

PhD Thesis

- [T] **Julien N. Girard**. *Development of the LOFAR Super Station & planetary observations with LOFAR*. Theses, Observatoire de Paris, May 2013 (tel-00835834) [↗](#)

Refereed Articles

- [P1] **J. N. Girard**, P. Zarka, C. Tasse, S. Hess, I. de Pater, D. Santos-Costa, Q. Nenon, A. Sicard, S. Bourdarie and 64 coauthors. Imaging Jupiter's radiation belts down to 127 MHz with LOFAR. *A&A*, 587:A3, March 2016 [↗](#)
- [P2] **J. N. Girard**, H. Garsden, J. L. Starck, S. Corbel, A. Woiselle, C. Tasse, J. P. McKean, and J. Bobin. Sparse representations and convex optimization as tools for LOFAR radio interferometric imaging. *Journal of Instrumentation*, 10:C8013, August 2015 [↗](#)
- [P3] H. Garsden, **J. N. Girard**, J. L. Starck, S. Corbel, C. Tasse, A. Woiselle, J. P. McKean and 74 coauthors. LOFAR sparse image reconstruction. *A & A*, 575:A90, March 2015 [↗](#)
- Note: I am the main author of this article as –all– studies have been redone from scratch and improved. The first author was kept as Garsden for historical/courtesy reasons even if I am the main contributor of this work.
- [P4] **J. N. Girard**, P. Zarka, M. Tagger, L. Denis, D. Charrier, A. A. Konovalenko, and F. Boone. Antenna design and distribution of the LOFAR super station. *Comptes Rendus Physique*, 13(1):33–37, January 2012 [↗](#)
- [P5] P. Zarka, J.-L. Bougeret, C. Briand, B. Cecconi, H. Falcke, **J. Girard**, J.-M. Grießmeier, S. Hess, M. Klein-Wolt, A. Konovalenko, L. Lamy, D. Mimoun, and A. Aminaei. Planetary and exoplanetary low frequency radio observations from the Moon. *Planet. Space Sci.*, 74:156–166, December 2012 [↗](#)
- [P6] J.-M. Grießmeier, P. Zarka, and **J. N. Girard**. Observation of planetary radio emissions using large arrays. *Radio Science*, 46(5):n/a–n/a, 2011. RS0F09 [↗](#)

*Submitted / in revision / in press*

- [Rev1] K. Zyma, **J. Girard**, E. Landquist, G. Schaper, and F. Vasko. Formulating and Solving a Radio Astronomy Antenna Connection Problem as a Generalized Cable-Trench Problem: An Empirical Study. *International Transactions in Operational Research*, in rev
- Note: K. Zyma and F. Vasko (Kutztown Univ., USA) were mathematician collaborators for the Cable-Trench problem addressed in [T].
- [Rev2] P. Zarka, D. Li, Grießmeier, L. J.-M, Lamy, **J. Girard**, S. Hess, T. J. W. Lazio, and G. Hallinan. Detecting exoplanets with FAST ? *Research in Astronomy and Astrophysics*, in press

*In preparation*

- [Prep1] **J. N. Girard**, M. Jiang, J. L. Starck, S. Corbel, A. Woiselle, and C. Tasse. Sparse spatio-temporal imaging of radio transients. *MNRAS*, in prep
- [Prep2] **J. N. Girard** and P. Zarka. Optimization of a small 2D phased array layout synthesizing a wide-beam antenna. *A & A*, in prep
- [Prep3] **J. N. Girard**, S. Corbel, J. Tomsick, and A. Loh. Constraining the nature of IGR J17454-2919 using radio data. *MNRAS*, in prep
- Note: [Prep1], [Prep2] and [Prep3] will be submitted in Spring 2016.
- [Prep4] **J. N. Girard**, D. Charrier, and P. Zarka. LSS antenna optimization. *A & A*, in prep
- [Prep5] P. Zarka, **J. N. Girard**, M. Tagger, and L. et al. Denis. NenuFAR: the LOFAR Super Station. *A & A*, in prep

## Chapters in books

*In preparation*

- [Ch1] **J. N. Girard** – Chapter 4 – The Visibility Space, in *Fundamentals of Radio interferometry*, NAASP, Rhodes University, Grahamstown, South Africa, in prep

Note: to be submitted in Spring 2016

## Refereed proceedings

- [Proc1] M. Jiang, **J. N. Girard**, J. L. Starck, S. Corbel, and C. Tasse. Compressed sensing and radio interferometry. In *Signal Processing Conference (EUSIPCO), 2015 23rd European*, pages 1646–1650, Aug 2015 [↗](#) Note: Ming Jiang is a PhD student (started 2014) co-supervised with Jean-Luc Starck at Cosmostat/AIM/CEA-Saclay.
- [Proc2] A. Konovalenko, P. Zarka, V. Zakharenko ... (**J. Girard**) and 33 coauthors. State-of-the-art of low frequency radio astronomy, relevant antenna systems and international cooperation in ukraine. In *Antenna Theory and Techniques (ICATT), 2015 International Conference on*, pages 1–5, April 2015 [↗](#)
- [Proc3] P. Zarka, M. Tagger, L. Denis, **J. N. Girard** and 80 coauthors. Nenufar: Instrument description and science case. In *Antenna Theory and Techniques (ICATT), 2015 International Conference on*, pages 1–6, April 2015 [↗](#)
- [Proc4] **J. N. Girard**, P. Zarka, M. Tagger, L. Denis, D. Charrier, and A. Konovalenko. Antenna Design and Distribution for a LOFAR Super Station in Nancy. *Planetary, Solar and Heliospheric Radio Emissions (PRE VII)*, pages 495–503, 2011 [↗](#)
- [Proc5] J.-M. Grießmeier, P. Zarka, A. Konovalenko, G. Fischer, V. Zakharenko, B. W. Stappers, **J. N. Girard**, B. Ryabov, D. Vavriv, V. Ryabov, and H. O. Rucker. Ground-Based Study of Saturn Lightning. *Planetary, Solar and Heliospheric Radio Emissions (PRE VII)*, pages 145–154, 2011 [↗](#)

## Other communications or contributions (non-exhaustive)

- [C1] M. Jiang, **J. N. Girard**, J.-L. Starck, S. Corbel, and C. Tasse. Interferometric Radio Transient Reconstruction in Compressed Sensing Framework. In F. Martins, S. Boissier, V. Buat, L. Cambrésy, and P. Petit, editors, *SF2A-2015: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics. Eds.: F. Martins, S. Boissier, V. Buat, L. Cambrésy, P. Petit, pp.231-236*, pages 231–236, December 2015 [↗](#)
- [C2] R. Courtin, M. Pandey-Pommier, D. Gautier, P. Zarka, M. Hofstadter, F. Hersant, and **J. Girard**. Metric observations of saturn with the giant metrewave radio telescope. In F. Martins, S. Boissier, V. Buat, L. Cambrésy, and P. Petit, editors, *SF2A-2015: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics*, pages 241–245, December 2015 [↗](#)
- [C3] **J. N. Girard**, P. Zarka, I. de Pater, S. Hess, C. Tasse, R. Courtin, M. Hofstadter, D. Santos-Costa, N. Nettelmann, and L. Lorenzato. Exploring the Jupiter’s and Saturn’s radiation belts with LOFAR. In *EGU General Assembly Conference Abstracts*, volume 16 of *EGU General Assembly Conference Abstracts*, page 9473, May 2014 [↗](#)
- [C4] **J. N. Girard**, I. de Pater, P. Zarka, D. Santos-Costa, R. Sault, S. Hess, B. Cecconi, R. Fender, and L. Pwng. Imaging Jupiter Radiation Belts At Low Frequencies. *European Planetary Science Congress 2014, EPSC Abstracts, Vol. 9, id. EPSC2014-580*, 9:580, April 2014 [↗](#)
- [C5] **J. N. Girard**, P. Zarka, C. Tasse, and S. Hess. Jupiter synchrotron imaging with LOFAR. In S. Boissier, P. de Laverny, N. Nardetto, R. Samadi, D. Valls-Gabaud, and H. Wozniak, editors, *SF2A-2012: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics*, pages 681–686, December 2012 [↗](#)
- [C6] P. Zarka, **J. N. Girard**, M. Tagger, and L. Denis. LSS/NenuFAR: The LOFAR Super Station project in Nançay. In S. Boissier, P. de Laverny, N. Nardetto, R. Samadi, D. Valls-Gabaud, and H. Wozniak, editors, *SF2A-2012: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics*, pages 687–694, December 2012 [↗](#)
- [C7] J. M. Grießmeier, P. Zarka, **J. Girard**, S. Ter Veen, and H. D. E. Falcke. Ground-based study of solar system planetary lightning. In *ISKAF2010 Science Meeting*, page 22, 2010 [↗](#)

- [C8] Regis D. Courtin, Mamta Pandey-Pommier, Daniel Gautier, Philippe Zarka, Mark D. Hofstadter, and **Julien Girard**. Metric observations of saturn with the giant meterwave radio telescope. In *DPS/AAS meeting 46, Tucson, Arizona, USA*, November 2014
- [C9] B. Cecconi, P. Zarka, **J. Girard**, M. Klein Wolt, J. Bergman, A.-J. Boonstra, C. Briand, M. Maksimovic, H. Falcke, W. Baan, and B. Segret. Space based radio astronomy instrumentation: Present and future. In *AOGS 11th Annual Meeting session, Sapporo, Japan*, August 2014
- [C10] S. Hess, **J. Girard**, C. Tasse, and P. Zarka. Imaging of the jovian radiation belts with lofar. In *AOGS 11th Annual Meeting session, Sapporo, Japan*, August 2014
- [C11] P. Zarka, M. Tagger, L. Denis, **J. Girard**, and for the NenuFAR collaboration. The nenufar project (new extension in nanay upgrading lofar). In *Journes radio SKA-LOFAR, IAP, Paris <http://journees-radio.sciencesconf.org/>*, February 2014 ↗
- [C12] B. Cecconi, P. M. Zarka, **J. N. Girard**, M. Klein Wolt, A. J. Boonstra, W. Baan, C. Briand, M. Maksimovic, and B. Segret. Space based low frequency interferometric radioastronomy: the path towards the imaging of the inner heliosphere. December 2014 ↗
- [C13] B. Cecconi, P. Zarka, J. Bergman, H. Falcke, A.-J. Boonstra, C. Briand, **J. Girard**, M. Klein Wolt, W. Baan, B. Segret, and M. Maksimovic. Low frequency radioastronomy of the inner heliosphere: the way forward. In *40th COSPAR Scientific Assembly*, volume 40 of *COSPAR Meeting*, August 2014 ↗
- [C14] B. Cecconi, P. Le Sidaner, S. Hess, **J. Girard**, E. Thetas, A. Coffre, J.-C. Malapert, and V. Genot. Sharing Planetary Radio Emission Dataset in the Virtual Observatory. In *40th COSPAR Scientific Assembly*, volume 40 of *COSPAR Meeting*, August 2014 ↗
- [C15] P. Zarka, J. M. Grießmeier, **J. Girard**, S. Hess, B. Cecconi, L. Denis, and al. Études Planétaires et Exoplanétaires avec le Radiotelescope LOFAR, Programme National de Planétologie. In *Colloque Quadriennal de Bilan et Prospective - IUEM, Plouzané, 13-15/9/2010*, 2010

**Note:** Refer to the seminar/communication participation for an exhaustive list of my activities.

## Séminaires

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- 2016 Séminaire Observatoire de la Côte-d'Azur, Nice, France
- 2015 LESIA – pôle plasma, Observatoire de Paris, France
- 2014 2<sup>nd</sup> International Summer School INFIERI 2014, Paris, France (**Séminaire/cours**)  
Séminaire Post-doc – AIM/CEA-Saclay, France

## Participations à des conférences et ateliers

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### Oraux invités

- 2015 Magnetospheres of Outer Planets 2015, Atlanta, É.-U.
- 2014 EGU General Assembly, Vienne, Autriche  
EPSC, Cascais, Portugal
- 2013 Conférence annuelle de l'AOGS, Brisbane, Australie

### Oraux

- 2015 PhysSIS kick-off meeting, Saclay, France  
RATT/NRAO Imaging workshop, Socorro, É.-U.
- 2014 LOFAR TKP meeting, Amsterdam, Pays-Bas  
Journées radio de l'Action Spécifique SKA-LOFAR, Paris, France  
Atelier NenuFAR : la science de NenuFAR, Paris, France  
Radio Weak Lensing, Manchester, R.-U.
- 2013 LOFAR Dalftsens II : Collaboration Science Workshop, Dalftsens, Pays-Bas  
Semaine de SF2A, Montpellier, France  
Magnetospheres of Outer Planets, Athènes, Grèce
- 2012 Journée de la SF2A, Nice, France
- 2011 Journées scientifiques de l'URSI-France, Les radiotélescopes du futur : technologies et avancées scientifiques, Paris, France (**Prix URSI-France, meilleure communication orale étudiante**)  
TKP first results with LOFAR, Dalftsens, Pays-Bas  
LOFAR TKP meeting, Meudon, France  
2<sup>nd</sup> France-Ukraine PICS program meeting, Meudon, France
- 2010 XL<sup>th</sup> YERAC - Young European Radio Astronomers Conference, Alcalá de Henares, Espagne

## Posters en conférences et ateliers

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- 2015 SKA bursary conference, Stellenbosch, Afrique du Sud
- 2014 From Gaia to Cosmos : observation and modelling, Florence, Italie
- 2012 UK-Germany National Astronomy Meeting (NAM), Manchester, Royaume-Uni
- 2011 URSI General Assembly, Istanbul, Turquie
- 2010 7<sup>th</sup> International Workshop on Planetary, Solar and Heliospheric Radio Emissions, Graz, Autriche

## Participation à des écoles et ateliers

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- 2015 Next-Generation Radio Interferometric Imaging for the SKA 2015, Delheim, Afrique du Sud  
1<sup>st</sup> SA-NL radio continuum workshop, Cape Town, Afrique du Sud
- 2014 NRAO 14<sup>th</sup> Synthesis Imaging Workshop, Socorro, États-Unis
- 2012 Long Baseline busy week, MPIfRA, Bonn, Allemagne
- 2011 LOFAR Programming Tutorial, ASTRON, Dwingeloo, Pays-Bas
- 2010 Transient busy week, ASTRON, Dwingeloo, Pays-Bas  
2<sup>nd</sup> LOFAR Data Processing School, ASTRON, Dwingeloo, Pays-Bas
- 2009 Towards 3<sup>rd</sup> generation calibration in radio astronomy - MCCCT SKADS/MeqTrees Workshop, Nançay, France  
6<sup>th</sup> Pulsar busy week, ASTRON, Dwingeloo, Pays-Bas

## Organisation de conférences et d'ateliers

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- 2015** IYAS International Young Astronomers School – ED 127 (En charge des travaux pratiques numériques),  
Sèvres, France
- 2014** Journées radio SKA-LOFAR (LOC/SOC), Paris, France  
Atelier NenuFAR : la science de NenuFAR (LOC/SOC), Paris, France
- 2010-2011** 1<sup>st</sup> France-Ukraine PICS program meeting (LOC/SOC), Meudon, France  
3<sup>rd</sup> LOFAR TKP meeting (LOC), Meudon, France  
2<sup>nd</sup> France-Ukraine PICS program meeting (LOC/SOC), Meudon, France