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## SUMMARY

The Puerto Rico Astronomy Society, Inc. (PRAS) is the island's oldest and largest astronomy organization, a leader in the local astronomy community since Halley's Comet last visit. PRAS is headquartered at the Bayamón campus of Metropolitan University (UMET), which is located by road PR–167 right in the San Juan metropolitan area.

PRAS came into existence during a preliminary meeting in February 16, 1985, and was officially established five months later with 41 founding members on the assembly held at the Puerto Rican Athenaeum (i.e., *Ateneo Puertorriqueño*) in San Juan, Puerto Rico, on July 16, 1985.

The mission of PRAS is threefold: (1) to watch and enjoy the night sky, (2) promote the popularization of astronomy, and (3) foster astronomical research at the amateur level.

Since October 2002 PRAS has been a NASA Puerto Rico Space Grant Consortium (PRSGC) affiliate and is fully endorsed and supported by them in its educational efforts.

## LEGAL STATUS

The Puerto Rico Astronomy Society, Inc., is a private, member-based, non-profit organization, incorporated on May 22, 1985 with the Puerto Rico State Department (registration #15579) and has been a bona fide corporation ever since.

PRAS is in compliance with all applicable state and federal regulations and is a tax exempt organization under section 1101.01 of the 2011 Internal Revenue Code of Puerto Rico. The PRAS fiscal year runs from August 1<sup>st</sup> to July 31<sup>st</sup>.

PRAS is the owner of the common law trademarks for its name and acronym, the original and current logos, and the name of its magazine "El Observador". The original Spanish name for PRAS is *Sociedad de Astronomía de Puerto Rico, Inc.*, and its Spanish acronym is *SAPR*.

## ORGANIZATIONAL HIGHLIGHTS

- PRAS provides regular and student membership to anyone with an interest in astronomy, whether amateur or professional. Honorary members are also designated when deemed appropriate. The membership is composed primarily of amateurs and also includes astronomy educators and researchers.
- PRAS features a nine-member board of directors and a five-member advisory council composed of leading professionals in their fields of knowledge. Local branches called *regions* have been established in Arecibo, Corozal and Ponce.
- PRAS is a recognized leader in the education and outreach field with 31 years of experience dealing with schools, colleges, local communities, non-profits, and government at all levels including federal agencies.
- PRAS enjoys strong media appeal and a well established presence with renowned media outlets, featuring approximately 50 successful press releases per year. PRAS draws large numbers of people, with yearly direct audience numbers surpassing the 5,000 mark.
- PRAS is a partner with major players in the astronomy and space science fields. Since October 2002 PRAS has been a NASA Puerto Rico Space Grant Consortium (PRSGC) affiliate, and is currently seeking affiliate status with Astronomers Without Borders.
- PRAS is actively engaged in strategic alliances with local ecological organizations and is proud to partake at "Puerto Rico Brilla Naturalmente", a light pollution control advisory committee hosted by the Conservation Trust of Puerto Rico.

## ONGOING PROGRAMS

- **Magazine:** PRAS is the proud publisher of "El Observador" (i.e., *The Observer*), a NASA-sponsored, bilingual, monthly astronomy magazine targeting 100+ schools, colleges, PRAS members and the scientific community. El "Observador" started non-stop publication in 1985 and is internally refereed by experienced astronomy educators. As an ongoing program for over 30 years, this is one of the flagship projects at PRAS.
- **Astronomy extension courses:** PRAS has partnered with Metropolitan University, UMET (2013) and the University of Puerto Rico–Aguadilla (2015) to design and offer comprehensive continuing education programs leading to professional certifications in observational astronomy. Courses are taught by PRAS members, who also advise extensively on course content and marketing strategies. Programs emphasize night sky observation and provide a visual, descriptive view of astronomy.

- **Optical Observatory:** PRAS is working towards the completion of the *Gregory García Optical Observatory* (GGOO), an accessible, urban observatory now being erected at UMET's main campus in Cupey (San Juan metro area), to be operated by PRAS under agreement with UMET. Expected to open in 2020, the observatory is named after PRAS founding father Greg García who had originally proposed an astronomical observatory devoted to informal education and public outreach, the first of its type in the island.
- **Lectures and panels:** PRAS conducts free astronomy lectures and panel discussions featuring experienced amateur and professional astronomers at 7:30 pm on the third Wednesday of every month, except August and December. With over 300 successful public lectures, this program has been ongoing since PRAS was established back in 1985. Meetings are currently held at the Planetarium in Luis A. Ferré Science Park, Bayamón.
- **Press releases:** PRAS drafts regular press releases (average: 50 per year) which are featured in major media outlets and are sent automatically to subscribers in our e-mail list. Topics include current sky events and the latest discoveries of space exploration missions. Anyone may subscribe to this free service by submitting a valid e-mail address via the online mini-form located on the right-side frame at our main website.
- **Books:** Four book-length works are now available at our website for free download, including *A Puerto Rican in the South Pole* and the recently released, 192-page Spanish-language textbook *Panorama de la astronomía*. Pending the PRAS website large-scale overhaul, downloads can be made from <http://www.armandocaussade.org/books/>

## SERVICES

The Puerto Rico Astronomy Society has a strong, well established astronomy outreach program which is available for the benefit of colleges, schools and the community in general. Yearly live audience numbers surpass the 5,000 mark. Services are free but donations are accepted. These donations are an essential source of income and help support our continued work.

Requests for presentations, star parties and solar viewing sessions should be made with 12 weeks advance notice. Visits may be arranged anywhere in Puerto Rico, including offshore townships Vieques and Culebra. Talks may be delivered either in Spanish or English, and star parties can be arranged for groups of any size, from 10 to over 1,000 participants. Securing staff and volunteers for an event takes time, therefore, adequate advance notice is essential.

- **Astronomy viewing nights:** PRAS conducts free astronomy viewing nights at remote locations away from city lights. These are held on Saturdays around the last quarter and new moon phases, on semi-rural locations in Arecibo, Corozal and Santa Isabel (darkness in the Bortle scale: class 4 to 5).

- **Public star parties:** PRAS conducts free public star parties at easy-to-reach, downtown locations in large metropolitan areas such as San Juan, Ponce and Arecibo. These are held on average four times each year and are always scheduled around the first quarter moon phase, usually at important dates such as Astronomy Day and International Observe the Moon Night (InOMN).
- **Solar viewing sessions:** PRAS conducts free daytime sessions for solar observation. *[Warning: never attempt to look at the Sun without proper eye protection!]*. We use only approved equipment and special filters for safe solar viewing, and take the utmost care and precautions with our audiences to avoid even the slightest chance of eye injury. We can provide both neutral and hydrogen-alpha views of the Sun through our telescopes.
- **Workshops:** PRAS hosts regular workshops with emphasis on practical, hands-on astronomy activities such as astrophotography and digital image processing. We will also gladly deliver astronomy merit badge workshops for boy and girl scout groups at the location of your choice.
- **Information booths:** PRAS is available to host information booths and/or exhibits at science museums, shopping malls and community events. Short presentations can also be scheduled around these events.
- **Telescope advice:** PRAS offers telescope advice and is able to respond to virtually any query concerning amateur astronomy equipment. We may refer interested parties to experienced amateurs within our group who specialize in optical testing, as well as construction, repair and restoration of astronomical telescopes.
- **Continuing education:** PRAS offers professional development opportunities for secondary level teachers through our participation at symposiums, conferences, workshops and Internet webinars. These are usually arranged through local colleges, allowing teachers to earn credit for contact hours.
- **Science fair:** PRAS will provide, upon request, volunteers to judge science fair projects submitted by secondary level students from both public and private schools. We cover all STEM subject areas, with particular emphasis on astronomy, space science and physics.
- **Media spokespersons:** PRAS will provide, upon request, experienced media spokespersons to discuss what is on view in the night sky and to share their passion for astronomy with audiences via television, radio, newspapers and Internet webcasts.
- **Website:** PRAS runs an astronomy website at <http://www.astronomiapr.org/> which provides the latest news and discoveries about astronomy in general. There is also an astrophotography gallery featuring images obtained by PRAS members, a growing digital library holding past issues of "El Observador", as well as an event calendar section. We also maintain Facebook, Twitter and LinkedIn websites.

- **Magazine:** PRAS' monthly publication, "El Observador", is available free of charge for selected schools and colleges. Both printed and digital editions are available. Interested parties should send an application letter explaining how the magazine will be used as a learning tool in class. Guest writers are encouraged to submit their articles for review and publication.
- **Member-only services:** PRAS provides its members with exclusive dark skies field trips, social events such as cocktail and dinner receptions, and invitation-only lectures with renowned scientists which are arranged in partnership with local universities.

### **PROFILES OF BOARD OFFICERS (FOR PRAS FISCAL YEAR 2017–2018)**

The Puerto Rico Astronomy Society features a fully bilingual, ten-member board of directors with strong academic background, teaching credentials and extensive astronomy and telescope experience. Approximately half of our board officers have obtained university degrees in STEM fields (i.e., science, technology, engineering, mathematics).

- **Prof. Juan Villafañe** (President and communications director) is a visual artist, musician and educator who has enjoyed a lifelong fascination with the night sky.
- **Mr. Josué Rodríguez** (Vice President) is an experienced amateur astronomer and space enthusiast who is also affiliated with NASA / JPL's Solar System Ambassador Program.
- **Mr. Jean-Pierre Bernal** (Treasurer) is a certified computer technician who holds a BS in electronic engineering technology. Mr. Bernal enjoys both planetary and deep-sky watching and is planning to enter the field of double and variable star research.
- **Mr. Norman A. Padovani** (Secretary) holds a BS in electrical engineering from the University of Puerto Rico, Mayagüez Campus, and is additionally licensed as a professional engineer (PE). After a long time of absence from the amateur astronomy arena he found in PRAS a new opportunity to again watch and enjoy the night sky.
- **Mr. David A. Gaud** (Ponce regional director) is a professional engineer (PE) and longstanding PRAS member who is well versed in all areas of amateur astronomy.
- **Ms. Evelyn Díaz** (Corozal regional director and at-large officer)
- **Mr. José Colom** (Arecibo regional director and at-large officer)
- **Ms. Linda Díaz** (At-large officer)
- **Ms. María M. Molina** (At-large officer)

- **Mr. Christian Virella** (At-large officer).

## LIST OF ADVISORS AND PERSONNEL EMERITUS

- **Daniel R. Altschuler, PhD** (Technical advisor and founding member) is a physicist, astronomer, full professor and published author. He is a former director at the Arecibo Observatory (1991–2003) and is currently affiliated with the Department of Physics at the University of Puerto Rico, Río Piedras campus.
- **Sarah G. Vázquez, Esq.** (Legal advisor) is a lawyer in private practice, with 20+ years of legal experience, as well as a seasoned amateur astronomer.
- **Armando Caussade, GCSc, BS** (President emeritus, strategic advisor and founding member) is an astronomy educator who has taught at all levels of education, whose current affiliations include UMET and UPR–Aguadilla. A published author and editor, he is a PolarTREC alumni who in 2015 traveled to the South Pole to work with the IceCube Neutrino Observatory, as well as a former NASA / JPL Solar System Ambassador. Prof. Caussade has been with PRAS since 1985, serving as president for six years.

## NOTABLE DECEASED MEMBERS

- **Gregory E. García, ANG Retired** (1935–2016) served PRAS as President emeritus and PRSGC affiliate representative. He worked at Mt. Cuba Observatory in Delaware, at the Arecibo Observatory in Puerto Rico, and also as an astronomy instructor at UMET. A key figure in Puerto Rican astronomy, Greg was unsurpassed in the field of observational astronomy, and as the original PRAS founding father back in 1985—as well as its first president—he inaugurated the era of modern amateur skywatching in Puerto Rico.
- **Víctor Román-Cordero, BS** (1964–2015) served PRAS for many years as Vice President and Arecibo regional director. He was an accomplished science communicator who was largely responsible for the success of "El Observador" magazine, as well as an expert in light pollution who lent his expertise to a number of government committees. At his passing, Víctor was also affiliated with NASA / JPL's Solar System Ambassador Program and with the Puerto Rico Science Teachers Association.
- **Modesto Iriarte-Beauchamp, PhD** (1923–2007) was an engineer, professor and published author, who in 1960 established the BONUS nuclear reactor in Rincón, Puerto Rico. He became a chairman of the Board of the Puerto Rico Electric Power Authority, and was also involved with the Institute of Electrical and Electronics Engineers (IEEE).
- **Joaquín A. García de la Noceda-Quintana, MS** (1916–1999) was a full professor at the

University of Puerto Rico, Río Piedras campus, who was universally acknowledged as the pioneer of amateur telescope making in the island. In 1993 he erected his own private observatory in San Juan, Puerto Rico, with a 300-millimeter telescope of his own making.

- **Elio Delgado-Suárez, BS** (1952–1995) served PRAS as education and outreach coordinator. He was an aeronautical engineer who excelled at communicating space science in everyday language, for which he was given an INTRE award for outstanding work in media engagement. In 1992 he established the Puerto Rico Aerospace Network.

## ALLIANCES

<b>Astronomers Without Borders</b> Affiliate organization (approval pending)	<b>2018 to present</b>
<b>University of Puerto Rico (UPR), Aguadilla campus</b> Partner to a collaborative academic program	<b>2015 to present</b>
<b>Ana G. Méndez University System / Metropolitan University (UMET)</b> Partner to a collaborative academic program	<b>2013 to present</b>
<b>Índice Conuco (periodical indexing service)</b> Contributing organization via signed agreement	<b>2012 to present</b>
<b>Puerto Rico Conservation Trust / "Puerto Rico Brilla Naturalmente"</b> Advisory committee member	<b>2009 to present</b>
<b>International Year of Astronomy 2009 / Puerto Rico Steering Committee</b> Committee member	<b>2009</b>
<b>Puerto Rico National Parks Public Corporation</b> Associate organization via signed agreement	<b>2007 to 2009</b>
<b>Earth Day 2007 Puerto Rico Steering Committee</b> Committee member	<b>2007</b>
<b>NASA Puerto Rico Space Grant Consortium (PRSGC)</b> Affiliate organization via memorandum of understanding	<b>2002 to present</b>
<b>Luis A. Ferré Science Park (and Planetarium)</b> Partner via verbal agreement	<b>1992 to present</b>
<b>Puerto Rico Conservation Trust</b> Partner via verbal agreement	<b>1989 to present</b>

**The Astronomical League**  
Member society via corporate membership

**1987 to 2000**

## **AWARDS AND RECOGNITION**

PRAS is the recipient of the *1999 Sky & Telescope Astronomy Day Award*, which honors the organization whose events and displays were judged most successful in achieving the core concept of Astronomy Day, namely "bringing astronomy to the people".

Our president emeritus and advisor Armando Caussade is a recipient of the *Antarctica Service Medal of the United States of America* (2015), an award from the National Science Foundation which recognizes valuable contributions to Antarctic exploration and scientific achievement.

Our advisor and founding member Daniel R. Altschuler is the recipient of the 2010 *Andrew Gemant Award* from the American Institute of Physics for significant contributions to the cultural dimension of physics.

In addition, several longtime members were individually awarded with outstanding achievement certificates by the Puerto Rico Academy of Arts and Sciences (June 18, 2008) and by the UNESCO Center for Culture / Puerto Rico UNESCO Association (August 30, 2013).

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