

Newsletter 18-29

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IN MEMORIAM: BRADFORD A. SMITH (1931-2018)

Bradford A. Smith, planetary astronomer best known as the lead imaging scientist on the Voyager mission who guided the world during the 1980s on a visual odyssey across the outer solar system, passed away peacefully at his home in Santa Fe, NM on July 3, 2018 from complications from myasthenia gravis, an autoimmune disorder. He was 86.

Brad was born in 1931 in Cambridge, Massachusetts and grew up in nearby Winchester, MA. He graduated in 1954 from Northeastern University with a BSc degree in Chemical Engineering and received a PhD in Astronomy from New Mexico State University in 1973. During the course of his career, he held the academic appointments of Associate Professor of Astronomy at New Mexico State University, Professor in both the Department of Planetary Sciences and the Department of Astronomy at the University of Arizona, and



finally Research Astronomer at the Institute for Astronomy, University of Hawaii at Manoa.

Despite his early training as a chemical engineer, Brad's first love was astronomy. After college, he spent two years as a private in the army, working as an astronomer in the US Army Map Service at the White Sands Missile Range in New Mexico, where he began a long and productive association with Clyde Tombaugh, the discoverer of Pluto. His first astronomical project was a search (with negative results) for possible natural satellites of the Moon at Lowell Observatory, with Tombaugh, during the lunar eclipse of November 17-18, 1956.

Soon thereafter, he followed Tombaugh to New Mexico State University and in 1958 established there a program of systematic, ground-based telescopic imaging of the planets in support of the robotic planetary missions on which the newly formed NASA would soon be embarking. This was the dawn of the space age, a time when planetary science as a disciplined study of the planets was only just taking shape. Brad's cutting-edge knowledge and experience in imaging the planets earned him membership in that first generation of explorers chosen to execute humankind's initial reconnaissance of the solar system.

Throughout the 1960s, 70s, and 80s, he was involved in many US and international space missions: the Mariner 6, Mariner 7, Viking, and Soviet Phobos missions to Mars; the Soviet Vega mission to Halley's Comet; and the Wide Field/Planetary Camera team for the Hubble Space Telescope. He rose to deputy team leader for the imaging investigation on Mariner 9, the first spacecraft to orbit another planet in 1971, and from 1972 through 1989, served as the imaging lead on the Voyager mission to Jupiter, Saturn, Uranus,

and Neptune. For his contributions to space science, he was four times awarded the NASA Medal for Exceptional Scientific Achievement. Asteroid 8553 (bradsmith) is named for him.

While still deeply involved in spaceflight, Brad continued to push the limits in Earth-based astronomical imaging. In early 1976 Brad and his colleagues were the first to use a CCD detector on an astronomical telescope, yielding the first high-resolution infrared images of Uranus and Neptune. Later, in 1984, he would be the first to use a coronagraph on the star β Pictoris, an observational breakthrough that led to his discovery of the star's circumstellar debris disk. This was the first direct evidence of a planetary system beyond our own and a finding that initiated the observational study of extrasolar planetary systems, today the most productive field in astronomy.

Within a career of scientific firsts, Brad's most renowned role was his leadership of the imaging team on the most celebrated interplanetary mission of them all, the Voyager mission to the outer planets. Voyager was different than any mission that had come before. It was a long-duration, uncertain, risky undertaking to journey across and beyond the solar system, coursing on the way through one giant-planet system after another, that became iconic in its scope and significance ... more rite of passage than expedition, more mythic than scientific. Those extraordinary images of alien worlds and stunning marvels, so unexpected, all never seen before, and that pre-cognitive sense of being there that they evoked, were the means by which lay people the world over felt connected to a grand pilgrimage, with Brad as head pilgrim, rendering meaning along the way. And he excelled at it: well-spoken, commanding, knowledgeable, witty, with movie star good looks. Central Casting could not

have done better.

At the same time, he was very much responsible for the phenomenal scientific success of the whole imaging investigation. He was one of few who had the foresight to recognize the satellites and, later, the rings of the outer planets would be as fascinating as the planets themselves, and the need for a high-resolution imaging capability to address both. These realizations drove him to insist on a change in the optics of the Voyager cameras and to hand-appoint to the original NASA-selected imaging team (against the wishes of NASA officials) additional scientists with expertise in atmospheric science, geology and planetary rings, as well as those directly involved in ground-based studies of the bodies that Voyager would visit, to take advantage of the imaging system's increased capabilities. And he was gender blind: three of those additions, from 1977 to 1988, were women, including myself. He simply went after the best.

Brad was worldly and engaged in life in ways many of his colleagues were not. Maybe it was this that moved him to extend a hand, again without official approval, to scientists from other countries at a time when it was rare to do so. For the Neptune encounter, he invited onto the imaging team Andre Brahic from France and Sasha Basilevsky from the Soviet Union. The latter was a bold gesture, considering that the Cold War had not yet ended. It was Sasha who proclaimed that the surface of Neptune's moon, Triton, was like frozen vodka!

Many of us chosen for the Cassini mission back to Saturn were among those Brad added to the Voyager imaging team. I surely would not have won the



position of imaging team lead on Cassini had it not been for his selection of me for Voyager. He might have had a reputation for being unapproachable and intimidating, but under it all, away from the politics and pressure, he was a gentleman, loved by many for his encouragement, open-mindedness, and willingness to listen. He was there for me through some very difficult and punishing times over the 27 years of Cassini. He was one who knew firsthand what the job of imaging team leader entailed, what deep resentment from colleagues came with the very public-facing nature of the job, and how politically charged it could be. Through it all, he remained a steadfast supporter.

Once Cassini reached Saturn, Brad would occasionally send me communications that only someone who had held the seat in an earlier era could send.

During our first satellite encounter in mid-2004 with Saturn's outer moon, Phoebe: "There simply are no adequate words to describe those pictures! Now I know how Tom Gehrels [imaging team leader for Pioneer 11 at Saturn] felt when he saw the Saturn Voyager images."

On our findings at Enceladus in 2005: "Unbelievable! I haven't seen such a tormented satellite since Miranda [moon of Uranus]. You certainly are doing fantastic work! It brings back memories of past exciting times."

And he was still there, cheering, only days before Cassini's end: "I can remember my own emotions as Voyager 2 headed away from Neptune, ending the imaging phase of the mission. So, I can only imagine the emotion you will be going through seeing your beloved Cassini die after all your years together."

In the history of human life, Bradford A. Smith was consequential in the most meaningful of ways. He will be fondly remembered.

Brad is survived by his wife, Diane McGregor, his three children, Kari Rasmason of Albuquerque, NM, Hillary Tolmen of Cape Coral, FL, and Randall Smith of Albuquerque, five grandchildren, and five great-grandchildren.

A memorial service will be held at the Lunar and Planetary Lab at the University of Arizona on September 22, 2018.

For more info: <http://shorelips.net/bradsmith/memorial-service.html> [1]

Carolyn Porco
Mill Valley, California

(with assistance from Diane McGregor, Santa Fe, New Mexico;
William Sheehan, Flagstaff, Arizona; and Faith Vilas, Seabrook, Texas)

Carolyn Porco was a member of the Voyager Imaging Team from October 1983 through the end of mission in 1989. She has been the imaging team leader on the Cassini mission at Saturn since November 1990.

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50TH ANNUAL MEETING OF THE AAS DIVISION FOR PLANETARY SCIENCES OCTOBER 21-26, 2018 IN KNOXVILLE, TENNESSEE

REGULAR ABSTRACTS ARE DUE THURSDAY, JULY 26, 2018 9:00 PM EDT

Registration is now open!

Both local and scientific organizing committees are working with AAS meeting planners to make this meeting a place to share our recent scientific results and to continue our collaborations with colleagues.

More information, as it becomes available, can be found at the meeting website:

<https://aas.org/meetings/dps50> [2]

Here are some key dates to be aware of:

26 July 2018 Regular Abstract Deadline, 9:00 PM EDT

31 July 2018 Early Registration Deadline (lowest cost!)

31 July 2018 Exhibit Final Deadline

31 August 2018 Late Abstract Submission Deadline

15 September 2018 Dependent Care Grant Applications Due

Note that there will be limited and expensive hotel rooms close to the Knoxville Convention Center in downtown Knoxville on the Saturday night before the meeting (Oct 20) due to the home football game between Tennessee and Alabama. The LOC and AAS staff are working to find meeting space so that workshops can be held on Saturday October 27. There will be meeting space for workshops at the Knoxville Convention Center on Sunday October 21 (before the meeting), but it will be extremely difficult for some people to get into Knoxville early that day (particularly those coming from the west coast). Another option for workshop attendees would be to stay at a hotel outside of the downtown area on Saturday night. Workshop

conveners should consider these constraints and communicate with expected attendees when deciding on workshop dates and times.

Two field trips are being scheduled for Saturday, October 27. Expected offerings include a visit to the Oak Ridge National Laboratory, nearby caves, and hiking in the Smoky Mountains.

We plan to continue offering electronic posters this year. We will also be having a banquet at the Knoxville Museum of Art and an ice-cream social on Friday afternoon.

We look forward to seeing you in Knoxville in October.

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DPS 2018 ELECTION REMINDER

The 2018 election for DPS Vice-Chair and Committee is now open, and will close on July 31st 2018.

Please remember to vote!

Go to <https://aas.org/vote/> [3]

You will need your AAS member login ID (which defaults to your membership number), and your password.

If you have trouble voting on line, the AAS can do a proxy vote and vote on your behalf (send an e-mail to dpssec@aas.org [4]). You will still get an automated email confirmation and a separate manual email, both with who you voted for and a confirmation number.

You should vote for one of the two candidates for Vice Chair:

- o Matija Ćuk, SETI Institute
- o Amanda Hendrix, Planetary Science Institute

The elected Vice Chair will take his/her functions in October 2018 and will become the DPS Chair in October 2019.

You should also vote for two of the four candidates for DPS Committee:

- o Michael Bland
- o Will Grundy, Lowell Observatory
- o Lucille Le Corre, Planetary Science Institute
- o Krista Soderlund, University of Texas

The successful candidates will serve on the Committee for three years after October 2018.

The detailed vitae and position statements for each of the candidates is linked from the main election page,

<https://aas.org/vote/> [3]

It is very important for all DPS Members to participate to these elections, so please take a moment to vote!

Thank you!

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JOBS, POSITIONS, OPPORTUNITIES

A) FACULTY POSITION IN GEOPHYSICS AND GEOCHEMISTRY

AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)

The MIT Department of Earth, Atmospheric, and Planetary Sciences invites qualified candidates to apply for a tenure-track faculty position. The search is in the broad area of geophysics and geochemistry encompassing the Earth and other planetary bodies in the solar system. We seek candidates who use theory, observation, and/or experimentation and particularly encourage applicants whose work crosses traditional disciplinary boundaries. Candidates should have the potential for innovation and leadership in research and a commitment to teaching at the undergraduate and graduate levels.

Applicants must hold a Ph.D. in geoscience or related field by the start of employment. Our intent is to hire at the assistant professor level, but more senior appointments may also be considered. A complete application must include a cover letter, curriculum vitae, one- to two-page descriptions each of research and teaching plans, and three letters of recommendations. We request that in their cover letter, applicants explicitly commit to our department's code of conduct:

<https://eapsweb.mit.edu/about/code-conduct> [5]

Submit applications at:

<https://academicjobsonline.org/ajo/jobs/11380> [6]

To receive full consideration, complete applications must be received by November 1, 2018.

Search Contact:

Ms. Karen Foshier, HR Administrator, EAPS, 54-924

kfoshier@mit.edu [7]

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Send submissions to:

Anne Verbiscer, DPS Secretary (dpssec@aas.org) [4]

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