NASA's Kennedy Space Center Amateur Radio Club, N1KSC, members. Standing from left to right are Jose Nunez, W4ALU, and Scott Vangen, WBØQMZ. Sitting from left to right are Andrew "Andy" Lopatin, KB3KX; Michael Seay, WA4ECT; Sean Cannon, KK4RYN, and Kevin Zari, KK4YEL. [Sean Cannon, KK4RYN, and Michael Seay, WA4ECT, photo]

NASA On the Air

NASA employees launched a yearly operating event that made the agency more amateur radio active than ever.

David D. Lee, W5OC

NASA on the Air (NOTA) is an annual collaboration between the ham radio clubs of 12 different NASA centers (see the sidebar, "Participating NASA Club Stations"). NOTA stations, manned primarily by NASA staff, operate together throughout each year to celebrate the agency's major historical achievements. Though it is not a competition, amateurs who contact NOTA stations are encouraged to upload their logs to a database at **www.nasaontheair.wordpress.com**.

In 2025, NOTA is honoring 12 NASA milestones, including the launch of ham-built OSCAR 1 and when Astronaut Owen Garriott, W5LFL, became the first to operate a ham radio in space. For the NOTA operation schedule for the rest of this year, see Table 1 or visit the NOTA website.

NOTA's Liftoff

It all began in 2018, when a clever and bold idea percolated in the mind of Dr. Rob Suggs, NN4NT, a prominent space environmental scientist at NASA's Marshall Space Flight Center (MSFC) in Huntsville, Alabama. Fueled by his love of the hobby and enthusiasm from members of the MSFC Amateur Radio Club (MSFC ARC), NN4SA, Rob and his team solicited the other NASA ham clubs across the country, asking for group participation in a special event operation.

The NASA club stations had been historically independent and unaffiliated, so any joint interest was the least expected outcome. But serendipity does happen — Rob explained, "...one of our NN4SA members, Don Hediger, N4MSN, noticed that the 60th anniversary of NASA was that year, and we thought maybe we should do a year-long event."

Participating NASA Club Stations

- Ames Research Center, NA6MF (California)
- Armstrong Flight Research Center, NA6SA (California)
- Glenn Research Center, NA8SA (Ohio)
- Goddard Space Flight Center, WA3NAN (Maryland)
- Jet Propulsion Laboratory, W6VIO/W6JPL (California)
- Johnson Space Center, W5RRR (Texas)
- Kennedy Space Center, N1KSC (Florida)
- Langley Research Center, KG4NJA (Virginia)
- Marshall Space Flight Center, NN4SA (Alabama)
- Stennis Space Center, N5SSC (Mississippi)
- Wallops Flight Facility, W4WFF (Virginia)
- White Sands Test Facility/Mesilla Valley Radio Club, N5BL (New Mexico)

Although Rob had never met anyone from most of the other clubs, his idea turned out to be a resounding success. All of the other NASA club stations enthusiastically responded, joined forces, and committed to NOTA in 2018. Rob said:

> I had hoped it would just be a fun excuse to get on the air and connect with other hams. It is always energizing to talk to hams across the world who love what NASA does. We tend to get buried in the paperwork and details of spaceflight development, and I have always enjoyed making those contacts, which remind me of how cool what we do really is. The hams we contact tell us so…Most are tech savvy, but I occasionally run into someone who doesn't know that we have a permanently manned station (the International Space Station) orbiting above us, or [they] don't know what our plans are for [Space Launch System (a launch vehicle)], *Orion* [(a spacecraft built to take humans beyond Earth's orbit)], and Gateway [(a lunar space station)].

The ability to contact NOTA stations continues to bring excitement to the ham community. As mentioned, logs from each NASA center are regularly uploaded into a NOTA database developed by MSFC ARC member Matt McDougal, KAØS. Matt's database ingests each center's log data and allows participants to track their status across different modes and bands.

Impact on NASA's Ham Shacks

NASA's presence on HF and the VHF/UHF satellites had previously been sparse, making its radio clubs akin to rare DX entities. But since the creation of NOTA, NASA club station activity has been re-energized, and it is no longer uncommon to contact them during the weekends or after hours. In most cases, each club was encouraged to dust off the cobwebs in their shack and update their gear. Kennedy Space Center Amateur Radio Club Vice President Michael Seay, WA4ECT, said:

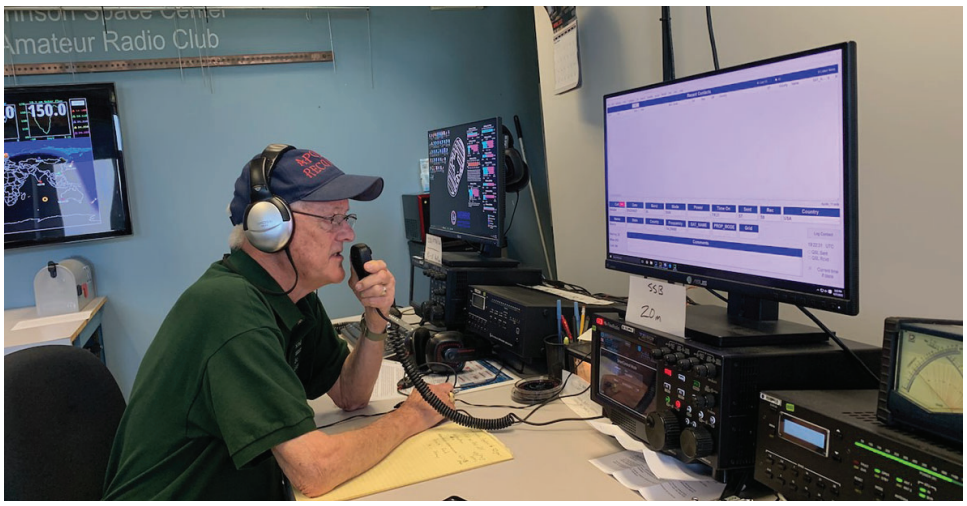
> In the early days of the club, our operations were the definition of "100 W and a wire…" When a club member donated a Cushcraft A3S three-element triband beam, our contact numbers doubled. A later addition of an Elecraft K3S transceiver with a 500 W amplifier really improved our NOTA contacts with Europe, South America, and the South Pacific.

Langley Research Center Amateur Radio Club Member TJ Johnston, K4TFJ, added:

> The club primarily existed to maintain several voice and digital repeaters located on top of the historic gantry at the Landing and Impact Research Facility… We were radio silent for many years due to damaged antennas, primarily caused by weather and renovations. We are slowly replacing and improving each system. Just this month, an HF/VHF/UHF station was installed at the emergency operations center in support of NASA's [participation in the SHAred RESources High Frequency Radio Program], which will also be used for future NOTA events.

Table 1 — NOTA Operations for the Rest of 2025 (updated as of press time)

NOTA Operation Date	Celebrated Event(s)	Historic Date
May 3 – 4	First crewed US space mission/first American in space	May 5, 1961
July 19 – 20	Apollo 11 mission; first humans on the moon	July 16 – 24, 1969
August 23 – 24	Viking 1 launch	August 20, 1975
September 6 – 7	Voyager 1 launch	September 5, 1977
October 5 – 6	Sputnik launch (triggered NASA's creation)	October 4, 1957
November 22 – 23	First use of ham radio in space	November 28, 1983
December 13 – 14	OSCAR 1 launch	December 12, 1961



Milt Heflin, K5KRM, operating at the Johnson Space Center Amateur Radio Club, W5RRR, shares his recollections of being on board the aircraft carrier USS *Ticonderoga* during the recovery of Apollo 16. [David Lee, W5OC, photo]

High-Flying Careers, Down-to-Earth Operators

NOTA club operators often consist of federal and contracted NASA personnel who have specialized, diverse backgrounds, and who are skilled technical and administrative space experts. Most of the members are full-time employees engaged in the agency's mission, which includes handling center operations and flight vehicles, researching and developing science and technology advancements, and planning future space and aeronautical road maps. It's difficult for them to find the time to operate, but that's the magic of ham radio — bringing passions and people together.

Like the other NASA centers, the Johnson Space Center's (JSC's) club station, W5RRR, has also been active on all HF bands and modes, as well as the amateur satellites. Numerous hams have been able to contact a special NASA icon during several NOTA events: Milt Heflin, K5KRM. Milt had been on the mic during several W5RRR NOTA activations celebrating Apollo mission anniversaries.

Milt served in many roles during his illustrious 47-year career at NASA, including Flight Director for 20 Space Shuttle missions and various senior management positions. On Apollo 16's 50th anniversary, Milt told several hams about his experience as a 28-year-old NASA Landing and Recovery Engineer onboard the USS *Ticonderoga*, and how he served as the lead Recovery Operations Engineer overseeing the safe return of the Command Module when it splashed down into the Pacific. An outpouring of hams across the country monitored Milt's Apollo stories while participating in many heartfelt contacts. Milt reflected:

> I could actually feel the excitement of the contacts as they communicated with a NASA guy (me) at JSC…I'm not a fan of exchanging only call signs and signal strength for an event like this…my advice is to visit with them ([which] ain't gonna be popular in a pileup)… to ask them what they want to know about the event and to have fun.

It's common to work NOTA operators who share personal stories and memories about their role with a program. It's also common to work those being honored during a NOTA celebratory event.

Stellar Results

NOTA has been a unique and successful program that has affected each NASA center in many different and valuable ways. Many thanks to Rob Suggs, NN4NT, and the MSFC ARC, NN4SA, for creating an ongoing effort that sustains public presence and public relations with the community. As Ames Research Center Amateur Radio Club, NA6MF, Station Trustee Desiree Baccus, N3DEZ, summarized:

> We worked collectively on the same goal...to engage with and inspire the worldwide community. Seeing clubs, educators, and operators from around the world engage, make contacts, and get involved with NOTA has been incredibly rewarding for all of us.

David D. Lee, W5OC, is an Amateur Extra-class operator who has been licensed since 1968. He received a BSEE in electrical engineering from Stanford University in 1978 and an MBA from the University of Southern California in 1985. He retired from NASA's Johnson Space Center in 2021, where he served as a Deputy Chief for the Wireless and Communications Branch in the Avionic Systems Division. David enjoys the art of repairing broken radios and using ham radio to encourage young students to pursue science and engineering. He can be reached at **w5oc@arrl.net**.

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