

OUTREACH IN A PANDEMIC: STRATEGIES THAT LED TO RECORD-BREAKING PARTICIPATION IN INTERNATIONAL OBSERVE THE MOON NIGHT 2020. A. J. P. Jones¹, M. L. Wasser^{1,2}, S. Tiedeken^{1,2}, A. Shaner³, C. Barry^{1,2}, J. Fooshee⁴, V. White⁵, N. Whelley^{1,6}, B. Day^{7,8}, S. Buxner⁹, E. C. S. Joseph¹⁰, P. Gay⁶, and M. Bakerman⁹, ¹NASA's Goddard Space Flight Center (8800 Greenbelt Road, Greenbelt MD 20771; andrea.j.jones@nasa.gov), ²ADNET Systems, Inc., ³Lunar and Planetary Institute, ⁴University of Edinburgh, ⁵Astronomical Society of the Pacific, ⁶University of Maryland, ⁷NASA's Ames Research Center, ⁸Lockheed Martin Information Technology, ⁹Planetary Science Institute, ¹⁰University of Arizona.

Introduction: International Observe the Moon Night is a day each year that everyone on Earth is invited to learn about lunar science and exploration, take part in celestial observations, and honor cultural and personal connections to the Moon. This event occurs in the fall on or near a first-quarter Moon phase—a great phase for evening observing, as the Moon is high in the sky at sunset. A first-quarter Moon also offers excellent viewing opportunities along the terminator (the line between day and night), where long shadows enhance views of the Moon's cratered landscape.

Visibility even with the naked eye and in light-polluted skies makes the Moon one of the most accessible celestial objects. But there are lots of ways to observe the Moon, and we encourage people to interpret 'observe' broadly. There are images and other data from spacecraft to be explored, 3D prints of lunar landscapes, Moon songs and stories, and more. The Moon, around the world, is woven into our language, art, and culture.

People participate in International Observe the Moon Night by attending or hosting virtual or in-person events or observing the Moon from home. People also connect with lunar enthusiasts around the world through social media—on our Facebook page [1], our Flickr group [2], and through #observethemoon across social media platforms. Program information, resources, and registration are available on moon.nasa.gov/observe.



Figure 1. 2020 map of registered events and observers (cropped to show locations of highest registration density).

Outreach in a Global Pandemic: In 2020, the global pandemic focused our attention on accommodating virtual, small group, and individual participation. We invested heavily in our program website, updating the site's look, language, and

architecture and expanded our registration structure and program materials to better support digital and at-home engagement.



Figure 2. Examples of 2020 participation, shared through the International Observe the Moon Night Flickr group [2]. Image credits: Club de Astronomia (top), Gunstar Team (bottom).

We toned down our use of words like 'celebration' and focused on making connections and offering flexibility within the opportunity. People can observe the Moon with friends and family, even from far apart. We included guidance on our website, including in a prominent website banner, advising hosts and participants to adhere to local laws and guidelines and (in the United States) Centers for Disease Control and Prevention (CDC) guidelines on health and safety for preventing the spread of COVID-19.



Figure 3. Examples of lunar-inspired artwork submitted through the International Observe the Moon Night Flickr group [2]. Picture credits: Adrianna Allen (left), Hubert Faiarit (right).

We collaborated with The Art of Planetary Science (TAPS) group at the University of Arizona in a coordinated call for lunar-inspired artwork. We received submissions from around the world in a wide range of media and styles. The TAPS exhibition is available online [3], as is the collection within our Flickr group [2]. We also developed a social media toolkit for NASA social media leads and external supporters to further support engagement and conversations online.

NASA TV Broadcast and Live Shot Campaign:

In 2020, we had our first NASA Television broadcast. Former NASA Administrator and astronaut Charlie Bolden, Planetary Science Division Director Lori Glaze, and NASA Solar System Exploration Research Virtual Institute Director Greg Schmidt provided welcome videos, and NASA Centers and NASA-affiliates across the United States contributed content. The 6-hour live broadcast included demonstrations of hands-on activities people could follow along with at home, cultural stories about the Moon, presentations by NASA lunar scientists, a tour of the Lunar Sample Laboratory Facility at NASA's Johnson Space Center, a virtual tour of the Moon, tips for taking pictures of the Moon. NASA scientists and communications specialists answered questions submitted through #AskNASA throughout the broadcast through social media and live on air. This broadcast is posted to YouTube and has over 255,000 views [4].

2020 also marked our first Live Shot campaign. With support from NASA scientists and Lunar Reconnaissance Orbiter mission team members, we highlighted International Observe the Moon Night as well as current and upcoming lunar science and exploration in live television and radio news interviews. This campaign was produced by the NASA GSFC Office of Communications and included 63 English- and Spanish-language interviews for international, national, and statewide news audiences.

Record-Breaking Participation: 3,775 International Observe the Moon Night events and observers were registered in 2020, doubling registration from 2019. 38% of total events were reported as fully virtual or including virtual components. 55% of events were organized by new hosts and 83% of individual participants were new. We had participants in all 50 US states + Guam, Puerto Rico, the US Virgin Islands, and the District of Columbia; 103 countries (10 new); and, for the first time, on all 7 continents—with an event held at the South Pole. Events ranged from small (1 to 10 visitors) to very large (501 to 5,000 visitors). We estimate 500,000 people participated in International Observe the Moon Night in 2020.

In September our website, moon.nasa.gov, became one of the most visited of all NASA websites, advancing

in visitation numbers from #39 to #14. The NASA Moon Twitter account gained over 11,000 new followers, to reach 341,000 followers, and had 3.26 million impressions. #observethemoon had almost 15,000 tweets in 22 languages announcing events and sharing photos and stories.

Evaluation: For 2020 program evaluation, data was collected through event registrations completed by event organizers online and individual lunar observers, lunar observer online surveys, and post-event surveys for event hosts.

Over 95% of visitors surveyed indicated they learned something about lunar science or exploration at the International Observe the Moon Night event they attended. Almost 75% of lunar observers who completed a survey reported that observing and learning about the Moon increased their interest in lunar science and exploration, and over 90% reported that they were interested in learning more about NASA's planetary science research and exploration. Facilitators reported very positive experiences hosting their International Observe the Moon Night events and value the opportunity to be part of a larger global event.

Example feedback from a participant in Pakistan: "It was really amazing. We already sometimes look at the Moon, but that night was special because everyone in the world was looking at it, and I felt like apart but still together." and Indonesia: "The event was really fun. And of course it increased my knowledge about the Moon and makes me want to learn more about the Moon and other planetary research." Evaluation data will be used to improve the program website and resources moving forward.

Looking Ahead: In 2020, we reduced barriers to participating in International Observe the Moon Night in the context of the COVID-19 pandemic. Many of the strategies we identified and infrastructure investments we made to support and enhance program participation this year will endure. We will continue supporting virtual engagement when we are again able to host large in-person events, and will continue our efforts to further broaden access to the program.

The next International Observe the Moon Night will be on Saturday, October 16, 2021. We welcome new collaborators, participants, and ideas for engagement.

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References: [1] [facebook.com/observethemoon/](https://www.facebook.com/observethemoon/)
[2] [flickr.com/groups/observethemoon2020/](https://www.flickr.com/groups/observethemoon2020/)
[3] <https://www.lpl.arizona.edu/art/2020> [4] <https://www.youtube.com/watch?v=6cu52OplXY0>