

# Curriculum Vitae

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## Personal Information

Name **Thomas G. Bisbas** (or Bismpas)  
Marital status Married  
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## Education

25/05/2010 **Ph.D. in Astrophysics**  
Title: "Smoothed Particle Hydrodynamics simulations of expanding HII regions"  
School of Physics and Astronomy. Cardiff University. United Kingdom  
Supervisor: Professor Anthony Whitworth  
2000-2004 **Degree of Physics ('Ptychio')**. Aristotle University of Thessaloniki. Greece

## Current position

11/2022 – today **Senior Research Scientist (Professor)**. Research Center of Astronomical Computing. Zhejiang Laboratory. Hangzhou, 311100. China

### Responsibilities

02/2024 – today **Head of Committee for International Collaborations**, Research Center of Astronomical Computing, Zhejiang Laboratory.

## Professional appointments

12/2019 – 10/2022 **Senior Scientist (DFG Fellow)**. University of Cologne, Germany  
06/2019 – 12/2019 **Postdoctoral Researcher**. National Observatory of Athens, Greece  
09/2018 – 03/2019 **Postdoctoral Researcher**. University of Cologne, Germany  
07/2016 – 07/2018 **Postdoctoral Researcher**. University of Florida, Gainesville, USA & University of Virginia, Charlottesville, USA  
07/2015 – 07/2016 **Postdoctoral Researcher**. Max-Planck-Institut für extraterrestrische Physik. Garching, Germany  
03/2012 – 06/2012 **Visiting Researcher** Harvard-Smithsonian Centre for Astrophysics. Boston, USA  
10/2010 – 07/2015 **Postdoctoral Researcher**. University College London. London, UK  
10/2009 – 09/2010 **Postdoctoral Researcher**. Czech Academy of Sciences. Prague, Czech Republic

## Publications

>60 peer-reviewed articles (16 as first-author). 1 book (Springer Briefs in Astronomy).  
Total citations >2400. H-index >27. First-author citations >900.

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## Awards & Distinctions

- 11/2023 Qianjiang Friendship Ambassador
- 02/2023 Zhejiang Province Talent Plan

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## Funding awarded

- 03/2019 Deutsche Forschungsgemeinschaft (DFG) – 287,000 Euros
- 03/2019 *Chandra* proposal [20610387](#) – 66,270\$

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## Teaching activities

- 09/2014 – 01/2015 Lecturer of the Astronomy Diploma Course “Interstellar Medium”. University College London, UK

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## (Co-)Supervision of students and mentoring

Dr. Gioacchino Accurso (PhD co-supervision, UCL; 2013-2016), Dr. Thomas Haworth (mentoring, University of Exeter & Cambridge University; 2013-2015), Mr. Lars Langen (MSc supervision, University of Cologne; 2020), Ms. Marta Oboletseva (graduate thesis supervision & mentoring, Saint Petersburg University; 2020-present), Dr. Luo Gan (mentoring, University of Nanjing; 2020-present), Ms. Farah Victoria Fallauer (CASSUM project supervision & mentoring, St. Andrews University; 2024-present), Ms. Maria-Christina Kyrmanidou (collaborative project & mentoring, Aristotle University of Thessaloniki; 2024-present)

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## Commissions of trust

External Reviewer for ERC Advanced Grants 2018  
External Reviewer for University Research Fellowships (Royal Astronomical Society)  
Reviewer for FONDECYT Regular Grant competition (Chilean public funds)  
Referee for Nature Astronomy, ApJ, MNRAS, A&A, PASA, ASCOM, IAUS

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## Principal investigator (PI)

- 2022 ALMA proposal [2022.1.01438.S](#) – 11.0 hours. “Revealing the 12C/13C ratio across the galactocentric radius through sensitive absorption detection”
- 2019 ALMA proposal [2019.1.00862.S](#) – 16.3 hours. “Two birds with one stone: CO rotation curves of two main-sequence galaxies at  $z = 1.5$  and 2.2”
- 2018 *Chandra* proposal [20610387](#) – 80ks. “Testing Cosmic Ray vs X-ray Driven Chemistry in Extreme Star-Forming Conditions”
- 2017 A-ranked ALMA proposal [2017.1.01020.S](#) – 13.1 hours. “Deep [CII] observations in the high-redshift Universe: studying the distribution of Dark Matter in galaxies”
- 2012 1.1 million CPU hours for DiRAC II project grand [ACOP26](#). “Modelling the Physics and Chemistry of expanding nebulae”

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## Co-investigator (Co-I)

- JWST [#2004](#) (PI: Dasyra, K.) "Pressure gradients of the molecular gas and their role in cloud stability in massive outflows driven by black hole jets", [#3629](#) (PI: Man, A.) "Direct detection of molecular gas reservoir in the circumgalactic medium of a brightest cluster galaxy", [#5064](#) (PI: Bialy, S.) "Constraining Cosmic Rays with H2 Ro-Vibrational Excitation in Dense Clouds"
- NOEMA [W15DW](#) (PI: Greve, T) "Tracing the molecular gas in strongly lensed starburst galaxies at  $z \sim 2.5$  using CI"; [W15EB](#) and [W14EL](#) (PI: Emonts, B) "CI in the cold molecular halo of a  $z = 2.6$  radio galaxy"
- SOFIA [05\\_0176](#) (PI: Sahai, R) "Shocked and scorched: A GREAT investigation of [CII] and [OI] emission from free-floating Evaporating Gas Globules in Massive Star Forming regions"; [06\\_0150](#) (PI: Tan, JC) "The Inception of Star Cluster Formation"
- NASA [N7-ADAP17-0093](#) (PI: Sahai, R) "Free-floating Evaporating Gaseous Globules: A New Astrophysical Laboratory for Investigating Star-Formation and Chemistry in Irradiated Environments"
- ALMA [2015.1.01133.S](#) (PI: Greve, T); [2015.1.01191.S](#) (PI: Zhang, Z-Y); [2017.1.00291.S](#) (PI: Zhang, Z-Y); [2017.1.00607.S](#) (PI: Haikala, L); [2017.1.00856.S](#) (PI: Bothwell, M); [2017.1.01499.S](#) (PI: Fu, X); [2018.1.00528.S](#) (PI: Zhang, Z-Y); [2019.1.00205.S](#) (PI: Yang, C.); [2019.1.00533.S](#) (PI: Yang, C.); [2019.1.00526.S](#) (PI: Zhang, Z-Y); [2019.1.00421.S](#) (PI: Zhang, Z-Y); [2019.1.00907.S](#) (PI: Cicone, C.); [2019.1.01030.S](#) (PI: Haikala, L.); [2021.1.01081.S](#) (PI: Luo, Y); [2021.1.01611.S](#) (PI: Paraschos, G. F.); [2022.1.00848.S](#) (PI: Lelli, F.); [2022.1.00067.S](#) (PI: Andreani, P.); [2022.1.00761.S](#) (PI: Coogan, R.); [2023.1.01154.S](#) (PI: Man, A.); [2023.1.01558.S](#) (PI: Tanaka, K.); [2024.1.01482.S](#) (PI: Tanaka, K.)

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## Organization of international conferences

- 2026 "The Olympian Symposium 2026: The Evolution of Interstellar Medium Across Cosmic Times" to be held during 18-22 May in Paralia Katerini, Greece. Principal Organizer. Website: [olympiansymposium.org](http://olympiansymposium.org)
- 2023 "The Olympian Symposium 2023: Star formation in the era of JWST". Principal Organizer SOC co-chair. 124 participants. Paralia Katerini, Greece (29/05/2023 – 02/06/2023).
- 2018 "The Olympian Symposium on Gas and Stars from milli- to mega- parsecs". Principal Organizer. SOC co-chair. 159 participants. Organized under the auspices of UNESCO. Paralia Katerini, Greece (28/05/2018 - 01/06/2018).
- 2015 "The Olympian Symposium on Cosmology and the Epoch of Reionization". Principal Organizer. 120 participants. Paralia Katerini, Greece (18/05/2015 - 22/05/2015)
- 2014 "The Olympian Symposium on Star Formation". Principal Organizer. 191 participants. Paralia Katerini, Greece (26/05/2014 - 30/05/2014)
- 2012 "The Labyrinth of Star Formation". Member of organizing committee. 127 participants. Crete, Greece (18/06/2012 - 22/06/2012)

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## Organization of workshops and summer schools

- 2016 "The ISM-SPP Olympian School of Astrophysics 2016". 28 students. Paralia Katerini, Greece (03/10/2016 - 07/10/2016)

- 2014 "StarBench-II" workshop. Member of the Scientific Advisory Committee. Bonn. Germany (01/09/2014 - 05/09/2014)
- 2013 "StarBench-I" workshop. Member of the Organizing and Scientific Advisory Committee. Exeter, UK (08/04/2013 - 11/04/2013)

## Lectures, Presentations and Talks

### Lectures

- 07/2024 "Introduction to Photodissociation Regions". First Summer School on Astrochemistry in China. Xiamen City, China (3 hours)
- 05/2024 "Introduction to Astrochemistry", Nanjing University, China (2 hours)
- 07/2022 "The Milky Way Galaxy - Formation and Evolution". Summer School of the Hellenic Astronomical Society, Athens, Greece. (4 hours)

### Presentations in international conferences (since 2018)

- 08/2025 High resolution 3D photodissociation region simulations across different environments. **Oral presentation.** "Star-formation in different environments", 21<sup>st</sup> Rencontres du Vietnam, ICISE. Quy Nhon, Vietnam.
- 05/2025 High resolution 3D models of (neural-)Photodissociation Regions. **Oral presentation.** "Cosmic Horizons", University of Texas at Austin, TX, USA
- 11/2024 Moleclues and planets in the outer Galaxy: Is there a boundary of the Galactic Habitable Zone? **Invited Speaker.** "Astrochemistry in extreme galactic conditions". National Institute of Astronomy, Florence, Italy.
- 09/2024 Annual meeting of the German Astronomical Society. **Convenor of Splinter Session & Speaker.** "Star Formation, feedback and chemistry of the low-metallicity ISM". Cologne, Germany
- 07/2024 The 2nd International Workshop on Astrochemistry. **Invited speaker.** "Understanding Photodissociation Regions in galactic and extragalactic environments". Chongqing, China
- 10/2023 Annual Symposium on Molecular Clouds and Star Formation. **Oral contribution.** " $\alpha$ -enhanced astrochemistry and the carbon cycle emission". Chongqing, China
- 06/2022 From Stars to Galaxies II, Connecting our understanding of star and galaxy formation. **Invited talk.** "Photodissociation Regions across galactic environments". Gothenburg, Sweden.
- 04/2022 IRAM Conference, Multi-line Diagnostics of the Interstellar Medium. **Oral presentation.** "*A new tool to estimate the atomic and molecular ISM content using probability distributions*". Nice, France
- 07/2021 Hellenic Astronomical Society Conference. **Two oral presentations.** "[CII] synthetic observations of dwarf galaxy mergers" and "Photodissociation Region diagnostics across galactic environments" (Virtual)
- 09/2020 Annual Meeting of the Astronomische Gesellschaft 2020 **Oral presentation** "*PDR diagnostics across galactic environments*". (Virtual)
- 06/2020 Astrochemical Frontiers. **Oral presentation** "*A new algorithm to estimate the atomic and molecular ISM content using probability distributions*". (Virtual)
- 07/2019 14<sup>th</sup> Hellenic Astronomical Conference. **Oral presentation.** "*Cosmic-ray induced destruction of CO in star-forming galaxies*". Volos, Greece

- 06/2019 From Stars to Planets II. **Poster presentation.** "*How do the observables of molecular clouds depend on the ISM environmental parameters?*". Gothenburg, Sweden.
- 07/2018 Astrochemistry: past, present & future (a meeting in celebration of Ewine van Dishoeck). **Oral presentation.** "*How do cosmic-rays affect the traceability of molecular gas in galaxies?*". Caltech, Pasadena, USA
- 05/2018 Cosmic rays, the salt of the star formation recipe. **Oral presentation.** "*Cosmic-ray induced destruction of CO in star-forming galaxies and implications for tracing H<sub>2</sub> gas*". Florence, Italy
- Invited presentations, seminars, workshops (since 2018)**
- 09/2024 Max-Planck fur Extraterrestrische Physik, Garching, Germany. **Colloquium** "Understanding Photodissociation Regions in galactic and extragalactic environments"
- 12/2023 Zhejiang University, Hangzhou. **Colloquium.** "Photodissociation Regions and the carbon cycle across galactic environments"
- 11/2023 Kavli Institute for Astronomy and Astrophysics, Peking University. **Colloquium.** "Photodissociation Regions and the carbon cycle across galactic environments"
- 06/2023 Aristotle University of Thessaloniki. **Colloquium.** "The carbon cycle emission as a diagnostic tool for the interstellar medium properties"
- 02/2023 Zhejiang Laboratory. **Colloquium.** "The carbon cycle emission as a diagnostic tool for the interstellar medium properties"
- 12/2021 Hellenic Astronomical Society Colloquium. **Colloquium.** "The carbon cycle emission as a diagnostic tool for the interstellar medium state" (Virtual)
- 03/2021 "Astrochemical Discussions". **Invited presentation.** "Photodissociation Region diagnostics across galactic environments" (Webinar)
- 12/2020 University of Cologne, Germany. **Workshop.** "*Photodissociation region diagnostics across galactic environments*" (Virtual)
- 09/2020 Chalmers University of Technology, Sweden. **Colloquium.** "*PDR diagnostics across galactic environments*" (Virtual)
- 04/2020 Nanjing University, China. **Colloquium.** "*Cosmic-ray induced destruction of CO in star-forming galaxies*" (Virtual)
- 11/2019 National Observatory of Athens, Greece. **Colloquium.** "*Photodissociation and cosmic-ray dominated regions from local infrared dark clouds to distant star-forming galaxies*"
- 11/2018 Aristotle University of Thessaloniki, Greece. **Colloquium.** "*Studying the properties of the interstellar medium in galaxies near and far*"
- 07/2018 Jet Propulsion Laboratory, NASA. **Invited talk.** "*The inception of star cluster formation revealed by [CII] emission around an Infrared Dark Cloud*"
- 05/2018 University of Crete, Greece. **Invited talk.** "*Cosmic-ray induced destruction of CO in star-forming galaxies. Implications for tracing H<sub>2</sub> gas*"
- 04/2018 National Radioastronomy Observatory (NRAO, VLA). Socorro, New Mexico, USA. **Invited talk.** "*Cosmic-ray induced destruction of CO in star-forming galaxies. Implications for tracing H<sub>2</sub> gas*"
- 02/2018 Harvard-Smithsonian Centre for Astrophysics (ITC seminars). **Invited talk.** "*Selecting the best H<sub>2</sub> tracer for molecular gas studies in galaxies*"

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## Scientific societies

- 2020 – present Member of the International Astronomical Union
- 2007 – present Member of the Hellenic Astronomical Society. Greece
- 2006 – 2010 Member of the Institute of Physics. UK

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## Public events

- 12/2019 Organization of the **Magic University** which aims to help kids identify their talents according to the “Theory of Multiple Intelligences” (Gardner, 1983). Total audience exceeding 250 pupils (7-12 years old). Various additional outreach talks.
- 2015 – present **Outreach talks in schools** (Greece). Total audience exceeding 3,000 pupils (13-15 years old). **Outreach talks in public** and various appearances in media (Greece).
- 12/2014 Participation in a panel of public outreach event followed by an open discussion on Science and Education. **Embassy of Greece in Brussels**. Invited by a Member of the European Parliament. The event was covered by media.
- 2014 – present Organization of major public events at the start of each Olympian Symposium and other scientific events (audience exceeding 300 people in each event)