

Matthew A. Kenworthy

Curriculum Vitae - June 7, 2024

[Leiden Observatory](#)

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Education

1995-1999 **PhD** [Institute of Astronomy, University of Cambridge](#), Astronomy

1992-1995 **BA (Hons)** [University of Oxford](#), Physics

Employment

2015- **Associate Professor**, Leiden Observatory, The Netherlands.

2010-2015 **Assistant Professor**, Leiden Observatory, The Netherlands.

2007-2009 **Assistant Astronomer**, Steward Observatory, USA.

2003-2007 **Instrument Scientist for the MMT AO System**, Steward Observatory, USA.

2001-2003 **Postdoctoral Research Associate**, University of Cincinnati, USA.

1999-2001 **Postdoctoral Research Associate**, Steward Observatory, USA.

Main Research Interests

- **Ground-based extrasolar planet imaging:** Using the largest telescopes in the world to directly detect and characterise extrasolar planets. Developing and implementing image processing algorithms to understand the nature of quasi-static aberrations in the telescope and subsequently minimise them.
- **Hill sphere ring systems** Planets in very young stellar systems accrete material from the circumstellar disk through a Hill-sphere filling circumplanetary disk, and onto their cores. There is a transition period where the circumplanetary disk becomes optically thin as gas and dust are accreted into rings and moons, during which time we can detect these giant ring-like structures through their transit signals as seen on Earth. This provides a unique insight into the early history of planet and moon formation and evolution. J1407 and PDS 110 are two prototype transiting Hill sphere systems that we study, and we are searching for more in archival data.
- **Novel instrumentation techniques:** Developing visible and near-infrared instrumentation that complements traditional imaging and long slit spectroscopy, ranging from integral field spectrographs using optical fibers and hexagonal lenslet arrays, through to coronagraphic and phase apodizing techniques for high contrast imaging of extrasolar planet systems.

Teaching

I have taught **26 courses** at Leiden from 2010 and I have led the coordination of the Space Missions Minor course which connects Leiden, TU Delft and Rotterdam Erasmus Universities with a Bachelor Minor course. I have taught several workshops and PhD/Summer schools on topics such as “Adaptive Optics”, “High Contrast Imaging”, “Preparing a professional web page” and “How to produce professional plots and figures for academic papers”.

Year	Lecture course	Level	Institute	ECs
2024	High Contrast Imaging	Masters	Leiden	3
2023	Astronomical Telescopes and Instruments *	Masters	Leiden	6
2023	Fundamentals of Astronomy (coordinator)	Bachelor	Leiden/TU Delft	4
2022	High Contrast Imaging	Masters	Leiden	3
2022	Astronomical Telescopes and Instruments *	Masters	Leiden	6
2022	Fundamentals of Astronomy (coordinator)	Bachelor	Leiden/TU Delft	4
2021	High Contrast Imaging	Masters	Leiden	3
2021	Astronomical Telescopes and Instruments *	Masters	Leiden	6
2020	Astronomical Telescopes and Instruments *	Masters	Leiden	6
2019	High Contrast Imaging	Masters	Leiden	3
2019	Astronomical Telescopes and Instruments *	Masters	Leiden	6
2019	Detection of Light *	Masters	Leiden	6
2018	Astronomical Telescopes and Instruments *	Masters	Leiden	6
2018	Detection of Light *	Masters	Leiden	6
2017	High Contrast Imaging	Masters	Leiden	3
2017	Astronomical Telescopes and Instruments *	Masters	Leiden	6
2016	Astronomical Telescopes and Instruments *	Masters	Leiden	6
2015	High Contrast Imaging	Masters	Leiden	3
2015	Astronomical Telescopes and Instruments/OAI *	Masters	Leiden	6
2014	Astronomical Telescopes and Instruments *	Masters	Leiden	6
2014	Detection of Light	Masters	Leiden	6
2013	Exoplanets	NOVA PhD School		-
2013	Modern Research	Bachelor	Leiden	3
2012	Detection of Light	Masters	Leiden	6
2012	ACAO Summer School	Summer School	South Africa	-
2012	Modern Research	Bachelor	Leiden	3
2011	Detection of Light	Masters	Leiden	6
2011	Modern Research	Bachelor	Leiden	3

* 50% shared responsibility

Research Grants and Awards since 2010

2023-2027	NWO M2 - P.I. Matthew Kenworthy 574kEuro for 'Understanding formation pathways of wide separation exoplanets'
2019-2023	NWO/PEPSci - P.I. Matthew Kenworthy 240kEuro for 'Modelling, detection and characterization of THEMIs'
2016	NWO/NRF - P.I. Matthew Kenworthy 12kEuro for 'Put a ring on it: looking for rings around the exoplanet Beta Pic b'
2015-2019	NWO/FAPESP Collaboration - P.I. Matthew Kenworthy 240kEuro for 4 year graduate student support
2013-2018	NOVA Postdoc for SPHERE ZIMPOL - (as Co-I) P.I. Christoph Keller Funds for 5 year postdoctoral support
2014	NWO/NRF - P.I. Matthew Kenworthy 12kEuro for 'Development of an Economical Adaptive Optics System'
2013	HST Support - supervisor to the P.I. Tiffany Meshkat Funds for multi-cycle observations
2011-2015	ESFRI Graduate student - P.I. Matthew Kenworthy 250kEuro Full graduate student support
2011-2015	Marie Curie IRG - P.I. Matthew Kenworthy 100kEuro over four years

Supervision of PhD students and post graduates

PhD students where I was the primary supervisor are in **bold**.

1. **Tiffany Meshkat** (2012–2016)
2. **Gilles Otten** (2012–2016)
3. **Emiel Por** (2016–2020)
4. **Alex Bohn** (2017–2021)
5. Tim van Werkhoven (2010–2014) *with C. Keller*
6. Maaïke van Kooten (2017–2021) *with N. Doelman*
7. **Dirk van Dam** (2018–)
8. **Elina Kleisioti** (2021–) *with D. Dirkx/TU Delft*
9. Pengyu Liu (2022–) *with B. Biller/Edinburgh*
10. Michiel Darcis (2023–) *with P. de Visser/SRON*
11. **Richelle van Capelleveen** (2023–)
12. **Hylke Hoogland** (2023–)

Postgraduates:

1. Dr. Christian Ginski (2014–2018) *with C. Keller*
2. **Dr. Schuyler Wolff (Oort Fellow)**

Supervision of Masters and Bachelor students

From 2010 to 2023, I have **supervised over 40 MSc projects and 21 undergraduate projects** on astronomy and instrumentation. Over 20 of these projects have led to refereed publications in the astronomical literature.

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<u>Student</u>	<u>Degree</u>	<u>Title</u>	<u>Year</u>
Britt Ottevanger	BRP	"The transiting disk eclipse of ASASSN-21ao"	2024
Rick Dullaart	MRP	"Searching for wide separation exoplanets in the SnapSHINE survey"	2024
Puck Rooijackers and Joep Noordhoek	BRP	"Characterising the binary system from YSES 3 with direct imaging"	2023
Zachary Burr	MRP	"Finding Companions in the YSES IFS Data"	2023
Catherine Slaughter	MRP	"Disentangling the shadows of a planetary collision"	2023
Theofilus Hobba Pramono	MRP	"Follow Up of ASASSN-21js Light Curve"	2023
Anna Perry	MRP	"A multi-wavelength Reconstruction Scheme for the Zernike WFS"	2023
Isis van Wolde	BRP	"Transit of a circumplanetary disk"	2023
Quirin van Woerkom	MRP	"The spectroastrometric detectability of nearby Solar System-like exomoons"	2023
Wouter van Tol	MRP	"WFS reconstruction with CNN for the pyramid WFS"	2023
Tunde Meijer and Levi van Es	BRP	"Looking for CPDs in CSDs and the discovery of a transiting exoplanet"	2022
Richelle van Capelleveen	MRP	"The Eclipse of ASASSN-21qj: A collisional event"	2022
Ioannis Koutalios	MRP	"Finding the best exoplanets to search for exomoons by radial velocity"	2022
Darío González Picos	MRP	"Looking for transiting circumplanetary disks in ASAS-SN"	2021
Francisco Tomas Pires de Santos	MRP	"Exploring the Terrascope"	2021
Lukas Welzel	MRP	"Measuring the optical depth of a debris disk using a galaxy"	2021
Mariya Krasteva	MRP	"Design of a Fabry-Perot Etalon for the CoPILOT Spectrometer"	2021
Sam de Regt	MRP	"Polarimetric differential imaging with VLT/NACO"	2021
Stef Heijnen	MRP	"Survival of exomoons around exoplanets"	2021
Liz van der Kamp	MRP	"A search for ejection events in Sco-Cen"	2021
Evelyn van der Kamp	MRP	"A multiplicity survey of transiting exoplanet host stars"	2021
Ramon van Gaalen and Hannah van Gem	BRP	"Compressed Sensing: Earth Observation Using a CASSI System"	2021
Wouter van Tol	BRP	"Lava Rainbows"	2021
Xinrui Shan	MRP	"DeepRDI: Detecting exoplanets with Reference Star Differential Imaging and Neural Networks"	2021
Pengyu Liu	MRP	"TRAP4vAPP: Finding exoplanets in vAPP coronagraphic data"	2020
Bart Ouwehand	BRP	"Determining the dust particle sizes during the transit seen towards J0600"	2020
Liz van der Kamp	BRP	"Looking through a list of Single Eclipses in K2 Data & modelling of a deep and asymmetric eclipse"	2020
Bas van Veen	BRP	"Looking for lonely planets with NIC1 and SPHERE data"	2020
Anne Baak and Fleur Evertsen	BRP	"Watching the Brightest Stars with the Leiden All Sky Camera"	2020
Christiaan Dik and Stan Barmentloo	BRP	"Looking for transiting planets around J1407"	2019
Sanna Heesakkers and Rosa Hoogenboom	BRP	"Light Curves of the Brightest Stars"	2019
Andy Schmit	MRP	"Finding Ring Systems in TESS light curves and putting constraints on lifetimes"	2019
Christopher Seay	MRP	"Finding Extrasolar Companions Around Sun-like Stars in the Sco-Cen Association"	2019
Aniek van Ogtrop	MRP	"Observing nova explosions using bRing"	2019
Sacha van Ruiten	BRP	"Observability of Tidally Heated Exomoons with METIS"	2019
Ruoyan Wang	MRP	"Cataloging and Visualizing Cradles of Planet Formation"	2019
Chandra Vaishali	MRP	"Direct Imaging of HR 8799"	2019
Alex Tripsas	MRP	"Design and Demonstration of Focal Plane Wavefront Sensing for Co-Phasing the GMT"	2019
Chen Xie	MRP	"Imaging accreting planets within their native environment with VLT/MUSE"	2019
Lennart van Sluijs	MRP	"Spectroscopic Transit Search: a self-calibrating method for detecting planets around bright stars"	2018
Rachel Losacco	MRP	"Lava Rainbows of 55 Cancri e"	2018
Erik Weenk and Marit Mol Lous	BRP	"Looking for Beta Pic c"	2017
Nilofar Khorshid	MRP	"Improving the Photometric Precision of bRing by Constructing a PSF Map"	2017
Jorge Andres Villa Vandez	MRP	"Searching for Exoplanetary Rings with SUPERWASP and Gaia"	2017
Robin Mentel	BRP	"Constraining the orbital period of the ringed companion J1407b with photographic plate and CCD data"	2016
Patrick Dorval	MRP	"bRing: Continuous Monitoring of the Beta Pictoris Hill Sphere Transit"	2016
Dirk van Dam	MRP	"High Resolution Polarisation Imaging of 1SWASP J140747.93-394542.6: The Search for an Extrasolar F"	2016
Bharath Chowdhary Nagam	MRP	"New Mass and Orbital constraints of J1407b"	2016
Lennart van Sluijs and Denis Vandael	BRP	"Transmission through the debris disk of the solar-like star HD 107146 from a distant occulted galaxy"	2015
Martijn Oei	BRP	"Towards a polarization-induced dOTF wavefront sensor"	2014
Pim Overgaauw	MRP	"Finding the Drake Equation for Tidally Heated Exomoons"	2014
Julia Heuritsch	MRP	"Looking for transiting exo-ring planetary systems in archival data"	2014
Kiera Brooks	MRP	"On-sky testing of the Polarization dOTF Wavefront Sensor Camera"	2014
Ari Karisli and Stefano Metafuni	BRP	"Allskycam at Leiden Observatory"	2013
Emiel Por	BRP	"Sparse Aperture Masking at the Leiden Old Observatory"	2013
Arisa Hatagaya	MRP	"The Search for Transiting Exoplanets in the Beta Pictoris System using the Box-Fitting Least Squares A"	2013
Luis Henry Quiroga Nunez	MRP	"Principal Component Analysis of HST Coronagraphic Images to detect circumstellar disk structure"	2013
Sascha Zeegers	MRP	"Feasibility of transit spectroscopy of nearby debris disks"	2011
Joris Voorn	BRP	"Stability of multimode fibers for exoplanet spectroscopy"	2011
Mason Carney	MRP	"Modeling a Stepped Luneberg Lens for All-Sky Imaging"	2011
Jens Hoeijmakers and Ritse Heinsbroek	BRP	"Looking for faint stellar companions to A-type stars using image convolution"	2010

Service & Committees (Institutional, active in bold)

I contribute to the Leiden Observatory department in several areas of management and administration, notably:

- Diversity Committee 2019—2023
- Editor of Leiden Observatory Annual Report 2018—2023
- **Social Committee 2018—**
- Opleidingscommissie van Natuurkunde en Sterrenkunde 2014—2020
- **Opleidingscommissie 2014—**
- Masters Admission Committee 2014—2019
- **Promotie Begeleidings Committee 2013—2014, 2021, Chair in 2024:** Leiden Observatory has one of the largest graduate programs in Europe with over 70 students in the academic year 2013. We talk with all the students once a year to listen to any concerns they might have and to ensure that they are progressing with their studies to both the supervisor and students satisfaction.
- Leiden Observatory Colloquium organiser 2011—2014.
- Masters Student Astronomy colloquium 2010—2012.

Service & Committees (External, active in bold)

- **2019— ESO, ALMA Reviewer.**
- **2023— LCOGT Reviewer.**
- 2021 JWST Cycle 1 Reviewer.
- **2018—2021,2023 Reviewer for NWO VENI proposals.**
- **2012— Coronagraphic design lead for [ERIS](#), a second generation thermal infrared imaging camera for the VLT.**
- 2013—2016 ING Time Allocation Committee.
- Program Committee for the SPIE Astronomical Telescopes + Instrumentation 2016, 2018, 2020
- 2014—2018 Simulations of first light [E-ELT](#) instrument Workshop Organiser, with the goal to unify the atmospheric and instrument parameters for consistent modeling.
- 2014—2016 [ESO Users Committee](#), representing the opinions of Dutch astronomers to the European Southern Observatory.
- 2012—2018 Coronagraphic design lead for the E-ELT instrument METIS as part of an international consortium.

- **Review papers for refereed journals ApJ, PASP, MNRAS, Nature, Nature Astronomy and other major astronomy journals.**
- 2013 Group leader for the Rocky Exoplanets panel on the NWO [PEPSci](#) program, coordinating several proposals within the funding agency.
- 2011—2014 NOVA Colloquium Organiser for the four astronomy institutes, organising week long visits from international prominent researchers.
- **NSF and ERC Panel Reviewer** in 2010, 2013, 2015 and 2016, typically reading over a dozen proposals and acting as lead reviewer on 3 to 4 proposals each time.
- **Reviewer for several international astronomy proposals**
- Canadian National Science Panel Reviewer in 2012.
- [Lorentz Center Workshop](#) Organiser for:
 - “[Optimal Exoplanet Imagers](#)” in February 2023.
 - “[Tackling the Complexities of Substellar Objects](#)” in February 2020.
 - “[Rocks, Rubble and Rings: Understanding Deep and Irregular Transits](#)” in October 2016.
 - “[Combining Coronagraphs and Wavefront Control](#)” in October 2014.
 - “[How to find our Nearest Neighbours](#)” in October 2012

Invited Colloquia and Research Talks

I have given **over 130 science talks from 2010 to present**, with over a third of them invited. The table shows talks from 2020 to present day.

Date	Talk at	Talk for	Talk title	talk type
2023-12-14	University of Galway	Physics Colloquium	When Worlds (probably) Collide!	invited
2023-11-28	MPIA	Astro Coffee	When Worlds Collide! (Probably)	invited
2023-11-21	NOVA	NOVA Group II	When Worlds Collide! (Probably)	invited
2023-11-09	ESTEC	SCI-S Seminar	YSES and WiSPIT: direct imaging surveys for young gas giant	invited
2023-10-26	STRW	Science Day	When Worlds Collide! (Probably)	invited
2023-10-03	ZOOM IN Optics	Delft	Imaging extrasolar planets and circumstellar disks with HCI	invited
2023-06-23	Oxford University	SPIMAX	The surprisingly eccentric orbit of the directly imaged exoplanet	invited
2023-06-09	ESTEC	Exoplanet Science Meeting (HAESM)	The surprisingly eccentric orbit of the directly imaged exoplanet	conference
2023-05-23	Leicester University	Leicester Astro Department	Recent Research	coffee
2023-03-20	ESTEC	ESLAB	YSES and WiSPIT: direct imaging surveys for young gas giant	conference
2023-03-08	TU Delft	ARTEMIS	YSES and WiSPIT: direct imaging surveys for young gas giant	invited
2022-12-01	ESO	Disks and Planets across ESO facilities	YSES and WiSPIT: direct imaging surveys for young gas giant	conference
2022-11-14	University of Groningen	Astro Seminar	YSES and WiSPIT: direct imaging surveys for young gas giant	invited
2022-09-26	Astronomy on Tap Leiden	Astronomy on Tap	Shadows of Rings	outreach
2022-06-07	SRON	SMS talk	Lonely Planets: Direct imaging discoveries of gas giant exoplanets	invited
2022-05-16	Pasadena/Heidelberg	Exoplanets in the 21st century	Advanced Coronagraphs and Recent Results	invited
2022-04-22	STRW	Dutch Exomoons Meeting	Circumsecondary Disks in Transit	conference
2022-04-06	Switzerland	3rd JURA for Planets	Make a web page	invited
2022-01-26	University of Toronto	Astronomy Colloquium	Lonely Planets: Direct imaging discoveries of gas giant exoplanets	invited
2022-01-24	TU Delft	AE Colloquium	Lonely Planets: Direct imaging discoveries of gas giant exoplanets	invited
2022-01-20	ASTRON	Dwingeloo-Leiden coffee	The Young Suns Exoplanet Survey	coffee
2021-11-24	Rijnlans Lyceum	Masters Course for senior students	Finding Other Worlds	outreach
2021-11-03	Leiden Observatory	PhD Introduction day	Astronomical Instrumentation at Leiden Observatory	coffee talk
2021-09-22	EPSC	EPSC 2021-35	The Young Suns Exoplanet Survey: imaging infant planets around	conference
2021-09-02	George Mason University Obs	Virtual Evenings Under the Stars	Seeing the shadows of giant ring systems around exoplanets	outreach
2021-05-17	Newbury Astronomical Society	Newbury Astronomical Society	Taking pictures of planets around Young Suns	outreach
2021-05-17	Ruhr-Universität Bochum	Astronomisches Institut	Taking pictures of planets around Young Suns	invited
2021-05-10	University of Innsbruck	JOINT Institute Seminar	Seeing the shadows of circumplanetary disks: the cases of J1407	invited
2021-04-16	Leiden Observatory	Observatory Seminar	Searching for circumplanetary material around Beta Pictoris b	coffee talk
2021-03-26	Stockholm University	Stockholm Astronomy Seminar	Seeing the shadows of circumplanetary disks: the cases of J1407	invited
2021-03-03	Leiden Observatory	Leiden Exoplanet Meeting	The Beta Pictoris b Hill sphere transit	group meeting
2021-01-13	UCSC	UCSC Colloquium	Looking for the transits of circumplanetary disks	invited
2021-01-12	MPIA	Exocoffee @ MPIA	ALMA and NACO observations towards the young exoring transit	invited
2021-01-09	AAVSO	AAVSO Webinar	Shadows of circumplanetary disks: J1407 and J0600	invited
2020-12-07	Wallace Fields	Two classes	Exoplanets	outreach
2020-11-26	NOVA	NOVA Group II	Shadows of Circumplanetary Rings	conference
2020-11-17	Leiden Lions Club	Leiden Lions Club	Two distant wanderers: how to take pictures of planets around	outreach
2020-11-06	Leiden University	Dutch Exomoons Meeting	Shadows of Circumplanetary Rings	conference
2020-10-12	ASTRON	Coffee morning	Searching for the shadows of exocomets and exomoons	journal club
2020-09-28	Astronomy on Tap Leiden	Outreach	Two distant wanderers: how to take pictures of planets around	outreach
2020-07-31	Leiden University	Leiden Observatory Seminar	Searching for Transiting Circumplanetary Disks with ALMA and	seminar
2020-07-06	Astronomy on Tap Groningen	Astronomy on Tap	Seeing the shadows of planets, comets and rings around other	outreach
2020-07-04	Perth Observatory	Perth Observatory	Observations of J0600 and Perth Observatory	outreach
2020-07-01	EAS2020	EAS2020	Search for Transiting Circumplanetary Disks	conference
2020-05-26	Steward/LPL	Origins Seminar	Looking for the transits of circumplanetary disks	invited
2020-05-13	Lansing	Astronomy on Tap	Finding Seven Trappists outside the Solar System	outreach
2020-04-28	University of St. Andrews	Lunch Talk	Looking for the transits of circumplanetary disks	invited
2020-04-08	Queens University Belfast	Astrophysics Colloquium	Looking for the transits of circumplanetary disks	invited
2020-03-04	University of Exeter	Astrophysics Colloquium	Looking for the transits of circumplanetary disks	invited
2020-02-12	Science Museum, London	PATREON people	Seeing the shadows of planets, comets and rings around other stars	invited
2020-01-27	Munich	HCI post-processing Workshop	Observations of Planetary Systems	invited
2020-01-20	Oxford University	Oxford Astrophysics Colloquium	Looking for the transits of circumplanetary disks	invited

Bibliography of Publications

4994	citations for 244 bibliographic references in the Astrophysics Data System
144	Refereed publications (135 since 2010)
36	Hirsch h-index (i.e. 36 publications with ≥ 36 citations)
60	SPIE Instrumentation Papers

[Google Scholar citations](#)

Refereed Papers since 2010

- A135. [The formation of transiting circumplanetary debris discs from the disruption of satellite systems during planet-planet scattering](#)
Mustill, A. J., Davies, M. B., & **Kenworthy, M. A.**, 2024, MNRAS, 530, 3606.
- A134. [The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems. V. Do Self-consistent Atmospheric Models Represent JWST Spectra? A Showcase with VHS 1256–1257 b](#)
Petrus, S., Whiteford, N., Patapis, P., Biller, B. A., Skemer, A., Hinkley, S., Suárez, G., et al., 2024, ApJL, 966, L11.
- A133. [Disk Evolution Study Through Imaging of Nearby Young Stars \(DESTINYs\): The SPHERE view of the Orion star-forming region](#)
Valegård, P.-G., Ginski, C., Derkink, A., Garufi, A., Dominik, C., Ribas, Á., Williams, J. P., et al., 2024, A&A, 685, A54.
- A132. [Polarimetric differential imaging with VLT/NACO. A comprehensive PDI pipeline for NACO data \(PIPPIN\)](#)
de Regt, S., Ginski, C., **Kenworthy, M. A.**, Caceres, C., Garufi, A., Gledhill, T. M., Hales, A. S., et al., 2024, A&A, 684, A73.
- A131. [The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems. IV. NIRISS Aperture Masking Interferometry Performance and Lessons Learned](#)
Sallum, S., Ray, S., Kammerer, J., Sivaramakrishnan, A., Cooper, R., Greebaum, A. Z., Thatte, D., et al., 2024, ApJL, 963, L2.
- A130. [An Episode of Occultation Events in Gaia21bcv](#)
Hodapp, K. W., Gaidos, E., **Kenworthy, M. A.**, Tucker, M., Shappee, B. J., Payne, A. V., & Do, A., 2024, AJ, 167, 85.
- A129. [A near-infrared variability survey of young planetary-mass objects](#)
Liu, P., Biller, B. A., Vos, J. M., Whiteford, N., Zhang, Z., Liu, M. C., Fontanive, C., et al., 2024, MNRAS, 527, 6624.
- A128. [A planetary collision afterglow and transit of the resultant debris cloud](#)
Kenworthy, M., Lock, S., Kennedy, G., van Capelleveen, R., Mamajek, E., Carone, L., Hambusch, F.-J., et al., 2023, Natur, 622, 251.
- A127. [Chasing rainbows and ocean glints: Inner working angle constraints for the Habitable Worlds Observatory](#)
Vaughan, S. R., Gebhard, T. D., Bott, K., Casewell, S. L., Cowan, N. B., Doelman, D. S., **Kenworthy, M.**, et al., 2023, MNRAS, 524, 5477.

- A126. *The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems I: High-contrast Imaging of the Exoplanet HIP 65426 b from 2 to 16 μm*
Carter, A. L., Hinkley, S., Kammerer, J., Skemer, A., Biller, B. A., Leisenring, J. M., Millar-Blanchaer, M. A., et al., **2023**, ApJL, 951, L20.
- A125. *Tidally heated exomoons around Eridani b: Observability and prospects for characterization*
Kleisioti, E., Dirkx, D., Rovira-Navarro, M., & **Kenworthy**, M. A., **2023**, A&A, 675, A57.
- A124. *The β Pictoris system: Setting constraints on the planet and the disk structures at mid-IR wavelengths with NEAR*
Skaf, N., Boccaletti, A., Pantin, E., Thebault, P., Kral, Q., Danielski, C., Galicher, R., et al., **2023**, A&A, 675, A35.
- A123. *The Enhanced Resolution Imager and Spectrograph for the VLT*
Davies, R., Absil, O., Agapito, G., Agudo Berbel, A., Baruffolo, A., Biliotti, V., Black, M., et al., **2023**, A&A, 674, A207.
- A122. *Applying a temporal systematics model to vector Apodizing Phase Plate coronagraphic data: TRAP4vAPP*
Liu, P., Bohn, A. J., Doelman, D. S., Sutliff, B. J., Samland, M., **Kenworthy**, M. A., Snik, F., et al., **2023**, A&A, 674, A115.
- A121. *Improved Companion Mass Limits for Sirius A with Thermal Infrared Coronagraphy Using a Vector-apodizing Phase Plate and Time-domain Starlight-subtraction Techniques*
Long, J. D., Males, J. R., Haffert, S. Y., Pearce, L., Marley, M. S., Morzinski, K. M., Close, L. M., et al., **2023**, AJ, 165, 216.
- A120. *Measuring the variability of directly imaged exoplanets using vector Apodizing Phase Plates combined with ground-based differential spectrophotometry*
Sutliff, B. J., Birkby, J. L., Stone, J. M., Doelman, D. S., **Kenworthy**, M. A., Panwar, V., Bohn, A. J., et al., **2023**, MNRAS, 520, 4235.
- A119. *Disk Evolution Study Through Imaging of Nearby Young Stars (DESTINYs): Diverse outcomes of binary-disk interactions*
Zhang, Y., Ginski, C., Huang, J., Zurlo, A., Beust, H., Bae, J., Benisty, M., et al., **2023**, A&A, 672, A145.
- A118. *The JWST Early-release Science Program for Direct Observations of Exoplanetary Systems II: A 1 to 20 μm Spectrum of the Planetary-mass Companion VHS 1256-1257 b*
Miles, B. E., Biller, B. A., Patapis, P., Worthen, K., Rickman, E., Hoch, K. K. W., Skemer, A., et al., **2023**, ApJL, 946, L6.
- A117. *Detecting life outside our solar system with a large high-contrast-imaging mission*
Snellen, I. A. G., Snik, F., **Kenworthy**, M., Albrecht, S., Anglada-Escudé, G., Baraffe, I., Baudoz, P., et al., **2022**, ExA, 54, 1237.
- A116. *An optimized survey strategy for the ERIS/NIX imager: searching for young giant exoplanets and very low mass brown dwarfs using the K-peak custom photometric filter*
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Outreach

Popular press articles written:

- “Rings of a Super Saturn” in *Scientific American* 2015
- “Sharpening the Sky with Adaptive Optics” in *Yearbook of Astronomy 2006*, ed. Patrick Moore, MacMillan.
- “Challenges with the MMT Adaptive Optics System” an Invited article for the *Center for Adaptive Optics Newsletter*, **3**, 1 (Winter 2006)
- “One in a trillion comet” - News article for *Astronomy* magazine (November 2004)
- “Einstein’s Mirror” - a book review written for *Astronomy Now*, p.12 (March 1998)
- “A dark cloud on the horizon” - “Objective” (op-ed article) written for *Astronomy Now*, p.66 (September 1997)
- “Gamma ray burst ‘seen’ ” - News Update written for *Astronomy Now*, p.6 (June 1997)
- “Images of Comet Hyakutake” - written for “Comet Hyakutake: a further view” *Astronomy Now*, p.23 (July 1996)