

Joseph A'Hearn

Curriculum Vitae
12 November 2019

Department of Physics
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United States Citizen

EDUCATION

Ph.D. Physics	University of Idaho, Moscow, ID	expected 2021
B.S. Physics & Philosophy	University of Illinois, Urbana-Champaign, IL	2016
B.A. Philosophy	Pontifical Athenaeum Regina Apostolorum, Rome, Italy <i>summa cum laude</i>	2011
A.A. Humanities	Legion of Christ College of Humanities, Cheshire, CT	2009

PUBLICATIONS

J.A. A'Hearn, M.M. Hedman, M. El Moutamid, Dynamics of multiple bodies in a corotation resonance: Conserved quantities and relevance to ring arcs, *The Astrophysical Journal* 882:66 (2019)

AWARDS

2019 Outstanding Research Poster, Graduate Division at the University of Idaho
College of Science Research Expo, Moscow, ID: *Are Moonlets Hidden Among the Clumps in Saturn's Innermost Ring?*: \$100
American Astronomical Society Hartmann Travel Grant: \$500 to attend the 2019 EPSC-DPS Joint Meeting in Geneva, Switzerland

CONFERENCE PARTICIPATION

2019 College of Science Research Expo, Moscow, ID: Poster: *Are Moonlets Hidden Among the Clumps in Saturn's Innermost Ring*
European Planetary Science Congress – Division of Planetary Sciences Joint Meeting, Geneva, Switzerland: Poster: *Are Moonlets Hidden Among the Clumps in Saturn's Innermost Ring?*
Division on Dynamical Astronomy Meeting, Boulder, CO: Oral Presentation: *Are Moonlets Hidden Among the Clumps in Saturn's Innermost Ring?*

2018 Astronomy Northwest by Southwest Meeting, Vancouver, Canada
Division of Planetary Sciences Meeting, Knoxville, TN: Poster: *Dynamics of multiple bodies in a corotation resonance*

- College of Science Research Expo, Moscow, ID: Poster: *Dynamics of multiple bodies in a corotation resonance*
- Division on Dynamical Astronomy Meeting, San Jose, CA: Oral Presentation: *Dynamics of multiple bodies in a corotation resonance*
- 2017 Division of Planetary Sciences Meeting, Provo, UT, October 2017: Poster: *Using four-body problems to explore Aegaeon's orbital evolution*
- Numerical Integration Methods in Planetary Science Meeting, Toronto, Canada, August 2017
- 2016 American Astronomical Society Meeting, San Diego, CA
American Astronomical Society Meeting, Kissimmee, FL

CAMPUS OR DEPARTMENTAL TALKS

- 2017 The Search for a Resonance for Saturn's Moon Pallene
The Aegaeon 4-Body Problem

TEACHING EXPERIENCE

Memoria Press Online Academy, Instructor
Physics (algebra-based) (2018-present)

University of Idaho Department of Physics, Teaching Assistant (sole instructor)
Astronomy Lab (Fall 2016, Fall 2017)
General Physics II Lab (electricity, magnetism, optics) (Spring 2017)

Legion of Christ College of Humanities, Instructor
World History (2012-13)
Latin (2012-13)
Koiné Greek (2012-13)
Physics (algebra-based) (Fall 2012)
Euclidean Geometry (Spring 2013)

RESEARCH EXPERIENCE

University of Idaho Department of Physics, Research Assistant for Matthew Hedman
(2017-present), NASA Faint Rings Grant

MAIN RESEARCH INTERESTS

Orbital mechanics, dynamical astronomy, planetary physics, giant planet interiors

SERVICE TO PROFESSION

Wiki Education Foundation Facilitator, Wikipedia Edit-a-thon, 228th AAS Meeting (2016)

COMMUNITY INVOLVEMENT/OUTREACH

PUBLIC

Yuri's Night, Jewett Observatory, Pullman, WA: Talk on gravitational slingshots (2019)
Solar Eclipse Education and Outreach, Moscow Farmers Market, Moscow, ID (2017)
Splash at UIUC, Champaign, IL: Talk on the Big Bang and the end of the Universe (2016)
An Evening Under the Stars, Adler Planetarium, Chicago, IL: Representative of the
University of Illinois Astronomical Society (2016)

CATHOLIC

Theology on Tap, Pocatello, ID: Talk on science and the Shroud of Turin (2019)
Vandal Catholic Encounter, Moscow, ID: Talk on extraterrestrial life and baptism (2019)
Faith & Science Symposium, Moscow, ID: Talk on the evolution of planet Earth (2019)
Science Fair, Summit Academy, Cottonwood, ID: Judge for the science fair (2018)
Vandal Catholic Encounter, Moscow, ID: Talk on whether we can know God exists (2018)
Catholics in the Professional World, Cottonwood, ID: Talks on life as a Catholic
astrophysicist and on the Origin of the Universe (2018)
Theology on Tap, Pocatello, ID: Talk on the Origin of the Universe (2017)
Theology Buzz, Moscow, ID: Talk on the Origin of the Universe (2017)
Vandal Catholic Encounter, Moscow, ID: Talk on the Church's role in science (2017)
Vandal Catholic Encounter, Moscow, ID: Talk on science and the Shroud of Turin (2017)
Vandal Catholic Encounter, Moscow, ID: Talk on the Origin of the Universe (2017)
Evening Talk, Rolling Prairie, IN: Talk on the Origin of the Universe and Q&A (2016)
Spirit & Truth, Plainfield, IL: Talk on science and the Shroud of Turin (2015)
Fever Science & Faith Symposium, Urbana, IL: Talk on fine-tuning in the Cosmos (2015)
Newman Frontline Catholics, Champaign, IL: Talk on science and faith in dialogue (2014)
Spirit & Truth, Naperville, IL: Talk on science and faith in dialogue (2013)
Spirit & Truth, Plainfield, IL: Talk on science and faith in dialogue (2013)
Evening Talk, Cheshire, CT: Talk on science and the Shroud of Turin (2013)

RELATED PROFESSIONAL SKILLS

Mercury6
Python, C++
Observatory Operation
Astronomical Observation Assistance

NON-ACADEMIC WORK

Youth Ministry Coordinator, Mission Network USA, Inc. (2011-12)

Exhibit Coordinator, Pontifical Athenaeum Regina Apostolorum (2010-11)
Translation Coordinator and Promotion Assistant, Centrum Pro Educatoribus
Seminariorum (2009-11)
Secretary to the Vice-Rector, Translation Assistant, and Cultural Visit Coordinator, Legion
of Christ College of Humanities (2007-09)

COURSES PREPARED TO TEACH

Introductory Physics
Introductory Astronomy
Astronomy Lab
Solar System Dynamics
Orbital Mechanics
Classical Mechanics
Electricity and Magnetism
Quantum Physics
Numerical Methods

LANGUAGES

Spanish: fluent, lived two years in Mexico
Italian: good, lived two years in Rome
Latin: good, taught Latin two semesters, occasional tutoring and substituting
Classical and Koiné Greek: good, taught Koiné Greek two semesters

PROFESSIONAL MEMBERSHIPS OR AFFILIATIONS

American Astronomical Society: Division of Planetary Science and Division on
Dynamical Astronomy
Palouse Astronomical Society
Society of Catholic Scientists
Phi Sigma Tau, international honors society in philosophy