

Bibliography

Julien H. Girard

Compiled on January 31, 2024

Summary from the [Astrophysics Data System](#)

10,312 Citations for a total of **351 References** in **ADS**
219 Combined papers: **170 Refereed** (accepted/published), **49 SPIE/Instrumentation**
53 Lead Author papers (among top 5 authors), **9 as First Author**
58 H-index (Hirsch index: *i.e.* 58 publications with ≥ 58 citations)

Other links

[Google Scholar](#) bibliography: **over 13,100 citations, H-index: 64** (January 2024).

[ORCID 0000-0001-8627-0404](#) bibliography

Navigate the full publication record

Selected papers for which I had a leadership role and/or a key contribution ([explained](#)).

🎓 Papers authored by **students** or **postdocs** I have supervised or co-advised.

⚡ Most cited or impactful papers (e.g. discoveries, instrument/mode commissioning).

Submitted papers (only listed here if posted on [arXiv](#) and about to be accepted).

Refereed articles

170. [MIRI MRS Observations of Beta Pictoris I. The Inner Dust, the Planet, and the Gas.](#)
Worthen, Chen, Law, Lu, Hoch et al. including **Girard**
Accepted for Publication in ApJ, arXiv:2401.16361, **2024**.

⚡ 169. [JWST-TST High Contrast: Asymmetries, Dust Populations, and Hints of a Collision in the \$\beta\$ Pictoris Disk with NIRCcam and MIRI.](#)
Rebollido, Stark, Kammerer, Perrin, Lawson et al. including **Girard**
[The Astronomical Journal](#), 167, 69, **2024**.

[Discovery of the "cat's tail" feature \(\[NASA Press Release\]\(#\)\).](#)

168. [VLT/GRAVITY Provides Evidence the Young, Substellar Companion HD 136164 Ab Formed Like a "Failed Star".](#)
Balmer, Pueyo, Lacour, Wang, Stolker et al. including **Girard**
[The Astronomical Journal](#), 167, 64, **2024**.

167. *First VLTI/GRAVITY Observations of HIP 65426 b: Evidence for a Low or Moderate Orbital Eccentricity.*

Blunt, Balmer, Wang, Lacour, Petrus et al. including **Girard**
The Astronomical Journal, 166, 257, **2023**.

166. *VLTI/GRAVITY Observations and Characterization of the Brown Dwarf Companion HD 72946 B.*

Balmer, Pueyo, Stolker, Reggiani, Maire et al. including **Girard**
The Astrophysical Journal, 956, 99, **2023**.

165. *Large Interferometer For Exoplanets (LIFE). X. Detectability of currently known exoplanets and synergies with future IR/O/UV reflected-starlight imaging missions.*

Carrión-González, Kammerer, Angerhausen, Dannert, García Muñoz et al. including **Girard**
Astronomy and Astrophysics, 678, A96, **2023**.

⚡ 164. *The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems I: High Contrast Imaging of the Exoplanet HIP 65426 b from 2-16 μm .*

Carter, Hinkley, Kammerer, Skemer, Biller et al. including **Girard**
The Astrophysical Journal, 951, L20, **2023**.

Early Release Science (ERS ID 1386, PI Hinkley) paper with the first ever image of an exoplanet with JWST. Beyond being a key member of this collaboration, I lead the Coronagraphs Working Group and NIRCcam Coronagraphy mode commissioning which success lead to this publication. The data reduction and post-processing here was made straight forward and effective thanks to the five years of work my working group and I invested in 2017-2023.

163. *TOI-179: A young system with a transiting compact Neptune-mass planet and a low-mass companion in outer orbit.*

Desidera, Damasso, Gratton, Benatti, Nardiello et al. including **Girard**
Astronomy and Astrophysics, 675, A158, **2023**.

⚡ 162. *The James Webb Space Telescope Mission.*

Gardner, Mather, Abbott, Abell, Abernathy et al. including **Girard**
Publications of the Astronomical Society of the Pacific, 135, 068001, **2023**.

⚡ 161. *The Science Performance of JWST as Characterized in Commissioning.*

Rigby, Perrin, McElwain, Kimble, Friedman et al. including **Girard**
Publications of the Astronomical Society of the Pacific, 135, 048001, **2023**.

General JWST Commissioning Paper led by the Deputy Project Scientist at NASA.

160. *Time-resolved Optical Polarization Monitoring of the Most Variable Brown Dwarf.*

Manjavacas, Miles-Páez, Karalidi, Vos, Galloway et al. including **Girard**
The Astronomical Journal, 165, 181, **2023**.

159. [The high-albedo, low polarization disk around HD 114082 that harbors a Jupiter-sized transiting planet. Constraints from VLT/SPHERE completed with TESS, Gaia, and radial velocities.](#)

Engler, Milli, Gratton, Ulmer-Moll, Vigan et al. including **Girard**
[Astronomy and Astrophysics](#), 672, A1, **2023**.

⚡ 158. [The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems II: A 1 to 20 Micron Spectrum of the Planetary-Mass Companion VHS 1256-1257 b.](#)

Miles, Biller, Patapis, Worthen, Rickman et al. including **Girard**
[The Astrophysical Journal](#), 946, L6, **2023**.

⚡ 157. [Performance of NIRCam on JWST in Flight.](#)

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[Publications of the Astronomical Society of the Pacific](#), 135, 028001, **2023**.

[NIRCam Commissioning Paper led by the Principal Investigator.](#)

156. [The SPHERE view of three interacting twin disc systems in polarized light.](#)

Weber, Pérez, Guidi, Kurtovic, Zurlo et al. including **Girard**
[Monthly Notices of the Royal Astronomical Society](#), 518, 5620, **2023**.

155. [Flatfield Calibrations with Astrophysical Sources for the Nancy Grace Roman Space Telescope's Coronagraph Instrument.](#)

Maier, Zellem, Colavita, Mennesson, Nemati et al. including **Girard**
[arXiv e-prints](#), arXiv:2202.04815, Submitted to AAS Journals.

154. [Direct discovery of the inner exoplanet in the HD 206893 system. Evidence for deuterium burning in a planetary-mass companion.](#)

Hinkley, Lacour, Marleau, Lagrange, Wang et al. including **Girard**
[Astronomy and Astrophysics](#), 671, L5, **2023**.

153. [JWST/MIRI coronagraphic performances as measured on-sky.](#)

Boccaletti, Cossou, Baudoz, Lagage, Dicken et al. including **Girard**
[Astronomy and Astrophysics](#), 667, A165, **2022**.

152. [Reference-star differential imaging on SPHERE/IRDIS.](#)

Xie, Choquet, Vigan, Cantalloube, Benisty et al. including **Girard**
[Astronomy and Astrophysics](#), 666, A32, **2022**.

151. [Orbital and dynamical analysis of the system around HR 8799. New astrometric epochs from VLT/SPHERE and LBT/LUCI.](#)

Zurlo, Goździewski, Lazzoni, Mesa, Nogueira et al. including **Girard**
[Astronomy and Astrophysics](#), 666, A133, **2022**.

150. [First Peek with JWST/NIRCam Wide-field Slitless Spectroscopy: Serendipitous Discovery of a Strong \[O III\]/H \$\alpha\$ Emitter at \$z = 6.11\$.](#)

Sun, Egami, Pirzkal, Rieke, Boyer et al. including **Girard**
[The Astrophysical Journal](#), 936, L8, **2022**.

149. [Constraining masses and separations of unseen companions to five accelerating nearby stars.](#)
Mesa, Bonavita, Benatti, Gratton, Marino et al. including **Girard**
Astronomy and Astrophysics, 665, A73, **2022**.
148. [Probing the innermost region of the AU Microscopii debris disc.](#)
Gallenne, Desgrange, Milli, Sanchez-Bermudez, Chauvin et al. including **Girard**
Astronomy and Astrophysics, 665, A41, **2022**.
147. [Large Interferometer For Exoplanets \(LIFE\). I. Improved exoplanet detection yield estimates for a large mid-infrared space-interferometer mission.](#)
Quanz, Ottiger, Fontanet, Kammerer, Menti et al. including **Girard**
Astronomy and Astrophysics, 664, A21, **2022**.
146. [The JWST Early Release Science Program for the Direct Imaging and Spectroscopy of Exoplanetary Systems.](#)
Hinkley, Carter, Ray, Skemer, Biller et al. including **Girard**
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145. [Trends in Silicates in the \$\beta\$ Pictoris Disk.](#)
Lu, Chen, Sargent, Watson, Lisse et al. including **Girard**
The Astrophysical Journal, 933, 54, **2022**.
144. [New binaries from the SHINE survey.](#)
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Astronomy and Astrophysics, 663, A144, **2022**.
143. [ISPY - NaCo Imaging Survey for Planets around Young stars. CenteR: The impact of centering and frame selection.](#)
Godoy, Olofsson, Bayo, Cheetham, Launhardt et al. including **Girard**
Astronomy and Astrophysics, 663, A53, **2022**.
142. [Calibration of quasi-static aberrations in exoplanet direct-imaging instruments with a Zernike phase-mask sensor. IV. Temporal stability of non-common path aberrations in VLT/SPHERE.](#)
Vigan, Dohlen, N’Diaye, Cantalloube, **Girard** et al.
Astronomy and Astrophysics, 660, A140, **2022**.
141. [Characterizing the Protolunar Disk of the Accreting Companion GQ Lupi B.](#)
Stolker, Haffert, Kesseli, van Holstein, Aoyama et al. including **Girard**
The Astronomical Journal, 162, 286, **2021**.
- ⚡ 140. [The mass of \$\beta\$ Pictoris c from \$\beta\$ Pictoris b orbital motion.](#)
Lacour, Wang, Rodet, Nowak, Shangguan et al. including **Girard**
Astronomy and Astrophysics, 654, L2, **2021**.
139. [GRAVITY K-band spectroscopy of HD 206893 B. Brown dwarf or exoplanet.](#)
Kammerer, Lacour, Stolker, Mollière, Sing et al. including **Girard**
Astronomy and Astrophysics, 652, A57, **2021**.

138. [Lessons learned from SPHERE for the astrometric strategy of the next generation of exoplanet imaging instruments.](#)
Maire, Langlois, Delorme, Chauvin, Gratton et al. including **Girard**
Journal of Astronomical Telescopes, Instruments, and Systems, 7, 035004, **2021**.
137. [Direct Imaging of Exoplanets beyond the Radial Velocity Limit: Application to the HD 134987 System.](#)
Li, Hildebrandt, Kane, Zimmerman, **Girard** et al.
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Viswanath, Janson, Dahlgvist, Petit dit de la Roche, Samland et al. including **Girard**
Astronomy and Astrophysics, 651, A89, **2021**.
- ⚡ 135. [The SPHERE infrared survey for exoplanets \(SHINE\). III. The demographics of young giant exoplanets below 300 au with SPHERE.](#)
Vigan, Fontanive, Meyer, Biller, Bonavita et al.
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134. [The SPHERE infrared survey for exoplanets \(SHINE\). II. Observations, data reduction and analysis, detection performances, and initial results.](#)
Langlois, Gratton, Lagrange, Delorme, Boccaletti et al. including **Girard**
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Xie, Haffert, de Boer, Kenworthy, Brinchmann et al. including **Girard**
Astronomy and Astrophysics, 650, L6, **2021**.
- 🎓 132. [Possible single-armed spiral in the protoplanetary disk around HD 34282.](#)
de Boer, Ginski, Chauvin, Ménard, Benisty et al. including **Girard**
Astronomy and Astrophysics, 649, A25, **2021**.
131. [A faint companion around CrA-9: protoplanet or obscured binary?](#)
Christiaens, Ubeira-Gabellini, Cánovas, Delorme, Pairet et al. including **Girard**
Monthly Notices of the Royal Astronomical Society, 502, 6117, **2021**.
130. [A Community Exoplanet Imaging Data Challenge for Roman CGI and Starshade Rendezvous.](#)
Turnbull, Zimmerman, **Girard**, Hildebrandt, Li et al.
Journal of Astronomical Telescopes, Instruments, and Systems, 7, 021218, **2021**.

This paper is based on the Roman Coronagraph (CGI) Data Challenge which I coordinated/organized.
- ⚡ 129. [Constraining the Nature of the PDS 70 Protoplanets with VLT/GRAVITY.](#)
Wang, Vigan, Lacour, Nowak, Stolker et al. including **Girard**
The Astronomical Journal, 161, 148, **2021**.
- 🎓 128. [A survey of the linear polarization of directly imaged exoplanets and brown dwarf companions with SPHERE-IRDIS. First polarimetric detections revealing disks around DH](#)

Tau B and GSC 6214-210 B.

van Holstein, Stolker, Jensen-Clem, Ginski, Milli et al. including **Girard**
Astronomy and Astrophysics, 647, A21, **2021**.

127. *Direct imaging of sub-Jupiter mass exoplanets with James Webb Space Telescope coronagraphy.*
Carter, Hinkley, Bonavita, Phillips, **Girard** et al.
Monthly Notices of the Royal Astronomical Society, 501, 1999, **2021**.
126. *Investigating three Sirius-like systems with SPHERE.*
Gratton, D'Orazi, Pacheco, Zurlo, Desidera et al. including **Girard**
Astronomy and Astrophysics, 646, A61, **2021**.
125. *A Search for Polarized Thermal Emission from Directly Imaged Exoplanets and Brown Dwarf Companions to Nearby Stars.*
Jensen-Clem, Millar-Blanchaer, van Holstein, Mawet, Graham et al. including **Girard**
The Astronomical Journal, 160, 286, **2020**.
124. *Searching for proto-planets with MUSE.*
Xie, Haffert, de Boer, Kenworthy, Brinchmann et al. including **Girard**
Astronomy and Astrophysics, 644, A149, **2020**.
- ⚡ 123. *Direct confirmation of the radial-velocity planet β Pictoris c.*
Nowak, Lacour, Lagrange, Rubini, Wang et al. including **Girard**
Astronomy and Astrophysics, 642, L2, **2020**.
122. *Unveiling the β Pictoris system, coupling high contrast imaging, interferometric, and radial velocity data.*
Lagrange, Rubini, Nowak, Lacour, Grandjean et al. including **Girard**
Astronomy and Astrophysics, 642, A18, **2020**.
121. *Dynamical Evidence of a Spiral Arm-driving Planet in the MWC 758 Protoplanetary Disk.*
Ren, Dong, van Holstein, Ruffio, Calvin et al. including **Girard**
The Astrophysical Journal, 898, L38, **2020**.
120. *CS Cha B: A disc-obscured M-type star mimicking a polarised planetary companion.*
Haffert, van Holstein, Ginski, Brinchmann, Snellen et al. including **Girard**
Astronomy and Astrophysics, 640, L12, **2020**.
- ⚡ 119. *Retrieving scattering clouds and disequilibrium chemistry in the atmosphere of HR 8799e.*
Mollière, Stolker, Lacour, Otten, Shangguan et al. including **Girard**
Astronomy and Astrophysics, 640, A131, **2020**.
118. *VLT/SPHERE survey for exoplanets around young early-type stars, including systems with multi-belt architectures.*
Lombart, Chauvin, Rojo, Lagadec, Delorme et al. including **Girard**
Astronomy and Astrophysics, 639, A54, **2020**.

117. *Detection of Polarization due to Cloud Bands in the Nearby Luhman 16 Brown Dwarf Binary.* Millar-Blanchaer, **Girard**, Karalidi, Marley, van Holstein et al. The Astrophysical Journal, 894, 42, **2020**.

We pushed the limits of the VLT/NACO instrument, achieving $\leq 0.1\%$ accuracy in degree of linear polarization in H-band, from the ground and on a brown dwarf. This result is huge both technically and scientifically because we showed we could use polarimetry to detect the presence of cloud bands, a technique which one day will be applicable to directly imaged exoplanets.

116. *ISPY-NACO Imaging Survey for Planets around Young stars. Survey description and results from the first 2.5 years of observations.*

Launhardt, Henning, Quirrenbach, Ségransan, Avenhaus et al. including **Girard** Astronomy and Astrophysics, 635, A162, **2020**.

115. *NaCo polarimetric observations of Sz 91 transitional disc: a remarkable case of dust filtering.*

Maucó, Olofsson, Canovas, Schreiber, Christiaens et al. including **Girard** Monthly Notices of the Royal Astronomical Society, 492, 1531, **2020**.

114. *RefPlanets: Search for reflected light from extrasolar planets with SPHERE/ZIMPOL.*

Hunziker, Schmid, Mouillet, Milli, Zurlo et al. including **Girard** Astronomy and Astrophysics, 634, A69, **2020**.

- ⚡ 113. *Early formation and recent starburst activity in the nuclear disk of the Milky Way.*

Nogueras-Lara, Schödel, Gallego-Calvente, Gallego-Cano, Shahzamanian et al. including **Girard** Nature Astronomy, 4, 377, **2020**.

- 🎓 112. *Polarimetric imaging mode of VLT/SPHERE/IRDIS. I. Description, data reduction, and observing strategy.*

de Boer, Langlois, van Holstein, **Girard**, Mouillet et al. Astronomy and Astrophysics, 633, A63, **2020**.

- ⚡ 111. *Polarimetric imaging mode of VLT/SPHERE/IRDIS. II. Characterization and correction of instrumental polarization effects.*

van Holstein, **Girard**, **de Boer**, Snik, Milli et al. Astronomy and Astrophysics, 633, A64, **2020**.

These two papers led by my former students are the results of the commissioning, optimization and characterization of the VLT/SPHERE/IRDIS differential polarimetry mode. This mode became the most popular to image circumstellar disks in scattered light with unprecedented details and contrast. I pushed really hard to offer it as soon as SPHERE was commissioned. High impact papers like Benisty et al. 2015 (over 200 citations) were made possible by this work.

110. *Mapping of shadows cast on a protoplanetary disk by a close binary system.*

D'Orazi, Gratton, Desidera, Avenhaus, Mesa et al. including **Girard** Nature Astronomy, 3, 167, **2019**.

- ⚡ 109. *SPHERE: the exoplanet imager for the Very Large Telescope.*
Beuzit, Vigan, Mouillet, Dohlen, Gratton et al. including **Girard**
Astronomy and Astrophysics, 631, A155, **2019**.

Commissioning paper of the VLT/SPHERE instrument (~ 290 citations): I was instrumental in this work as I transitioned from Deputy Instrument Scientist to Lead Instrument Scientist for SPHERE at the end of the science verification in December 2014, when the instrument was offered to the community. I cowrote the User Manual and Calibration Plan and led the effort to turn it into a "science machine" that can be operated by a single, non expert staff member (operator). Today, SPHERE data have contributed to over 300 refereed publications.

108. *GALACTICNUCLEUS: A high-angular-resolution JHK_s imaging survey of the Galactic centre. II. First data release of the catalogue and the most detailed CMDs of the GC.*
Nogueras-Lara, Schödel, Gallego-Calvente, Dong, Gallego-Cano et al. including **Girard**
Astronomy and Astrophysics, 631, A20, **2019**.
107. *Constraining the properties of HD 206893 B. A combination of radial velocity, direct imaging, and astrometry data. + (Corrigendum).*
Grandjean, Lagrange, Beust, Rodet, Milli et al. including **Girard**
Astronomy and Astrophysics, 627, L9, **2019**.
106. *The inner dust shell of Betelgeuse detected by polarimetric aperture-masking interferometry.*
Haubois, Norris, Tuthill, Pinte, Kervella et al. including **Girard**
Astronomy and Astrophysics, 628, A101, **2019**.
105. *ISPY - NaCo Imaging Survey for Planets around Young stars. Discovery of an M dwarf in the gap between HD 193571 and its debris ring.*
Musso Barucci, Launhardt, Kennedy, Avenhaus, Brems et al. including **Girard**
Astronomy and Astrophysics, 627, A77, **2019**.
- 🎓 104. *Separating extended disc features from the protoplanet in PDS 70 using VLT/SINFONI.*
Christiaens, Casassus, Absil, Cantalloube, Gomez Gonzalez et al. including **Girard**
Monthly Notices of the Royal Astronomical Society, 486, 5819, **2019**.
103. *Two accreting protoplanets around the young star PDS 70.*
Haffert, Bohn, **de Boer**, Snellen, Brinchmann et al. including **Girard**
Nature Astronomy, 3, 749, **2019**.
- 🎓 102. *Evidence for a Circumplanetary Disk around Protoplanet PDS 70 b.*
Christiaens, Cantalloube, Casassus, Price, Absil et al. including **Girard**
The Astrophysical Journal, 877, L33, **2019**.
101. *Kernel phase imaging with VLT/NACO: high-contrast detection of new candidate low-mass stellar companions at the diffraction limit.*
Kammerer, Ireland, Martinache, and **Girard**
Monthly Notices of the Royal Astronomical Society, 486, 639, **2019**.

100. [A search for accreting young companions embedded in circumstellar disks. High-contrast \$H\alpha\$ imaging with VLT/SPHERE.](#)
Cugno, Quanz, Hunziker, Stolker, Schmid et al. including **Girard**
Astronomy and Astrophysics, 622, A156, **2019**.
99. [Spectral and orbital characterisation of the directly imaged giant planet HIP 65426 b.](#)
Cheetham, Samland, Brems, Launhardt, Chauvin et al. including **Girard**
Astronomy and Astrophysics, 622, A80, **2019**.
98. [SPHERE dynamical and spectroscopic characterization of HD 142527B.](#)
Claudi, Maire, Mesa, Cheetham, Fontanive et al. including **Girard**
Astronomy and Astrophysics, 622, A96, **2019**.
97. [Post-conjunction detection of \$\beta\$ Pictoris b with VLT/SPHERE.](#)
Lagrange, Boccaletti, Langlois, Chauvin, Gratton et al. including **Girard**
Astronomy and Astrophysics, 621, L8, **2019**.
96. [Star formation history and metallicity in the Galactic inner bulge revealed by the red giant branch bump.](#)
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Astronomy and Astrophysics, 620, A83, **2018**.
- ⚡ 95. [SPHERE/ZIMPOL high resolution polarimetric imager. I. System overview, PSF parameters, coronagraphy, and polarimetry.](#)
Schmid, Bazzon, Roelfsema, Mouillet, Milli et al. including **Girard**
Astronomy and Astrophysics, 619, A9, **2018**.
94. [Dynamical masses of M-dwarf binaries in young moving groups. II. Toward empirical mass-luminosity isochrones.](#)
Janson, Durkan, Bonnefoy, Rodet, Köhler et al. including **Girard**
Astronomy and Astrophysics, 620, A33, **2018**.
93. [Dynamical masses of M-dwarf binaries in young moving groups. I. The case of TWA 22 and GJ 2060.](#)
Rodet, Bonnefoy, Durkan, Beust, Lagrange et al. including **Girard**
Astronomy and Astrophysics, 618, A23, **2018**.
92. [The gravitational mass of Proxima Centauri measured with SPHERE from a microlensing event.](#)
Zurlo, Gratton, Mesa, Desidera, Enia et al. including **Girard**
Monthly Notices of the Royal Astronomical Society, 480, 236, **2018**.



91. [SAFARI - I. A SPHERE discovery of a super metal-rich M-dwarf companion to the star HD 86006.](#)
Pantoja, Jenkins, **Girard**, Vigan, Salter Jones et al.
Monthly Notices of the Royal Astronomical Society, 479, 4958, **2018**.

As PhD co-advisor, I trained Dr. Pantoja to high contrast imaging techniques and in particular to the observing modes of SPHERE.

90. [Medium-resolution integral-field spectroscopy for high-contrast exoplanet imaging. Molecule maps of the \$\beta\$ Pictoris system with SINFONI.](#)
Hoeijmakers, Schwarz, Snellen, de Kok, Bonnefoy et al. including **Girard**
Astronomy and Astrophysics, 617, A144, **2018**.
89. [Characterization of low-mass companion HD 142527 B.](#)
Christiaens, Casassus, Absil, Kimeswenger, Gomez Gonzalez et al. including **Girard**
Astronomy and Astrophysics, 617, A37, **2018**.
88. [Orbital and atmospheric characterization of the planet within the gap of the PDS 70 transition disk.](#)
Müller, Keppler, Henning, Samland, Chauvin et al. including **Girard**
Astronomy and Astrophysics, 617, L2, **2018**.
87. [Discovery of a planetary-mass companion within the gap of the transition disk around PDS 70.](#)
Keppler, Benisty, Müller, Henning, van Boekel et al. including **Girard**
Astronomy and Astrophysics, 617, A44, **2018**.
86. [Physical, spectral, and dynamical properties of asteroid \(107\) Camilla and its satellites.](#)
Pajuelo, Carry, Vachier, Marsset, Berthier et al. including **Girard**
Icarus, 309, 134, **2018**.
85. [Observations of fast-moving features in the debris disk of AU Mic on a three-year timescale: Confirmation and new discoveries.](#)
Boccaletti, Sezestre, Lagrange, Thébault, Gratton et al. including **Girard**
Astronomy and Astrophysics, 614, A52, **2018**.
84. [First scattered light detection of a nearly edge-on transition disk around the T Tauri star RY Lupi.](#)
Langlois, Pohl, Lagrange, Maire, Mesa et al. including **Girard**
Astronomy and Astrophysics, 614, A88, **2018**.
83. [GALACTICNUCLEUS: A high angular resolution JHK_s imaging survey of the Galactic centre. I. Methodology, performance, and near-infrared extinction towards the Galactic centre.](#)
Nogueras-Lara, Gallego-Calvente, Dong, Gallego-Cano, **Girard** et al.
Astronomy and Astrophysics, 610, A83, **2018**.
82. [Dynamical models to explain observations with SPHERE in planetary systems with double debris belts.](#)
Lazzoni, Desidera, Marzari, Boccaletti, Langlois et al. including **Girard**
Astronomy and Astrophysics, 611, A43, **2018**.
81. [Investigation of the inner structures around HD 169142 with VLT/SPHERE.](#)
Ligi, Vigan, Gratton, **de Boer**, Benisty et al.
Monthly Notices of the Royal Astronomical Society, 473, 1774, **2018**.

- ⚡ 80. [In-depth study of moderately young but extremely red, very dusty substellar companion HD 206893B.](#)
Delorme, Schmidt, Bonnefoy, Desidera, Ginski et al. including **Girard**
Astronomy and Astrophysics, 608, A79, **2017**.
79. [The HIP 79977 debris disk in polarized light.](#)
Engler, Schmid, Thalmann, Boccaletti, Bazzon et al. including **Girard**
Astronomy and Astrophysics, 607, A90, **2017**.
- ⚡ 78. [Discovery of a warm, dusty giant planet around HIP 65426.](#)
Chauvin, Desidera, Lagrange, Vigan, Gratton et al. including **Girard**
Astronomy and Astrophysics, 605, L9, **2017**.
77. [A search for passive protoplanetary discs in the Taurus-Auriga star-forming region.](#)
Duchêne, Becker, Yang, Bouy, De Rosa et al. including **Girard**
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- ⚡ 76. [Exploring Dust around HD 142527 down to 0.025'' \(4 au\) Using SPHERE/ZIMPOL.](#)
Avenhaus, Quanz, Schmid, Dominik, Stolker et al. including **Girard**
The Astronomical Journal, 154, 33, **2017**.
75. [A Resolved and Asymmetric Ring of PAHs within the Young Circumstellar Disk of IRS 48.](#)
Schworer, Lacour, Huélamo, Pinte, Chauvin et al. including **Girard**
The Astrophysical Journal, 842, 77, **2017**.
74. [SPHERE/ZIMPOL observations of the symbiotic system R Aquarii. I. Imaging of the stellar binary and the innermost jet clouds.](#)
Schmid, Bazzon, Milli, Roelfsema, Engler et al. including **Girard**
Astronomy and Astrophysics, 602, A53, **2017**.
- ⚡ 73. [The VLT/NaCo large program to probe the occurrence of exoplanets and brown dwarfs at wide orbits. IV. Gravitational instability rarely forms wide, giant planets.](#)
Vigan, Bonavita, Biller, Forgan, Rice et al. including **Girard**
Astronomy and Astrophysics, 603, A3, **2017**.
72. [Upper limits for mass and radius of objects around Proxima Cen from SPHERE/VLT.](#)
Mesa, Zurlo, Milli, Gratton, Desidera et al. including **Girard**
Monthly Notices of the Royal Astronomical Society, 466, L118, **2017**.
71. [Near-infrared scattered light properties of the HR 4796 A dust ring. A measured scattering phase function from 13.6° to 166.6°.](#)
Milli, Vigan, Mouillet, Lagrange, Augereau et al. including **Girard**
Astronomy and Astrophysics, 599, A108, **2017**.



70. *BP Piscium: its flaring disc imaged with SPHERE/ZIMPOL.*
de Boer, Girard, Canovas, Min, Sitko et al.
Monthly Notices of the Royal Astronomical Society, 466, L7, **2017**.

Together with my former student, we made the first spatially resolved scattered light image of this disk at visible wavelength during the Science Verification campaign of SPHERE.



69. *Three Radial Gaps in the Disk of TW Hydrae Imaged with SPHERE.*
van Boekel, Henning, Menu, **de Boer**, Langlois et al. including **Girard**
The Astrophysical Journal, 837, 132, **2017**.

68. *VLT/SPHERE robust astrometry of the HR8799 planets at milliarcsecond-level accuracy. Orbital architecture analysis with PyAstrOFit.*
Wertz, Absil, Gómez González, Milli, **Girard** et al.
Astronomy and Astrophysics, 598, A83, **2017**.



67. *Discovery of a low-mass companion inside the debris ring surrounding the F5V star HD 206893.*
Milli, Hiben, Christiaens, Choquet, Bonnefoy et al. including **Girard**
Astronomy and Astrophysics, 597, L2, **2017**.

66. *First Scattered-light Images of the Gas-rich Debris Disk around 49 Ceti.*
Choquet, Milli, Wahhaj, Soummer, Roberge et al. including **Girard**
The Astrophysical Journal, 834, L12, **2017**.

65. *MASSIVE: A Bayesian analysis of giant planet populations around low-mass stars.*
Lannier, Delorme, Lagrange, Borgniet, Rameau et al. including **Girard**
Astronomy and Astrophysics, 596, A83, **2016**.



64. *The SHARDDS survey: First resolved image of the HD 114082 debris disk in the Lower Centaurus Crux with SPHERE.*
Wahhaj, Milli, Kennedy, Ertel, Matrà et al. including **Girard**
Astronomy and Astrophysics, 596, L4, **2016**.



63. *Multiple rings in the transition disk and companion candidates around RX J1615.3-3255. High contrast imaging with VLT/SPHERE.*
de Boer, Salter, Benisty, Vigan, Boccaletti et al. including **Girard**
Astronomy and Astrophysics, 595, A114, **2016**.



62. *Direct detection of scattered light gaps in the transitional disk around HD 97048 with VLT/SPHERE.*
Ginski, Stolker, Pinilla, Dominik, Boccaletti et al. including **Girard**
Astronomy and Astrophysics, 595, A112, **2016**.

61. *Sparse aperture masking at the VLT. II. Detection limits for the eight debris disks stars β Pic, AU Mic, 49 Ceti, η Tel, Fomalhaut, g Lup, HD 181327 and HR 8799.*
Gauchet, Lacour, Lagrange, Ehrenreich, Bonnefoy et al. including **Girard**
Astronomy and Astrophysics, 595, A31, **2016**.

60. [*Calibration of quasi-static aberrations in exoplanet direct-imaging instruments with a Zernike phase-mask sensor. II. Concept validation with ZELDA on VLT/SPHERE.*](#)
N'Diaye, Vigan, Dohlen, Sauvage, Caillat et al. including **Girard**
Astronomy and Astrophysics, 592, A79, **2016**.
- ⚡ 59. [*An M-dwarf star in the transition disk of Herbig HD 142527. Physical parameters and orbital elements.*](#)
Lacour, Biller, Cheetham, Greenbaum, Pearce et al. including **Girard**
Astronomy and Astrophysics, 590, A90, **2016**.
58. [*Discovery of concentric broken rings at sub-arcsec separations in the HD 141569A gas-rich, debris disk with VLT/SPHERE.*](#)
Perrot, Boccaletti, Pantin, Augereau, Lagrange et al. including **Girard**
Astronomy and Astrophysics, 590, L7, **2016**.
57. [*SAXO: the extreme adaptive optics system of SPHERE \(I\) system overview and global laboratory performance.*](#)
Sauvage, Fusco, Petit, Costille, Mouillet et al. including **Girard**
Journal of Astronomical Telescopes, Instruments, and Systems, 2, 025003, **2016**.
- ⚡ 56. [*First light of the VLT planet finder SPHERE. II. The physical properties and the architecture of the young systems PZ Telescopii and HD 1160 revisited.*](#)
Maire, Bonnefoy, Ginski, Vigan, Messina et al. including **Girard**
Astronomy and Astrophysics, 587, A56, **2016**.
- ⚡ 55. [*First light of the VLT planet finder SPHERE. III. New spectrophotometry and astrometry of the HR 8799 exoplanetary system.*](#)
Zurlo, Vigan, Galicher, Maire, Mesa et al. including **Girard**
Astronomy and Astrophysics, 587, A57, **2016**.
- ⚡ 54. [*First light of the VLT planet finder SPHERE. I. Detection and characterization of the substellar companion GJ 758 B.*](#)
Vigan, Bonnefoy, Ginski, Beust, Galicher et al. including **Girard**
Astronomy and Astrophysics, 587, A55, **2016**.
53. [*Luminous blue variables: An imaging perspective on their binarity and near environment.*](#)
Martayan, Lobel, Baade, Mehner, Rivinius et al. including **Girard**
Astronomy and Astrophysics, 587, A115, **2016**.
- ⚡ 52. [*First light of the VLT planet finder SPHERE. IV. Physical and chemical properties of the planets around HR8799.*](#)
Bonnefoy, Zurlo, Baudino, Lucas, Mesa et al. including **Girard**
Astronomy and Astrophysics, 587, A58, **2016**.
51. [*The VLT/NaCo large program to probe the occurrence of exoplanets and brown dwarfs at wide orbits . III. The frequency of brown dwarfs and giant planets as companions to solar-type stars.*](#)
Reggiani, Meyer, Chauvin, Vigan, Quanz et al. including **Girard**
Astronomy and Astrophysics, 586, A147, **2016**.

- ⚡ 50. [A narrow, edge-on disk resolved around HD 106906 with SPHERE.](#)
Lagrange, Langlois, Gratton, Maire, Milli et al. including **Girard**
Astronomy and Astrophysics, 586, L8, **2016**.
49. [Adaptive Optics in High-Contrast Imaging.](#)
Milli, Mawet, Mouillet, Kasper, and Girard including **Girard**
Astronomy at High Angular Resolution, 439, 17, **2016**.
48. [Variability and dust filtration in the transition disk J160421.7-213028 observed in optical scattered light.](#)
Pinilla, **de Boer**, Benisty, Juhász, de Juan Ovelar et al. including **Girard**
Astronomy and Astrophysics, 584, L4, **2015**.
- ⚡ 47. [Fast-moving features in the debris disk around AU Microscopii.](#)
Boccaletti, Thalmann, Lagrange, Janson, Augereau et al. including **Girard**
Nature, 526, 230, **2015**.
46. [Pluto's Atmosphere from Stellar Occultations in 2012 and 2013.](#)
Dias-Oliveira, Sicardy, Lellouch, Vieira-Martins, Assafin et al. including **Girard**
The Astrophysical Journal, 811, 53, **2015**.
- ⚡ 45. [Confirmation and Characterization of the Protoplanet HD 100546 b—Direct Evidence for Gas Giant Planet Formation at 50 AU.](#)
Quanz, Amara, Meyer, **Girard**, Kenworthy and Kasper
The Astrophysical Journal, 807, 64, **2015**.
- ⚡ 44. [The dust disk and companion of the nearby AGB star L₂ Puppis. SPHERE/ZIMPOL polarimetric imaging at visible wavelengths.](#)
Kervella, Montargès, Lagadec, Ridgway, Haubois et al. including **Girard**
Astronomy and Astrophysics, 578, A77, **2015**.
43. [The inner environment of Z Canis Majoris: High-contrast imaging polarimetry with NaCo.](#)
Canovas, Perez, Dougados, **de Boer**, Ménard et al. including **Girard**
Astronomy and Astrophysics, 578, L1, **2015**.
42. [WISE J061213.85-303612.5: a new T-dwarf binary candidate.](#)
Huélamo, Ivanov, Kurtev, **Girard**, Borissova et al.
Astronomy and Astrophysics, 578, A1, **2015**.
41. [New constraints on the dust surrounding HR 4796A.](#)
Milli, Mawet, Pinte, Lagrange, Mouillet et al. including **Girard**
Astronomy and Astrophysics, 577, A57, **2015**.
- ⚡ 40. [The VLT/NaCo large program to probe the occurrence of exoplanets and brown dwarfs at wide orbits. II. Survey description, results, and performances.](#)
Chauvin, Vigan, Bonnefoy, Desidera, Bonavita et al. including **Girard**
Astronomy and Astrophysics, 573, A127, **2015**.

- ⚡ 39. [Deep Thermal Infrared Imaging of HR 8799 bcde: New Atmospheric Constraints and Limits on a Fifth Planet.](#)
Currie, Burrows, **Girard**, Cloutier, Fukagawa et al.
The Astrophysical Journal, 795, 133, **2014**.
- ⚡ 38. [Discovery of a Companion Candidate in the HD 169142 Transition Disk and the Possibility of Multiple Planet Formation.](#)
Reggiani, Quanz, Meyer, Pueyo, Absil et al. including **Girard**
The Astrophysical Journal, 792, L23, **2014**.
37. [Searching for visual companions of close Cepheids. VLT/NACO lucky imaging of Y Oph, FF Aql, X Sgr, W Sgr, and \$\eta\$ Aql.](#)
Gallenne, Kervella, Mérand, Evans, **Girard** et al.
Astronomy and Astrophysics, 567, A60, **2014**.
36. [Very deep images of the innermost regions of the \$\beta\$ Pictoris debris disc at L'.](#)
Milli, Lagrange, Mawet, Absil, Augereau et al. including **Girard**
Astronomy and Astrophysics, 566, A91, **2014**.
35. [Ground-based transit observations of the super-Earth GJ 1214 b.](#)
Cáceres, Kabath, Hoyer, Ivanov, Rojo et al. including **Girard**
Astronomy and Astrophysics, 565, A7, **2014**.
34. [Characterization of the Benchmark Binary NLTT 33370.](#)
Schlieder, Bonnefoy, Herbst, Lépine, Berger et al. including **Girard**
The Astrophysical Journal, 783, 27, **2014**.
33. [Possible astrometric discovery of a substellar companion to the closest binary brown dwarf system WISE J104915.57-531906.1.](#)
Boffin, Pourbaix, Mužić, Ivanov, Kurtev et al. including **Girard**
Astronomy and Astrophysics, 561, L4, **2014**.
32. [Confirmation of the Planet around HD 95086 by Direct Imaging.](#)
Rameau, Chauvin, Lagrange, Meshkat, Boccaletti et al. including **Girard**
The Astrophysical Journal, 779, L26, **2013**.
- ⚡ 31. [Searching for companions down to 2 AU from \$\beta\$ Pictoris using the L'-band AGPM coronagraph on VLT/NACO.](#)
Absil, Milli, Mawet, Lagrange, **Girard** et al.
Astronomy and Astrophysics, 559, L12, **2013**.

Together with Prof. Dimitri Mawet (then NACO Deputy Instrument Scientist with me as Lead), I commissioned the Annular Groove Phase Mask "vortex" coronagraph, the first to be installed on a 8-10 class telescope at the VLT. This paper is the result from our verification campaign.
- ⚡ 30. [A Combined Very Large Telescope and Gemini Study of the Atmosphere of the Directly Imaged Planet, \$\beta\$ Pictoris b.](#)
Currie, Burrows, Madhusudhan, Fukagawa, **Girard** et al.
The Astrophysical Journal, 776, 15, **2013**.

- ⚡ 29. *Discovery of a Probable 4-5 Jupiter-mass Exoplanet to HD 95086 by Direct Imaging.*
Rameau, Chauvin, Lagrange, Boccaletti, Quanz et al. including **Girard**
The Astrophysical Journal, 772, L15, **2013**.
28. *A Multiplicity Census of Intermediate-mass Stars in Scorpius-Centaurus.*
Janson, Lafrenière, Jayawardhana, Bonavita, **Girard** et al.
The Astrophysical Journal, 773, 170, **2013**.
27. *Prospects of detecting the polarimetric signature of the Earth-mass planet α Centauri B b with SPHERE/ZIMPOL.*
Milli, Mouillet, Mawet, Schmid, Bazzon et al. including **Girard**
Astronomy and Astrophysics, 556, A64, **2013**.

- ⚡ 26. *The near-infrared spectral energy distribution of β Pictoris b.*
Bonnetfoy, Boccaletti, Lagrange, Allard, Mordasini et al. including **Girard**
Astronomy and Astrophysics, 555, A107, **2013**.

The image quality improvement of NACO (see SPIE Instrumentation papers) enabled the detection of the planet at shorter wavelengths (J and H band at 1.25 and 1.65 μm). They would not have been possible without my contribution.

25. *Characterization of the nearby L/T Binary Brown Dwarf WISE J104915.57-531906.1 at 2 pc from the Sun.*
Kniazev, Vaisanen, Mužić, Mehner, Boffin et al. including **Girard**
The Astrophysical Journal, 770, 124, **2013**.

24. *Direct-imaging discovery of a 12-14 Jupiter-mass object orbiting a young binary system of very low-mass stars.*
Delorme, Gagné, **Girard**, Lagrange, Chauvin et al.
Astronomy and Astrophysics, 553, L5, **2013**.

I carried out the observations and found this substellar object while observing at the telescope with VLT/NACO, in real time and decided to characterize it with several filters. This object may have a circumplanetary disk and will be observed in Cycle 2 with JWST.

- ⚡ 23. *A survey of young, nearby, and dusty stars conducted to understand the formation of wide-orbit giant planets. VLT/NaCo adaptive optics thermal and angular differential imaging.*
Rameau, Chauvin, Lagrange, Klahr, Bonnetfoy et al. including **Girard**
Astronomy and Astrophysics, 553, A60, **2013**.

- ⚡ 22. *L'-band AGPM vector vortex coronagraph's first light on VLT/NACO. Discovery of a late-type companion at two beamwidths from an F0V star.*

Mawet, Absil, Delacroix, **Girard**, Milli et al.
Astronomy and Astrophysics, 552, L13, **2013**.

Commissioning paper of the the Annular Groove Phase Mask "vortex" coronagraph which I led as Lead Instrument Scientist.

- ⚡ 21. *A Young Protoplanet Candidate Embedded in the Circumstellar Disk of HD 100546.*

Quanz, Amara, Meyer, Kenworthy, Kasper **Girard** et al.
The Astrophysical Journal, 766, L1, **2013**.

20. *Coronagraphic Observations of Fomalhaut at Solar System Scales.*

Kenworthy, Meshkat, Quanz, **Girard**, Meyer and Kasper.
The Astrophysical Journal, 764, 7, **2013**.

19. *Holographic imaging of crowded fields: high angular resolution imaging with excellent quality at very low cost.*

Schödel, Yelda, Ghez, **Girard**, Labadie et al.
Monthly Notices of the Royal Astronomical Society, 429, 1367, **2013**.

I was instrumental in testing the "time series" (windowed) detector mode of the VLT/Hawk-I instrument, enabling the image reconstruction method (a sort of "noiseless deconvolution") described in this paper (co-authored with Nobel Prize winner Prof. Andrea Ghez).

- ⚡ 18. *Flows of gas through a protoplanetary gap.*

Casassus, van der Plas, Perez, Dent, Fomalont et al. including **Girard**
Nature, 493, 191, **2013**.

- ⚡ 17. *High-contrast imaging of the close environment of HD 142527. VLT/NaCo adaptive optics thermal and angular differential imaging.*

Rameau, Chauvin, Lagrange, Thébault, Milli et al. including **Girard**
Astronomy and Astrophysics, 546, A24, **2012**.

16. *New Brown Dwarf Companions to Young Stars in Scorpius-Centaurus.*

Janson, Jayawardhana, **Girard**, Lafrenière, Bonavita et al.
The Astrophysical Journal, 758, L2, **2012**.

15. *Direct imaging of extra-solar planets in star forming regions. Lessons learned from a false positive around IM Lupi.*

Mawet, Absil, Montagnier, Riaud, Surdej et al. including **Girard**
Astronomy and Astrophysics, 544, A131, **2012**.

- ⚡ 14. *Orbital characterization of the β Pictoris b giant planet.*

Chauvin, Lagrange, Beust, Bonnefoy, Boccaletti et al. including **Girard**
Astronomy and Astrophysics, 542, A41, **2012**.

- ⚡ 13. *The position of β Pictoris b position relative to the debris disk.*
Lagrange, Boccaletti, Milli, Chauvin, Bonnefoy et al. including **Girard**
Astronomy and Astrophysics, 542, A40, **2012**.
- 12. *Searching for Gas Giant Planets on Solar System Scales: VLT NACO/APP Observations of the Debris Disk Host Stars HD172555 and HD115892.*
Quanz, Kenworthy, Meyer, **Girard** and Kasper.
The Astrophysical Journal, 736, L32, **2011**.
- ⚡ 11. *High angular resolution detection of β Pictoris b at 2.18 μ m.*
Bonnefoy, Lagrange, Boccaletti, Chauvin, Apai et al. including **Girard**
Astronomy and Astrophysics, 528, L15, **2011**.
- 10. *Spatially extended emission around the Cepheid RS Puppis in near-infrared hydrogen lines. Adaptive optics imaging with VLT/NACO.*
Gallenne, Mérand, Kervella, and **Girard**
Astronomy and Astrophysics, 527, A51, **2011**.

- 9. *Adaptive optics observations of the T10 ultracool dwarf UGPS J072227.51-054031.2.*
Bouy, **Girard**, Martín, Huélamo, and Lucas.
Astronomy and Astrophysics, 526, A55, **2011**.

I prepared and carried out these challenging observations making use of the laser guide star.

- 8. *X-shooter, NACO, and AMBER observations of the LBV Pistol Star.*
Martayan, Blomme, Le Bouquin, Merand, Montagnier et al. including **Girard**
Bulletin de la Societe Royale des Sciences de Liege, 80, 400, **2011**.

- ⚡ 7. *First Results from Very Large Telescope NACO Apodizing Phase Plate: 4 μ m Images of The Exoplanet β Pictoris b.*
Quanz, Meyer, Kenworthy, **Girard**, Kasper et al.
The Astrophysical Journal, 722, L49, **2010**.

First light paper of a new high contrast mode (Apodizing Phase Plate Coronagraphy) for which I was a key player as lead Instrument Scientist for VLT/NACO. I carried out all tests and observations, participated to the analysis.

- 6. *Follow-up observations of binary ultra-cool dwarfs.*
Bouy, Martín, Brandner, Forveille, Delfosse et al. including **Girard**
Astronomy and Astrophysics, 481, 757, **2008**.
- 5. *Techniques for measuring atmospheric aerosols at the high resolution fly's eye experiment.*
Abbasi, Abu-Zayyad, Amann, Archbold, Belov et al. including **Girard**
Astroparticle Physics, 25, 74, **2006**.

- ⚡ 4. *Monocular measurement of the spectrum of UHE cosmic rays by the FADC detector of the HiRes experiment.*

Abbasi, Abu-Zayyad, Amman, Archbold, Bellido et al. including **Girard**
Astroparticle Physics, 23, 157, **2005**.

⚡ 3. *Measurement of the Flux of Ultrahigh Energy Cosmic Rays from Monocular Observations by the High Resolution Fly's Eye Experiment.*

Abbasi, Abu-Zayyad, Amann, Archbold, Bellido et al. including **Girard**
Physical Review Letters, 92, 151101, **2004**.

2. *Geometry and optics calibration for air fluorescence detectors using star light.*

High Resolution Fly's Eye Collaboration, Sadowski, van der Zande, Abbasi, Abu-Zayyad et al. including **Girard**
Astroparticle Physics, 18, 237, **2002**.

1. *A fiber-optic-based calibration system for the High Resolution Fly's Eye cosmic ray observatory.*

Girard, Wiencke, Archbold, Bellido, Belov et al.

Nuclear Instruments and Methods in Physics Research A, 460, 278, **2001**.

My first refereed paper. During two years I built this calibration system and installed/commissioned it in the Utah desert. This work was the basis of my Master's Degree Thesis. This calibration system has since been copied to more powerful observatories with high energy fluorescence detectors (e.g. Auger).

SPIE Instrumentation papers ([SPIE Digital Library](#))


- ⚡ 49. *JWST/NIRCam coronagraphy: commissioning and first on-sky results.*
Girard, Leisenring, Kammerer, Gennaro, Rieke et al.
Space Telescopes and Instrumentation 2022: Optical, Infrared, and Millimeter Wave, 12180, 121803Q, 2022.
- This paper is a summary of the Commissioning and Science Readiness exercise (which I lead) for the JWST/NIRCam Coronagraphy mode. It's based on the program I designed entirely (PID 1441).
- 🎓 48. *Performance of near-infrared high-contrast imaging methods with JWST from commissioning.*
Kammerer, **Girard**, Carter, Perrin, Cooper et al.
Space Telescopes and Instrumentation 2022: Optical, Infrared, and Millimeter Wave, 12180, 121803N, 2022.
47. *Direct imaging and spectroscopy of exoplanetary systems with the JWST early release science program.*
Hinkley, Carter, Ray, Biller, Skemer et al. including **Girard**
Space Telescopes and Instrumentation 2022: Optical, Infrared, and Millimeter Wave, 12180, 121800S, 2022.
46. *Nancy Grace Roman Space Telescope coronagraph instrument observation calibration plan.*
Zellem, Nemati, Gonzalez, Ygouf, Bailey et al. including **Girard**
Space Telescopes and Instrumentation 2022: Optical, Infrared, and Millimeter Wave, 12180, 121801Z, 2022.
45. *Simulating JWST high contrast observations with PanCAKE.*
Carter, Skemer, Danielski, Leisenring, Wang et al. including **Girard**
Techniques and Instrumentation for Detection of Exoplanets X, 11823, 118230H, 2021.
44. *Planet formation with all flavors of adaptive optics: VLT/MUSE's laser tomography adaptive optics to directly image young accreting exoplanets.*
Girard, Haffert, Bae, Zeidler, de Boer et al.
Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 11448, 1144808, 2020.
43. *The Roman exoplanet imaging data challenge: a major community engagement effort.*
Girard, Bogat, Gonzalez-Quiles, Hildebrandt, Kane et al.
Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 11443, 1144337, 2020.

This paper describes the data challenge I coordinated, involving tens of young exoplanet scientists to get them and the community acquainted with the new kind of data the Roman Coronagraph will provide and how to exploit the science avenues it opens: giants planets in reflected light!

42. [Data processing for high-contrast imaging with the James Webb Space Telescope.](#)
Ygouf, Rocha, Beichman, Greenbaum, Leisenring et al. including **Girard**
Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 11443, 114433N,
2020.
41. [The ExoGRAVITY project: using single mode interferometry to characterize exoplanets.](#)
Lacour, Wang, Nowak, Pueyo, Eisenhauer et al. including **Girard**
Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 11446, 114460O,
2020.

40. [Making good use of JWST's coronagraphs: tools and strategies from a user's perspective.](#)
Girard, Blair, Brooks, Brooks, Brown et al.
Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave, 10698,
106983V, 2018.

In this paper, I described the end to end (proposal preparation, simulations, data reduction pipeline) framework I put in place as Coronagraphs Working Group Lead at STScI to best prepare (ourselves and the community) for the JWST commissioning and its first science cycles.

39. [Updated optical modeling of JWST coronagraph performance contrast, stability, and strategies.](#)
Perrin, Pueyo, Van Gorkom, Brooks, Rajan et al. including **Girard**
Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave, 10698,
1069809, 2018.
38. [Lessons for WFIRST CGI from ground-based high-contrast systems.](#)
Bailey, Bottom, Cady, Cantalloube, de Boer et al. including **Girard**
Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave, 10698,
106986P, 2018.
37. [Around the world: status and prospects with the infrared vortex coronagraph.](#)
Absil, Karlsson, Mawet, Carlomagno, Christiaens et al. including **Girard**
Ground-based and Airborne Instrumentation for Astronomy VII, 107020T (Conference Pre-
sentation), 2018.
36. [Low wind effect on VLT/SPHERE: impact, mitigation strategy, and results.](#)
Milli, Kasper, Bourget, Pannetier, Mouillet et al. including **Girard**
Adaptive Optics Systems VI, 10703, 107032A, 2018.
-  35. [Combining angular differential imaging and accurate polarimetry with SPHERE/IRDIS to characterize young giant exoplanets.](#)
van Holstein, Snik, **Girard**, de Boer, Ginski et al.
Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10400, 1040015,
2017.
34. [Pushing down with the contrast: scientific performances with SPHERE-IFS.](#)
Claudi, Antichi, Baruffolo, Bruno, Cascone et al. including **Girard**
Ground-based and Airborne Instrumentation for Astronomy VI, 9908, 99083H, 2016.

33. *SPHERE on-sky performance compared with budget predictions.*
Dohlen, Vigan, Mouillet, Wildi, Sauvage et al. including **Girard**
Ground-based and Airborne Instrumentation for Astronomy VI, 9908, 99083D, **2016**.
- ⚡ 32. *SPHERE IRDIS and IFS astrometric strategy and calibration.*
Maire, Langlois, Dohlen, Lagrange, Gratton et al. including **Girard**
Ground-based and Airborne Instrumentation for Astronomy VI, 9908, 990834, **2016**.
31. *Three years of harvest with the vector vortex coronagraph in the thermal infrared.*
Absil, Mawet, Karlsson, Carlomagno, Christiaens et al. including **Girard**
Ground-based and Airborne Instrumentation for Astronomy VI, 9908, 99080Q, **2016**.
30. *Interferometric direct imaging properties of a BIGRE-DAM device in laboratory.*
Patru, Antichi, Rabou, Giro, Farinato et al. including **Girard**
Optical and Infrared Interferometry and Imaging V, 9907, 99072U, **2016**.

29. *Sparse aperture masking with SPHERE.*
Cheetham, **Girard**, Lacour, Schworer, Haubois, and Beuzit
Optical and Infrared Interferometry and Imaging V, 9907, 99072T, **2016**.

I was instrumental in making the first test with the non-redundant mask in SPHERE and to commission it with Anthony Cheetham (Postdoc then).

28. *Training telescope operators and support astronomers at Paranal.*
Boffin, Gadotti, Anderson, Pino, de Wit, and **Girard**
Observatory Operations: Strategies, Processes, and Systems VI, 9910, 991032, **2016**.

27. *ABISM: an interactive image quality assessment tool for adaptive optics instruments.*
Girard and Tourneboeuf
Adaptive Optics Systems V, 9909, 99097V, **2016**.

I imagined, defined and co-developed this tool with a graphical user interface to assess the image quality of AO instruments at the VLT (specifically NACO, SINFONI and SPHERE). The tool was used in regular operations for years to determine if observations met their IQ requirements.

26. *ZELDA, a Zernike wavefront sensor for the fine measurement of quasi-static aberrations in coronagraphic systems: concept studies and results with VLT/SPHERE.*
N'Diaye, Vigan, Dohlen, Sauvage, Caillat et al. including **Girard**
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- 🎓 25. *Speckle lifetime in XAO coronagraphic images: temporal evolution of SPHERE coronagraphic images.*

Milli, Banas, Mouillet, Mawet, **Girard** et al.
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24. *Tackling down the low wind effect on SPHERE instrument.*
Sauvage, Fusco, Lamb, **Girard**, Brinkmann et al.
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23. [*SAXO, the SPHERE extreme AO system: on-sky final performance and future improvements.*](#)
Fusco, Sauvage, Mouillet, Costille, Petit et al. including **Girard**
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22. [*Atmospheric parameter estimation from AO wavefront sensing data: application of the FADE method with NACO.*](#)
Brunner and **Girard**
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21. [*Discretized aperture mapping with a micro-lenses array for interferometric direct imaging.*](#)
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Mawet, Smette, Sarazin, Kuntschner, and **Girard**
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19. [*Final performance and lesson-learned of SAXO, the VLT-SPHERE extreme AO: from early design to on-sky results.*](#)
Fusco, Sauvage, Petit, Costille, Dohlen et al. including **Girard**
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18. [*Characterizing instrumental effects on polarization at a Nasmyth focus using NaCo.*](#)
de Boer, **Girard**, Mawet, Snik, Keller, and Milli
Ground-based and Airborne Instrumentation for Astronomy V, 9147, 914787, **2014**.
17. [*Adaptive phase-mask coronagraph with amplitude and phase modulation for high dynamic range synchronous detection: APM² coronagraph.*](#)
Bourget, Mawet, Mardones, Schuhler, Pueyo, **Girard** et al.
Techniques and Instrumentation for Detection of Exoplanets VI, 8864, 88640J, **2013**.
16. [*Small-angle, high-contrast exoplanet imaging with the L-band AGPM vector vortex coronagraph now offered at the VLT.*](#)
Mawet, Absil, Milli, Delacroix, **Girard** et al.
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15. [*Extinction controlled adaptive mask coronagraph Lyot and phase mask dual concept for wide extinction area.*](#)
Bourget, Schuhler, Mawet, Haguenaer, **Girard**, and Gonté
Modern Technologies in Space- and Ground-based Telescopes and Instrumentation II, 8450, 84505I, **2012**.
14. [*Conceptual study for a sub-pupil instrument having 4 high order adaptive optics path for parallel multi-wavelength high contrast imaging, and medium resolution spectrometry.*](#)
Gonté, Bourget, **Girard**, Haguenaer, and Mawet
Ground-based and Airborne Instrumentation for Astronomy IV, 8446, 84467Z, **2012**.

- ⚡ 13. *Review of small-angle coronagraphic techniques in the wake of ground-based second-generation adaptive optics systems.*

Mawet, Pueyo, Lawson, Mugnier, Traub et al. including **Girard**
Space Telescopes and Instrumentation 2012: Optical, Infrared, and Millimeter Wave, 8442, 844204, **2012**.

12. *What can be retrieved from adaptive optics real-time data?*

Kolb, Muller, Aller-Carpentier, Andrade, and **Girard**
Adaptive Optics Systems III, 8447, 84475U, **2012**.

11. *Image quality and high contrast improvements on VLT/NACO.*

Girard, O'Neal, Mawet, Kasper, Zins, Neichel, Kolb, Christiaens, and Tourneboeuf
Adaptive Optics Systems III, 8447, 84470L, **2012**.

When I took over NACO as lead Instrument Scientist, its image quality had degraded. I recalibrated the non-common path aberrations and focus using phase diversity measurements with a simplified method. The improvements in image quality immediately led to new discoveries (exoplanet imaging, galactic center, etc.) and to the publication of more high impact papers for the remainder of NACO's lifetime at the VLT.

10. *Speckle imaging observations of 2005 YU55 with the NACO-VLT no-AO mode.*

Rengaswamy, **Girard**, Lombardi, Ivanov, and Dumas
Optical and Infrared Interferometry III, 8445, 84453M, **2012**.

9. *The hypertelescope at work with a BIGRE integral field unit.*

Antichi, Rabou, Patru, Giro, **Girard**, and Mourard
Optical Complex Systems: OCS11, 8172, 81720X, **2011**.

8. *Direct imaging with a dense aperture masking in comparison with a telescope or a hypertelescope.*

Patru, Antichi, and **Girard**
Optical Complex Systems: OCS11, 8172, 81720W, **2011**.

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Girard, Kasper, Quanz, Kenworthy, Rengaswamy et al.
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As lead Instrument Scientist for VLT/NACO, I described new capabilities I helped to commission, characterize and offer to the community: a new visible wavefront sensor optimized for Laser Guide Star operations, the so-called "cube mode" for continuous readout, a low-resolution prism spectroscopy mode covering 1-5 μm , etc.

6. *An apodizing phase plate coronagraph for VLT/NACO.*

Kenworthy, Quanz, Meyer, Kasper, Lenzen et al. including **Girard**
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5. *Evaluation of performance of the MACAO systems at the VLTI.*
Rengaswamy, Haguenaer, Brillant, Cortes, **Girard** et al.
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4. *Speckle imaging with the SOAR and the very large telescopes.*
Rengaswamy, **Girard**, and Montagnier
Optical and Infrared Interferometry II, 7734, 77341B, **2010**.

3. *GUIELOA, the Mexican adaptive optics system: expected performance and operation.*
Girard, Watson, Álvarez, Chapa, Cuevas et al.
Adaptive Optics Systems, 7015, 701560, **2008**.

Curvature AO system I helped designed and I was setting up and testing in the lab in Mexico City. Unfortunately the project was stopped and the system was never integrated at the 2.1m telescope.

2. *The Polychromatic Laser Guide Star for tilt measurement: progress report of the demonstrator at Observatoire de Haute Provence.*
Foy, Éric, Eysseric, Foy, Fusco et al. including **Girard**
Astronomical Adaptive Optics Systems and Applications III, 6691, 66910R, **2007**.

This paper is based on the results obtained during my PhD Thesis (the first ever correlation measurement between atmospheric tilt and differential tilt between two independent wavelengths)

1. *Feasibility study of the polychromatic laser guide star.*
Foy, Pique, Bellanger, Chevrou, Petit et al. including **Girard**
Adaptive Optical System Technologies II, 4839, 484, **2003**.

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52. [The Roman Space Telescope Science Operations Center: News and updates.](#)
Sanchez, Al-Kowski, Beaton, Bellini, Casertano et al. including **Girard**
American Astronomical Society Meeting Abstracts, 55, 230.02, **2023**.
51. [Time-resolved Optical Polarization Monitoring of the Most Variable Brown Dwarf.](#)
Manjavacas, Miles-Paez, Karalidi, Vos, Galloway et al. including **Girard**
American Astronomical Society Meeting Abstracts, 55, 407.01, **2023**.
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Bellini, Al-Kowski, Desjardins, **Girard**, Gomez et al.
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49. [The Roman Space Telescope Science Operations Center: Overview and Progress.](#)
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47. [Predictions for Astrometric and Orbit Retrieval of Confirmed Exoplanets with Roman Space Telescope Coronagraphy.](#)
Bogat, Zimmerman, **Girard**, Gonzalez-Quiles, Turnbull et al.
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46. [The Roman Space Telescope Science Operations Center: Overview of Software and Data Simulation Tools.](#)
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Kammerer, Stolker, Pueyo, Perrin, **Girard** et al.
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Bogat, Zimmerman, **Girard**, Gonzalez-Quiles, Turnbull et al.
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40. [*Original use of MUSE's laser tomography adaptive optics to directly image young accreting exoplanets.*](#)
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36. [*High Contrast Imaging Of A New Circumbinary Disk Around A Young Spectroscopic Binary.*](#)
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35. [*Preparing for JWST Coronagraphy, a roadmap.*](#)
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5. *The Polychromatic Laser Guide Star: the ELP-OA demonstrator at Observatoire de Haute Provence.*
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4. *Polychromatic Laser Guide Star. Progress report and modeless laser.*
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3. *ATTILA - Measuring the atmospheric tilt from its wavelength dependence.*
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