

SOFIA

Science e-Newsletter



May 2019

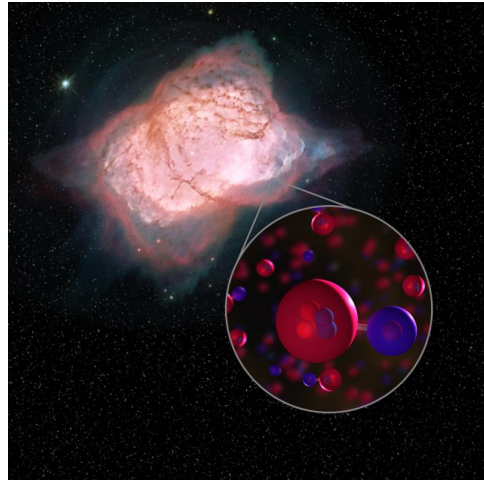
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Astrophysical Detection of the Helium Hydride Ion (HeH⁺)

Güsten et al., *Nature*, 2019

Researchers using SOFIA have made the first-ever detection of the helium hydride molecular ion (HeH⁺) in interstellar space. This discovery refines our understanding of the underlying chemical networks that control the formation and destruction of this special molecular ion, a first step toward the huge diversity of molecules in the Universe today. *(Image credit: NASA/ESA/Hubble Processing: Judy Schmidt)*



[Read the web release and watch an associated video here](#)

[Read the paper here](#)

Cycle 7 Observations Begun, and Cycle 8 Soon to Come!

April 30, 2019, marked the beginning of observations for the [selected proposals for Cycle 7](#) with the Far Infrared Field-Imaging Line Spectrometer (FIFI-LS) onboard for duty. FIFI-LS operates between 50 – 200 microns with a spectral resolution ranging between 500 and 2,000, depending on the wavelength being observed. Past observations with FIFI-LS have yielded a complete [C II] emission map of the grand design spiral galaxy M51 ([Pineda 2019](#)), were instrumental in differentiating the source of [C II] emission in the active galaxy NGC4258 ([Appleton 2019](#)), and shed light on the destruction of the molecular clouds in the Omega nebula M17 by radiation from massive stars ([Klein, in prep](#)).

Cycle 7 will run through April 20, 2020. The [current schedule of observations](#) allows for 145 flight opportunities, almost a quarter of which will be Southern Deployment observations based out of Christchurch, New Zealand, in June and July 2019. Southern Deployments allow SOFIA to take advantage of the excellent winter observing conditions

in the high southern latitudes. The instruments selected for the Cycle 7 Southern Deployment are the German REceiver for Astronomy at Terahertz Frequencies (GREAT), Faint Object infraRed CAmera for the SOFIA Telescope (FORCAST), and High-resolution Airborne Wideband Camera-plus (HAWC+). The observing program for GREAT and FORCAST will include the SOFIA Legacy Programs, which are larger programs spanning two cycles of observation. To further benefit from SOFIA's mobility advantage, opportunities to integrate additional shorter deployments later in Cycle 7 are also currently under consideration.

The Cycle 8 Call for Proposals is just around the corner and due for release on May 31, 2019. Astronomers interested in observing with SOFIA should review the [Quick Guide](#) for an overview of the SOFIA instrument suite.

SOFIA Science on Tour

From May to August 2019, members of the SOFIA science team will be deployed across the United States to present recent SOFIA science and provide assistance to current users and proposers through seminars and workshops, depending on the needs of the local community. At no cost to participants or the host institution, SOFIA Science on Tour enables research institutes and university departments to offer staff and students free resources to learn about new research discoveries and opportunities through a diverse range of presentations, tutorials, and targeted technical support.



The current [schedule of events](#) will be updated regularly as new events are scheduled and host informational webpages become available. The next events currently include the following:

- May 9, 2019: University of Iowa, Iowa City, IA
- May 10, 2019: Observatory Hamburg, Germany
- May 13-14, 2019: [Herschel Ten Years After Launch](#), Spain
- May 13, 2019: [University of Illinois](#), Astronomy Department
- May 16, 2019: University of Kassel, Germany
- May 17, 2019: Thuringian State Observatory, Germany
- May 20-23, 2019: [Exploring the IR Universe; The promise of SPICA](#), Greece
- May 21, 2019: [Dominion Astrophysical Observatory Colloquium](#), British Columbia
- May 22, 2019: University of Washington
- June 12, 2019: SOFIA Data Demo at IRSA booth, AAS Meeting, St. Louis
- August 9, 2019: SOFIA Proposal Tool Webinar

Contact the [Help Desk](#) for more information on how to get SOFIA Science on Tour to come to your institution with an event specifically tailored to the needs of your staff and students.

Upcoming Tele-Talks

SOFIA Tele-Talks are scientific presentations given via phone, with slides distributed ahead of time. The talks are targeted broadly towards members of the astronomy

community who are interested in SOFIA science and in the current and potential scientific capabilities of the observatory. The talks are organized by Dan Lester (Univ. of Texas, Austin) and held approximately twice a month on Wednesdays at 9:00am Pacific, noon Eastern.

For information on how to participate in the Tele-Talks, please check the [SOFIA Tele-Talk page](#).

The next Tele-Talks are:

- June 5: David Neufeld (Johns Hopkins University); HeH+ in NGC7027
- June 12: Jorge Pineda (JPL); [CII] in M51
- July 10: Darius Lis (Caltech); D/H in Comet 46P/Wirtanen
- July 17: Maggie Thompson (UCSC); MidIR debris disk around BD+20 307
- August 7: Allison Towner (University of Virginia, NRAO); photometry of Extended Green Objects

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Please feel free to direct questions and comments to the SOFIA Science Center help desk: sofia_help@sofia.usra.edu.

