ExoPlanet News
An Electronic Newsletter

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Editors: J. Davoult, H. Wang, L. Schlarmann, D. Angerhausen & T.-E. Riesen
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http://nccr-planets.ch/exoplanetnews

Contents

1 Editorial

Welcome to Edition 178 of the ExoPlanet News!

As usual, we bring you abstracts of scientific papers, job ads, conference announcements, and an overview of exoplanet-related articles on astro-ph. Thanks a lot to all of you who contributed to this issue of the newsletter!

For the next month we look forward to your paper abstracts, job ads or meeting announcements. Also, special announcements are welcome. As always, we would also be happy to receive feedback concerning the newsletter. The Latex template (v2.0) for submitting contributions, as well as all previous editions of ExoPlanet News, can be found on the ExoPlanet News webpage (`http://nccr-planets.ch/exoplanetnews/`).

The next issue will appear on May 14, 2024.

Thanks again for your support, and best regards from the editorial team,

Jeanne Davoult
Daniel Angerhausen
Haiyang Wang
Leander Schlarmann
Timm-Emanuel Riesen

2 Abstracts of refereed papers

JWST/NIRCam Imaging of Young Stellar Objects. II. Deep Constraints on Giant Planets and a Planet Candidate Outside of the Spiral Disk Around SAO 206462

G. Cugno[1], J. Leisenring[2], K. Wagner[2], C. Mullin[3], R. Dong[3], T. Greene[4], D. Johnstone5,3, M. Meyer[1], S. Wolff[2] and the NIRCam GTO team

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[4] NASA Ames Research Center, MS 245-6, Moffett Field, CA 94035, USA
[5] NRC Herzberg Astronomy and Astrophysics, 5071 West Saanich Road, Victoria, BC, V9E 2E7, Canada

The Astronomical Journal, published (10.3847/1538-3881/ad1ffc)

We present JWST/NIRCam F187N, F200W, F405N and F410M direct imaging data of the disk surrounding SAO 206462. Previous images show a very structured disk, with a pair of spiral arms thought to be launched by one or more external perturbers. The spiral features are visible in three of the four filters, with the non-detection in F410M due to the large detector saturation radius. We detect with a signal-to-noise ratio of 4.4 a companion candidate (CC1) that, if on a coplanar circular orbit, would orbit SAO 206462 at a separation of ~ 300 au, 2.25σ away from the predicted separation for the driver of the eastern spiral. According to the BEX models, CC1 has a mass of $M_{\rm CC1} = 0.8 \pm 0.3\ M_J$. No other companion candidates were detected. At the location predicted by simulations of both spirals generated by a single massive companion, the NIRCam data exclude objects more massive than $\sim 2.2\ M_J$ assuming the BEX evolutionary models. In terms of temperatures, the data are sensitive to objects with $T_{\rm eff} \sim 650 - 850$ K, when assuming planets emit like blackbodies (R_p between 1 and $3R_J$). From these results, we conclude that if the spirals are driven by gas giants, these must be either cold or embedded in circumplanetary material. In addition, the NIRCam data provide tight constraints on ongoing accretion processes. In the low extinction scenario we are sensitive to mass accretion rates of the order $\dot{M} \sim 10^{-9} M_J$ yr^{-1}. Thanks to the longer wavelengths used to search for emission lines, we reach unprecedented sensitivities to processes with $\dot{M} \sim 10^{-7} M_J$ yr^{-1} even towards highly extincted environments ($A_v \approx 50$ mag).

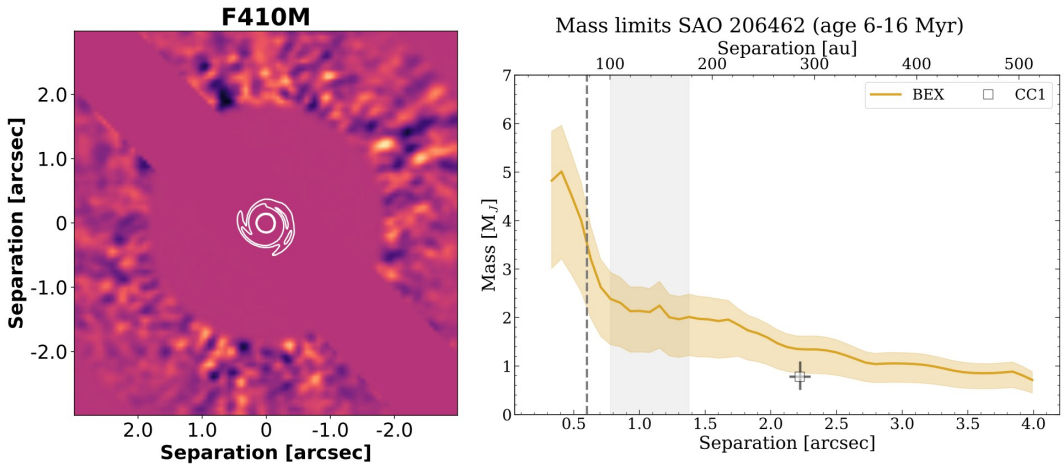

Figure 1: *Left:* F410M residuals highlighting the companion candidate to SAO 206462. The white contours show the disk spirals traced in scattered light. *Right:* Mass limits of SAO 206462 as a function of separation obtained from the 5σ flux limits when using the BEX cooling curve for the age of the system. The uncertainties, represented by the shaded area, include the age uncertainties of the system (6–16 Myr). The estimated mass of the companion candidate is showed as a black square. At $\sim$ 120 au, the NIRCam data exclude planets with masses $> 2.2\ M_J$.The dashed vertical line represents the size of spirals in scattered light and the shaded area highlights the predicted planet location from Xie et al. (2021).

Download/Website: `https://ui.adsabs.harvard.edu/abs/2024AJ....167..182C/abstract`

Contact: `gcugno@umich.edu`

Polarimetric differential imaging with VLT/NACO. A comprehensive PDI pipeline for NACO data (PIPPIN)

S. de Regt[1], *C. Ginski*[1,2,3], *M. A. Kenworthy*[1], *C. Caceres*[4,5], *A. Garufi*[6], *T. M. Gledhill*[7], *A. S. Hales*[8,9], *N. Huelamo*[10], *Á. Kóspál*[11,12,13,14], *M. A. Millar-Blanchaer*[15], *S. Pérez*[16,17,18], *M. R. Schreiber*[5,19]

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Astronomy & Astrophysics, in press (arXiv:2404.02222)

The observed diversity of exoplanets can possibly be traced back to the planet formation processes. Planet–disk interactions induce sub-structures in the circumstellar disk that can be revealed via scattered light observations. However, a high-contrast imaging technique such as polarimetric differential imaging (PDI) must first be applied to suppress the stellar diffraction halo. In this work we present the PDI PiPelIne for NACO data (PIPPIN), which reduces the archival polarimetric observations made with the NACO instrument at the Very Large Telescope. Prior to this work, such a comprehensive pipeline to reduce polarimetric NACO data did not exist. We identify a total of 243 datasets of 57 potentially young stellar objects observed before NACO's decommissioning. The PIPPIN pipeline applies various levels of instrumental polarisation correction and is capable of reducing multiple observing setups, including half-wave plate or de-rotator usage and wire-grid observations. A novel template-matching method is applied to assess the detection significance of polarised signals in the reduced data. In 22 of the 57 observed targets, we detect polarised light resulting from a scattering of circumstellar dust. The detections exhibit a collection of known sub-structures, including rings, gaps, spirals, shadows, and in- or outflows of material. Since NACO was equipped with a near-infrared wavefront sensor, it made unique polarimetric observations of a number of embedded protostars. This is the first time detections of the Class I objects Elia 2-21 and YLW 16A have been published. Alongside the outlined PIPPIN pipeline, we publish an archive of the reduced data products (`https://doi.org/10.5281/zenodo.8348803`), thereby improving the accessibility of these data for future studies.

Download/Website: `https://arxiv.org/abs/2404.02222`

Contact: `regt@strw.leidenuniv.nl`

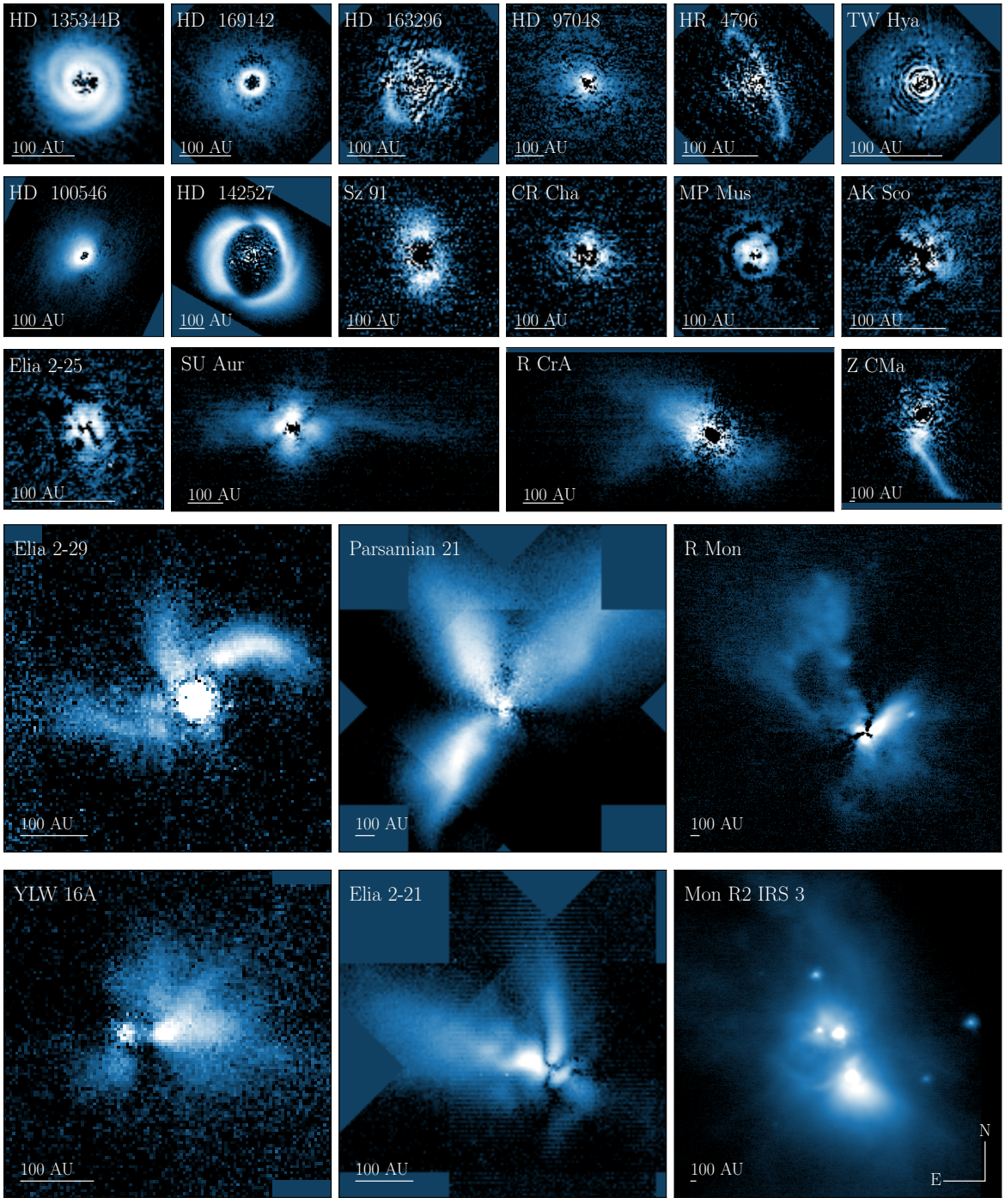

Figure 2: Gallery of young systems detected with NACO and reduced with PIPPIN. Each panel shows the polarised light on a logarithmic scale ranging between different values to highlight sub-structures (e.g. spirals, rings, shadows). The highest degree of instrumental-polarisation correction is used where possible. The images of YLW 16A and Elia 2-21 present the first polarised light detections in the NACO observations.

Color measurements of the polarized light scattered by the dust in protoplanetary disks

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Astronomy & Astrophysics, published (2024A&A...683A..18M/ arXiv:2312.14045)

Ground-based high-contrast instruments have yielded reflected light images of protoplanetary disks. Quantitative measurements of the reflected radiation provide strong constraints on the scattering dust which can clarify the dust particle evolution in these disks and the composition of the forming planets. This study aimed to derive the wavelength dependence of polarized reflectivity $(\hat{Q}_\varphi/I_\star)_\lambda$ for 11 disks, constraining dust properties and identifying systematic differences. Using ESO archive data from SPHERE/ZIMPOL and SPHERE/IRDIS instruments, we obtained accurate intrinsic polarized reflectivity $(\hat{Q}_\varphi/I_\star)$ values at wavelengths from $0.62\mu m$ to $2.2\mu m$. Polarized reflectivities ranged from $\hat{Q}_\varphi/I_\star \approx 0.1\%$ to 1.0%, with PSF-corrected values averaging 1.6 times higher than observed. Accurate PSF calibrations reduced systematic errors to $\Delta\hat{Q}_\varphi/\hat{Q}_\varphi \approx 10\%$ or less. For each disk, we derived a polarized reflectivity color $\eta_{V/IR}$ between a visible band $\lambda < 1\mu m$ and a near-IR band $\lambda > 1\mu m$ and other wavelength combinations. Wavelength gradients η varied significantly among objects. Disks around Herbig stars (HD 169142, HD 135344B, HD 100453, MWC 758, and HD 142527) showed a red color $\eta_{V/IR} > 0.5$, suggesting rather compact dust grains. T-Tauri star disks (PDS 70, TW Hya, RX J1615, and PDS 66) were predominantly gray $-0.5 < \eta_{V/IR} < 0.5$, with an absence of blue colors incompatible with porous aggregates. Exceptional red colors for LkCa 15 and MWC 758 were attributed to potential extra reddening from hot dust near the star. Future studies incorporating parameters like fractional polarization hold promise for advancing our understanding of dust properties within protoplanetary disks.

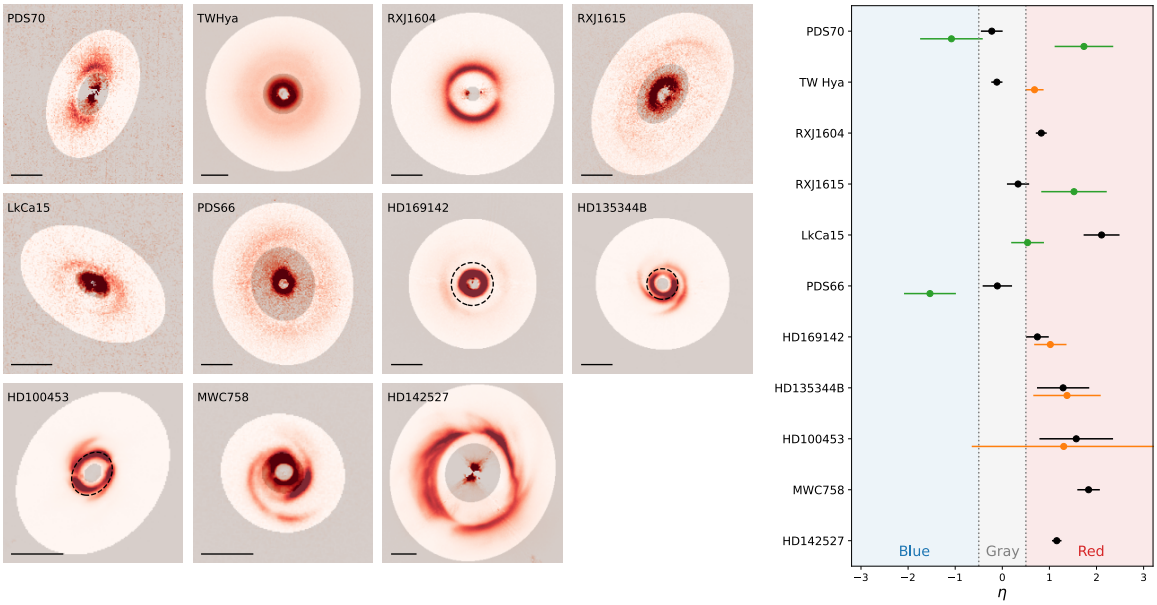

Figure 3: Left:Observed polarized intensity images $Q_\varphi(x, y)$ of the studied disks. J band images are given, except for TW Hya which is shown in the H band and MWC 758 in the Y band. The lines in the left-bottom corner represent 0.5". The white elliptical annulus highlights the disk integration region. Right: Logarithmic wavelength gradients η for the polarized reflectivity for the measured disks. Targets are sorted by the stellar luminosity. Black points are colors $\eta_{\mathrm{V/IR}}$ between visible and near-IR bands, orange points for visible bands η_{V}, and green points for near-IR bands η_{IR}. The shading represents the used definition of blue, gray, and red disk reflectivities.

Download/Website: `https://ui.adsabs.harvard.edu/abs/2024A%26A...683A..18M/abstract`

Contact: `jma@phys.ethz.ch`

JWST/NIRCam Imaging of Young Stellar Objects. III. Detailed Imaging of the Nebular Environment around the HL Tau Disk

C. Mullin[1], R. Dong[1], J. Leisenring[2], G. Cugno[3], T. Greene[4], D. Johnstone[1,5], M. R. Meyer[3], K. Wagner[2], S. G. Wolff[2], M. Boyer[6], S. Horner[7], K. Hodapp[8], D. McCarthy[2], G. Rieke[2], M. Rieke[2], E. Young[9]

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AAS Astronomical Journal, published (2024AJ....167..183M)

As part of the James Webb Space Telescope (JWST) Guaranteed Time Observation (GTO) program "Direct Imaging of YSOs" (program ID 1179), we use JWST NIRCam's direct imaging mode in F187N, F200W, F405N, and F410M to perform high contrast observations of the circumstellar structures surrounding the protostar HL Tau. The data reveal the known stellar envelope, outflow cavity, and streamers, but do not detect any companion candidates. We detect scattered light from an in-flowing spiral streamer previously detected in HCO^+ by the Atacama Large Millimeter/submillimeter Array, and part of the structure connected to the c-shaped outflow cavity. For detection limits in planet mass we use BEX evolutionary tracks when $M_{\rm p} < 2M_{\rm J}$ and AMES-COND evolutionary tracks otherwise, assuming a planet age of 1 Myr (youngest available age). Inside the disk region, due to extended envelope emission, our point-source sensitivities are $\sim$5 mJy (37 $M_{\rm J}$) at 40 au in F187N, and $\sim$0.37 mJy (5.2 $M_{\rm J}$) at 140 au in F405N. Outside the disk region, the deepest limits we can reach are $\sim$0.01 mJy (0.75 $M_{\rm J}$) at a projected separation of $\sim$525 au.

Download/Website: `https://ui.adsabs.harvard.edu/abs/2024AJ....167..183M/abstract`
Contact: `camrynmullin@uvic.ca`

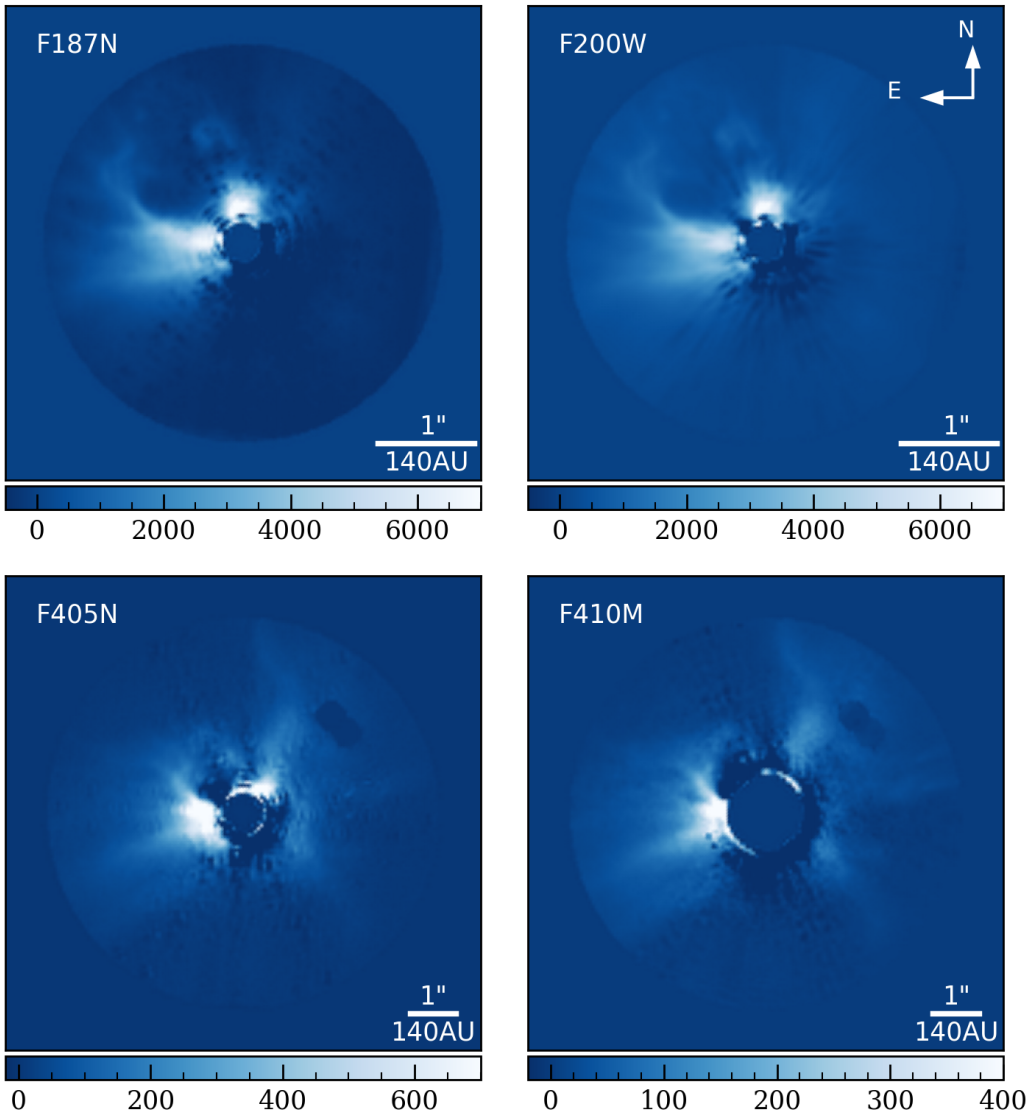

Figure 4: PSF-subtracted data for all 4 filters where color is in units of MJy/sr. We utilize an annulus of inner radius 0.″2 for F187N and F200W, and 0.″4 for F405N. We use a larger 0.″8 mask for F410M – which suffers from high levels of saturation – to retain data in the outer envelope regions. The stellar envelope is the most prominent feature in our data. Negative spiral residuals out to a distance of 1″ have been introduced by using MWC 758 as a PSF reference. In addition, we apply a mask to an artifact introduced in the NW direction of the long wavelength images due to the presence of a background star in the MWC 758 data.

3 Conferences and Workshops

Are We a Unique Species on a Unique Planet? – or are we just the ordinary Galactic standard?

Conference in Copenhagen, Denmark, about exoplanets and life, July 30 to August 2, 2024

The conference follows the theme from exoplanet formation, via pre-biology and habitability, to formation and future of life, addressing questions like "What determines whether an interstellar cloud collapses into a habitable or a lifeless planetary system?", "Which chemical routes does it take?", "Is our Solar system special?", "Does universal laws exist for life-formation?", "Is there a great filter of evolution toward higher intelligence and did we pass it?". These and many more questions about the conditions for life on the many new exoplanets being discovered today will be discussed by leading scientists within the wide range of areas that illuminates the field. Full program, abstracts of the invited talks, registration forms, etc, are found at https://cels.nbi.ku.dk/english/conference-cels/
Deadline for early registration (250 Euro) is May 1, and for late registration (300 Euro) July 1, 2024.

Subjects and list of invited speakers:

Exoplanets:
Anne-Marie Lagrange: Exoplanet discovery and evolution.
Nikku Madhusudhan: Chemical diversity of temperate exoplanets and implications for life.
Helmut Lammer: The evolution of Earth-like habitats.
Michiel Lambrechts: Earth's early atmosphere and volatility content .

Disk evolution and pre-biology:
Paola Caselli: Chemistry from ISM to disks to pre-biology to planets.
Bengt Gustafsson: Is the Sun an oddball and if so why? Interpretations and implications.
Pascale Ehrenfreund: Prebiotic reservoirs available to the early Earth and Mars.
Lena Noack: Planetary interior and habitability.

Terrestrial contra alien biology:
Katarzyna Adamala: Synthetic life.
Dirk Schulze-Makuch: Expectations about alien lifeforms.
David Catling: The rise of oxygen and its importance for complex life.
Kai Finster: The interaction between micro-organisms and cloud formation.
Donald Canfield: The evolution of Eukaryote ecosystems.

The future of life and humanity:
Milan Cirkovic: The rare Earth hypothesis: An obituary?
Steven Dick: Transforming our worldviews in a biological (or post-biological) Universe
Nick Bostrom: Are we in front or behind "the great filter" of evolution? (tbc)
Edward Schwieterman: Challenges for advanced life in the habitable zone.

Download/Website: `https://cels.nbi.ku.dk/english/conference-cels/`
Contact: `uffegj@nbi.ku.dk`

2024 Sagan Summer Hybrid Workshop
Advances in Direct Imaging: From Young Jupiters to Habitable Earths

T. Chen, D. Gelino
NASA Exoplanet Science Institute, California Institute of Technology, Pasadena, CA, USA

Hybrid Workshop, July 22-26, 2024

Direct imaging and spectroscopy has become a standard tool for studying the atmospheres and orbits of young, self-luminous giant planets in wide orbits. Advances in starlight suppression and spectroscopy technologies and techniques have gradually improved sensitivity to lower-mass and closer-in young planets. Going forward, ground- and space-based observatories will have complementary roles to play in the study of mature planetary systems, whether the search for biosignatures on Earth-like planets or the characterization of the variety of planetary system architectures.

The agenda with confirmed speakers, as well as descriptions of the hands-on sessions, is available on the workshop website. This workshop will cover the scientific questions in exoplanets motivating direct imaging. Sessions will explore basic optical principles of high-contrast imaging and the fundamentals of coronagraph and wavefront sensing technologies and high-contrast instrument design. Presentations and group exercises will cover approaches to starlight/PSF subtraction and to planet and disk recovery, determination of orbits from imaging observations, and other topics. The workshop will conclude with a look toward future facilities.

As has been the case for the past few years, the 2024 workshop will be hybrid with both in-person attendance and on-line attendance via Zoom webinar. Registration is free for everyone.

The Sagan Summer Workshops are aimed at advanced undergraduates, grad students, and postdocs, however all are welcome to attend. Attendees will also participate in hands-on tutorials and have the chance to meet in smaller groups with our speakers.

There is no registration fee for this workshop. Please contact us with any questions or to be added to the email list.

Download/Website: `http://nexsci.caltech.edu/workshop/2024`
Contact: `sagan_workshop@ipac.caltech.edu`

4 Jobs and Positions

Postdoctoral Position in exoplanetary/stellar outflows

Prof A. A. Vidotto

Leiden University, Netherlands, September 2024 or after

Leiden Observatory invites applications for a postdoctoral position to join the group of Aline Vidotto, whose research is centred around star-exoplanet connections, ranging from stellar outflows (stellar winds, coronal mass ejections), exoplanetary outflows (bulk atmospheric escape), and magnetism (stellar and planetary). The successful candidate will advance the modelling of stellar/exoplanetary outflows conducted by the group. Thus, for this position, we are particularly welcoming applicants with experience in numerical modelling. Experience in the modelling of solar/stellar and planetary outflows is welcome, but it is not required.

Interested candidates should upload their applications by **21 April 2024**. The application should contain a cover letter, CV, publication list, and a statement of research experience and future research interests (2-3 pages). Please mention how the candidate's past experience and his/her/their skills could complement the research carried out in Vidotto's research group. Candidates should arrange for three reference letters to be submitted before the indicated deadline. Referees can only submit their letters after receipt of an email by the submission system. This is initiated by the applicant. The applicant should register early and start this process.

The position is funded for 4 years, consisting of an initial appointment of 2 years plus an extension of 2 years contingent on satisfactory performance. The position is available from 01 September 2024. For more information about the position and how to apply, please visit the link below.

Leiden Observatory is a lively world-class university astronomy department that covers a wide range of science. We are the largest astronomy department in the Netherlands, with about 35 faculty members, 40 postdoctoral researchers, 30 support staff, 70 PhD students and 100 MSc students. Leiden itself, is a charming university town with international flair with easy connections to other European countries.

Leiden Observatory is dedicated to providing an inclusive, equitable, and supportive environment for everyone.

Benefits: Salary ranges from 3,877 to 5,090 euros gross per month based on a full time employment (38 hours/week, pay scale 10 in accordance with the Collective Labour Agreement for Dutch Universities). Leiden University offers an attractive benefits package with additional holiday allowance and end-of-year bonus (8% and 8.3% of annual income, respectively), training and career development, paid vacation, sick leave, disability insurance, maternity and parental leave, and retirement benefits. Candidates from outside the Netherlands may be eligible for a substantial tax break. Compulsory medical insurance is not included (on average 150 euro/month/adult).

Download/Website: `https://jobs.strw.leidenuniv.nl/2024/VidottoPD`

Contact: `vidotto@strw.leidenuniv.nl`

Open calls for PhD, PostDoc, Academy Scientist, and instrument operator positions in Space Research

Space Research Institute (IWF) of the Austrian Academy of Sciences (OeAW),

The Space Research Institute (IWF) of the Austrian Academy of Sciences (OeAW), invites applications for a number of open positions in exoplanet research and space-related instrument development:

- **PhD positions in Interdisciplinary Space Sciences and Planetary Research**: (1) Machine Learning Supported Exoplanet Cloud Formation Modelling, and also as part of YRP@Graz (2) Solar Eruptions and their global magnetic environment (University of Graz), and (3) Magnetic helicity in solar eruptions and related interplanetary disturbances (University of Graz)

  The application process has two stages and aims to decrease selection biases. Deadline: 30 April 2024
- **PostDoc Position** in Cloud Droplets and Redox Pairs in the Venusian Atmosphere. Deadline: 15 April 2024
- **PostDoc Positions** in Exoplanet Atmosphere: (1) Cloud Modelling and (2) Links to Observations. Deadline: 15 May 2024
- **Academy Scientist** in Satellite Laser Ranging & Space Safety. Deadline: 30 April 2024
- **Instrument Operator** for the ASPOC instrument onboard NASA MMS (part-time). Deadline: 31 March 2024

Download/Website: `https://www.oeaw.ac.at/en/iwf/institute/working-with-us`
Contact: `cosima.muck@oeaw.ac.at`

Professor in experimental planetary science (remote sensing).

Christoph Mordasini
Division of Space Research and Planetary Sciences, University of Bern, Switzerland

Bern, Switzerland, 2025

The Division of Space Research and Planetary Sciences within the Physics Institute of the University of Bern has an opening, as of 2025, for a Professor in Experimental Physics (100%) in space instrumentation for experimental planetary science, field of remote sensing.
The Division is one of the leading research groups in the field of space instrumentation for experimental Solar System exploration and is looking for a professor in the field of planetary remote sensing or a related field. The initial hiring level can range from assistant professor tenure track to full professor according to qualifications (open rank). The position will be filled in coordination with another open professorship in experimental planetology (field of in situ mass spectrometry) at the Division. This interdependence may influence the finally available rank.
The successful candidate is expected to have or further develop an excellent and internationally recognized track record in the development, construction, and exploitation of scientific instrumentation flying on major spacecraft missions. The successful candidate's research program will constitute a central part of the Division's core research activities and represent the field of space research nationally and internationally. It will complement existing research activities both at the University and within the Swiss and international landscapes. The successful candidate will be part of a vibrant Division and Institute interacting in research, education, outreach, and administration as a member of the physics faculty. The Division offers excellent conditions in terms of laboratory infrastructure, engineering, and manufacturing capabilities to build space-grade hardware.
We expect an outstanding academic record including successful acquisition of third-party funds, demonstrated expertise in instrument development, a strong international network in space research including multiple links to space agencies, excellent social skills, and leadership qualities. The person will teach at BSc. and MSc. level, including lecturing basic physics courses in German for which non-German speakers will be given the necessary time to become competent in the language.
Candidates are expected to hold a PhD in physics or a related field and must be able to teach physics classes. The University of Bern values diversity and is committed to equal opportunities; applications are welcome from all suitably qualified candidates who meet the stated criteria. The University of Bern has set the aim of increasing the percentage of women in leading academic positions and thus strongly encourages female scientists to apply for the position. Applications proposing job sharing will also be considered. The University of Bern has signed the DORA declaration and will apply its principles to the recruiting process. Remuneration is in accordance with the personnel regulations of the Canton of Bern.
Applications should include: Letter of motivation, Curriculum vitae, List of publications, List of courses taught, List of third-party funds raised, List of contribution to space missions and instrument developments, Information on further academic activities including science management, Research plan for the first 5 years.
The application documents must be submitted by 1. August 2024 electronically in a single PDF file (smaller than 10 MB) to the Dean's Office (email: applications.natdek@unibe.ch), Sidlerstrasse 5, 3012 Bern, Switzerland, including this completed online questionnaire:
`https://www.space.unibe.ch/about_us/jobs/questionnaire/index_eng.html`
where also additional information on the position can be found. The contact person for inquiries is Prof. Christoph Mordasini, Executive Director of the Division of Space Research and Planetary Sciences:

Contact: `jobs.space@unibe.ch`

Professor in experimental planetary science (in situ mass spectrometry).

Christoph Mordasini
Division of Space Research and Planetary Sciences, University of Bern, Switzerland

Bern, Switzerland, 2025

The Division of Space Research and Planetary Sciences within the Physics Institute of the University of Bern has an opening, as of 2025, for a Professor in Experimental Physics (100%) in space instrumentation for experimental planetary science, field of in situ mass spectrometry.
The Division is one of the leading research groups in the field of space instrumentation for experimental Solar System exploration and is looking for a professor in the field of planetary in situ mass spectrometry or a related field. The initial hiring level can range from assistant professor tenure track to full professor according to qualifications (open rank). The position will be filled in coordination with another open professorship in experimental planetology (field of remote sensing) at the Division. This inter-dependence may influence the finally available rank.
The successful candidate is expected to have or further develop an excellent and internationally recognized track record in the development, construction, and exploitation of scientific instrumentation flying on major spacecraft missions. The successful candidate's research program will constitute a central part of the Division's core research activities and represent the field of space research nationally and internationally. It will complement existing research activities both at the University and within the Swiss and international landscapes. The successful candidate will be part of a vibrant Division and Institute interacting in research, education, outreach, and administration as a member of the physics faculty. The Division offers excellent conditions in terms of laboratory infrastructure, engineering, and manufacturing capabilities to build space-grade hardware.
We expect an outstanding academic record including successful acquisition of third-party funds, demonstrated expertise in instrument development, a strong international network in space research including multiple links to space agencies, excellent social skills, and leadership qualities. The person will teach at BSc. and MSc. level, including lecturing basic physics courses in German for which non-German speakers will be given the necessary time to become competent in the language.
Candidates are expected to hold a PhD in physics or a related field and must be able to teach physics classes. The University of Bern values diversity and is committed to equal opportunities; applications are welcome from all suitably qualified candidates who meet the stated criteria. The University of Bern has set the aim of increasing the percentage of women in leading academic positions and thus strongly encourages female scientists to apply for the position. Applications proposing job sharing will also be considered. The University of Bern has signed the DORA declaration and will apply its principles to the recruiting process. Remuneration is in accordance with the personnel regulations of the Canton of Bern.
Applications should include: Letter of motivation, Curriculum vitae, List of publications, List of courses taught, List of third-party funds raised, List of contribution to space missions and instrument developments, Information on further academic activities including science management, Research plan for the first 5 years.
The application documents must be submitted by 1. August 2024 electronically in a single PDF file (smaller than 10 MB) to the Dean's Office (email: applications.natdek@unibe.ch), Sidlerstrasse 5, 3012 Bern, Switzerland, including this completed online questionnaire:
`https://www.space.unibe.ch/about_us/jobs/questionnaire/index_eng.html`
where also additional information on the position can be found. The contact person for inquiries is Prof. Christoph Mordasini, Executive Director of the Division of Space Research and Planetary Sciences:

Contact: `jobs.space@unibe.ch`

5 As seen on astro-ph

The following list contains exoplanet related entries appearing on astro-ph in March 2024.
Disclaimer: The hyperlinks to the astro-ph articles are provided for the convenience of the reader, but the ExoPlanet News cannot be responsible for their accuracy and perpetuity.

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astro-ph/2403.00110: **Validation of a Third Planet in the LHS 1678 System** *by Michele L. Silverstein et al.*
astro-ph/2403.00470: **Autonomous Robotic Arm Manipulation for Planetary Missions using Causal Machine Learning** *by C. McDonnell et al.*
astro-ph/2403.01026: **Examining the detectability of ringing on highly eccentric exoplanets** *by Mathijs Vanrespaille et al.*
astro-ph/2403.00908: **JWST/NIRCam Imaging of Young Stellar Objects III: Detailed Imaging of the Nebular Environment Around the HL Tau Disk** *by Camryn Mullin et al.*
astro-ph/2403.00676: **Transiting exoplanets with the Mid-InfraRed Instrument on board the James Webb Space Telescope: From simulations to observations** *by Achrène Dyrek et al.*
astro-ph/2403.00647: **Resolved ALMA observations of water in the inner astronomical units of the HL Tau disk** *by Stefano Facchini et al.*
astro-ph/2403.00626: **The First Spatially-resolved Detection of ^{13}CN in a Protoplanetary Disk and Evidence for Complex Carbon Isotope Fractionation** *by Tomohiro C. Yoshida et al.*
astro-ph/2403.00608: **The GAPS Programme at TNG: LIV. A HeI survey of close-in giant planets hosted by M-K dwarf stars with GIANO-B** *by G. Guilluy et al.*
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astro-ph/2403.01527: **The GAPS Programme at TNG LV. Multiple molecular species in the atmosphere of HAT-P-11 b and review of the HAT-P-11 planetary system** *by M. Basilicata et al.*
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