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Nota di contenuto	Part 1: STUDENT INNOVATIONS IN GUIDANCE, NAVIGATION AND CONTROL -- Chapter 1: Autonomous Guidance for Robust Achievement of Science Observations Around Small Bodies -- Chapter 2: Root Locus Analysis of the FROA and FROA/TDOA Geolocation Problem -- Chapter 3: Low-Thrust Earth-Moon Transfers Via Manifolds of a Halo Orbit in the Cis-Lunar Space (AAS 20-014) -- Chapter 5: A Composite Framework for Joint Optimization of Trajectory and Propulsion System Design (AAS 20-015) -- Chapter 6: The Design of a Space-Based Observation and Tracking System for Interstellar Objects (AAS 20-016) -- Chapter 7: Investigation of Prandtl-Ishlinskii Hysteresis Compensation for Deep Space Optical Communications Pointing Control (AAS 20-017) -- Chapter 8: Multifunctional Structures for Spacecraft Attitude Control (AAS 20-018) -- Part 2: SMALL SAT GUIDANCE, NAVIGATION AND CONTROL -- Chapter 9: Passive Roll Stabilization of the Near Earth Asteroid Scout Solar Sail Mission (AAS

20-021) -- Chapter 10: Advancing Asteroid Spacecraft GNC Technology Using Student Built CubeSat Centrifuge Laboratories (AAS 20-023) -- Chapter 11: Decentralized Spacecraft Swarms for Inspection of Large Space Structures (AAS 20-024) -- Chapter 12: Mobility, Power and Thermal Control of SphereX for Planetary Exploration (AAS 20-025) -- Chapter 13: GNC of Shape Morphing Microbots for Planetary Exploration (AAS 20-026) -- Chapter 14: A Multiplicative Extended Kalman Filter for Low Earth Orbit Attitude Estimation Aboard a 0.5U SmallSat (AAS 20-027) -- Chapter 15: Design and Performance of an Open-Source Star Tracker Algorithm on Commercial Off-The-Shelf Cameras and Computers (AAS 20-028) -- Part 3: ADVANCES IN HARDWARE -- Chapter 16: RVS®3000-3D Lidar – Gateway Rendezvous and Lunar Landing (AAS 20-031) -- Chapter 17: The Magnetically Clean Reaction Wheel: Is Active Magnetic Field Compensation a Feasible Solution? (AAS 20-032) -- Chapter 18: GPS Navigation from Geo-Transfer to Geosynchronous Orbit: A New Receiver for Efficient Electric Orbit Raising (AAS 20-033) -- Chapter 19: ASTRO XP – First Test Results (AAS 20-034) -- Chapter 20: Preliminary Test Results from ARIETIS, a High to Medium Performance, Hi-Rel, Space Qualified Gyro (AAS 20-035) -- Chapter 21: A Low-Cost Radiation-Hardened ASIC for Coriolis Vibratory Gyroscope Control (AAS 20-036) -- Chapter 22: Auriga Star Tracker Flight Heritage on Inaugural Airbus OneWeb Satellites Constellation (AAS 20-037) -- Part 4: HUMAN SPACEFLIGHT/ DEEP SPACE GATEWAY -- Chapter 23: Analysis of Cislunar Autonomous Navigation with StarNAV and OPNAV (AAS 20-041) -- Chapter 24: Evaluating Relative Navigation Filter Designs and Architectures for Human Spaceflight (AAS 20-042) -- Chapter 25: Path-Adaptive Guidance Algorithm Trades for a Two-Stage Lunar Descent Vehicle AAS 20-043) -- Chapter 26: Powered Descent Guidance for a Crewed Lunar Landing Mission (AAS 20-044) -- Chapter 27: GN&C Sequencing for Orion Rendezvous, Proximity Operations, and Docking (AAS 20-045) -- Chapter 28: Attitude Control and Perturbation Analysis of a Crewed Spacecraft with a Lunar Lander in Near Rectilinear Halo Orbit (AAS 20-046) -- Chapter 29: Phase Control and Eclipse Avoidance in Near Rectilinear Halo Orbits (AAS 20-047) -- Chapter 30: A Practical Method for Truncating Spherical Harmonic Gravity Fields (AAS 20-048) -- Chapter 31: Application at the Moon.

Sommario/riassunto

This conference attracts GN&C specialists from across the globe. The 2022 Conference was the 44th Annual GN&C conference with more than 230 attendees from six different countries with 44 companies and 28 universities represented. The conference presented more than 100 presentations and 16 posters across 18 topics. This year, the planning committee wanted to continue a focus on networking and collaboration hoping to inspire innovation through the intersection of diverse ideas. These proceedings present the relevant topics of the day while keeping our more popular and well-attended sessions as cornerstones from year to year. Several new topics including “Autonomous Control of Multiple Vehicles” and “Results and Experiences from OSIRIS-REx” were directly influenced by advancements in our industry. In the end, the 44th Annual GN&C conference became a timely reflection of the current state of the GN&C ins the space industry. The annual American Astronautical Society Rocky Mountain Guidance, Navigation and Control (GN&C) Conference began 1977 as an informal exchange of ideas and reports of achievements among guidance and control specialists local to the Colorado area. Bud Gates, Don Parsons, and Bob Culp organized the first conference, and began the annual series of meetings the following winter. In March 1978, the First Annual Rocky Mountain Guidance and Control Conference met at Keystone, Colorado. It met

there for eighteen years, moving to Breckenridge in 1996 where it has been for over 25 years.