

# Ramon Brassler

Project Associate Professor  
Earth Life Science Institute, Tokyo Institute of Technology, Tokyo, Japan  
Associate Investigator, Collaborative for Research in Origins (CRiO)  
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## BRIEF SUMMARY

Experienced, interdisciplinary candidate with a passion for solar system and extrasolar planet formation. Able to add a solid understanding of dynamics, planet formation and its linkage with cosmochemistry, geochemistry and geochronology. Capable of adding a vigorous research programme to any working environment. Eloquent, enthusiastic, natural leader who inspires and motivates others. Self-motivated, collaborative team player, demonstrates versatility and adaptability to excel in a fast-changing environment. Takes initiative, quick learner and a high-impact contributor.

## RESEARCH INTERESTS AND CORE KNOWLEDGE AREAS

- ✓ Terrestrial and exoplanet formation
- ✓ Fusion of cosmochemistry and dynamics
- ✓ Planetary habitability on long time scales
- ✓ Tidal evolution of planets and satellites
- ✓ Divergence of Venus and Mars vs. Earth
- ✓ Planetary bombardment
- ✓ Isotopic composition of rocky planets
- ✓ Delivery of biogenic materials
- ✓ Time and place of the origin of life
- ✓ Extinction events

## SCIENTIFIC DISCOVERIES

Contrary to popular opinion, Mars likely formed in the asteroid belt.

The Earth's Late Veneer must have consisted of a single large impact rather than an assumed constant stream of planetesimals.

Mars must have suffered a colossal impact in order to explain its highly siderophile element abundance. Both Earth and Mars underwent such impacts at ca. 4480 Ma.

Jupiter must have scattered/ejected another giant planet of the same size as Uranus or Neptune otherwise the orbits of the terrestrial planets would be far too eccentric.

The Jupiter-Family comets and the Long-Period comets share the same origin. Both the Oort comet cloud and Scattered Disc populations can be explained from a single population that was stirred during an episode of giant planet migration.

The Sun's birth cluster is likely responsible for placing dwarf planet Sedna on its current orbit.

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## EDUCATION

### **Ph.D. in Astronomy** (Magna Cum Laude)

*Tuorla Observatory, University of Turku, Finland*

Supervisors: Dr. Seppo Mikkola and Prof. Mauri Valtonen

Thesis title: *Aspects of Solar System and Three Body Dynamics*

### **M.Sc. in Astronomy**

*Astronomical Institute 'Anton Pannekoek', University of Amsterdam, Amsterdam, Netherlands*

Supervisors: Dr. Simon Portegies-Zwart and Prof. Huib Henrichs

## PUBLICATION INFORMATION

Number of *reviewed* publications as first author since beginning of Ph.D.: 32 (2/yr).

Total *reviewed* publications: 60 (3/yr) (1 in *Nature*, 1 in *Science*)

H-index: 21.  $dh/dt = 1/yr$  (source: NASA ADS).

Average number of citations per paper: 23 (max 150).

## PROFESSIONAL EXPERIENCE

- Research Associate and Associate Professor positions*** 2014+
- Research Associate and Associate Professor, ELSI; Tokyo, Japan**  
Key achievement: Mars formed in the asteroid belt, farther than its current location. This has implications for its volatile budget and biosphere development.
- Visiting researcher positions*** 2011-2014
- Visiting Scholar, ASIAA; Taipei, Taiwan** 2011-2014  
Key achievement: The simulated Oort cloud to Scattered Disc population ratio is 13, in accordance with observations from long-period and short-period comets.
- Post-doctoral positions*** 2003-2011
- Helmholtz Alliance post-doc at Observatoire de la Côte d'Azur; Nice, France** 2008-2011  
Employer: *Dr. Alessandro Morbidelli*  
Key achievement: The late migration of the giant planets had to occur through mutual scattering rather than the clearing of nearby small bodies.
- Post-doc University of Toronto at Scarborough; Toronto, Canada** 2007-2008  
Employer: *Prof. Pawel Artymowicz*  
Key achievement: The Oort comet cloud formed in two stages; one when the Sun was in its birth cluster and the second came 500 Myr later.
- CITA National Fellow at Queen's University; Kingston, Canada** 2004-2007  
Employer: *Prof. Martin Duncan*  
Key achievement: The origin of the distant dwarf planet Sedna is the result of a close stellar encounter while the Sun was in its birth cluster.
- Post-doc at York University; Toronto, Canada** 2003-2004  
Employer: *Prof. Kimmo Innanen*  
Key achievement: All the terrestrial planets have temporary co-orbital asteroids.

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## GRANTS AND FELLOWSHIP AWARDS

JSPS Fund for International Collaboration (JPN) JPY 5,200,000	2018
ELSI Director's Fund (JPN) JPY 520,000	2016
JSPS Kakenhi Grand-in-aid for Young Researchers (JPN) JPY 4,030,000	2016-2018
Daiwa Anglo-Japanese foundation (GBR) GBP 5000	2016
NINS Astrobiology consortium (JPN) JPY 650,000	2015
CITA National Fellowship (CAN) CAD 50,000	2005
CIMO Fellowship (FIN) EUR 8073	2002
Yrjö Väisälä foundation (FIN) EUR 9100	2002

No grants were obtained between 2003 and 2014 because I was disallowed *by law* from applying to national funding foundations. ELSI Director's Fund is an internal institute-wide competition.

## SUPERVISORY ROLES AND TEACHING EXPERIENCE

ELSI Ph.D. student (Tokyo, Japan)	1	2016+
Tokyo Tech Master student (co-supervision)	1	2017-2018
ASIAA Summer students (Taipei, Taiwan)	1	2012 & 2013

Class taught	Level	Year
Introduction to Planetology	Graduate	2017
Planetary Science I	Graduate	2018

## ORGANISATION OF SCIENTIFIC MEETINGS AND CONFERENCE SESSIONS

- The First 100 million years of the Solar System (2013). ASIAA, Taiwan
- The Fourth ELSI Symposium (2016). ELSI, Japan
- Before the Moon (2016). ELSI, Japan
- Puzzles and Solutions in Astrobiology (2018). ELSI, Japan
- EGU 2018: Accretion, Differentiation and Volatiles: constraints on terrestrial planets
- AOGS 2018: From Dust to Planets: the First Hundred Million Years of the Solar System
- Goldschmidt 2018: The Chemistry, Observations, and Modelling of Planetary Assembly

## INVITED PRESENTATIONS

- Asia Oceania Geosciences Society (AOGS) Annual meeting 2017 (Singapore, Singapore).

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- Rencontres du Vietnam - Search for life: from early Earth to exoplanets 2016 (Quy Nhon, Vietnam)
- International Workshop on Comets 2016 (Paris, France)
- Comets and the Late Heavy Bombardment 2014 (Gdynia, Poland)
- 5<sup>th</sup> Subaru conference: Exoplanets and disks 2013 (Kona, HI, USA)
- 1<sup>st</sup> COSPAR Symposium 2013 (Bangkok, Thailand)
- Dynamics and Formation of the Oort cloud 2011 (Lille, France)
- Quantifying the Martian geological reservoirs 2011 (ISSI, Bern, Switzerland)

Further contributions: Solar System symposium in Sapporo (3 times), DPS meeting (7 times), Goldschmidt (twice), DDA (3 times), CASCA (3 times), IAU Symposium 310 Complex Planetary Systems 2014 (Namur, Belgium).

## COMMISSIONS OF TRUST AND PROFESSIONAL SERVICES

External Reviewer for NASA	2007, 2008, 2010, 2014
External Reviewer for Austria's FWF	2013
Panel member, NASA's OPR, Washington, DC, USA	2009

Reviewer for Nature, Astronomy & Astrophysics, Earth and Planetary Science Letters, Icarus, Monthly Notices of the Royal Astronomical Society, The Astronomical Journal and The Astrophysical Journal.

## COMMUNICATION AND PRESS

Gave interviews for: BBC (UK), Nature News (UK), Science et Vie (France), Ciel et Espace (France), Taiwan Television (Taiwan), NHK (Japan), Nautilus Magazine (USA), The Register (UK).

## MEMBERSHIPS OF PROFESSIONAL SCIENTIFIC SOCIETIES

- Division of Planetary Science, American Astronomical Society
- Division of Dynamical Astronomy, American Astronomical Society
- Geochemical Society
- Asia Oceania Geosciences Society

## MANAGERIAL EXPERIENCE AND INSTITUTIONAL CONTRIBUTIONS

- Organisation of seminars and workshops
- Deployment and maintenance of computational infrastructure
- Hosted internal meetings to increase success of external funding

## COMPUTING AND TECHNICAL SKILLS

Advanced knowledge of Linux, FORTRAN 77 (SWIFT, SyMBA and MERCURY); basic knowledge of ANSI C, advanced bash shell scripting. Beginner's knowledge of Python. Intermediate knowledge of computer networking skills. Excellent at solving many computer technology related problems. Experience with setting up and managing a HTCondor high-throughput computing cluster.

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## LANGUAGE SKILLS

Fluent Oral and Written: **English (UK) • Dutch**

Conversational: **Spanish • French • Mandarin Chinese** (Traditional)

Basic: **German • Japanese**

## CHARACTER REFERENCES

Stephen J. Mojzsis

University of Colorado at Boulder, Boulder, CO, USA

[mojzsis@colorado.edu](mailto:mojzsis@colorado.edu)

Stephanie C. Werner

University of Oslo, Oslo, Norway

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Shigeru Ida

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