

Yayaati Chachan

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EDUCATION	PhD Student, Planetary Science, California Institute of Technology Supervisors: Heather Knutson and David Stevenson	2017-
	M.Sci and B.A., Physics & Astronomy, University of Cambridge, St John's College, Institute of Astronomy Supervisors: Cathie Clarke, Richard Booth, Amaury Triaud Cambridge Commonwealth Trust and St John's College Scholarship First Class Honours (B.A. and M.Sci)	2013-2017
	A levels, Anglo-Chinese Junior College Singapore Airlines (SIA) Youth Scholar	2011-2012
RESEARCH	Atmospheric Retrievals and Modeling (Heather Knutson)	2018-
	Transmission Spectroscopy (Heather Knutson)	2017-
	Gravitational Moments and Differential Flow (David Stevenson)	2017-2018
	Formation of super-Earths (David Stevenson)	2016-
	Planet Formation and Accretion in Binary Systems, IoA (Cathie Clarke, Richard Booth, Amaury Triaud)	2016-
	Venus' Circumsolar Ring, IoA (Grant Kennedy, Wyatt group)	2016-2017
	Molecular spintronics, Forschungszentrum Juelich	2015
	Phase Transformation of Iron Oxide, NUS (Sow Chorng Haur)	2011-2012
AWARDS	Institute of Astronomy Prize	2017
	St John's College Dirac Prize	2017
	J. P. Read Prize	2017
	Cunningham Prize	2017
	St John's College Hockin Prize	2016, 2017
	United Steele Scholarship	2015, 2016
	St John's College Scholar	2015-2017
	Scholastic Merit Award	2012
	NUS-NTU Astro Challenge	2012
	Delhi Science Open Merit Test (Rank 1)	2009
	Junior Science Talent Search (Rank 3)	2009
GRANTS	GPS Graduate Fellowship	2017-2018
	Cambridge Commonwealth Trust Scholarship	2013-2017
	St John's College Scholarship	2013-2017
	DAAD Rise Scholarship	2015
	Undergraduate Academic Research Program	2015, 2016
	Scullard Travel Grant	2014
	NUS Science Research Program	2011-2012
	Singapore Airlines (SIA) Youth Scholarship	2011-2012

PAPERS

Published:

1. **Chachan, Y.** and Stevenson, D. J. 2018, On the Role of Dissolved Gases in Atmosphere Retention of Low-Mass Low-Density Planets, *ApJ*, 854, 21, arXiv:1802.04296

Submitted:

1. **Chachan, Y.**, Booth, R., Triaud, A., Clarke, C. 2018, *MNRAS*, Dust Accretion in Binary Systems: Implications for planets and transition discs
2. **Chachan, Y.** and Stevenson, D. J. 2018, *Icarus*, A linear approximation for the effect of cylindrical differential rotation on gravitational moments: Application to the non-unique interpretation of Saturn's gravity
3. Zhang, M., **Chachan, Y.**, Kempton, E. M.-R., Knutson, H. A. 2018, *PASP*, Forward modelling and retrievals with PLATON, a fast open source tool

In preparation:

1. **Chachan, Y.**, Knutson, H., Wong, I., Gao, P., Kataria, T., Sing, D., Benneke, B., Zhang, M., Lewis, N., Wakeford, H., Nikolov, N., Lopez-Morales, M., Evans, T., Barstow, J. 2018, HAT-P-11b: Additional Insights from HST STIS Data
2. **Chachan, Y.**, Booth, R., Triaud, A., Clarke, C. 2018, Accretion and Mass Ratio Evolution in Eccentric Binary Systems

TALKS AND POSTERS

- Chachan, Y.**, Knutson, H., Wong, I., Gao, P., Kataria, T., Sing, D., Benneke, B., Zhang, M., Lewis, N., Wakeford, H., Nikolov, N., Lopez-Morales, M., Evans, T., Barstow, J. HAT-P-11b: Deciphering cloud properties from HST STIS data, Exoplanets II Cambridge (Poster) 2018
- Zhang, M., Knutson, H., Benneke, B., Crossfield, I., Deming, D., Wong, I., **Chachan, Y.**, Transmission Spectroscopy of 55 Cancri e and HD 149026b, Exoplanets II Cambridge (Poster) 2018
- Chachan, Y.** and Stevenson, D. J., Atmosphere retention of super-Earths, DTA Symposium on super-Earths, NAOJ Tokyo, (Talk) 2018
- Stevenson, D. J. and **Chachan, Y.**, The degeneracy in Saturn's differential flow properties implied by Cassini's gravity data, JUNO Meeting, San Antonio 2017
- Chachan, Y.** and Stevenson, D. J., Atmosphere retention of super-Earths, Undergraduate Journal Club, Institute of Astronomy Cambridge, (Talk) 2016
- Chachan, Y.** and Stevenson, D. J., Atmosphere retention of super-Earths, ExSoCal, Caltech Pasadena, (Talk) 2016
- Chachan, Y.**, Hess, V. et al., A study of Hexabenzocoronene on HOPG, Weekly Institute Seminar, Forschungszentrum Juelich (Talk) 2015
- Chachan, Y.**, Lee, K. K., Sow, C. H., Laser induced phase transformations on FeOOH nano-structured thin films with defined micro-patterns, Science Research Congress, NUS Singapore, (Poster) 2012

SKILLS

Expert: Python
Experienced: Mathematica, C, Matlab
Familiar: Fortran, Java

SERVICE

Caltech Planetary Science Floor Warden 2018
St John's College Badminton Team Captain 2017
Writer, Triple Helix Cambridge 2016
Cambridge University Physics Society, Speaker Liaison 2015-2016
St John's College Punting Society, Treasurer 2014-2015
Science and Math Council, ACJC, Singapore 2011-2012
ACJC Astronomy Society, Vice President 2011-2012