Center in New York during "Jesuits and Jedi: Science and Spirituality in the Age of Star Wars"

**Once more, I ask for your help to spread the word about our Foundation and its web sites; and I ask for your prayers.** I am not just being delicate by avoiding asking directly for money. Nor are my request for prayers merely piety. I am being quite decidedly practical.

For one thing, a certain percentage of those who sign up for our Catholic Astronomer site eventually also send us a contribution. So, the more people who sign up, the more support we'll get for the web sites and the other work we do.

Right now we have about 7500 subscribers to the Catholic Astronomer web site, and about 150 paying members of Sacred Space. Are there only 7500 Catholics in all the world who are interested in astronomy? I hope not! I should think easily ten times as many would enjoy knowing about us. (Recently we've changed our site hosting to accommodate the traffic, which is already increasing every month.) If we had 75,000 subscribers and 1,500 Sacred Space members, we

would be in great financial shape, and able to expand our outreach programs accordingly.

But even if they (and you) do nothing more than read our sites, we're accomplishing our goal. The reason we exist is not to raise money; we are here to show the world how the Catholic Church supports science. The more people who read about us, the more we are accomplishing our goal... no money needed.

And as for your prayers, I can't fit into a few hundred words a whole theology of how prayer works. Suffice it to say that I know for myself that your prayers have had an enormous effect on our work. So many unexpected graces have occurred that defy the expectations of mere coincidence. For example, every one of the writers for our Catholic Astronomer site appeared seemingly out of nowhere, offering their remarkable talents to the Foundation. I wouldn't know even where to begin to find such great thinkers and writers.

But even the most hardened materialist ought to admit that, regardless of all the other ways prayer works, praying certainly has an effect on the one who prays. And that goes to the heart of why we support astronomy. To us at the Vatican Observatory and its Foundation, to see the handiwork of God brings us closer to the One who created that handiwork. To me, that is a form of prayer. So... let us pray!

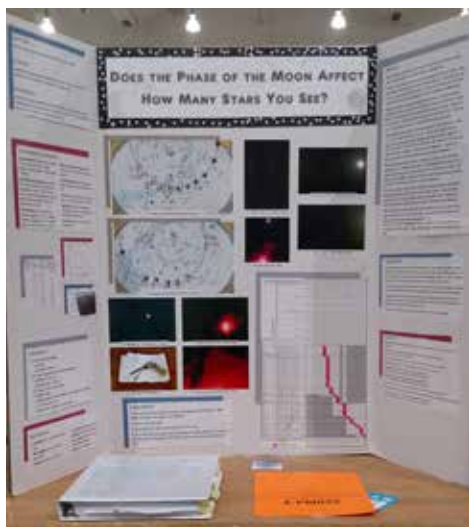


During his trip to Australia including a series of talks for the Diocese of Broken Bay, Br. Guy was thrilled to receive "A touch of Southern Hemisphere gratitude for his generosity, knowledge and awesome story-telling!"

## News Around the Observatory



The Vatican Observatory welcomed visitors at the 10th Tucson Festival of Books in March. Led by VOF Board member Nancy and Larry Lebofsky, Br. Guy, Br. Bob Macke, Fr. JB Kikwaya and Fr. Justin Whittington presented engaging displays on the phases of the Moon, stellar spectroscopy inspired by the research of Father Angelo Secchi SJ, and observing exoplanets.



The 2018 VOF Science Fair Award was given to Louisa Stine, a fourth grader from Fruchthendler Elementary School in Tucson. Her project was "Does the Phase of the Moon Affect How Many Stars You See?" Her project summary stated, "This project studied how the moon affects how many stars you see and was done to help amateur astronomers." Louisa observed over 2,000 stars over a period of 18 days.

This project was brought to our attention by Dr. Don Davis who has been deeply involved with the International Dark Sky Association since its inception and he thought that this was one of the most detailed observing projects he had ever seen.



VOF Blogger and University of Arizona professor, Dr. Brenda Frye, was part of the group that recently set a new distance record for the farthest individual star ever seen: 9 billion light years!



Br. Bob Macke, curator of the Vatican Observatory Meteorite Collection, will be the first Observatory member, possibly the first Jesuit, to join a science team for NASA. He will be participating in the Lucy mission, the first spacecraft to visit Trojan asteroids.

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FOUNDATION

2017 East Lee Street  
Tucson, Arizona 85719

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For more information email or call:

[whittington@vofoundation.org](mailto:whittington@vofoundation.org)

+1 520.795.2655

The Catholic Astronomer Blog

Read the Daily Articles at:

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**Join Us in Rome!**

**March 17-24, 2019**

**For More Information:**

**[katie@vofoundation.org](mailto:katie@vofoundation.org)**



**FAITH & ASTRONOMY WORKSHOP**

For Pastors and Parish Educators

**January 14-18, 2019**

Four days of prayer, reflection, and hands-on astronomy with the scientists of the Vatican Observatory in Tucson, Arizona

Applications will open on September 1, 2018 at [www.vofoundation.org](http://www.vofoundation.org)