



## University Faculty Details Page on DU Web-site

Title	Prof.	First Name	H. P.	Last Name	SINGH	
Designation		PROFESSOR				
Department		PHYSICS & ASTROPHYSICS				
Address (Campus)		Room No. 136, Multi-storey block, Department of Physics & Astrophysics, University of Delhi, Delhi - 110 007				
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Email		hpsingh@physics.du.ac.in				
Web-Page		people.du.ac.in/~hpsingh/				
Education						
Subject	Institution		Year	Details		
Physics & Astrophysics	University of Delhi		1988	Ph.D., Thesis topic: Oscillations of Degenerate Stellar Masses		
Physics & Astrophysics	University of Delhi		1983	M.Phil, Dissertation topic: On Solar Luminosity Variation		
Astronomy & Space Sciences	Punjabi University		1981	M.Sc.		
Career Profile						
Organisation / Institution		Designation	Duration	Role		
Sri Venkateswara College, DU		Lecturer	1984-1990	Teaching & Research		
University of Kiel, Germany		DAAD Fellow	1990-1992	Post Doc. Research		
Queen Mary University of London		Research Associate	1992-1994	Teaching & Research		
Sri Venkateswara College, DU		Sr.Lecturer/Reader	1994-2003	Teaching & Research		
Dept. Physics & Astrophysics, DU		Reader	2003-2005	Teaching & Research		
Dept. Physics & Astrophysics, DU		Professor	2005-	Teaching & Research		
Research Interests / Specialization						
Astronomy & Astrophysics: Astronomical Spectroscopy & Photometry, Variable Stars, Automated Data Analysis, Astrophysical Fluid Dynamics, Nonlinear Dynamics						
Teaching Experience ( Subjects/Courses Taught)						
35 years Undergraduate and Post Graduate Teaching in DU Astronomy & Astrophysics-I & II (MSc Sem. III & IV) Observational Astronomy Lab (MSc Sem IV) Computer Programming (MSc Sem. III)						
Honors & Awards						
Fellow, Royal Astronomical Society, London since 1999 German Academic Exchange Service (DAAD) Fellow 1990-92, 2007 Vice President, Astronomical Society of India (2013-16) Member, International Astronomical Union Member, DST-JSPS India-Japan Science Council (2016-) Member, Planning & Programme Committee, National Science Center (2012-14) Member, Editorial Board, Bulletin of Astronomical Society of India (2010-16) Dean, International Relations, University of Delhi (2016-) Director, Cluster Innovation Centre, University of Delhi(2016-)						

Chair, Time Allocation Committee, Indian Institute of Astrophysics, Bengaluru (2018 -)

**Publications (LAST FIVE YEARS 2014-2019)**

**Books / Monographs**

<b>Authors</b>	<b>Year of Publication</b>	<b>Title</b>	<b>Publisher</b>
Stellar Spectral Libraries Proceedings of the 2013 International Workshop held in Lyon, France Editors: H. P. Singh, Philippe Prugniel & Isebel Vauglin 2014, Astronomical Society of India Conference Series (ASICS), Volume 10			

**In Indexed/ Peer Reviewed Journals (2014-2019)**

<b>S. No.</b>	<b>Authors</b>	<b>Year of Publication</b>	<b>Title</b>	<b>Journal</b>
1.	Suyal, V., Prasad., A., Singh, H. P.	2014.	Visibility graph analysis of solar wind velocity.	Solar Physics 289, 379
2.	Deb, S., Singh, H. P.	2014.	Chemical and Structural Analysis of the Large Magellanic Cloud using the fundamental mode RR Lyrae stars.	Monthly Notices of Royal Astronomical Society 438, 2440
3.	Bhardwaj, A., Kanbur, S. M., Singh, H. P., Ngeow, C. C.	2014.	Empirical Period-Color and Amplitude-Color Relations for Classical Cepheids and RR Lyrae Variables.	Monthly Notices of Royal Astronomical Society 445 (3), 2655.
4.	Deb, S., Singh, H. P., Kumar, S., Kanbur, S. M.	2015.	Morphology and Metallicity of the the Small Magellanic Cloud using Rrab Stars.	Monthly Notices of Royal Astronomical Society 449 (3), 2768.
5.	Mishra, N., Hasse, M., Biswal, B., Singh, H. P.	2015.	Reliability of Unstable Periodic Orbit based control strategies in Biological Systems.	Chaos 25 (4), 043104.
6.	Sachdeva, S., Gadotti, D., Saha, K., Singh, H. P.	2015.	The Evolution of Disc Galaxies with and without Classical Bulges since $z \sim 1$ .	Monthly Notices of Royal Astronomical Society 451, 4521.
7.	Bhardwaj, A., Kanbur, S. M., Singh, H. P., Macri, L., Ngeow, C. C.	2015.	On the Variation of Fourier Parameters for Galactic and LMC Cepheids at Optical, Near-Infrared and Mid-Infrared Wavelengths.	Monthly Notices of Royal Astronomical Society 447 (1), 3342.
8.	Ngeow, C. C., Kanbur, S. M., Bhardwaj, A., Singh, H. P.	2015.	Period-Luminosity Relations Derived from The OGLE-III Fundamental Mode Cepheids II. The Small Magellaic Cloud Cepheids.	The Astrophysical Journal 808 (1), 67.
9.	Wu, Y., Prugniel, P., Luo, A., Singh, H. P.	2015.	Comparison of the stellar atmospheric parameter determining accuracy of the SSPP and the full spectrum fitting depending on S/N.	IAU General Assembly, Meeting #29, id.2254764.
10.	Gupta, R., Singh, H. P., Kanbur, S. M., Schrimpf, A., Dersch, C.	2015.	U-SmART - Small Aperture Robotic Telescopes for Universities.	Publications of The Korean Astronomical Society 30, issue 2, 683.
11.	Ngeow, C. C., Sarkar, S., Bhardwaj, A., Kanbur, S. M., Singh, H. P.	2015.	Updated 24 $\mu$ m Period-Luminosity	

Relation Derived from Galactic Cepheids. *The Astrophysical Journal* 813 (1), 57.

12. Kanbur, S. M., Bhardwaj, A., Singh, H. P., Ngeow, C. C. 2015. Period-Color and Amplitude-Color Relations for RR Lyraes. *Proc. Conf. High-precision studies of RR Lyrae stars*. arXiv:1512.03494.

13. Sharma, K., Prugniel, P., Singh, H. P. 2016. New atmospheric parameters and spectral interpolator for the MILES cool stars. *Astronomy & Astrophysics* 585, A64.

14. Bhardwaj, A., Kanbur, S. M., Macri, L. M., Singh, H. P., Ngeow, C. C., Wagner-Kaiser, R., Sarajedini, A. 2016. Large Magellanic Cloud Near-infrared Synoptic Survey. II. The Wesenheit Relations and Their Application to the Distance Scale. *The Astronomical Journal* 151 (4), 88.

15. Bhardwaj, A., Kanbur, S. M., Macri, L. M., Singh, H. P.; Ngeow, C. C., Ishida, Emille E. O. 2016. Large Magellanic Cloud Near-Infrared Synoptic Survey - III. A statistical study of non-linearity in the Leavitt Laws. *Monthly Notices of Royal Astronomical Society* 457, 1644.

16. Bhardwaj, A., Ngeow, C. C., Kanbur, S. M., Singh, H. P. 2016. Period-Luminosity relations derived from the OGLE-III First-overtone mode Cepheids in the Magellanic Clouds. *Monthly Notices of Royal Astronomical Society* 458, 3705.

17. Ngeow, C. C., Kanbur, S. M., Bhardwaj, A., Singh, H. P. 2016 RR Lyrae stars in the SDSS Stripe 82 region: period-color and amplitude-color relations. *Communications from the Konkoly Observatory* 105, 211.

18. Kanbur, S. M., Bhardwaj, A., Singh, H. P., Ngeow, C. C. 2016 Period-color and amplitude-color relations for RR Lyrae stars. *Communications from the Konkoly Observatory* 105, 57.

19. Gray, R., Soubiran, C., Nordstrom, B., Burgasser, A., Gupta, R., Han-son, M., Leggett, S. K., Singh, H. P. 2016 Division G Commission 45: Stellar Classification. *Transactions of the IAU*, 29A, 490.

20. Ngeow, C.-C.; Kanbur, S. M.; Bhardwaj, A.; Schreengost, Z.; Singh, H. P. 2017 Periodcolor and Amplitudecolor Relations at Maximum and Minimum Light for RR Lyrae Stars in the SDSS Stripe 82 Region. *The Astrophysical Journal* 834, 160.

21. Joshi, S.; Semenko, E.; Moiseeva, A.; Sharma, K.; Joshi, Y. C.; Sachkov, M.; Singh, H. P.; Yerra, B. K. 2017 High-resolution Spectroscopy and Spectropolarimetry of Selected Delta Scuti Pulsating Variables. *Monthly Notices of Royal Astronomical Society* 467, 633.

22. Kameswara Rao, N.; Lambert, D. L.; Reddy, A. B. S.; Gupta, R.; Muneer, S.; Singh, H. P. 2017 Unveiling Vela - Time Variability of Interstellar Lines in the Direction of the Vela Supernova Remnant II. Na D and Ca II. *Monthly Notices of Royal Astronomical Society* 467, 1186.

23. Bhardwaj, Anupam; Macri, Lucas M.; Rejkuba, Marina; Kanbur, Shashi M.; Ngeow, Chow-Choong; Singh, Harinder P. Large Magellanic Cloud Near- Infrared Synoptic Survey. IV. Leavitt Laws for Type II Cepheid Variables *The Astronomical Journal* (in Press).

24. Bhardwaj, Anupam; Kanbur, Shashi M.; Marconi, Marcella; Rejkuba, Marina; Singh, Harinder P.; Ngeow, Chow-Choong. 2017, A comparative study of multi-wavelength theoretical and observed light curves of Cepheid variables. *Monthly Notices of Royal Astronomical Society* 466, 2805.

25. Panwar, Neelam; Samal, M. R.; Pandey, A. K.; Jose, J.; Chen, W. P.; Ojha, D. K.; Ogura, K.; Singh, H. P.; Yadav, R. K. Low-mass young stellar population and star formation history of the cluster IC 1805 in the W4 H ii region. *Monthly Notices of Royal Astronomical Society* 468, 2684.

26. Gadotti, D. A., Sachdeva, S., Saha, K., Singh, H. P. 2017. The observed peripheral growth of disc galaxies from  $z \sim 1$ . Proceedings of the International Astronomical Union, IAU Symposium, Volume 321, pp. 324-326.
27. Sachdeva, S., Saha, K., Singh, H. P. 2017. Growth of bulges in disc galaxies since  $z \sim 1$ . The Astrophysical Journal 840, 79.
28. Bhardwaj, A.; Rejkuba, M.; Minniti, D.; Surot, F.; Valenti, E.; Zoccali, M.; Gonzalez, O. A.; Romaniello, M.; Kanbur, S. M.; Singh, H. P. 2017. Galactic bulge population II Cepheids in the VVV survey: period-luminosity relations and a distance to the Galactic centre. Astronomy & Astrophysics, 605, 100
29. Panwar, Neelam; Pandey, A. K.; Samal, Manash R.; Battinelli, Paolo; Ogura, K.; Ojha, D. K.; Chen, W. P.; Singh, H. P. 2018. Young Cluster Berkeley 59: Properties, Evolution, and Star Formation. The Astronomical Journal, 155, 44.
30. Sharma, Kaushal; Joshi, Santosh; Singh, Harinder P. 2018. Low resolution spectroscopic investigation of Am stars using Automated method. Bulletin de la Société Royale des Sciences de Liège, in Proceedings of the First Belgo-Indian Network for Astronomy & Astrophysics (BINA) workshop, November 2016, held in Nainital, India, Vol. 87, pp. 121-124 .
31. Mishra, N.; Karan, R; Biswal, B.; Singh, Harinder P. 2018. A model for the evolution of the neuronal network in kindled brain slices. Physica A: Statistical Mechanics and its Applications, 505, 444.
32. Deb, S., Ngeow, C. C., Kanbur, S. M., Singh, H. P., Wysocki, D., Kumar, S, 2018. Geometry of the Large Magellanic Cloud Using Multi- wavelength Photometry of Classical Cepheids.. Monthly Notices of Royal Astronomical Society 478, 2526.
33. Das, Susmita; Bhardwaj, Anupam; Kanbur, Shashi M.; Singh, Harinder P.; Marconi, Marcella, 2018. On the variation of light-curve parameters of RR Lyrae variables at multiple wavelengths. Monthly Notices of Royal Astronomical Society 481, 2000.
34. Kanbur, Shashi M., Marconi, Marcella, Bhardwaj, Anupam, Kundu, R., Singh, Harinder P.; 2018. The Role of Opacities in Stellar Pulsation. ASPC 515, 189.
35. Kundu, R., Minniti, D., Singh, Harinder P.; 2019. Search for extra-tidal RR Lyrae stars in Milky Way globular clusters from Gaia DR2. Monthly Notices of the Royal Astronomical Society 483, 1737.
36. Panwar, Neelam; Samal, Manash R.; Pandey, A. K.; . Singh, H. P; Sharma, Saurabh; 2019. Understanding formation of young, distributed low-mass stars and clusters in the W4 cloud complex. The Astronomical Journal 157, 112.
37. Bhardwaj, Anupam; Panwar, Neelam; Herczeg, G. J.; Chen, W. P.; Singh, Harinder P.; 2019. Variability of young stellar objects in the star-forming region Pelican Nebula. Astronomy & Astrophysics 627, 135.
38. Joshi, Arti; Pandey, J. C.; Singh, H. P; 2019. X-Ray Observations of an Intermediate Polar V2400 Oph. The Astronomical Journal 158, 11.

Articles
Conference Presentations Presented papers at international conferences in Daejeon, Korea (2014), Texas, USA (2015), Lyon , France (2016), Ekaterinberg (BRICS), Russia (2016), Sao Paolo, Brazil (2017), Lyon (2018)
Total Publication Profile - optional
Books
In Indexed/ Peer Reviewed Journals <b>Complete list of publications is available on the website <a href="http://people.du.ac.in/~hpsingh/">http://people.du.ac.in/~hpsingh/</a></b>
Articles
Conference Presentations
Public Service / University Service / Consulting Activity <b>On Selection committees of several Universities and Govt. organisations Lectures at DST Inspire Camps, National workshops on Introductory Astronomy &amp; Astrophysics</b>
Professional Societies Memberships <b>Fellow, Royal Astronomical Society, London Member, International Astronomical Union Member, European Astronomical Society Member, Astronomical Society of India Vice President, Astronomical Society of India (2013-16)</b>
Projects (Major Grants / Collaborations) Sponsored Research Projects 1. <b>Indo-US Joint Center on “Analysis of Variable Star Data” funded by Indo-US Science &amp; Technology Forum (2013-2016)</b> <b>Collaborating Institutes: University of Delhi (Nodal Center), State Univ. of New York at Oswego, University of Florida at Gainesville, Texas A&amp;M University, IUCAA, Pune</b> 2. <b>Indo-US Joint Networked Center “Theoretical Analyses of Variable Star Data in the Era of Large Surveys” (2018-2020)</b> <b>Collaborating Institutes: University of Delhi (Nodal Center), State Univ. of New York at Oswego, Yale University, IUCAA, Pune</b>

**3. CSIR Project “Galactic & Extragalactic Archeology using Variable Stars” 2019-20122**

**4. Lecture tour of Japan funded by DST & Japan Society for Promotion of Science, March 2015; September 2016**

**5. Following PhD students visited abroad for collaborations:**

**a. Anupam Bhardwaj – State University of New York at Oswego, 30 days, 2015**

**b. Susmita Das – State University of New York at Oswego, 30 days, 2015**

**c. Kaushal Sharma – University of Lyon, France, 30 days, 2013**

**d. Sonali Sachdeva, European Southern Observatory, Chile, 6 months 2013**

**e. Anupam Bhardwaj – European Southern Observatory, Garching, Germany, 1 year, 2016**

**f. Anupam Bhardwaj, Kavli Institute Beijing, July-September 2017**

**g. Susmita Das, TMT Young Career awardees, Meeting USA, 2017**

**h. Richa Kundu, Vatican Observatory, Rome, June-July, 2018**

**i. Susmita Das, SUNY, Oswego, USA, June 1-30, 2019**

**j. Richa Kundu, SUNY Oswego, USA, June 1-30, 2019**

**Other Details**

Ph.D. Students Presently Registered: Susmita Das, Richa Kundu, Nitesh Kumar

(Signature of Faculty Member)

(Signature & Stamp  
of Head of the Department)