ALAN JACKSON

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EXPERIENCE

Nov 2019 –	**Exploration Fellow/Assistant Research Scientist,** School of Earth and Space Exploration, Arizona State University
Oct 2016 – Jul 2019	**CPS Fellow,** Centre for Planetary Sciences, University of Toronto
Feb 2014 – Sep 2016	**Postdoctoral Research Associate,** School of Earth and Space Exploration, Arizona State University Advisor: Erik Asphaug

EDUCATION

Oct 2010 – Jan 2014	**PhD, Institute of Astronomy, University of Cambridge** Supervisor: Mark Wyatt Thesis title: Debris in planetary systems
Oct 2006 – Jun 2010	**MPhys (Hons), 1st class, Merton College, University of Oxford** College scholarships: Exhibitioner (2007), Postmaster (2008-2010)

TEACHING

Jan 2015 – May 2015	Co-instructor for Terrestrial Planet Formation (GLG 598) graduate course
Jan 2011 – May 2013	Supervisor/tutor (groups of 2-3) for Astrophysical Fluid Dynamics Part II (3rd year undergraduate) course
Summer 2018	Advised undergraduate student Loic Nassif-Lachapelle for University of Toronto, CPS summer undergraduate fellowships programme.

I also worked closely in a semi-advisory role with doctoral students Viranga Perera and Travis Gabriel while at ASU from 2014-2016

GRANTS

Project	Funding organisation	Award date	Duration	Total funding
Stop hitting yourself: did most terrestrial impactors originate from the terrestrial planets? Position: PI/Science PI	NASA	Apr 2016	3 years	$643,000

OBSERVING PROGRAMS

Project	Facility	Award date	Time/time valuation	Support funding
Probing terrestrial planet formation with extreme disk variability Position: Co-I, PI: Kate Su, University of Arizona	Spitzer Space Telescope	Aug 2016	120 hrs/ $258,000	
Mineralogical evolution in extreme debris disks II Position: Co-I, PI: Kate Su, University of Arizona	SOFIA	Oct 2016	2.5 hrs	$32,000
Mineralogical evolution in extreme debris disks Position: Co-I, PI: Kate Su, University of Arizona	SOFIA	Oct 2015	3.5 hrs	$38,000
Debris disk variability: observational test bed for probing terrestrial planet formation Position: Co-I, PI: Kate Su, University of Arizona	Spitzer Space Telescope	Dec 2014	130 hrs/ $279,500	$10,000

PROFESSIONAL SERVICE

Jan 2020 –	Member NASA Nexus for Exoplanet System Science (NExSS) Science Communications Working Group (SCWG)
Mar 2018	Dwornik Student Presentation Award judge, 49th LPSC
Mar 2017	Session chair at 48th LPSC
Jan 2017 – Dec 2018	Co-convener for CPS lunchtime seminars at UTSC
Sep 2015 – Sep 2016	Convener for Stars, Planets and Disks discussion group at ASU
Apr 2015 –	Member, ASU Nexus for Exoplanet System Science (NExSS) team
Jan 2015 – Jun 2015	Convener for Exoplanetary Systems journal club at ASU
Jan 2015	Chambliss Student Poster Award judge, 225th AAS meeting

Reviewer for *The Astrophysical Journal (2), Computational Astrophysics and Cosmology (1), Monthly Notices of the Royal Astronomical Society (4), Nature (2), Nature Astronomy (2), Science (1)*
Reviewer for NASA grant proposals (2 on panel, 6 external), UK STFC Consolidated Grant (2), Austrian Science Fund (1)

PUBLICATIONS

25 refereed publications (6 first author)

2 non-refereed publications.

H-index: 13, 796 total citations (from ADS)

*Student-led publication under my supervision

REFEREED

1. *1I/'Oumuamua as an N_2 ice fragment of an exo-pluto surface I: Size and Compositional Constraints*
   Jackson A.P., Desch S.J., 2021, Journal of Geophysical Research, in press
2. *1I/'Oumuamua as an N_2 ice fragment of an exo-pluto surface II: Generation of N_2 ice fragments and the origin of 'Oumuamua*
   Desch S.J., **Jackson A.P.**, 2021, Journal of Geophysical Research, in press
3. *Mid-infrared Studies of HD 113766 and HD 172555: Assessing Variability in the Terrestrial Zone of Young Exoplanetary Systems*
   Su K.Y.L., Rieke G.H., Melis C., **Jackson A.P.**, Smith P.S., Meng H.Y.A., Gáspár A., 2020, Astrophysical Journal, 898, 21
4. *HD 145263: Spectral observations of silica debris disk formation via extreme space weathering?*
   Lisse C.M., Meng H.Y.A., Sitko M.L., Morlok A., Johnson B.C., **Jackson A.P.**, Vervack R.J. Jr., Chen C.H., Wolk S.J., Lucas M.D., Marengo M., Britt D.T., 2020, Astrophysical Journal, 894, 116
5. *Automated crater shape retrieval using weakly-supervised deep learning*
   Ali-Dib M., Menou K., **Jackson A.P.**, Zhu C., Hammond N., 2020, Icarus, 345, 113749
6. **Gravity dominated collisions: a model for largest remnant masses with treatment for 'hit and run' and density stratification*
   Gabriel T.S.J., **Jackson A.P.**, Asphaug E., Reufer A., Jutzi M., Benz W., 2020, Astrophysical Journal, 891, 40
7. *Can a machine learn the outcome of planetary collisions?*
   Valencia D., Paracha E., **Jackson A.P.**, 2019, Astrophysical Journal, 882, 35
8. *Oort cloud asteroids: collisional evolution, the Nice Model and the Grand Tack*
   Shannon A., **Jackson A.P.**, Wyatt M.C., 2019, Monthly Notices of the Royal Astronomical Society, 485, 5511
9. *Extreme debris disk variability: exploring the diverse outcomes of large asteroid impacts during the era of terrestrial planet formation*
   Su K.Y.L, **Jackson A.P.**, Gáspár A., Rieke G.H., Dong R., Olofsson J., Kennedy G.M., Leinhardt Z.M., Malhotra R., Hammer M., Meng H.Y.A., Rujopakarn W., Rodriguez J.E., Pepper J., Reichart D.E., James D., Stassun K.G., 2019, Astronomical Journal, 157, 202
10. *Lunar crater identification via machine learning*
    Silburt A., Ali-Dib M., Chenchong Z., **Jackson A.P.**, Valencia D., Kissin Y., Tamayo D., Menou K., 2019, Icarus, 317, 27

11. *Effect of re-impacting debris on the solidification of the lunar magma ocean*
    Perera V., **Jackson A.P.**, Elkins-Tanton L.T., Asphaug E., 2018, Journal of Geophysical Research: planets, 123, 1168
12. *Ejection of rocky and icy material from binary star systems: Implications for the origin and composition of 1I/`Oumuamua*
    Jackson A.P., Tamayo D., Hammond N., Ali-Dib M., Rein H., 2018, Monthly Notices of the Royal Astronomical Society Letters, 478, 49
13. *Dynamical and biological panspermia constraints within multi-planet exosystems*
    Veras D., Armstrong D.J., Blake J.A., Gutiérrez-Marcos J.F., **Jackson A.P.**, Schäeffer H., 2018, Astrobiology, 9, 18
14. *Constraints on the pre-impact orbits of Solar System giant impactors*
    Jackson A.P., Gabriel T.S.J., Asphaug E., 2018, Monthly Notices of the Royal Astronomical Society, 474, 2924
15. *The Taurus boundary of stellar/sub-stellar (TBOSS) survey II: Disk masses from ALMA continuum observations*
    Ward-Duong K., Patience J., Bulger J., van der Plas G., Menard F., Pinte C., **Jackson A.P.**, Bryden G., Turner N.J., Harvey P., Hales A., de Rosa R.J., 2018, Astrophysical Journal, 155, 54
16. *How to design a planetary system for different scattering outcomes: giant impact sweet spot, maximising exocomets, scattered disks*
    Wyatt M.C., Bonsor A., **Jackson A.P.**, Marino S., Shannon A., Monthly Notices of the Royal Astronomical Society, 2017, 464, 3385
17. *Gas and dust around A-type stars at tens of Myr: signatures of cometary breakup*
    Greaves J. S., Holland W. S., Matthews B. C., Marshall J. P., Dent W. R. F., Woitke P., Wyatt M. C., Matrà L., **Jackson A.P.**, Monthly Notices of the Royal Astronomical Society, 2016, 461, 3910
18. *The spherical Brazil nut effect and its significance to asteroids*
    Perera V., **Jackson A.P.**, Asphaug E., 2016, Icarus, 278, 194
19. *Insights into planet formation from debris disks: II. Giant impacts in extrasolar planetary systems*
    Wyatt M.C., **Jackson A.P.**, in The disk in relation to the formation of planets and their proto-atmospheres, eds. Falanga M., Rodrigo R., Blanc M., Lammer H., International Space Science Institute – Beijing, 2016, also at Space Science Reviews, 2016, 205, 231

20. *Eight billion asteroids in the Oort cloud*
    Shannon A., **Jackson A.P.**, Veras D., Wyatt M.C., 2014, Monthly Notices of the Royal Astronomical Society, 446, 2059
21. *Debris from giant impacts between planetary embryos at large orbital radii*
    Jackson A.P., Wyatt M.C., Bonsor A., Veras D., 2014, Monthly Notices of the Royal Astronomical Society, 440, 3757
22. *Molecular Gas Clumps from the Destruction of Icy Bodies in the β Pictoris Debris Disk*

Dent W.R.F., Wyatt M.C., Roberge A., Augereau J.-C., Casassus S., Corder S., Greaves J.S., de Gregorio-Monsalvo I., Hales A., **Jackson A.P.**, Hughes A.Meredith, Lagrange A.-M., Matthews B., Wilner D., 2014, Science, 343, 1490

23. *Debris from terrestrial planet formation: the Moon-forming collision*
    Jackson A.P., Wyatt M.C., 2012, Monthly Notices of the Royal Astronomical Society, 425, 657

24. *Planetary evaporation by UV & X-ray radiation: basic hydrodynamics*
    Owen J.E., **Jackson A.P.**, 2012, Monthly Notices of the Royal Astronomical Society, 425, 2931

25. *The coronal X-ray-age relation and its implications for the evaporation of exoplanets*
    Jackson A.P., Davis T.A., Wheatley P.J., 2012, Monthly Notices of the Royal Astronomical Society, 422, 2024

OTHER PUBLICATIONS

1. *The Chicxulub impactor: comet or asteroid?*
   Desch S.J., Noviello J.L., **Jackson A.P.**, Anbar A., 2021, Astronomy & Geophysics, in press

2. *M-stars are fast and neat and A-stars are slow and messy at late-stage rocky planet formation*
   Lisse C.M., **Jackson A.P.**, Wolk S.J., Snios B.T., Desch S.J., Unterborn C., Patel R.I., Owen J.E., Panic O., 2019, Research Notes of the American Astronomical Society, 3, 90

MEDIA

Interviewed for NHK Cosmic Front Next television documentary on 'Oumuamua – Jun 2018
Interviewed for Royal Canadian Institute for Science podcast – Oct 2017
Interviewed for BBC Radio Cambridgeshire 'Naked Scientists' programme – Feb 2013

PRESS RELEASES

Accompanying the paper *Ejection of rocky and icy material from binary star systems: Implications for the origin and composition of 1I/`Oumuamua:*
University of Toronto
Royal Astronomical Society
These were carried by a variety of news organisations internationally, including *The Guardian* (int.), the *Associated Press* (int.), *The Daily Mail* (UK), *CTV News* (Canada) and the *CBC* (Canada)

PRESENTATIONS

18 conference oral presentations, including 2 invited
11 conference poster presentations
11 seminars or colloquia

INVITED CONFERENCE PRESENTATIONS

	Date	Title	Event	Location
1)	Sep 2018	Giant impacts and debris, what we can learn about planet formation	Current and future trends in debris disk science	Victoria, Canada
2)	Jun 2018	Giant Impacts and their relation to Rapidly Evolving Debris Disks	Astrophysical Frontiers in the next decade and beyond	Portland, Oregon, USA

SEMINARS AND COLLOQUIA

	Date	Title	Event	Location
1)	Feb 2020	Stop hitting yourself! Puncturing the early lunar crust with re-impacting debris	SESE colloquium	SESE, Arizona State University, USA
2)	Sep 2019	No man (or moon) is an island: Impacts and the lunar magma ocean	CPS planetary seminar	University of Toronto at Scarborough, Canada
3)	Jul 2018	The Solar system is rare: reconciling the formation pathways of the Solar system and the Kepler systems	Astronomy seminar	University of Warwick, UK
4)	Mar 2018	The Solar system is unusual: Two channels for terrestrial planet formation	Astronomy colloquium	Pennsylvania State University, Pennsylvania, USA
5)	Feb 2018	The Solar system is unusual: Two channels for terrestrial planet formation	Astronomy colloquium	University of Rochester, New York, USA
6)	Jun 2017	To see a world in a grain of sand: Using debris to test planet formation theory and the occurrence rate of Solar System analogues	Astrophysics seminar	Notre Dame University, South Bend, Indiana, USA
7)	Sep 2015	Asymmetric and variable debris disks: signatures of ongoing planet formation	Astrophysics colloquium	Lund University, Sweden
8)	Sep 2015	Optically thick debris from terrestrial planet formation	Astrophysics seminar	Institute of Astronomy, Cambridge, UK
9)	Oct 2013	Light from shattered worlds	Astrophysics seminar	DAMTP, Cambridge, UK
10)	Mar 2013	Light from shattered worlds	Planet-Z meeting	ETH Zurich, Switzerland
11)	May 2012	When worlds collide: Debris from terrestrial planet formation	Astrophysics seminar	Institute of Astronomy, Cambridge, UK

CONTRIBUTED CONFERENCE ORAL PRESENTATIONS

	Date	Title	Event	Location
1)	Mar 2021	To see a world in a shard of ice: ‘Oumuamua as a fragment of N_2 ice from an exo-Pluto	LPSC 2021	Virtual
2)	Mar 2019	Puncturing holes in the early lunar crust with re-impacting debris	LPSC 2019	The Woodlands, Texas, USA
3)	Oct 2018	Observing giant, planet forming impacts in exoplanetary systems	The first billion years: bombardment	Flagstaff, Arizona, USA
4)	Mar 2018	Ejection of rocky and icy material from binary star systems: Implications for the origin and composition of 1I/`Oumuamua	LPSC 2018	The Woodlands, Texas, USA

	Date	Title	Event	Location
5)	Oct 2017	Constraining the pre-impact orbits of Solar System giant impactors	DPS 2017	Provo, Utah, USA
6)	Aug 2017	Constraining the pre-impact orbits of Solar System giant impactors	Accretion: building new worlds	LPL, Houston, Texas, USA
7)	Mar 2017	Impacts into thin crust overlying a magma ocean	LPSC 2017	The Woodlands, Texas, USA
8)	Oct 2015	Extreme, Variable debris disks produced by giant impacts during terrestrial planet formation	EPSC 2015	Nantes, France
9)	Feb 2015	Stop hitting yourself: did most terrestrial impactors originate from the terrestrial planets?	Early solar system bombardment III	LPL, Houston, Texas, USA
10)	Jan 2015	Debris from giant impacts: signatures of forming and dynamic planetary systems	AAS 225	Seattle, Washington, USA
11)	Sep 2014	Giant impacts in the Beta Pic system	30 years of Beta Pic and debris disk studies	IAP, Paris, France
12)	Jul 2014	Debris from giant impacts, at home and abroad	Characterising planets across the HR diagram	Institute of Astronomy, Cambridge, UK
13)	Sep 2013	Light from shattered worlds	EPSC 2013	UCL, London, UK
14)	Oct 2012	When worlds collide: Debris from terrestrial planet formation	Rocks 'n' stars	MPS, Göttingen, Germany
15)	Mar 2012	Evaporating planets with stellar X-rays: A potential test for migration scenarios?	UK-Germany NAM	Manchester, UK
16)	Mar 2012	Debris from giant impacts	Exoplanets and their host stars	Oxford, UK

CONTRIBUTED CONFERENCE POSTER PRESENTATIONS

	Date	Title	Event	Location
1)	Mar 2021	A moth-eaten blanket: Re-impacting debris punctured holes in the early lunar crust	LPSC 2021	Virtual
2)	Jul 2018	Giant Impacts and their relation to Rapidly Evolving Debris Disks	Exoplanets 2	Cambridge, UK
3)	Aug 2017	Impact generation of holes in the early lunar crust	Accretion: building new worlds	LPL, Houston, Texas, USA
4)	Mar 2017	Constraining the pre-impact orbits of Solar System giant impactors	LPSC 2017	The Woodlands, Texas, USA
5)	Oct 2016	Constraining the pre-impact orbits of Solar System giant impactors	DPS 48/EPSC 2016	Pasadena, CA, USA
6)	Oct 2016	Stop hitting yourself!	DPS 48/EPSC2016	Pasadena, CA, USA
7)	Nov 2014	Stop hitting yourself: did most terrestrial impactors originate from the terrestrial planets?	DPS 46	Tucson, Arizona, USA
8)	Jun 2013	Light from shattered worlds: debris from giant impacts	IAUS 299	Victoria, British Columbia, Canada
9)	Mar 2013	Debris from giant impacts: A dusty window on terrestrial planet formation	Characterising Exoplanets	Royal Society, London, UK

	Date	Title	Event	Location
10)	Mar 2012	Debris from giant impacts: Signposts of terrestrial planet formation	UK-Germany NAM	Manchester, UK
11)	Jul 2011	Debris from giant impacts: Signposts of terrestrial planet formation	Origins of solar systems	Mt. Holyoke College, Massachusetts, USA

PUBLIC OUTREACH

Speaker and guide for Canada 150 UTSC Solar Walk
Front of house work at Institute of Astronomy public observing evenings
Demonstrator at annual Cambridge University Science Festival
Member of the Institute of Astronomy Ask an Astronomer team

PUBLIC TALKS

Sep 2020	Formation of the Planets and Solar system	Lecture for Arizona Museum of Natural History course, joint with Jessica Noviello	
May 2018	'Oumuamua, our first interstellar visitor	North York Astronomical Association	Audience 40
Mar 2018	Making the Moon	Royal Astronomical Society of Canada, Mississauga Centre	Audience 150
Oct 2017	Solar System Origins	Royal Canadian Institute for Science event: The Planets, a Musical Odyssey of Evolution, Environment and Exploration	Audience 200
Jul 2017	150 years of Solar System astronomy	UTSC, Toronto Canada Day Solar Walk	Audiences 150-180
Nov 2013	Views of Venus	Institute of Astronomy, Cambridge Public observing evening	Audience 170

PROFESSIONAL ORGANISATIONS

Royal Astronomical Society
American Astronomical Society (Division for Planetary Sciences, Division for Dynamical Astronomy)