

Benoît Seignovert

PHD STUDENT · ASTROPHYSICIST

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Education

University of Reims Champagne-Ardenne

Reims, France

DOCTOR OF PHILOSOPHY (ASTRONOMY & ASTROPHYSICS)

2014 – 2017

- Thesis title: Analysis of Titan's Detached Haze Layer with Cassini/ISS instrument
- Supervisors: Prof Pascal RANNOU and Dr Panayotis LAWAS

École Normale Supérieure of Lyon

Lyon, France

MASTER DEGREE IN EARTH AND PLANETARY SCIENCE (WITH HONOURS)

2011 – 2014

- Master 2: Score 15.56/20 – Rank 2/8
- Master 1: Score 15.41/20 – Rank 4/30
- ECTS: 240

BACHELOR OF GEOSCIENCE (WITH HONOURS)

- Semester 2: Score 15.81/20 – Rank 1/36
- Semester 1: Score 14.44/20 – Rank 7/36
- ECTS: 180

Research Internships

Cassini high resolution navigation with star catalogues

JPL, Pasadena, USA

SUPERVISOR: ROBERT A. WEST

Mar. – Apr. 2017

- Full calibration and deconvolution of ISS data
- Star navigation with the Tycho & GAIA catalogues

Modeling radar response of Linear Dunes and Mega-Yardangs on Earth and Titan

LAB, Bordeaux, France

SUPERVISOR: PHILIPPE PAILLOU

Jan. – Jul. 2014

- Cassini and TerraSAR-X radar image analysis
- SRTM and GDEM data processing
- Radar backscattering modeling

Cassini VIMS image processing on Titan

JPL, Pasadena, USA

SUPERVISOR: CHRISTOPHE SOTIN

May – Aug. 2013

- Hyperspectral infrared image processing
- Image navigation and mapping
- Gravitational fields analysis

Analysis on stable tungsten isotopes in iron meteorites

ÉNSL, Lyon, France

SUPERVISORS: BRETON THOMAS & QUITTÉ GHYLAINE

Jan. – Apr. 2013

- Iron meteorites sampling
- Isotopic chemistry extraction
- ICP mass spectrometry

Characterization of thermal history on primitive meteorites

IPAG, Grenoble, France

SUPERVISOR: LYDIE BONAL

Jun. – Jul. 2012

- Carbon micro-meteorites sampling
- IR and RAMAN spectroscopy
- MEB and synchrotron imaging (ESRF)

Morphology studies on Martian barchans based on MRO/CTX images

LGLTPE, Lyon, France

SUPERVISOR: PASCAL ALLEMAND

Jun. – Jul. 2012

- MRO CTX data processing
- Image mapping and stereoscopy reconstruction

Telescopic Interferometry applied to planetary and stellar measurements

CRAL, Lyon, France

SUPERVISORS: ÉRIC THIÉBAULT & JACQUE VALADE

Apr. 2009 – Jun. 2011

- Telescopic survey of Jupiters' moons
- Interferometry modeling

Training

Summer schools

Jun. 2015	Spec-Atmos , CNRS	<i>Fréjus, France</i>
Jul. 2014	Space missions for geophysics of the terrestrial planets , ESA/FFG/CNES	<i>Alpbach, Austria</i>

Field works

Oct. 2012	Stratigraphy analysis of sedimentary basin	<i>Blieux, France</i>
Oct. 2012	Geomorphology in ophiolitic context	<i>Mt Chenaillet, France</i>
May 2012	Sedimentology, Metamorphism and Volcanism	<i>Tournon & Puy de Sancy, France</i>
Apr. 2012	Marine Seismology	<i>Nice, France</i>
Oct. 2011	Geology Mapping	<i>Le Mas, France</i>
Sep. 2011	Initiation to geology field work	<i>Cucugnan, France</i>

Honors & Awards

2014 – 2017	Doctor of Philosophy Scholarship , French Ministry of Research	<i>Reims, France</i>
2014	ESA summer school Alpbach grant , CNES	<i>Alpbach, Austria</i>
2013	EXPLORA travel grant for international interns , Rhône-Alpes region	<i>Pasadena, USA</i>

Leadership & Community Service

Fireball Recovery and InterPlanetary Observation Network (FRIPON)

MEMBER & LOCAL TECHNICAL SUPPORT

Reims, France

2016-2017

Astro-Café Parisien

MEMBER

Paris, France

2016-2017

Titan Aeronomy & Climate workshop

CO-ORGANIZER & WEBMASTER (PLANETO.UNIV-REIMS.FR/TAC)

Reims, France

2016

ÉNS Lyon Astro club – têteENSI'air

PRESIDENT & WEBMASTER (BDE.ENS-LYON.FR/CLUBS/ASTRO)

Lyon, France

2011-2014

Skills

Programming	Python, Fortran, C, Bash, Matlab, IDL, T _E X
Data analysis	PDS, NAIF, ISIS, ENVI, ArcGIS, Maple, Mathematica, Abinit, Yorick
WebDev	PHP (Symfony/Silex), Go(lang), HTML5, CSS, (coffee/node)JS, NPM, Gulp
Database	SQLite, MySQL
Management	Git (CI), Apache/Nginx, DNS/MX records
Photography	Ligtroom, Photoshop, PTGui, Inkscape

Activities

Astronomy	Nightscape to deep field observation and survey
Photography	Digital / B&W film capture and processing (photos.seignovert.fr)
Sports	Walking/Hiking/Trekking, Skiing, Climbing, Mountain biking
Music	Flutist, Oboist, Rock band bassist

Other

Citizenship	French
Birth year	1990 (27 years old)
Languages	French (native), English (fluent, CLES B2), Russian, German, Ancient Greek
Driving	French B/European licence

Peer review publications

First-author publications:

- 2 HAZE SEASONAL VARIATIONS OF TITAN'S UPPER ATMOSPHERE DURING THE CASSINI MISSION *in prep.*
Seignovert B., Rannou P., West R.A. & Vinatier S.
- 1 AEROSOLS OPTICAL PROPERTIES IN TITAN'S DETACHED HAZE LAYER BEFORE THE EQUINOX *2017*
Seignovert B., Rannou P., Lavvas P., Cours T. & West R.A. *Icarus*

Second-author publications:

- 5 TITAN'S GEOID AND HYDROLOGY: IMPLICATIONS FOR THE FORMATION OF THE POLAR CAPS *in prep.*
Sotin C., Seignovert B., Lawrence K.J. & MacKenzie S.M.
- 4 LANDSCAPE FORMATION ON TITAN: A 3D KARST LANDSCAPE EVOLUTION MODEL *in prep.*
Cornet T., Seignovert B., Fleurant C., Cordier D., Bourgeois O., Le Mouélic S., Rodriguez S. & Lucas A.
- 3 TITAN'S DETACHED HAZE SEASONAL CYCLE *under review*
West, R.A., Seignovert B., Rannou P., Dumont Ph., Turtle, P., Perry J., Roy M. & Ovanessian A. *Nature Astronomy*
- 2 TRANSPARENCY OF 2 μ m WINDOW OF TITAN'S ATMOSPHERE *under review*
Rannou P., Seignovert B., Le Mouélic S., Maltagliati L. & Sotin C. *Planetary and Space Science*
- 1 RADAR SCATTERING OF LINEAR DUNES AND MEGA-YARDANGS: APPLICATION TO TITAN *2016*
Paillou Ph., Seignovert B., Radebaugh J. & Wall S. *Icarus*

Seminars & Conference Talks

2017	European Planetary Science Congress	<i>Riga, Latvia</i>
2017	European Geosciences Union	<i>Vienna, Austria</i>
2017	48th Lunar and Planetary Science Conference	<i>Houston, USA</i>
2016	Division for Planetary Science	<i>Pasadena, USA</i>
2016	Titan Surface Meeting	<i>Paris, France</i>
2016	Titan Aeronomy and Climate workshop	<i>Reims, France</i>
2015	European Planetary Science Congress	<i>Nantes, France</i>
2014	Reunion des Sciences de la Terre	<i>Pau, France</i>
2014	Workshop on the Habitability of Icy Worlds	<i>Pasadena, USA</i>
2013	American Geophysical Union	<i>San Francisco, USA</i>
2013	European Geological Union	<i>Vienna, France</i>
2012	Annual Meteoritical Society Meeting	<i>Cairns, Australia</i>

Outreach

2015	Airburst over Chelyabinsk and small impactors	<i>GSMA Journal Club</i>
2014	La chute de la météorite de Tcheliabinsk (Russie) du 15 février 2013, un an après	<i>Planet Terre</i>