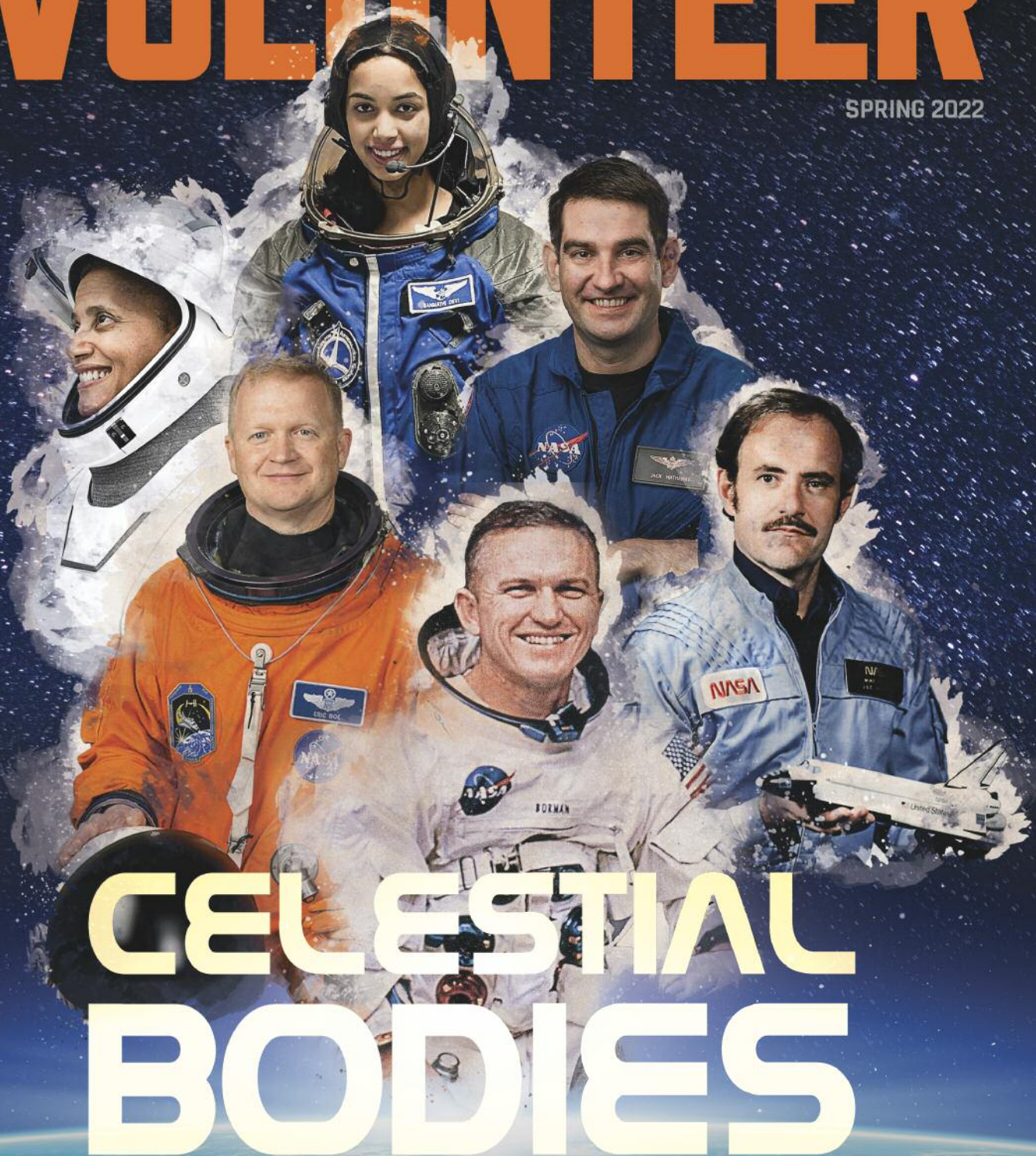


CIVIL AIR PATROL

# VOLUNTEER

SPRING 2022



# CELESTIAL BODIES

WAVE OF SUPPORT

LABOR OF LOVE

BLUE BERET



# VOLUNTEER

SPRING 2022



inside

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## ON OUR COVER

This collection of past, current, and likely future astronauts has at least one thing in common — Civil Air Patrol. Clockwise from the top are Cadet Lt. Col. Sanmathi Abiram, Cmdr. Jack Hathaway, Lt. Col. John "Mike" Lounge, Col. Frank Borman, Col. Eric Boe, and Maj. Sian Proctor.

## Space Race

■ Civil Air Patrol's first national cadet STEM challenge lifts payloads and imaginations to the edge of space.

When coronavirus-related limitations altered the in-person educational experience, the national aerospace education team initiated an exciting national science, technology, engineering and math (STEM) activity for cadets that could be conducted both in-person and online. With renewed interest in commercial spaceflight and the creation of the U.S. Space Force, a space-focused STEM program emerged — CAP's National High-Altitude Balloon Challenge, our first-ever national STEM challenge for cadets.

Working in partnership with StratoStar, a STEM project-based learning company, we launched the program in the spring of 2021. Soon thereafter, 139 cadet teams from all regions began identifying science experiments that would be lifted to the edge of space — 85,000 feet and beyond — as payloads of two high-altitude balloons.

Initially designed as a fun learning program, the venture quickly evolved into a highly competitive challenge. As national ambassador of the program, 93-year-old retired Air Force Col. Joe Kittinger, famed high-altitude aeromedical scientist, test pilot, and Vietnam



“KITTINGER DISCUSSED HIS RECORD-BREAKING SCIENTIFIC FEATS TO TEST THE EFFECTS OF SPACE ON THE HUMAN BODY AS HE JUMPED FROM A BALLOON-LIFTED GONDOLA FROM OVER 100,000 FEET.”

War veteran, pledged a \$5,000 prize to the team that created the best science experiments and completed all associated aspects of the project. The CAP space race was on, sparked by an opportunity to win the first Kittinger Cup, its financial award, and the honor of meeting Kittinger himself.

Innovation and creativity propelled the cadets to work all summer to

develop unique experiments that would fit into a 50-milliliter capsule weighing less than 40 grams. CAP adult mentors helped facilitate the cadets' research of potential experiments, that could prove useful in future spaceflight and habitats. Cadet project leaders organized their teams and reached out to area subject-matter experts at universities, medical facilities, and science organizations for



support. The teams met nights and weekends to conduct their pre- and postflight scientific research, building close bonds in the squadrons.

In early August, teams shipped identical test and control capsules with flight manifests to Anderson, Indiana, where a team of CAP members organized a “launch day” using a pair of weather balloons. The two balloons lifted over 650 experiments in 139 capsules to the edge of space.

This nationwide livestreamed science event featured the Indiana Wing coordinating a search and rescue exercise to track and retrieve the balloons’ payloads after they reached burst altitudes of 87,621 and 103,057 feet, respectively. The experiments were then repacked and shipped back to the squadrons, where the cadets completed postflight experiment analyses.

Launch day also included live-streamed YouTube interviews in which Kittinger discussed his record-breaking scientific feats to test the effects of space on the human body as he jumped from a balloon-lifted gondola from over 100,000 feet in 1960. His accomplishments helped lead the way for space travel and to safety technology still used today.

By late September, the cadet teams submitted their scientific findings on creative slides, team mission patches, and documentary videos of their entire Challenge experience, all to be cumulatively scored to determine the winner of the Kittinger Cup and the cash prize.

After grueling days of reviews of hundreds of experiment reports and all teams’ creative documentaries, the finalists were selected for this inaugural

national challenge. On Oct. 6, the national winner was announced via a livestream event.

Maj. Gen. Edward D. Phelka, Civil Air Patrol national commander, started the award ceremony with words of pride and support: “This project enabled our cadets to work as teams to design innovative science experiments, the results of which are worthy of next-level analysis. The Indiana Wing’s participation in the balloon launch and retrieval demonstrated how STEM carries over into all mission areas, using all of CAP’s assets, such as sUAS (small Unmanned Aerial Systems), aircraft, ground vehicles, and communications/tracking technology. We are so very proud of every cadet who participated in this program.”

The winning team traveled to Orlando, Florida, to join Kittinger as he presented the \$5,000 check, the Kittinger Cup, and personalized autographed copies of his book, *Come Up and Get Me*. The winning team consisted of

four Massachusetts Wing cadets, two each from the Bridgewater State University Composite Squadron and Goddard Cadet Squadron. They and their lead aerospace education officers, all seen in the awards event photo above, also received a behind-the-scenes tour of Cape Canaveral and Kennedy Space Center, thanks to Lt. Col. Gary Dahlke, the Florida Wing’s assistant director of aerospace education.

Kittinger pledged to support CAP’s Challenge into the future. “I care about science and the need for youth to get interested in science,” he said. “This project was executed with excellence and has brought to national attention the great work that CAP does in operations and in youth development in the science discipline. Our country’s future leaders are found in CAP squadrons where young people are encouraged to do their best and make significant contributions to our nation.” ▲



### 2022 CHALLENGE SCHEDULE:

Team registration ends April 30

- May 2 Challenge capsules shipped to teams
- July 22 Teams ship capsules to Indiana for launch
- Aug. 6 High-altitude balloons launch in Indiana (livestreamed) and capsules shipped back to squadrons
- (Aug. 13 Backup launch and ship date)
- Sept. 26 Teams submit all Challenge reports and documentaries
- Oct. 22 National Challenge awards event in Orlando (livestreamed)