

Curriculum Vitae

Esteban D. Araya, M.S.

Array Operation Center
National Radio Astronomy Observatory
801 Leroy Place
Socorro, NM 87801

Phone: (505) 835 7095
Fax: (505) 835 5707
earaya@nmt.edu
earaya@nrao.edu

Education

Jan 2004 - Present	Ph.D. Candidate	New Mexico Tech Socorro, NM, USA
2000 - 2003	M.S. Physics <i>Magna Cum Laude, GPA 4.0</i>	University of Puerto Rico San Juan, Puerto Rico
1996 - 1999	B.A. Physics <i>Magna Cum Laude, GPA 3.7</i>	Universidad de Costa Rica San José, Costa Rica

Relevant Employment

Sep 2006 - Present	NRAO Predoctoral Student, Dr. W. M. Goss, Dr. P. Hofner	NRAO, Socorro, NM
Jan 2004 - Sep 2006	Research Assistant, Dr. P. Hofner	New Mexico Tech
Spring & Fall 2004	Teaching Assistant	New Mexico Tech
Fall 2003	Teaching Assistant	University of Puerto Rico
Fall 2000 - Spring 2003	Research Assistant, Dr. P. Hofner	University of Puerto Rico
Summer 2000	Research Assistant, Dr. I. Alexef	University of Tennessee
Spring 2000	Research Assistant, Dr. H. Tolentino	National Laboratory of Synchrotron Light (LNLS), Campinas, Brazil.
Fall 1999 - Spring 2000	Profesor interino (Temporary professor)	Universidad de Costa Rica
1999	Laboratory instructor	Univ. Estatal a Distancia (UNED), Costa Rica
1997 - Spring 1999	Teaching Assistant	Universidad de Costa Rica
1998 - Spring 2000	Research Assistant, Dr. J. Bonatti, Dr. W. Fernández	Universidad de Costa Rica

Relevant Awards

2007	Albert Petscheck Award	Physics Department Award for Excellence in Physics, New Mexico Tech, Socorro, NM
2006-2008	NRAO Predoctoral Program	NRAO Predoctoral Student at the Array Operation Center, NRAO, Socorro, NM. Advisor: Dr. W. M. Goss.
2005-2006	GBT Student Support Program	NRAO/NSF grant to cover one year salary, computer equipment, and travel expenses to the AAS 207 meeting.
2004	Premio Nacional de Ciencia “Dr. Clodomiro Picado Twilight” (Costa Rican National Science Award)	Conferred for the detection and characterization of H ₂ CO maser emission in IRAS 18566+0408
1996, 1997, 1998	Award for Academic Excellence: best GPA of the Faculty of Natural Sciences, and best GPA of the B.A. Physics Program	Universidad de Costa Rica

Relevant Travel Grants

2007	IAU Travel Award	IAU travel grant to attend the IAU Symposium 242: Astrophysical Masers and their Environments, Alice Springs, Australia.
2005	Costa Rican Ministry of Science and Technology Travel Grant	Grant to present the talk “ <i>Explorando la Formación de Estrellas Masivas en la Galaxia</i> ”, Costa Rica.

2004	Graduate Student Association Travel Award, New Mexico Tech	Travel grant to visit the Max-Planck-Institute für Astronomie, Germany
2003	American Astronomical Society Travel Grant	Travel grant to attend at the XXVth IAU General Assembly, Sydney, Aus- tralia.
2000	National Laboratory of Syn- chrotron Light Travel Grant (Brazil)	Grant to participate in the <i>Noveno Programa de Bol- sas de Verano</i> , Campinas, Brazil.
2000	Grace Foundation Travel Grant	Grant to participate in the summer research program on Plasma Applications at the University of Tennessee.
1999	UNESCO Travel Grant	Travel grant to partici- pate in the <i>Astronomy Careers Summer Institute (PROJECT UPLIFT)</i> , New Mexico.
1998	International Astronomical Union Travel Grant	Travel grant to attend at the IX Reunión Lati- noamericana de la IAU, Puebla, México.

Invited Reviews

E. Araya, P. Hofner, & M. W. Goss “A Review of H₂CO Maser Emission in the Galaxy”, 2007, IAU Symposium 242: Astrophysical Masers and their Environments, Alice Springs, Australia.

Refereed Publications

15. **E. Araya**, P. Hofner, W. M., Goss, H. Linz, S. Kurtz, & L. Olmi, “A Search for Formaldehyde 6 cm Emission toward Young Stellar Objects II. H₂CO and H110 α Observations”, ApJS, 2007, 170, 152

14. Hofner, P., Cesaroni, R., Olmi, L., Rodríguez, L. F., Martí, J., & **Araya, E.**, “Sub-arcsecond Resolution Radio Continuum Observations of IRAS 20126+4104”, A&A, 2007, 465, 197

13. **E. Araya**, P. Hofner, M. Sewilo, H. Linz, S. Kurtz, L. Olmi, C. Watson, & E. Churchwell, “First Detection of an H₂CO 6 cm Maser Flare: A Burst in IRAS 18566+0408”, ApJL, 2007, 654, 95.

12. M. Mateen, P. Hofner, P., & **E. Araya**, “A Survey of the SO $J_K = 1_0 - 0_1$ Transition toward Massive Star-Forming Regions”, *ApJS*, 2006, 167, 239.
11. **E. Araya**, P. Hofner, L. Olmi, S. Kurtz, & H. Linz, “Arecibo Observations of Formaldehyde in L1551”, *AJ*, 2006, 132, 1851.
10. **E. Araya**, P. Hofner, W. M. Goss, S. Kurtz, H. Linz, & L. Olmi, “A New Galactic 6 cm Formaldehyde Maser”, *ApJL*, 2006, 643, 33.
9. **E. Araya**, P. Hofner, S. Kurtz, L. Bronfman, & S. DeDeo, “CH₃CN Observations toward Southern Massive Star-Forming Regions”, *ApJS*, 2005, 157, 279.
8. **E. Araya**, P. Hofner, S. Kurtz, H. Linz, M. Sewilo, E. Churchwell, C. Watson & L. Olmi, “Discovery of an H₂CO 6 cm Maser toward IRAS 18566+0408”, *ApJ*, 2005, 618, 339.
7. **E. Araya**, P. Hofner, H. Linz, M. Sewilo, E. Churchwell, C. Watson, L. Olmi & S. Kurtz, “A Search for H₂CO 6 cm Emission toward Young Massive Stellar Objects”, *ApJS*, 2004, 154, 579.
6. M. Sewilo, C. Watson, **E. Araya**, E. Churchwell, P. Hofner & S. Kurtz, “Resolution of Distance Ambiguities of Inner Galaxy Massive Star Formation Regions II”, *ApJS*, 2004, 154, 553.
5. **E. Araya**, P. Hofner & W. Baan, “Studies of Extragalactic Formaldehyde & Radio Recombination Lines”, *ApJS*, 2004, 154, 553.
4. **E. Araya**, P. Hofner, P. Goldsmith, S. Slysh & S. Takano, “A C-Band Spectral Scan of IRC+10°216”, *ApJ*, 2003, 596, 556.
3. C. Watson, **E. Araya**, M. Sewilo, E. Churchwell, P. Hofner, & S. Kurtz, “Resolution of Distance Ambiguities of Inner Galaxy Massive Star Formation Regions I”, *ApJ*, 2003, 587, 714.
2. **E. Araya**, P. Hofner, E. Churchwell & S. Kurtz, “Arecibo Observations of Formaldehyde and Radio Recombination Lines toward Ultracompact H II Regions”, *ApJS*, 2002, 138, 63.
1. **E. Araya**, J. Bonatti & W. Fernández, “Solar Activity and Climate in Central America”, *Geofísica Internacional*, 2000, 39, Num 1, 97.

Newsletters

- E. Araya**, & P. Hofner “An Update on H₂CO Maser Emission”, Radio Astronomy Highlights, Arecibo Observatory Newsletter, NAIC, December 2006, Num 40, 17
- C. Watson, **E. Araya**, M. Sewilo, E. Churchwell, P. Hofner, & S. Kurtz “The Resolution of Distance Ambiguities for Inner Galaxy Massive Star-Formation Regions”, Radio Astronomy Highlights, Arecibo Observatory Newsletter, NAIC, June 2003, Num 36, 10
- E. Araya**, & P. Hofner “A C-Band Spectral-Line Survey of IRC+10°216”, Radio Astronomy Highlights, Arecibo Observatory Newsletter, NAIC, March 2002, Num 34, 17
- P. Hofner, **E. Araya**, E. Churchwell, & S. Kurtz in “Molecular Line Studies”, Radio Astronomy Highlights, Arecibo Observatory Newsletter, NAIC, November 2000, Num 31, 7

Other Publications: selected posters and oral presentations

- E. Araya**, et al. “A Variability Study of the H₂CO 6 cm Maser in IRAS 18566+0408”, 2007, poster presented at the IAU Symposium 242: Astrophysical Masers and their Environments, Alice Springs, Australia.
- E. Araya** “H₂CO Masers in the Galaxy”, 2007, talk presented at the Physics Colloquium, Physics Department, New Mexico Tech, Socorro, NM.

E. Araya, “Variability of Formaldehyde Masers”, 2006, talk presented at the 22nd Annual New Mexico Symposium.

E. Jordan, P. Hofner, **E. Araya**, & S. Kurtz, “44 GHz Methanol Masers in Massive Star Forming Regions”, 2006, poster presented at the 22nd Annual New Mexico Symposium.

E. Araya, et al. “A GBT-VLA Survey for Formaldehyde Masers”, 2006, poster presented at the 207 AAS Meeting (NASA-ADS: 2005AAS...20718401A).

M. Mateen, **E. Araya**, & P. Hofner, “A SO Survey toward Massive Star Forming Regions”, 2006, poster presented at the 207 AAS Meeting (NASA-ADS: 2005AAS...207.8126M).

P. Hofner, **E. Araya**, M. Mateen, & E. Jordan “Massive Star Formagion Research at New Mexico Tech”, 2005, poster presented at the 21st Annual New Mexico Symposium.

E. Araya, “H₂CO 6 cm Emission”, presented at the Science Lunch Talk, Array Operation Center, NRAO, Socorro, NM.

E. Araya, “An Update on H₂CO 6 cm Emission”, presented at the Science Lunch Talk, NRAO, Green Bank, West Virginia.

E. Araya, et al. “A New Formaldehyde 6 cm Emitter in the Galaxy”, 2005, talk presented at the 205 AAS Meeting (NASA-ADS: 2004AAS...205.7407A).

P. Hofner, **E. Araya**, H. Linz, S. Kurtz, R. Cesaroni, S. Molinari, “7mm Observations toward Young Massive Stars”, 2005, poster presented at the 205 AAS Meeting (NASA-ADS: 2004AAS...205.9807H).

H. Linz, P. Hofner, **E. Araya**, , L. F. Rodríguez, S. Kurtz, & J. Martí, “VLA 7 mm Observations toward the pumping heart of GGD27”, 2004, *Astron. Nachr.*, 325, 11.

K. Schreyer, P. Hofner, **E. Araya**, H. Linz, B. Stecklum, T. Henning, “The Massive Disk around the Young B2-B3 Star AFGL490”, 2004, *Astron. Nachr.*, 325, 13.

E. Araya, et al. “The Discovery of the 4th H₂CO 6 cm Maser in the Galaxy”, talk presented at the *Max-Planck-Institute für Astronomie*, Heidelberg, Germany, 2004.

E. Araya, P. Hofner, L. Olmi, H. Linz, S. Kurtz & R. Cesaroni, “The Interior Structure of the G31.41+0.31 Hot Molecular Core”, 2003, poster presented at the *S221 Star Formation at High Angular Resolution Symposium*, Australia (NASA-ADS: 2003IAUS..221E.79A).

E. Araya, P. Hofner, E. Churchwell, M. Sewilo, C. Watson, H. Linz & S. Kurtz, “H₂CO 6 cm Emission toward IRAS 18566+0408”, 2003, poster presented at the 201 AAS Meeting (NASA-ADS: 2002AAS...201.7709A).

P. Hofner, **E. Araya**, L. Olmi, H. Linz, S. Kurtz & R. Cesaroni, “Subarcsecond Resolution Observations of the G31.41+0.31 Hot Molecular Core”, 2003, poster presented at the 201 AAS Meeting (NASA-ADS: 2002AAS...201.2015H).

E. Araya, P. Hofner, E. Churchwell & S. Kurtz, “Arecibo Observations of Formaldehyde and Radio Recombination Lines toward Ultracompact HII Regions”, 2002, poster presented at the 199 AAS Meeting (NASA-ADS: 2001AAS...19912402A).

E. Araya, A.Y. Ramos, H. Tolentino & E. Granado, “Local Environment of Mn³⁺ in LaMnO₃ around the Jahn-Teller Transition”, 2000, poster presented at the *Workshop on Applications of Synchrotron Light to Magnetic Materials*, Campinas, Brazil, 2000.

E. Araya, J. Bonatti & W. Fernández, “Possible Relationships between Solar Activity and some Climatic Variables in Central America” 1998, poster presented at the *Fifth Latin-American Conference on Space Geophysics V-COLAGE*, San José, Costa Rica.

E. Araya & J. Bonatti, “Deflection Ellipses: Numerical Modeling and Possible Detection”, 1997, talk presented at the *VII Workshop on Basic Space Science (ESA-UN)*, Tegucigalpa, Honduras.