Interstellar Research Group

9th Interstellar Symposium

Distant Worlds, Neighboring Opportunities

October 12-15, 2025 | AT&T Conference Center, Austin, TX

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ALPHA CENTAURI (Official Symposia Artwork)
BY ERIK STITT

Website https://irg.space
Email info2025@irg.space

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This theme evokes the fact that while truly interstellar missions remain an aspirational goal, all steps that we take now can have far-reaching effects by coloring our immediate challenges. Just as habitat engineering studies have benefits for improving living in harsh earth environments; studies of culture, law, art, and governance here on earth will have lasting impacts on crewed interstellar missions.

We want to underscore how the breadth of the human experience will determine the success of our expansion to the *Distant Worlds* and stars beyond. *Neighboring Opportunities* reminds us that space is for all.

2025 Organizing Committee

2025 Planning Committee

Dr. Ken Wisian.....2025 Symposium Chair
Les Johnson.....Program Chair
Dr. Joseph Meany.....Fundraising
Martha Knowles.....Hotel Liason
Lauren Randolph.....Receivables
Michael Birchfield.....Publicity
Sara Spath.....Project Management
Kenneth Roy.....Seminars
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Distant Worlds, Neighboring Opportunities

The goals of the Interstellar Research Group center on building towards human exploration of star systems outside of our solar system. However, all investments that are made in reaching those distant worlds will have follow-on returns that pay dividends to Earth. For those less familiar with IRG, our roadmap to the stars isn't just about a new propulsion system or about evolving into some post-human entity or imagining a perfect utopia. IRG is about making concrete, sustainable advancements and we will be able to do that by also benefiting our neighbors.

Space technology has a massive net benefit to society, from weather satellites to new foam mattresses. New developments can have similar impacts. NASA's Economic Impact Report for FY2023 concluded a stark statistic: for every dollar of NASA's budget, three dollars of economic activity were generated. Another report summarized that over the course of the agency's lifetime, every dollar put in has returned fourteen dollars in the economy.

Economic activity is one indicator of benefit, but it certainly isn't the only benefit. Our safety is enabled by weather alert systems and navigation. Our lives are enriched by knowing more about the wonderful universe that we inhabit, and today kids from all continents get to dream about the possibility that they might one day live in space. Access to space is becoming more widespread and missions to space are even beginning to include disabled folks. These advancements are on the way towards making space access more equitable.

Distant Worlds allow us to dream. Looking skyward gives us an opportunity to ask questions about ourselves and our destinations. As we tackle the challenges of moving beyond Earth and the Solar System, what can we learn about ourselves and life that lead to new ways of thinking? How will discoveries about our place in the universe change the way that we act within it? How will it change the way we act towards each other? Neighboring Opportunities underscores the message that we must apply the problems of the future to improving life on the ground as well. Water recycling and recovery systems developed for spacecraft have just as much benefit if they're installed in high-rises and homes in arid areas. Energy capture and storage is just as crucial here as it is on the surface of Mars or under the water of Europa. Fusion-enabled space travel has a clear benefit to energy abundance here, too.

This 9th Interstellar Symposium is not just a research conference. It is a celebration of the accomplishments that you are doing to make an indelible mark on our scientific evolution.

Joseph E. Meany Ph.D.,
President
Interstellar Research Group

1969

The only thing I remember from that year is my parents waking me up to watch Neil Armstrong step onto the Moon. That event has shaped my life in a major way.
I was already obsessed with the space program and that in turn led me to being an avid reader of science fiction. From this point on each interest fueled the other in a virtuous(?) spiral. These two interests, in turn, led directly to my two careers – scientist and air force officer. About fifteen years ago these paths came together in my research beginning in space exploration, interstellar and SETI issues. I attended my first IRG (then TVIW – Tennessee Valley Interstellar Workshop) in 2016 and was captivated by the atmosphere and stimulated by the discussions, formal and informal. Since then I have attended all but one of the conferences and steadily became more involved.

I believe deeply in the mission of the IRG – to advance humanity to interstellar status. Organisms that stagnate, die. And the same extends to cultures and civilizations. It is essential, despite (or because of) problems here on Earth, that we continue to explore and expand. Far into the future, but perhaps sooner than we realize, Earth will become uninhabitable – if we do not move outward, we end.

What makes this time so exciting for me is that we have the beginnings of the scientific understanding and engineering know-how to realistically work on the myriad of challenges in reaching other solar systems. These very hard problems are what gets scientists, engineers, futurists, science fiction writers and business people excited and motivated.

I would like to thank the tireless efforts of the Interstellar Research Group Board of Directors and the 9th Interstellar Symposium Organizing Committee. Furthermore, I would like to thank our hosts at The University of Texas at Austin, in particular the Center for Planetary Systems Habitability, the Jackson School of Geosciences, and the Office of the Vice President for Research. I would also like to thank our partners at the International Academy of Astronautics, Baen Books, and our many incredible Patrons that make an event like this possible.

Welcome to the exciting work of IRG 2025. Whether you are a professional in the field or an interested amateur, thanks for joining us for a great multi-day conference of expert talks, social events, and public outreach.

Dr. Ken Wisian,
Organizing Chair, 9th Interstellar Symposium
Interstellar Research Group

About Us

The Tennessee Valley Interstellar Workshop (doing business as the Interstellar Research Group, IRG) is a tax-exempt, 501(c)(3) non-profit scientific, educational corporation in the state of Tennessee.

The Tennessee Valley Interstellar Workshop (TVIW) was an outgrowth of the Friday Night Dinner Club (FNDC), which has met in Oak Ridge, TN on Friday evenings from 2004 to the present. The attendees were mostly professionals in science and engineering, and conversation typically centered on contemporary research topics, particularly with regard to space missions. Evening discussions resulted in publications of several papers, preparation of proposals for innovative space missions and in 3 papers accepted to the IAA's 7th Biennial Symposium on Realistic Near-Term Scientific Space Missions, held in Aosta, Italy in July, 2011. It was on the patio of a charming little hotel in the ancient city of Aosta in the Italian Alps, that the idea of holding an Interstellar Symposium in the Tennessee Valley was conceived. The first Symposium proved an opportunity for like-minded people to get together and discuss how to move humanity into space, and to promote interstellar exploration, travel, and communications. Six very successful TVIW Symposia have been held. In August of 2020 the Tennessee Valley Interstellar Workshop reorganized as the Interstellar Research Group (IRG) to better reflect it's current goals and structure, which have expanded beyond being a regional organization in the United States to become a fully national and international group.

TVIW incorporated with an official founding date of January 18, 2014, and selected the first TVIW Board of Directors from FNDC participants: John Preston, President; Martha Knowles, Sect/ Treasurer; Ken Roy; David Fields; and Robert Kennedy. Les Johnson was Advisor. Current Board Members are Joseph Meany, President; Stephen Fleming, Secretary; Lauren Randolph, Treasurer; Laura Montgomery; David Burke; Doug Loss; and Michael Birchfield. A current advisor is Les Johnson, who together with a separate advisory board that has been expanded to include professionals in aerospace, publishing, academia, and the United States military. John D. Rather was an advisor to the Board for the TVIW 2018 special symposium, "The Power of Synergy."

Mission

IRG's mission is to facilitate interstellar research and exploration by hosting regular summit meetings, encouraging educational advances, publishing technical and scientific papers, and supporting literature and culture, all in the service of enhancing public understanding and dialogue toward interstellar exploration. IRG will assist in building a technological, philosophical, and economic infrastructure that advances the goal of establishing outposts throughout the Solar System and, finally, achieving a pathway to the stars.

About Us

Though the original IRG concept was explicitly intended to be regional (viz., the American Southeast), it is now, in fact, an internationally recognized organization, with major speakers and attendees coming from all over the world. International participation has grown, for example, with the full involvement and support of the prestigious British Interplanetary Society, as well as the Initiative for Interstellar Studies and the International Space University.

IRG Symposia are opportunities for relaxed sharing of ideas in directions that will stimulate and encourage Interstellar exploration including propulsion, communications, and research. Why do we gather to discuss the challenges and opportunities of interstellar travel? Because we must. We are compelled by our nature to think positively about the future of humanity in a beautiful yet extremely hostile universe. Life on Earth is wonderful and we should do what we can to protect and preserve it here, but there is more. Among the billions of galaxies, stars and planets, we sense a call to explore. A call to disperse ourselves and settle a multitude of worlds in order to preserve and protect what must be very rare indeed: a bipedal species of intelligent tool-users who dare to dream, to love, to create and to aspire for more than mere survival. To do this, we must push boundaries and go. There are many challenges and some of them will take generations to overcome.

These efforts will take all of humanity. We need a unified effort. This will of course require scientists and engineers. But more than that it will take philosophers and artists and nurturing parents. We hope that one day we will see the great diversity that is the human race on the way to other planets and other stars. We invite all who are interested in using their talents to bridge the gap between here and our infinite future to join the IRG cause!

IRG Board of Directors

President.....Dr. Joseph Meany
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Member At Large.....Doug Loss
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Publications, Publicity
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Daily Updates
Matthew Christy.....Grant Writer
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From Here to The Stars
Laura Doman.....Publicity
Interstellar Updates
Will Lucas.....Video Editing
Qian Liu.....Video Editing
Aaron Stever.....Video Editing
Hannah Karenna Wery.....Social Media
Musician
Paul Gilster.....Daily Updates

Interested in volunteering with IRG
Contact **info@irg.space** for more information

Interstellar Activities

Main Programming

Keynote Lectures

Each day of the symposium is kicked-off by a keynote lecture by a leader in the interstellar community.

Plenary Sessions

Each presentation is considered for publication in academic journals, collected as Special Issues. Every presentation is recorded, professionally edited, and available for researchers to feely promote their work.

Poster Sessions

Select attendees present their research.

Sagan Session: "The Fermi Paradox"

Special 90-minute discussion panel selected for a deep dive.

Interstellar Activities

Main Programming

Working Track: “Future of IRG”

The transition out of the Tennessee Valley and our rebranding as the Interstellar Research Group has come with its own benefits and added notoriety, but an all volunteer organization continues to have succession planning challenges, a coherent brand vision, and a well-defined niche in the space philanthropy ecosystem.

Science Fiction Author Panel

Visionary ideas don’t just come from practicing bench scientists, creating thinkers just as often need new ideas to tell captivating stories in new ways. IRG celebrates the fandom underlying its founding by hosting a panel of science fiction authors, free and open to the public.

Optional Symposium Programming:

Pre-Symposium Seminars

3-hour deep dives on focused topics from Subject Matter Experts. Registration for these seminars is independent from Symposium participation.

Banquet

We celebrate the accomplishments of IRG’s volunteers and the space community with a catered banquet and speaker. Typically, the banquet speaker is a space historian.

Technical Tour

Firefly Aerospace is providing a technical tour of their Bertram facility, known as Rocket Ranch, consisting of the areas where they manufacture, test and integrate rockets. Offering a fun way to “wind down” from the events of the week to understand where the neighboring opportunities are.

Thursday October 16, 2025
8:00am - 12:00pm

Interstellar Activities

Included with symposium programming

Breakfast Buffet

8:00 - 9:00 am

Tejas Conference Dining on the second level

Each morning before the program begins, we are delighted to host a breakfast buffet. People need fuel too!

Lunch Buffet

Grand Salon DE

Buffet - Vegetarian options available.

Lunches are provided Monday and Tuesday of the Symposium. Tuesday we will have a talk about the State of the IRG from President Joseph Meany.

Coffee/Snack Breaks

We break up the rigorous programming of the event to encourage networking during a generous coffee/snack breaks provided by the hotel.

Art Show (Salon A)

We showcase the talents of creatives who are inspired by the beauty of space. Across different choices of mediums, we see the universe from new perspectives.

Hospitality Suite

6:00 - 10:00 pm

Echoing back to the IRG's founding by a group of science fiction fans, IRG symposia specifically plan for a suite that offers attendees a chance to relax in a social atmosphere that extends the conversations of the day with snacks and other refreshments. In the quieter environment, students have the opportunity to sit with senior attendees for ad hoc mentorship.

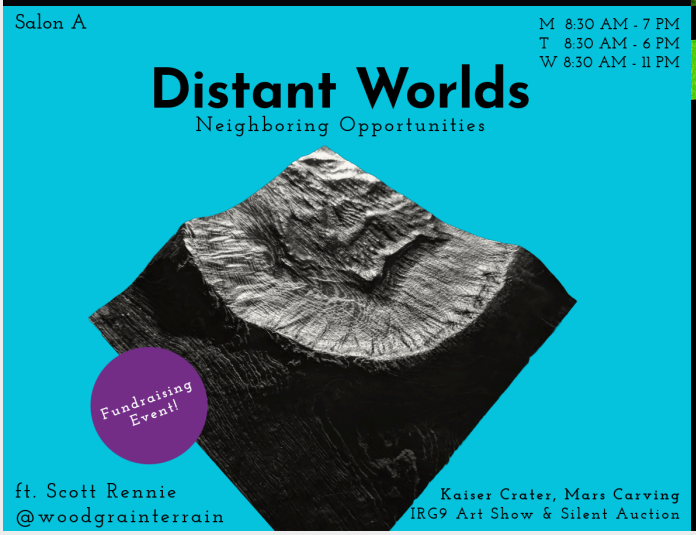
Interstellar Activities

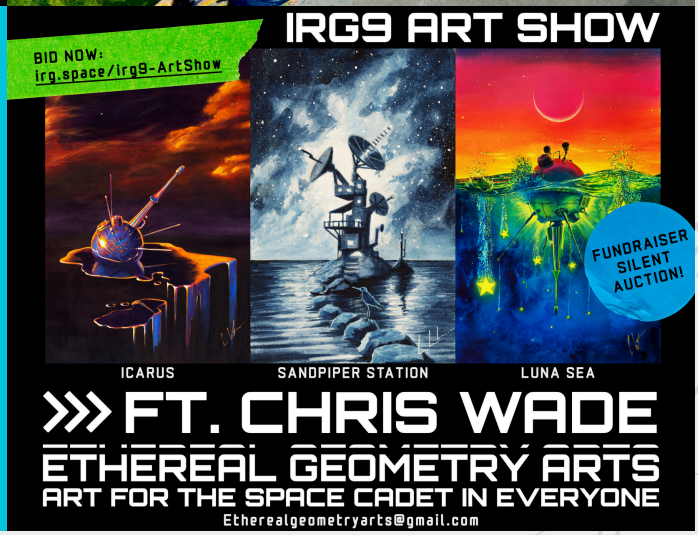
Art Show & Silent Auction Information

Winners will be announced during Closing Ceremony.

Silent Auction

Monday 12 PM - Wednesday at 11 AM





Schedule

The 9th Interstellar Symposium main programming runs from Monday October 13 to Wednesday October 15, with pre-symposium seminars taking place on Sunday October 12.

Registration

Check-In

Sunday: Outside Room 202 - M2 Lobby, 8 am – 3 pm

AT&T Courtyard 6:00 pm - 8:00 pm

Mon & Tues: Grand Ballroom, 8:15 am – 5 pm

Weds: Grand Ballroom, 8:15 am – 12 pm

Sunday, October 12, 2025

9:00 am **Seminars**

Room 202

Dr. Ken Wisian & Lieutenant Colonel John C. Wright

“Conflict in Space: Space War – Not Just Science Fiction Anymore”

12:00 pm **Lunch** (on your own)

1:00 pm **Seminars**

Room 202

Jeff Greason

“Space Propulsion: A Survey of Slower-Than-Light Interstellar Propulsion”

Room 301

Dr. Robert E. Hampson

“Tissue Engineering for Long Duration Space Flight”

6:00 pm **Opening Reception** (ends at 8:00 pm) FREE

Patrons will get to meet with the IRG Board of Directors, Organizing Committee, and Honored Guests for a private catered reception before the Symposium begins.

6:00 pm **Hospitality Suite** (open until 10:00 pm)

Pre-Symposium Seminars

Registration for these seminars is independent from Symposium participation taking place on Sunday October 12.

Conflict in Space

The session explores the principles, strategies, tactics, and technologies of space war, with a particular focus on conflict scenarios beyond Low Earth Orbit—whether between human factions or with alien intelligence.

Dr. Ken Wisian

Lt Col John C. Wright

Tissue Engineering for Long Duration Space Flight

This seminar addresses anticipated medical issues on space missions lasting months to decades. It evaluates genetic screening for crew selection, explores the effects of aging and the space environment, and showcases promising advances in tissue engineering and regenerative medicine—such as stem cell therapies, engineered organs, accelerated healing techniques, and neurodegenerative treatments.

Dr. Robert E. Hampson

Space Propulsion

A detailed overview of realistic slower-than-light interstellar propulsion systems, adapted from courses taught at Kepler Space University and NASA MSFC. It begins with a physics foundation and a classification of propulsion concepts—the “Zwicky Box”—including fission, fusion, and antimatter rockets; sails and drag devices; propellers, jets, and other non-rocket approaches.

Jeff Greason

Monday

Unless otherwise stated,
events will take place in **Grand Salon C**
of the AT&T Conference Center.

October 13, 2025

9:00 am **Opening Ceremony**

9:30 am **Patron Presentations**

10:00 am **Keynote Speaker**
Applying the DARPA Method to Becoming an Interstellar Species: The Plan, and Economic Guiding Principles, to Actually get it Done
Dr. Michael “Orbit” Nayak

10:45 am ***Coffee Break*** *(15 minutes)*

11:00 am **50 Years after Everyone Stops Laughing**
Andrew Higgins

11:30 am **Propellantless Propulsion in Space Exploration**
Roman Kezerashvili

12:00 pm ***Lunch*** (Salon DE)

1:00 pm **Aiming for Proxima Centauri**
Mark Baumann

1:30 pm **Thousand AU per Year Mission to the Oort Cloud**
Jeff Greason

2:00 pm **The Semantics of Space Ecology**
Livian Van Dron

2:30 pm **Exoplanet Deceleration using Nuclear Fusion Propulsion**
Gerald Jackson

3:00 pm ***Coffee Break*** *(15 minutes)*

3:15 pm **Poster Session**

Salon B

IRG hosts a poster session for students and professionals to promote their work, and hopefully spark off beneficial collaborations!

Monday

October 13, 2025

Unless otherwise stated,
events will take place in **Grand Salon C**
of the AT&T Conference Center.

4:00 pm **A Geothermal Power network in the Outer Solar System**
Ken Wisian

4:30 pm **Next Frontier Economic Systems for the New Space Age**
Wanjiku Chebet Kanjumba

5:00 pm **Plant-Based Life Support Systems to Support Population Growth and Long-Term Food Autonomy in Multi-Generational Interstellar Habitats**
Boris Petrovic

5:30 pm **Art Show** (Salon A) closes at 6:00 pm

6:00 pm **Hospitality Suite** (open until 10:00 pm)

7:00 pm **Public Outreach Event**

Les Johnson, Chief Technology Officer at NASA's Marshall Space Flight Center (retired) will provide an accessible and understandable overview of the reality and challenges of realistic interstellar travel.

Tuesday

October 14, 2025

Unless otherwise stated,
events will take place in **Grand Salon C**
of the AT&T Conference Center.

9:00 am **Keynote: Space Lab**
Noah Wilmot & Ian Cochran

9:45 am **Solar Sail Propulsion: An Essential Step to the Stars**
Les Johnson

10:15 am **Bomb Shot**
Al Jackson

10:45 am ***Coffee Break*** *(15 minutes)*

11:00 am **Europa Clipper and Beyond**
Donald D Blankenship & Duncan A. Young, Ph.D.

11:30 am **Fusion Power Generation in Sustained Orbit Around Proxima b**
Grace Bittlingmaier

12:00 pm **Group Photo:** Grand Ballroom

12:15 pm ***Lunch*** (Salon DE)

State of the IRG
Dr. Joseph Meany, IRG President

1:30 pm **Poster Session 2** (Salon B)

2:15 pm **Sagan Session: The Fermi Paradox**

3:45 pm ***Coffee Break*** *(15 minutes)*

4:00 pm **Science Fiction Authors Panel**

5:30 pm *End of Tuesday Main Programming*

6:00 pm **Banquet** (Salon DE) *Ticketed Event*
Exoplanet Presentation
Michael Endl, Ph.D.
Followed by the Eridani Award Ceremony

Tuesday

October 14, 2025

Art show silent auction closes at 11 am
Registration Hours:
Grand Ballroom, 8:15 am – 12 pm

Sagan Session: The Fermi Paradox

Speakers Include:

- Donald "Mark" Haynes
- Andrew Higgins
- Les Johnson
- Dr. Michael “Orbit” Nayak

The panel will explore the latest thinking on the solution to the Fermi Paradox. The Fermi paradox highlights the contradiction between the high probability of extraterrestrial civilizations existing in our vast universe and the lack of evidence or contact with any of them - where are they???

Science Fiction Authors Panel

Speakers Include:

- Dr. Robert E. Hampson
- Les Johnson
- William "Bill" Ledbetter
- Toni Weisskopf

Join award winning science fiction authors along with the publisher of Baen Books for a discussion of the role science fiction plays in our understanding and planning of future interstellar travel.

Wednesday

October 15, 2025

Art show silent auction closes at 11 am
Registration Hours:
Grand Ballroom, 8:15 am – 12 pm

9:00 am **Does God Belong**
Bryan Troop

9:30 am **Why Aren't We There Yet? (Or, How Not to Torch the Economy While Getting There)**
Connie Elliott

10:00 am **Redshifted civilizations, galactic empires, and the Fermi paradox**
Justin C. Feng

10:30 am ***Coffee Break*** *(15 minutes)*

10:45 am **Art Show**: Silent Auction Closes (Salon A)

10:45 am **Working Track: Future of IRG** (All Hands)
IRG is already planning the 10th Interstellar Symposium. We want your feedback on how the organization can expand and serve your interests more fully.

11:45 am **Closing Remarks**
IRG10 Announcement
Jud Ready

Speakers

Ariana Azimi is a sophomore Psychology major at UT Austin on the pre-med track. She is a research assistant supporting projects in the TIES Lab and a pulmonology/sleep clinic, with a strong interest in studying aerospace psychology.

Mark Baumann is currently a Research Fellow at The University of Texas at Austin and an Adjunct Professor at St. Edward's University. He earned an M.S. in computational and applied mathematics and a Ph.D. in physics from UT Austin. His research focuses on computational relativity and astrophysics.

Grace Bittlingmaier is currently a Freshman at Cornell University studying mechanical engineering with an aerospace minor. In the Summer of 2024 she worked for Beam Alpha as a machine shop and laboratory technician. As a result, she is adept at metal work using lathes & end mills and proficient at welding, soldering, and general mechanical and electrical fabrication. At the start of her high school senior year she transitioned to the role of weekend laboratory assistant, attaining the status of the only Beam Alpha intern to ever co-author a peer-reviewed scientific journal article. She has presented her work at several American Nuclear Society and accelerator physics conferences.

Dr. Donald "Don" Blankenship, Research Professor, Institute for Geophysics, Jackson School of Geosciences, The University of Texas at Austin. Dr Blankenship uses both airborne and ground-based geophysical techniques, including laser altimetry, radar sounding, seismic reflection and refraction, and potential fields methods, to investigate dynamics of large ice sheets and subglacial geology. Don is currently Principal Investigator for the Radar for Europa Assessment and Sounding: Ocean to Near-surface (REASON), which will be flown on NASA's Europa Clipper flagship mission. Don is also a member of the Science Team for the Radar for Icy Moons Exploration (RIME) to be flown on ESA's JUICE mission to Jupiter's moon Ganymede.

Ian Cochran is the Chief Engineer of the Launch Vehicle at the Texas Rocket Engineering Lab (TREL), where he leads the design and integration of the lab's rocket systems. He is a junior studying Aerospace Engineering at the University of Texas at Austin, Ian oversees a team of students working to advance collegiate rocketry through the development of high-performance propulsion, avionics, and structural systems. His role involves coordinating complex technical projects, ensuring design reliability, and driving innovation toward TREL's goal of more than doubling the collegiate altitude record.

Steve Durst is Editor at Space Age Publishing Company (1976), in Hawai'i and California, publishes Space Calendar and Lunar Enterprise Daily, and supports enterprises including Stanford on the Moon and Ad Astra Kansas / Interstellar University. He is also Director of International Lunar Observatory Association (2007) and its Galaxy Forum program.

Dr. Michael Endl is an astronomer and planetary scientist at the McDonald Observatory, and Department of Astronomy, University of Texas at Austin. His research focuses on the detection and characterization of extrasolar planets.

Justin C. Feng is a postdoctoral researcher at the Institute of Physics of the Czech Academy of Sciences in Prague, specializing in general relativity and gravitation. He received his Ph.D. from UT Austin in 2017, and previously held positions at National Taiwan University (Taipei) and IST, University of Lisbon.

Jeff Greason is a serial entrepreneur with 26 years in the commercial space industry. Chief Technologist of Electric Sky, developing power beaming technology & electric launch vehicles. Chairman of the Tau Zero Foundation, developing advanced propulsion for interstellar missions. Contributed to commercial space regulation; worked at XCOR Aerospace, Rotary Rocket, and Intel. 29 patents.

Dr. Robert E. Hampson, PHD. is a neuroscientist by day, science fiction author by night, and a brain wrangler 24/7. When he's not decoding how memories work or building brain-computer tech, he's busy imagining futures where science fiction becomes reality. His research ranges from studying the brain mechanisms underlying memory dysfunction to understanding radiation effects on the brain; from effects of substance abuse to assistive neurotechnology. As Baen Books and the Interstellar Research Group's official "Brain Guy," he's brought space biology to IRG and science fiction for more than 10 years. He teaches science communication and knows the importance of getting the message "out there," that science doesn't have to be dull, but can be informative, understandable, and enjoyable. Known in science fiction circles as the Speaker to Lab Animals - Dr. Hampson engages in serious science but never forgets the fun!

Andrew Higgins is a professor of Mechanical Engineering at McGill University, Montreal, Canada. He has 30 years of experience in shock wave experimentation and modelling with applications to advanced aerospace propulsion and fusion energy. Andrew Higgins has a PhD in Aeronautics and Astronautics from the University of Washington, Seattle.

Albert Allen Jackson IV was born in Dallas, Texas, October 1940. Grew up in Dallas graduated from high school at Texas Military Institute in San Antonio in 1959. Received my Bachelor and Master in Mathematics and Physics from University of North Texas in Denton Texas, 1965. Entered the US civil service with NASA in January of 1966 and became full time Apollo crew trainer on the Lunar Module Simulator, subsystem the Abort Guidance System. I received a Ph.D. in physics in 1975 from the Relativity Center at the University of Texas at Austin. Returned to the Johnson Space Center 1975 working for MacDonnell Douglas, Computer Science Corporation and Lockheed-Martin working on flight planning software, Orbital Debris and engineering simulation. I retired in 2010. I am a consultant at Triton Systems LLC in Houston.

Gerald Jackson received his doctorate in the field of accelerator physics from Cornell University. At the Fermi National Accelerator Laboratory ("Fermilab") from 1985 until 2000 he improved the performance of the Tevatron proton-antiproton collider program and was a leader in the development of a Fermilab luminosity upgrade plan that culminated in the design, construction, and commissioning of the 2 km circumference antiproton Recycler ring. In 2002 Dr. Jackson founded Hbar Technologies, LLC ("Hbar Tech"), a company dedicated to the commercialization of antimatter. He now also leads an investor-funded company that is developing revolutionary approaches to nuclear fusion, including interstellar propulsion and power.

Les Johnson is a physicist, author, CEO of Infinite Frontiers Consulting, and former Chief Technologist at the NASA George C. Marshall Space Flight Center. While at NASA, Les was developing the next generation of space technologies, from advanced space propulsion and power to human life support systems. Les served as the Principal Investigator for spaceflight demonstrations of solar sails, tethers, and more. He is a member of the International Academy of Astronautics, the British Interplanetary Society, the Science Fiction and Fantasy Writers of America, and MENSA – and is the Program Chair of the Interstellar Research Group. His science fiction books include Crisis at Proxima, Pluto, and more. Les's popular science book, A Traveler's Guide to the Stars (Princeton Press 2022) is now available in 7 languages. Les is also the co-editor of a 3-volume technical monograph series detailing the complex technical and social problems associated with future interstellar travel (Elsevier).

Wanjiku Chebet Kanjumba, an aerospace engineer, futurist, and Ph.D. student, pioneers space accessibility through projects like Omega Spaceport. A Titans Space astronaut-candidate and PoSSUM Academy graduate, she blends research, leadership, and outreach to advance global aerospace innovation, inspire future generations, and champion sustainable human presence in space.

Roman Kezerashvili is a Professor of Physics at the New York City College of Technology of the City University of New York, where he also serves as Director of the Center for Theoretical Physics. He holds two doctorates—a Ph.D. in Nuclear Physics and a D.Sc. in Theoretical Physics—and carries the honorary academic title of “Professor of Physics.” He is also an elected member of the International Academy of Astronautics and internationally recognized for his influential contributions across several fields, including nuclear physics, nuclear astrophysics, theoretical and mathematical physics, condensed matter physics, and astronautics.

William Ledbetter is a Nebula Award winning science fiction author with three novels about the intersection of AGI, nanotechnology and space travel, more than seventy speculative fiction short stories and non-fiction articles published in five languages. He's been a space and technology geek since childhood and spent most of his non-writing career in the aerospace industry where he worked on multiple aircraft and spacecraft projects.

Dr. Joseph Meany is a science consultant and President of The Interstellar Research Group. Dr. Meany received his PhD in Chemistry from The University of Alabama, where he designed and synthesized single-molecule nanocircuits. He has 15 years' experience in the chemical and materials sciences, and has worked across government, academia, and private industry. His professional publications touch on nano-circuitry, instrumentation for space propulsion development, and materials science. He is coauthor of the book Graphene with scientist Les Johnson. He lives in Atlanta, GA and can be found online as The Crimson Alkemist.

Dr. Michael Nayak, callsign Orbit, is a DARPA Program Manager with the Strategic Technology Office. He was previously a DARPA program manager with the Defense Sciences Office (DSO) as a U.S. Air Force officer. He is known for creating and running the DoD's first lunar research program, the 10-year Lunar Architecture, or LunA-10, program. Dr. Nayak is a futurist, scientist, pilot, author and innovator. Prior to DARPA, he has worked as a space shuttle engineer; flight director for multiple experimental spacecraft; a skydiving instructor; a planetary scientist at NASA Ames; research section chief for the DoD's largest telescope; instructor flight test engineer and instructor pilot. He is also a science-fiction author; the second novel in the Ice Plague Wars series from Penguin Random House, called Sentient, comes out in February 2026.

Boris Petrovic is the Founder of the Nikola Tesla Institute. He works in research and development of new energy sources, wireless energy transmission, and the enhancement of human energy. He promotes the legacy of the great scientist Nikola Tesla as a virtual being in the metaverse through a virtual reality AI platform called TESLAI. His organization, ExoTesla, develops Virtual Reality simulations and metaverse applications. Boris is also the Co-Founder of Veganaut, a Space Agriculture and Biotechnology company aiming to apply plant-based nutrition methods and technologies toward sustainable space settlement. Through his work, Boris bridges frontier science, deep tech, and planetary-scale vision, advancing new paradigms in energetics, consciousness, and regenerative space civilization design.

Dr. Bryan Troop received his MD degree at St. Louis University, and a masters in theology from Eden Seminary. He passed boards in Surgery, Surgical Critical Care, Emergency Medicine, and Hyperbaric Medicine. He has enjoyed training surgery residents, and currently enjoys teaching bioethics at Ponce University of Health Sciences.

Livian Von Dran is an entomologist at The Spring Institute for Forests on the Moon and a grant writer and science communicator at Interstellar Research Group. He is interested in astrobiology, lepidopterology, and the applications of entomology to astrobiology, space biology, space ecology, and space exploration.

Toni Weisskopf succeeded Jim Baen as publisher of Baen Books, a leading publisher of science fiction and fantasy, in 2006. She has worked with such authors as David Weber, David Drake, Lois McMaster Bujold, Eric Flint, Wen Spencer, John Ringo, Mercedes Lackey, Larry Correia, Sharon Lee & Steve Miller, Charles E. Gannon, Les Johnson, and many others. Weisskopf has been a guest speaker at many writers workshops and science fiction conventions across the country, and is well known for her interactive, audience-participation discussion of Baen's books, covers, and artwork, on-going and ever-changing since 1991. Weisskopf is a graduate of Oberlin College with a degree in anthropology. She is interested in space science and is on the Board of Advisors of the Interstellar Research Group.

Noah Wilmot is the Chief of Staff at the Texas Rocket Engineering Lab (TREL), where he oversees organizational coordination, communication, and internal operations throughout the lab. He is a sophomore studying Aerospace Engineering at the University of Texas at Austin, Noah plays a key role in ensuring smooth collaboration between TREL and University admin. In addition to his administrative responsibilities, Noah also serves as an Integration and Ground Structures Engineer, contributing to the design of systems used to ensure proper rocket activation.

Dr. Ken Wisian holds a Ph.D. in geophysics from SMU, an M.S. in Strategic Studies from the US Army War College, an M.S. in Geology from Centenary, and a B.A. in Physics from the University of Texas at Austin and brings decades of military and government experience to bear on leading edge science and technology issues and applications. He has published dozens of papers and presented on topics from Artificial Intelligence (AI), to geophysics, military affairs, leadership and space exploration. Dr. Wisian served in the Air Force and Air National Guard for 33 years, retiring in 2015 at 16 TVIW 2017 - Huntsville, AL the rank of Major General (Two-Star). General Wisian accumulated 3,800+ flying hours in all types of aircraft , mostly B-52s, C-130s, and Special Mission aircraft.

John C. Wright is a US Air Force officer and pilot. He has published multiple articles on Pacific region political-military affairs in a variety of journals and online publications. He specializes in Japanese language, culture, and US-Japan military-diplomatic affairs. He lives in Tokyo, Japan.

Duncan A. Young, Ph.D. works on the ice sheets of Antarctica and also on the exploration of Jupiter’s moon, Europa. Recent work focuses on the search for ancient ice in East Antarctica’s ice sheet, the geological controls on the evolving West Antarctic sheet, as well as the great subglacial basins of East Antarctica. Duncan is also a member of the instrument science team for REASON, an ice penetrating radar for NASA’s Europa Clipper mission.

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For the 9th Interstellar Symposium, IRG is delighted to partner with The University of Texas at Austin, and their Center for Planetary Systems Habitability as co-hosts.

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Furthermore, IRG is proud to continue our collaboration with the International Academy of Astronautics. IAA is committed to tackling groundbreaking challenges in the peaceful exploration and use of space, which strongly overlaps with the mission and ethos of the IRG.

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PIONEERING SPACE

We intend papers from the 9th Interstellar Symposium to be collated and published in another special issue of *Acta Astronautica,* as was the case for the 7th Interstellar Symposium at the University of Arizona and the 8th Interstellar Symposium at McGill University.

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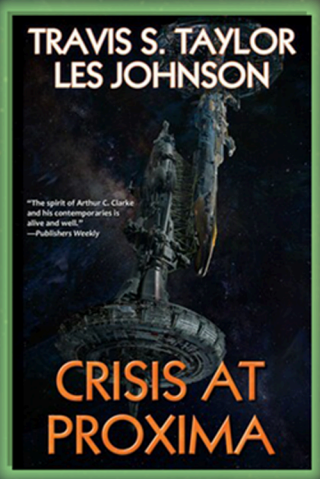

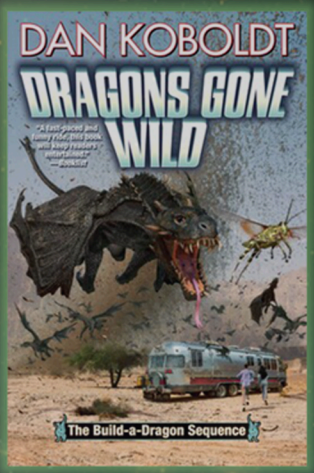

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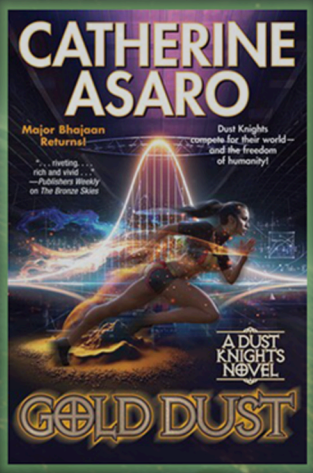

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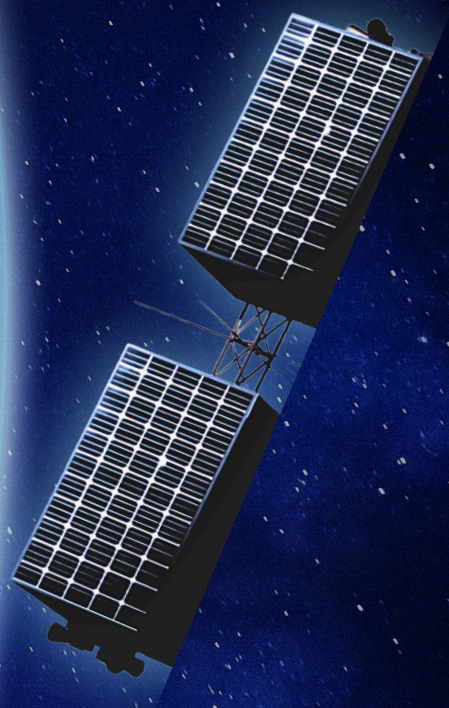

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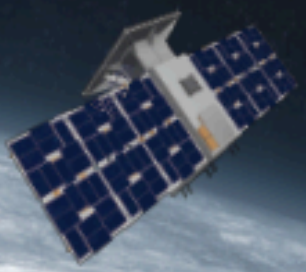

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Why Partner With Us?

Patronages allow us to maximize the quality of program offerings and maintain a high level of scientific benefit, while controlling costs to attendees. As a recognized 501(c)(3), you contribution may be tax deductible!

Keynote Speakers

The IRG works with the foremost scientists, engineers, and other academics to maximize the breadth and depth of our programming. In the past, we have had speakers like Peter Klupar of Breakthrough Starshot, Esther Dyson of Wellville, and Becky McCauley-Rench of NASA. We use Patronages to cover the travel and registration of these luminaries.

Networking Opportunities

Many creative and scientific collaborations have arisen out of the intentionally close proximity offered by our programming. Careful curation of a timeline that promotes the formation of mutually beneficial connections. We use Patronages to cover the cost of food and drink provided as a part of the symposium experience.

Supporting Arts and Culture

From the inception of the organization, artistic and cultural elements have been a core part of the IRG symposium DNA.
We use Patronages to cover the travel and registration of science fiction authors, artists, and other inspiring individuals as a part of the free public outreach portion of the symposium.

Scholarship Opportunities

The Interstellar Research Group “was created to foster and assist the study, research and experimentation necessary to make human interstellar travel a reality, with untold benefits to life on Earth,” said former IRG President Emeritus John Preston. “We can imagine no better way to demonstrate that goal than the creation of these scholarships, helping new generations of thinkers, builders and explorers to set their sights on the stars.”

Since 2017, IRG has been able to be provide scholarship opportunities to the current generation of students thanks our sponsors generous support.

Symposia Impacts

IRG serves as a critical incubator of ideas for the interstellar community.

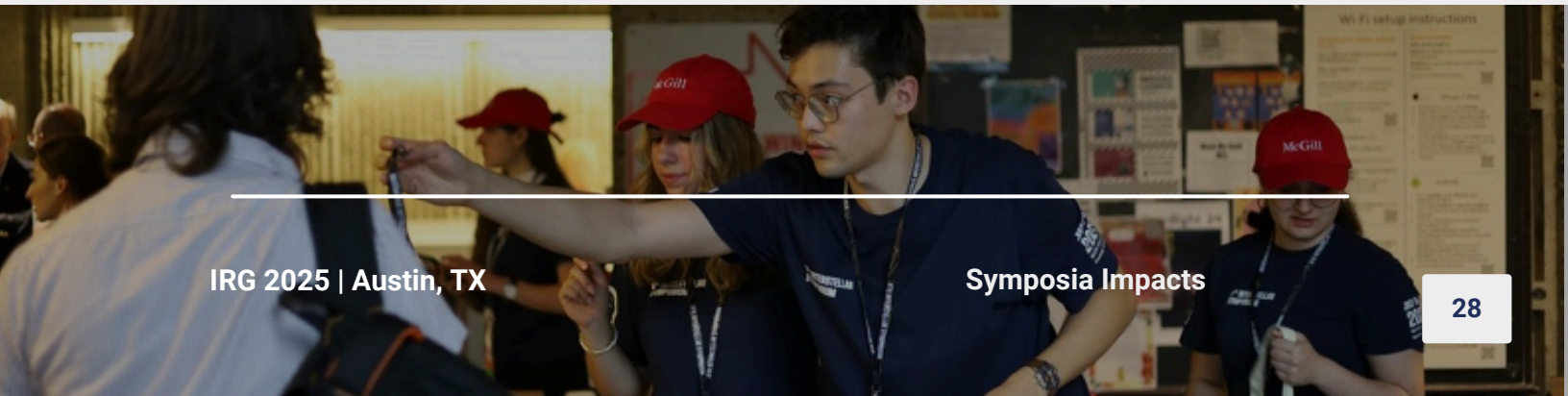
IRG has hosted eight “main stage” symposia between 2011 and 2023, and two special topic symposia in 2018 and 2024.

Following the success of the 7th Interstellar Symposium in 2021, papers were submitted for consideration in publication within a special issue of Acta Astronautica, published in August 2022.

Papers from the 8th Interstellar Symposium in 2023 are currently in peer review for special issues in Acta Astronautica and JBIS.

With the success of these relationships, we expect similar cooperative agreements to be in place for the upcoming 9th Interstellar Symposium.

- Three-book series of technical monographs published by Elsevier
  - Interstellar Travel: Purpose and Motivations
  - Interstellar Travel: Propulsion, Life Support, Communications, and the Long Journey
  - Interstellar Travel: After Arrival
- Two Special Issues of Acta Astronautica, featuring papers from the 7th and 8th Interstellar Symposia
- One Special Issue of Journal of the British Interplanetary Society (JBIS)
- Three anthologies, *Stellaris*, *The Ross 248 Project*, and *Going Interstellar*, featuring contributors from IRG Interstellar Symposia published by Baen Books
- Ongoing YouTube archives of symposium presentations, professionally edited and available for free.



Symposia Impacts

IRG Sciencecasts

- **Access to all symposium recordings.**
- **From Here to the Stars**, a monthly Interview podcast series that delves into the future of interstellar travel by engaging with leading experts in the field.
- **Interstellar Beacon**, a short-form video series brings you rapid-fire updates on the latest breakthroughs, discoveries, and headlines shaping the future of space exploration, interstellar travel, and advanced propulsion.
- **IRG: Webinar Series** featuring Les Johnson.

While truly interstellar missions remain an aspirational goal, all steps that we take now can have far-reaching effects by coloring our immediate challenges.

The 2025 symposium aims to bring together a multi-disciplinary community dedicated to advancing interstellar travel. The exploration of other stars and what lies between them (e.g. interstellar objects) is crucial not only for understanding the formation of stars, planets, galaxies, and the search for extraterrestrial life, but also for ensuring the safety of our planet and the future of humanity.

Featured Topics Include:

Physical Sciences
Power, navigation, materials, extraterrestrial resource utilization, breakthrough physics

Astrobiology
Technosignature/biosignature identification, SETI, Fermi Paradox, von Neumann probes

Human Factors
Life support, worldships, population genetics, psychology, hibernation, finance

Astronomy
Exoplanet discovery / characterization, habitability, solar gravitational focus imaging

Scholarship Winners
Aerospace Engineering, Astronautical Engineering, Environmental Science

Authors
Science Fiction, Technical Monographs, Popular Science

Engineering
Propulsion, exoplanet terraforming, habitat architecture

Ethics & Philosophy
Sociology, law governance, astroarchaeology, cultural evolution

Presentations by Area of Expertise

Biology

“Plant-Based Life Support Systems to Support Population Growth and Long-Term Food Autonomy in Multi-Generational Interstellar Habitats”
Boris Petrovic

“The Semantics of Space Ecology”
Livian Von Dran

Economies

“Why Aren't We There Yet? (Or, How Not to Torch the Economy While Getting There)”
Connie Elliott

“Next Frontier Economic Systems for the New Space Age”
Wanjiku Chebet Kanjumba

Fermi

“Consciousness and Bias in the Search for Extraterrestrial Life; Discussion of Solution 73 from the Fermi Paradox”
Ariana Azimi

“Redshifted civilizations, galactic empires, and the Fermi paradox”
Justin C. Feng

"The Fermi Paradox"
Segan Session

Philosophy

“Does God Belong”
Bryan Troop

Power

“Fusion Power Generation in Sustained Orbit Around Proxima b"
Grace Bittlingmaier

Rockets

“Bomb Shot”
Al Jackson

“Exoplanet Deceleration using Nuclear Fusion Propulsion”
Gerald Jackson, PhD

“Solar Sail Propulsion: An Essential Step to the Stars“
Les Johnson

“Propellantless Propulsion in Space Exploration”
Prof. Roman Kezerashvili

Travel

“Aiming for Proxima Centauri: Analysis of relativistic spacecraft trajectories”
Dr. Mark Baumann

“Thousand AU per Year Mission to the Oort Cloud”
Jeff Greason

“50 Years after Everyone Stops Laughing”
Andrew Higgins

Notes

Notes

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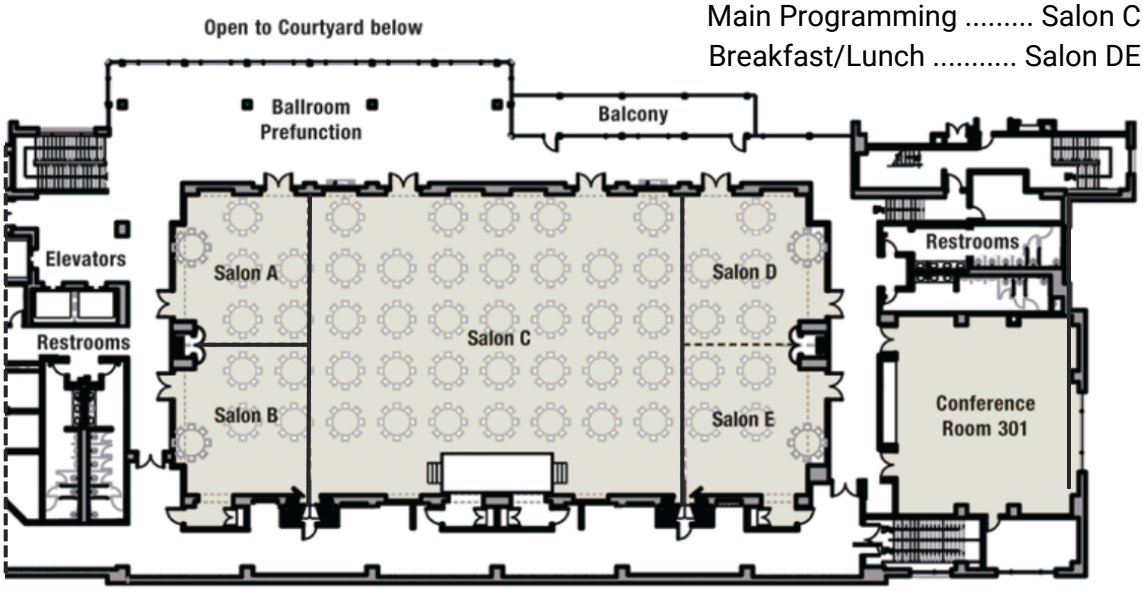
Floor Plan

AT&T Conference Center

Grand Ballroom | M3

Poster Sessions ..... Salon B
Art Show ..... Salon A
Main Programming ..... Salon C
Breakfast/Lunch ..... Salon DE



Dr. Claudio Maccone (1948–2025)

With great sadness, we mark the passing of Dr. Claudio Maccone (1948–2025), a pioneering researcher in interstellar exploration and a pillar of academic rigor in our field.

An example of his dedication to the field was his flying from Italy to Oak Ridge, TN in 2011 for the inaugural meeting of the TVIW, now the IRG, adding scientific credibility and integrity to the meeting and the newly-formed organization.

His legacy is one of brilliance, integrity, and kindness. He will be deeply missed.

Contact Us!

http://irg.space

info2025@irg.space

Interstellar Research Group
2221 Peachtree Rd. NE
Ste D-146
Atlanta, GA 30309

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