



STC Senior Vice President Dr. Thomas H. Vonder Haar Receives the AGU Fellow Medal

Dr. Thomas H. Vonder Haar received the Distinguished American Geophysical Union (AGU) Fellow medal from AGU President, Margaret Leinen, at the 2016 AGU meeting in San Francisco. The award citation said "For seminal observations of Earth's Radiation Budget, Clouds and Water Vapor."

Dr. Vonder Haar stated to Dr. Adarsh Deepak, STC President, that "most of the water vapor and some of the cloud observations from satellites were done with support of STC, METSAT Division and I certainly appreciate all the assistance from STC." ... "Keep me on the list for your Journal of Small Satellites...you had good foresight to start it in this new era!"

Dr. Vonder Haar is the University Distinguished Professor Emeritus of Atmospheric Sci-

ence, Founding Director Emeritus, Cooperative Institute for Research in the Atmosphere, and Member, National Academy of Engineering at Colorado State University Foothills Campus, Fort Collins, Colorado. □



Dr. Tom Vonder Haar and AGU President, Margaret Leinen, at the AGU meeting in San Francisco

STC Key in NASA Orion Support

Science and Technology Corporation (STC) has had an exciting couple of years in support of NASA's next crewed spaceship, known as Orion. From our support of the Ground Test Article (GTA) used at the Gantry for water impact testing for the SPLASH project, to the pad modifications for Space Launch Complex-46 (SLC-46), to the fabrication of the flight test articles (FTA) for Ascent Abort-2 (AA-2), STC has been instrumental in the progress being made to get NASA back in space with its first manned spacecraft since the space shuttle was retired in 2011.

STC technicians and engineers supported the water impact test campaign, SPLASH, using



Orion Ground Test Article

the Lockheed Martin-built GTA. SPLASH stands for Structural Passive Landing Attenuation for Survivability of Human-crew. The authenticity of the testing was further enhanced by using the heat shield that flew on Exploration Flight Test-1 (EFT-1). After cleaning the heat shield material, procedures needed to be developed to mate it with the GTA. This was not as simple as putting the heat shield on to start testing. To ensure proper form and fit, STC engaged a laser tracker to create a model of the heat shield and GTA, providing an opportunity to perform a virtual fit check prior to the actual mating. This reduced the risk of damaging the hardware and provided a mechanism to develop proper mating procedures. This made the fit up safer, more efficient, and timelier. The STC support provided to the SPLASH project worked for nearly 8 months preparing the GTA for testing and as the testing campaign started, they worked 12-hour days to ensure testing stayed on schedule. STC's staff provided mechanical fabrication and integration support, engineering support, engineering analysis support, and electronics and instrumentation support. For their efforts the team members were recognized

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AMS Scholarship Named for Dr. Paul Try



From left: Dr. Paul Try, Ms. Rachael Cross, and Dr. Jenni Evans, AMS President

The American Meteorological Society (AMS) has established The Paul D. Try Endowed Scholarship in Solar-Terrestrial Interactions, which is funded by Dr. Paul D. Try, STC Senior Vice President. The purpose of this scholarship is to encourage and support studies and research in "Solar-Terrestrial Interactions", more specifically, the responses of the Earth's atmosphere and ionosphere to space weather. Space weather impact on Earth's infrastructure (e.g., GPS, power grid, etc.) is also included. The endowed undergraduate scholarship, in the amount of \$5,000, is awarded annually.

The first recipient of this scholarship is Ms. Rachael Cross, currently at the University of Oklahoma. □

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"Team Member of the Month" Award



Mr. Tony Ramirez

STC Research Scientist **Mr. Tony Ramirez** was recognized by NOAA as September's Team Member of the Month. He provides full-time support to the Office of the Federal Coordinator for Meteorology as the editor of the annual Federal Weather Enterprise Budget and Coordination Report (prepared in fulfillment of two laws including the Weather Act of 2017), the executive secretary for the Working Group for Disaster Impacts Assessment and Plans/Weather and Water Data, which coordinates academic and federal agencies gathering

supplemental environmental data during high impact events including hurricane landfalls, and as the coordinator for ensuring funding to Civil Air Patrol flights used to assess recent or potential severe weather impacts. This spring, Tony went above and beyond in organizing a multi-agency workshop to coordinate federal efforts in meeting new World Meteorological Organization formats for coding and reporting environmental information. Tony's inspiring energy and unique ability to bring organizations with differing goals together have significantly increased the Federal Weather Enterprise's ability to quickly and effectively achieve coordinated goals. □

AMS/STC Scholarship Award



Mr. Giancarlo Valdeto

The AMS has named **Mr. Giancarlo T. Valdeto** as the recipient of the AMS/STC Freshman Undergraduate Scholarship for 2017. Giancarlo will be entering his freshman year of undergraduate studies at Cornell University. He will be majoring in atmospheric science at

Cornell University. The scholarship awards are announced in a student's freshman year, but are not presented at the AMS meeting until their junior year.

The AMS Freshman Undergraduate Scholarship is awarded on merit and is designed to encourage outstanding undergraduates to pursue careers in the fields covered by the award. STC has sponsored the scholarship since 1992. □

Another Reason to Report Foreign Travel!



One more reason to report your foreign travel (both business and personal) to your FSO before you book a trip! As a part of Security Executive Directive (SEAD) 6 implementation, the Department of Homeland Security (DHS) stood up their Continuous Evaluation (CE) Travel Record Data Service (TRDS) project in August 2018. Now the Customs and Border Patrol (CBP) shares all of their travel records with the Director of National Intelligence's (ODNI's) CE program, that in turn match the data to anyone enrolled in CE and determine if

there are flags or concerns that need follow-up. Counterintelligence (CI) experts can also submit queries to CBP's Advance Passenger Information System (APIS) and Border Crossing Information (BCI) to check on cleared personnel of concern who may have planned, or already traveled abroad, but have not reported it. Additionally, those with dual citizenship holding a foreign passport, should not use the foreign passport to enter or exit the United States as that will most certainly raise a flag. Failing to report foreign travel—and then getting caught—will subject you to a CE inquiry and could cost you your security clearance. You can request a copy of your travel data recorded in APIS and BCI by submitting a Freedom of Information Act (FOIA) request at FOIA.gov. □

NEW CONTRACTS

- **February 2019** – STC was awarded the Survivability Evaluation Directorate (SVED) contract with SURVICE as our subcontractor.
- **February 2019** – STC was awarded the ETSS subcontract under the New Horizons JV support to NASA Armstrong performing engineering and meteorological support.
- **January 2019** – STC was awarded a small JPL subcontract performing numerical simulations.
- **January 2019** – STC was one of the awardees of the Multi-award IDIQ Seaport-NxG contract with NSWC Dahlgren.
- **January 2019** – STC was one of the awardees of the Multi-award IDIQ Protech Oceans Domain contract.
- **December 2018** – STC was one of the awardees of the NASA Ames Vertical Lift Technology Development (VLTD) contract.
- **December 2018** – STC was awarded a subcontract with TRAX for Mission Support Services (MTSS) at Yuma Proving Ground, AZ.
- **December 2018** – STC won a task order under the ECBC BPA for Support to the Physical Sciences Division (PSD).
- **November 2018** – STC was one of the awardees of the Multi-award IDIQ JE-RDAP contract through the U.S. Army at APG, MD.
- **October 2018** – STC was awarded the RS3 contract at APG, MD.
- **June 2018** – STC was awarded the TO under PROTECH satellite Domain to support NOAA/NESDIS OPPA engineering support.
- **May 2018** – STC won a grant to support the NASA Community Long term Infrared Microwave Coupled Atmospheric Product Systems Algorithm (CLIMCAPS).
- **April 2018** – STC was awarded a grant for Fusion of VIIRS and CRiS to Contract Supplementary Infrared Band Radiances for VIIRS with NASAGSFC.
- **January 2018** – STC was awarded a subcontract with LGS Innovations, LLC for Radio Frequency Interference Monitoring System (RFIMS).
- **October 2017** – STC was on the winning AMA team for the follow-on contract, now called TEAMS 3, at NASA LaRC. STC is a teammate on this five year contract.

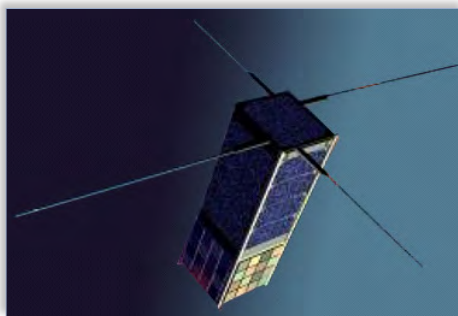
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NASA Langley Research Center's SHIELDS 1

NASA Langley Research Center's SHIELDS 1 is a 3U Cube Sat and is being used as a technology demonstration of environmentally durable space hardware to increase the technology readiness level of new commercial hardware in the relevant radioactive space environment. SHIELDS was launched December 16, 2018 on Electron. Electron is a small liquid fueled orbital launch vehicle, which is being developed by Rocket Lab.

It incorporates three experiments: vault electronics, charge dissipation film resistance, and vault shielding development or Atomic Number (Z)—grade radiation shielding that will provide radiation and operational data from the inner proton and outer electron belt regions. It hopes to increase mission times from 3 months to years with the new shielding.

Mr. Bill Girard of STC was instrumental in designing and machining of the new Cube Sat structure. He is currently working with the engineers to start on the next generation. You can see SHIELDS current path at <https://n2yo.com/satellite/?s=43850#results>. It was selected as a 2017 R&D 100 Finalist. □



SHIELDS 1

All Small Mentor Protégé Program Agreement

The U.S. Small Business Administration recently approved an All Small Mentor Protégé Program agreement (ASMPP) between Science & Technology Corporation as Mentor and RMV Technology Group LLC, a Service Disabled Veteran Owned High Tech Small Business (SDVOSB) and NASA Industry Partner.

RMV Technology Group (RMV) provides ESD and Product Safety Engineering Services;

Technical Writing & Support; Aerospace Mission Support; Technology Training; R&D for Physical & Life Sciences; and ESD Test & Evaluation of Materials, Products, Packaging, and Equipment. Visit their website at esdrmv.com for more information about the company and their capabilities.

We look forward to working with RMV and building a lasting relationship. □

Ownership of Stocks in Marijuana Companies Can Jeopardize Your Security Clearance

Even though many states have legalized marijuana, marijuana (and CBD (cannabidiol) oil) is still prohibited under federal law. If you have a security clearance, or plan to pursue one in the future, please note that marijuana "stock ownership must be reported and the DoDCAF (Consolidated



Adjudications Facility) will determine if the involvement raises questions about the individual's judgement, reliability, trustworthiness and willingness to comply with the laws, rules and regulations". "The DoD Consolidated Adjudications Facility's current legal position is that ownership of marijuana stocks is considered involvement in drug-related activities" per *Federal News Network*, February 26, 2019. □

– NEW CONTRACTS (Continued from page 2)

- **August 2017** – STC was awarded a small subcontract with AS&M for Aerodynamic Validation Capabilities Support at Wright Patterson AFB.
- **July 2017** – STC was one of the awardees of the Multi-award IDIQ Protech Satellite Domain Contract. We currently have 4 active task orders.
- **June 2017** – STC was awarded a subcontract with SAIC for the OMES II contract. This is a five year contract.
- **June 2017** – STC won the Multi-award GSA BPA for ECBC Research and Technology Directorate Support.
- **October 2016** – STC was awarded the Calipso contract by NASA LaRC.
- **September 2016** – STC was awarded a Geospatial Architectures and Geospatial Data Management Remote Sensing Methodologies from U.S. Army CRREL.
- **August 2016** – STC was awarded a subcontract with SGT for Geophysics, Geodynamics, and Space Geodesy (GGSG).
- **June 2016** – STC won the follow-on AEMMS contract at NASA Ames.
- **March 2016** – STC was awarded the ATC Welding/Fabrication contract. This is 5 year contract.
- **August 2015** – STC was awarded a subcontract with L3 for the Screening Obscuration Modules (SOM). □

REAL ID



(The information below applies to Virginia residents, but other states have similar requirements since the REAL ID Act is federal law. Check the DMV website for your state to find information or <https://www.dhs.gov/real-id>.)

Beginning October 1, 2020, Virginia drivers will not be able to use their current Virginia driver's license (credential) to board a domestic flight or to access secure federal facilities (including secure military bases). If you have a U.S. Passport or another form of approved identification, you can use that instead. So the next time you renew your Virginia standard credential, it will display "Federal Limits Apply" in the top right corner in order to distinguish it from a REAL ID-compliant credential.

However, beginning October 1, 2020, the federal government will require you to present a REAL ID-compliant credential (or another form of approved identification) in order to board a domestic flight or to access secure federal facilities. Virginia REAL ID-compliant credentials display a small star in the upper right corner to indicate it meets federal requirements. To obtain a REAL ID compliant credential, check www.dmvNOW.com/REALID. There is a \$10 REAL ID surcharge and you must appear in person with the appropriate required documentation. □

– **NASA ORION** (Continued from page 1)
by the Orion Program Office and the Orion Deputy Program Manager, Charlie Lundquist.



Front row, from left: Mr. Danny Lovaglio, Mrs. Cathy Kern, and Mr. Ronnie Tucker; Back row, far right: Mr. Rick Thomas

Additionally, STC personnel, **Mr. Eric May, Mr. Matt Stearman, Mr. Max Reid, and Mr. Chris Tarkenton** were recognized with the NASA Space Flight Awareness Team Award. The criteria for the team award include:

Employees must have significantly contributed to the human spaceflight program to ensure flight safety and mission success. Potential awardees must meet one or more of the following criteria:

- Contributed significantly beyond fundamental task accountabilities in support of the NASA programs.
- Contributed, recommended, and/or implemented a means of improving the reliability, efficiency, accuracy, or safety of a particular human spaceflight program.
- Sustained superior performance as part of a team effort over an extended period of time.
- Recommended and/or implemented operational improvements to increase efficiency.

The team was presented their awards by astronaut Steven Bowen along with SPLASH Program Manager, Ellen Sydnor, and Principal Investigator, Jim Corliss.



From left: Astronaut Steven Bowen, Mr. Matt Stearman, Mr. Eric May and Mr. Chris Tarkenton

Following the successful test campaign for SPLASH, STC personnel embarked on efforts to support the AA-2 test flight. STC was tasked with building platforms for SLC-46 at Canaveral Air Force Station. The new platforms will be required to refit the Mobile Access Structure (MAS) to accommodate a modified Peacekeeper booster. The AA-2 ar-

ticle uses a single stage Peacekeeper missile first stage motor [SR118] inside an Aero-Shell to replicate the Orion Service Module 5.5-meter diameter. The existing MAS had to be modified with platforms designed and built at Langley Research Center, by STC, to surround the Orion Abort Test Booster (ATB) and Launch Abort Vehicle [comprising a Separation Ring, Boilerplate Crew Module (also built at Langley Research Center), and Launch Abort System] outer mold line. Three platforms were built, each slightly different from the other, but the overall dimensions of each were 24 feet x 24 feet. To ensure the platforms would fit seamlessly once at Canaveral Air Force Station, STC built a test platform that had the same dimensions as the MAS. The test platform was laser tracked to confirm the dimensions of the completed structure matched the dimensions of the MAS. As each MAS platform was completed, it was transported to the test platform for fit up and load testing. The completed platforms were then trucked, one at a time over three nights, to Fort Eustis, VA where they were loaded on a barge and shipped to Florida for installation. **Mr. Bill Weigel**, STC's lead fabricator for the platforms, went to Florida on multiple occasions to assist with the installation of the platforms.

Due to the fit up with the test platform, the platforms went in smoothly with only minor adjustments needed. The MAS was now prepared for accepting the Orion ATB.



Platform for Space Launch Complex-46 (SLC-46)

Following completion of the launch platforms, STC turned its attention to the AA-2 Crew Module (CM) and Separation Ring (Sep Ring). This Crew Module would be STC's third built in support of Orion. The first was a pathfinder used for stacking procedures, the second was for the Ares-1X test flight, and the third was for the Pad Abort-1 (PA-1) flight test. This flight test article is currently in the Virginia Air and Space Center sitting proudly next to the Apollo 12 CM. Additionally, STC supported work on the Max Launch Abort System (MLAS) flight test as well, providing NASA with a great deal of experience building flight test articles. STC's lead fabricator for the AA-2 effort was **Mr. Aaron Wright**, who was



From left: Mr. Matt Stearman, Mr. Chris Cusson, and Mr. Jeff Manning

able to deal with all aspects of the build with competence, patience, and excellence. He had a highly skilled and motivated team that met milestones while working 10-hour shifts over the course of months. After completing the CM, and having it painted, it was shipped to the Johnson Space Center (JSC) for instrumentation. From there it went to Plum Brook Station for environmental testing before being sent back to JSC. While testing at Plum Brook Station, the STC team completed the Sep Ring and delivered it to

JSC. Aaron and **Mr. Tony Daly** flew to JSC to assist with the mating and integration of the CM with the Sep Ring. The mated CM and Sep Ring were then transferred to the Kennedy Space Center (KSC) in preparation for the Ascent Abort test flight from SLC-46 at Canaveral Air Force Station. The test flight was scheduled for April 2019, but has been delayed

due to the extended partial government shutdown and is now scheduled for June 12, 2019. Needless to say, STC has had an exciting time over the past few years supporting NASA's Orion

Program Office. Dr. Jonas Salk once said "The reward for a job well done is the opportunity to do more." If STC's efforts in support of NASA Langley's Electronic, Mechanical, Composite Hardware Fabrication Support Services (EM-CHFSS) II contract and the Orion Program Office are any indication, then we can only expect more exciting work! The STC team says "Bring it on!" □



From left: Mr. Tony Daly and Mr. Aaron Wright

*"The reward for a job well done is the opportunity to do more."
– Dr. Salk*