

# Curriculum vitae of Sabyasachi Pal

- **Name:** Sabyasachi Pal
- **Nationality:** Indian
- **Date of Birth:** 28th April, 1975
- **Sex:** Male
- **Postal Address:**  
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## Present academic positions

Associate Professor and Head of the Department, Midnapore City College  
Honorary Scientist, Indian Centre for Space Physics

## Previous academic positions

1. Project Scientist and Head of the Department (of Department of Radio Astronomy) in **Indian Centre for Space Physics** from 2012 to 2017 (March). The project ended in 31st March 2017.
2. Member of Academic Council of the Center for **Indian Centre for Space Physics** from 2012 to 2017.
3. Research Associate in **International Centre for Radio Astronomical Research (ICRAR), University of Western Australia (UWA)** (2009-2012). ICRAR is mainly responsible to build and maintain prestigious international astronomical project Square Kilometer Array (SKA) in Western Australia.
4. Post-doctoral Fellow at the **National Centre for Radio Astrophysics (NCRA)** (2005-2009), which is a centre of the **Tata Institute of Fundamental Research (TIFR)**. NCRA has built and operates the Giant Metrewave Radio Telescope (GMRT) and the Ooty Radio Telescope (ORT).
5. CSIR NET Fellow from 2001 to 2005.
6. Editor of the popular Bengali Science journal *Mohabiswa o Ami (Universe and Myself)* from 2002 to 2005.

## Member of the Academic Societies

1. Life member of the Astronomical Society of India.
2. Life member of General Body of Indian Centre for Space Physics.

## Academic Qualifications

Degree	Year	University/Board
Ph.D.	2006†	Jadavpur University
M.Sc. in Physics	2000 <sup>§</sup>	University of Calcutta,
B.Sc. in Physics	1998	University of Calcutta
Higher Secondary	1995	West Bengal Council of Higher Secondary Education, W.B., India
Secondary	1993	West Bengal Board of Secondary Education, W.B., India

† Title of Ph.D. thesis is '**Radio Properties of Galactic Compact Objects**' guided by Prof. Sandip K. Chakrabarti and Prof. Kushalendu Goswami.

§ With specialization Electronics, communication and microwave.

## Other National level Examination

- **NET**: Cleared lecturership and research fellowship from DST and CSIR.

## Awards

- **Young Scientist Award** by International Union of Radio Science (URSI) in 2006.
- **Young Astronomer award** by Astronomical Society of India for publishing best paper in Bulletin of Astronomical Society of India in 2005-2006.
- **Best poster award** in National Conference on Radio Science in India (INCURSI-2003), New Delhi.
- **Best poster award** in Astronomical Society of India Meeting, 2007
- **Bandana Chatterjee Memorial Prize** for securing highest marks in B. Sc physics (Hons.) in the college and scholarship of Rs. 1000 for the same.

## My areas of research interest

Presently I am involved in diverse fields of research activities. My specialization is radio astronomy and multi-wavelength observation of various galactic and extra galactic sources. Some of the main fields, I am currently working on is mentioned below:

1. **Search for transient radio sources in different Galactic and extra-galactic fields** (Collaborators: Dushmantha Patra; Hyman, Scott D.; Roy, Subhashis; Lazio, T. Joseph W.; Ray, Paul S.; Kassim, Namir E.)
2. **Spectral study of different type of radio galaxies** (Collaborators: Dushmantha Patra; Chiranjib Konar)
3. **Low frequency galactic plane survey** (Collaborators: Subhashis Roy; Dushmantha Patra; B. C. Joshi)
4. **Observation of micro-quasars and other compact objects in our galaxy** (Collaborators: Ishwara-Chandra, A. Pramesh Rao, Sergei Trushkhin, Sandip K. Chakrabarti etc.)
5. **Search of interesting sources from big data** (Collaborators: Sushanta Mondal, Netai Bhukta, Soumen Bera, Tapan Sasmal etc.)

## Teaching activity

I have good experience in teaching and guiding research students. Some of my research activities are mentioned below

- Presently I am guiding one full-time PhD student (Dusmanta Patra) and two part-time PhD students (Netai Bhukta and Reshmi Som).
- Soumen Bera and Tapan Sasmal are doing long term research project under me.
- I guided many students in University of Australia for various short time and long time projects.
- I guided Monique Hollick for 2009-10 summer project ‘Searching for New Transient Radio Sources in University of Western Australia.
- I have guided Aritra Basu for long term project ‘Finding the mass distribution of dark matter through gravitational lenses’.
- I have guided Mayukh Pahari for long term MSc. project ‘Accretion phenomenon near pseudo-Kerr black hole’.
- I have also guided Jayanta Dutta for a short term project ‘Making fast and effective algorithm to search gravitational lenses from large data bases like 2MASS, SDSS etc’.
- I am guided Avdhoot Datar for MSc. project ‘Search for radio counterpart of high mass X-ray binaries’.
- In the **Radio Astronomy School 2008**, I taught GMRT data analysis method using AIPS software.
- I have guided six students for three different projects for **Radio Astronomy School (RAS 2008)** and **Visiting Student Research Programme (VSRP 2008)** in last summer. The name of the projects and students who take part in that is as follows:
  - a) Title: Study of radio properties of a few selected black hole system  
Students: Sushanta K Mondal (RAS) and Rohit Chhiber (VSRP)
  - b) Title : Modeling of mass distribution of galaxies and cluster of galaxies using gravitational lensing properties  
Students: Tapomoy Guha Sarkar (RAS), Sagar Madgi (VSRP)
  - c) Title: Jet emission mechanism in few giant radio galaxies  
Students: Tanyamay Paranjpe (RAS), Jayanth Chennamangalam (RAS)
- I have guided six students for three different projects for **Radio Astronomy School (RAS 2007)** and **Visiting Student Research Programme (VSRP 2007)** in last summer. The name of the projects and students who take part in that is as follows:
  - a) Title: Search of transient radio sources in the Galactic centre region  
Students: M.C.Ramadevi (RAS), Manabendra Lahkar (RAS), Chandrayee Maitra (VSRP)
  - b) Title : VLBI observation of galactic black hole SS 433  
Students: Jitty James (VSRP)
  - c) Title: Multi-wavelength radio observation of high mass black hole Cyg X-3, at the time of flare  
Students: Veeresh Singh (RAS), Rupak Roy (RAS), Amrita Purkayastha (VSRP)
- **VSRP Programme 2006:** I was the supervisor of a VSRP student, Aritra Basu, from Pune University. The title of the project was ‘Mass modeling of Gravitational lenses’. In this project we make diagnostics to make mass (including dark mass) model of gravitationally lens system.
- **Workshop of Parallel Programming:** Participated in the workshop on parallel computing organized jointly by NCRA and CDAC and held in CDAC.

## Experience with observational facilities

During the last several years of research activity, I used many telescopes, some of which are briefly described below.

- **Giant Meterwave Radio Telescope (GMRT):** I observed extensively using GMRT facilities from 2002. I have already observed more than thousand hours using GMRT and made some of the best maps using it in the low radio frequency region (150 to 1450 MHz).  
I developed an automated analysis pipeline for GMRT data using python.
- **European VLBI Network (EVN):** I was co PI of a project with EVN, in which we have made observation of micro-quasar SS433 in three different epoch in 4.9 GHz.
- **Jansky Very large array (JVLA):** I have also considerable experience in making good images from VLA data at frequencies ranging from 350 to 8500 MHz.
- **Effelsberg Radio Telescope:** I was PI of a project in which we have observed SS433 simultaneously with Effelsberg, RXTE and GMRT. We have observed the source with 100m dish of Effelsberg telescope for six different days which ranged over around a month in five different frequencies from 6cm to 9mm.
- **Rossi X-ray Timing Explorer (RXTE):** I was co-PI of two projects which used TOO observation of SS433 in different epochs using RXTE.
- **Mt. Abu telescope:** I have make use of Mt. Abu telescope of Physical Research Laboratory to make J, H, K' band observation of SS433.
- **Vainu Bapu Telescope:** I used this telescope to make spectroscopic observation of the sources SS433.
- **ARIES telescope:** I used this telescope to make photometric observation of SS433 in 2002 September.

## Extra Curricular Activity

1. Rashtrapati award (President of India Award) for rovering in the year 1996.
2. Uparastrapati award (Vice-President of India Award) for rovering for the year 1996-1997.
3. Uparastrapati award (Vice-President of India Award) for rovering for the year 1997-1998.
4. Rajya Puruskar (State Award) for scouting in the year 1992.

# List of Publications

## Refereed Publications/Astronomical Telegrams

- 1. Effect of 2021 assembly election in India on COVID-19 transmission**  
Souvik Manik, **Sabyasachi Pal**, Manoj Mandal, Mangal Hazra, 2021, *Nonlinear Dynamics (NODY)*, in press, DOI :10.1007/s11071-021-07041-7
- 2. Transient nature of radio source NVSS J1957+35**  
**Sabyasachi Pal**, Dusmanta Patra, Monique Hollick, Sandip K. Chakrabarti, 2019, *Astrophysics and Space Science*, 2019, 64, 765
- 3. Multi-frequency properties of an interacting narrow-angle tail radio galaxy J0037+18**  
**Sabyasachi Pal**, Dusmanta Patra, Monique Hollick, Sandip K. Chakrabarti, 2019, *Advances in Space Research*, 2019, 364, 72
- 4. Discovery of the Small-diameter, Young Supernova Remnant G354.4+0.0**  
Subhashis Roy and **Sabyasachi Pal**, 2013, *The Astrophysical Journal (ApJ)*, 774, 150
- 5. RXTE observation of recent flaring activity from the transient X-ray pulsar 2S 1553-542**  
Mayukh Pahari and **Sabyasachi Pal**, 2012, *Monthly Notices of the Royal Astronomical Society (MNRAS)*, 423, 3352
- 6. The Optically Unbiased GRB Host (TOUGH) Survey. VI. Radio Observations at  $z \leq 1$  and Consistency with Typical Star-forming Galaxies**  
Michalowski, M. J.; Kamble, A.; Hjorth, J.; Malesani, D.; Reinfrank, R. F.; Bonavera, L.; Castro Ceron, J. M.; Ibar, E.; Dunlop, J. S.; Fynbo, J. P. U.; Garrett, M. A.; Jakobsson, P.; Kaplan, D. L.; Kruhler, T.; Levan, A. J.; Massardi, M.; **Pal, S.**; Sollerman, J.; Tanvir, N. R.; van der Horst, A. J.; Watson, D.; Wiersema, K., 2012, *The Astrophysical Journal (ApJ)*, 755, 11
- 7. High-Redshift Radio Galaxies from Deep Fields**  
C. H. Ishwara-Chandra, S. K. Sirothia, Y. Wadadekar, **S Pal**, 2011, *Journal of Astrophysics and Astronomy*, 32, 609
- 8. Detailed Radio View on Two Stellar Explosions and Their Host Galaxy: XRF 080109/SN 2008D and SN 2007uy in NGC 2770**  
van der Horst, A. J.; Kamble, A. P.; Paragi, Z.; Sage, L. J.; **Pal, S.**; Taylor, G. B.; Kouveliotou, C.; Granot, J.; Ramirez-Ruiz, E.; Ishwara-Chandra, C. H. et al., 2011, *The Astrophysical Journal (ApJ)*, 726, 99
- 9. Signature of long-term class evolution in GRS 1915+105 at a high accretion rate**  
Mayukh pahari and **Sabyasachi Pal**, 2010, *Monthly Notices of the Royal Astronomical Society (MNRAS)*, 409, 903
- 10. RXTE/PCA detection of QPO near 0.22 Hz in Aql X-1 during ongoing outburst**  
Mayukh Pahari, **Sabyasachi Pal** and Arunava Mukherjee, 2010, *The Astronomer's Telegram (ATEL)*, 2902, 1
- 11. Outburst of Aql X-1 as observed by RXTE and Swift**  
**Sabyasachi Pal**, 2010, *The Astronomer's Telegram (ATEL)*, 2850, 1
- 12. Circularly Polarized Emission from the Transient Bursting Radio Source GCRT J1745 - 3009**  
Roy, Subhashis; Hyman, Scott D.; **Pal, Sabyasachi**; Lazio, T. Joseph W.; Ray, Paul S.; Kasim, Namir E., *The Astrophysical Journal Letter (The Astrophysical Journal Letter (ApJL))*, 712L, 5, astro-ph/1001.5394

13. **A multifrequency study of the large radio galaxies 3C46 and 3C452**  
Nandi, S.; Pirya, A.; **Pal, S.**; Konar, C.; Saikia, D. J.; Singh, M., *Monthly Notices of the Royal Astronomical Society (MNRAS)*, 404, 433, astro-ph/1001.3998
14. **Deep GMRT 150 MHz observations of the LBDS-Lynx region: Ultra-Steep Spectrum Radio Sources**  
Ishwara-Chandra, C. H.; Sirothia, S. K.; Wadadekar Y.; **Pal, S.**; Windhorst, R., *Monthly Notices of the Royal Astronomical Society (MNRAS)*, 405, 436, astro-ph/1002.0691
15. **Softening of state during recent X-ray outburst of LMC X-3 as detected by RXTE**  
Mayukh Pahari and **Sabyasachi Pal**, 2009, *The Astronomer's Telegram (ATEL)*, 2230, 1
16. **Detection of 27 Hz QPO and type-I X-ray burst during state transition from recent RXTE-PCA observation of 4U 1820-303**  
Mayukh Pahari and **Sabyasachi Pal**, 2009, *The Astronomer's Telegram (ATEL)*, 2167, 1
17. **Simultaneous Multi-Wavelength Observations of Sgr A\* during 2007 April 1-11**  
Yusef-Zadeh, F.; Bushouse, H.; Wardle, M.; Heinke, C.; Roberts, D. A.; Dowell, C. D.; Bruntthaler, A.; Reid, M. J.; Martin, C. L.; Marrone, D. P.; Porquet, D.; Grosso, N.; Dodds-Eden, K.; Bower, G. C.; Wiesemeyer, H.; Miyazaki, A.; **Pal, S.**; Gillessen, S.; Goldwurm, A.; Trap, G.; Maness, H., 2009, *The Astrophysical Journal (ApJ)*, 706, 348, astro-ph/0907.3786
18. **SN2007bg : GMRT Radio observations**  
Atish Kamble , **Sabyasachi Pal**, Dipankar Bhattacharya, Ralph Wijers, and Ishwara Chandra, 2009, *The Astronomer's Telegram (ATEL)*, 2133, 1
19. **GMRT observation of GRB 090424 afterglow**  
Atish Kamble, **Sabyasachi Pal**, A. J. van der Horst, D. Bhattacharya, R. Wijers, C. H. Ishwara Chandra, Evert Rol, 2009, *GCN*, 9484, 1
20. **A new radio transient towards the Galactic centre**  
Scott D. Hyman, Rudy Wijnands, T. Joseph W. Lazio, **Sabyasachi Pal**, Rhanna Starling, Namir E. Kassim and Paul S. Ray, 2009, *The Astrophysical Journal Letter (The Astrophysical Journal Letter (ApJL))*, 696, 280, astro-ph/0811.1972
21. **Cygnus X-3 is in flare: observation by RATAN and GMRT**  
Sergei Trushkin, **Sabyasachi Pal**, Sushanta Mondal, N. N. Bursov, C. H. Ishwara-Chandra, 2008, *The Astronomer's Telegram (ATEL)*, 1881, 1
22. **X-ray and radio emission from the Ophiuchus cluster of galaxies**  
M.A. Perez-Torres, F. Zandanel, M.A. Guerrero, S. Pal, S.Profumo, F. Prada, 2009, *Monthly Notices of the Royal Astronomical Society (MNRAS)*, 396, 2237, astro-ph/0812.3598
23. **The Local Group dwarf Leo T: HI on the brink of star formation**  
Ryan-Weber, Emma V.; Begum, Ayesha; Oosterloo, Tom; **Pal, Sabyasachi**; Irwin, Michael J.; Belokurov, Vasily; Evans, N. Wyn; Zucker, Daniel B., 2008, *Monthly Notices of the Royal Astronomical Society (MNRAS)*, 384, 535.
24. **GMRT low frequency radio observation of the giant flare from Cygnus X-3**  
**Pal, Sabyasachi**; Trushkin, S. A.; Chandra, Ishwara, 2008, *The Astronomer's Telegram (ATEL)*, 1486, 1
25. **RXTE observation of 2S 1553-542 at the time of recent flare**  
**Pal, Sabyasachi**; Pahari, Mayukh, 2008, *The Astronomer's Telegram (ATEL)*, 1373, 1
26. **XRF 080109/SN2008D : GMRT upper limit at 1.28 GHz.**  
Kamble, A.; **Pal, S.**; Bhattacharya, D.; Chandra, I., 2008, *GCN*, 7330, 1

27. **XRF 080109 / SN 2008D: GMRT radio observation at 1280 MHz.**  
Pal, S.; Kamble, A.; Bhattacharya, D., 2008, *GCN*, 7201, 1
28. **A Faint, Steep Spectrum Burst from the Radio Transient GCRT J1745-3009**  
Hyman, Scott D.; Roy, Subhashis; Pal, Sabyasachi; Lazio, T. Joseph W.; Ray, Paul S.; Kassim, Namir E.; Bhatnagar, Sanjay, *The Astrophysical Journal Letter (ApJL)*, 660, 121, astro-ph/0701098.
29. **Simultaneous VLBI/GMRT/RXTE observation of SS433**  
Chakrabarti, S. K.; Pal, S.; Nandi, A., 2006, *A&A*, 453, 965.
30. **GMRT observation of radio flare in Cygnus X-3 at 614 MHz**  
Pal, Sabyasachi; Ishwara-Chandra, C. H.; Rao, A. Pramesh, 2006, *The Astronomer's Telegram (ATEL)*, 809, 1.
31. **GMRT Low frequency radio observation of Cyg X-3 at the time of flare**  
Pal, Sabyasachi; Rao, A. Pramesh, 2007, *The Astronomer's Telegram (ATEL)*, 1100, 1
32. **Broadband radio spectrum of SS433**  
Pal, Sabyasachi; Chakrabarti, Sandeep K.; Kraus, Alex; Mandal, Samir, 2006, *BASI*, 34, 1.
33. **GRB070612A: radio upper limit from GMRT**  
Pal, S.; Ishwara-Chandra, C. H.; Bhattacharya, D.; Kamble, A. P., 2007, *GCN*, 6714, 1
34. **GMRT upper limit of GRB 070610/SWIFT J195509.6+261406 in 610 MHz**  
Pal, S.; Basu, A., 2007, *GCN*, 6559, 1
35. **SS 433: results of a recent multiwavelength campaign**  
Chakrabarti, Sandip K.; Anandarao, B. G.; Pal, S.; Mondal, Soumen; Nandi, A.; Bhattacharyya, A.; Mandal, Samir; Sagar, Ram; Pandey, J. C.; Pati, A.; Saha, S. K., 2005, *Monthly Notices of the Royal Astronomical Society (MNRAS)*, 362, 957.
36. **A GHz Flare in a Quiescent Black Hole and A Determination of the Mass Accretion Rate**  
Pal, Sabyasachi; Chakrabarti, Sandip K., 2005, *ChJAS*, 5, 69.
37. **Results of Recent Multi-wavelength Campaign of SS433**  
Pal, Sabyasachi; Chakrabarti, Sandip K.; Goswami, K.; Nandi, A.; Ananda Rao, B. G.; Mondal, S., 2005, *ChJAS*, 5, 69.
38. **Mass accretion rate of the galactic black hole A0620-00 in its quiescent state**  
Pal, S.; Chakrabarti, S. K., 2004, *A&A*, 421, 13.
39. **Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433**  
Chakrabarti, Sandip K.; Pal, S.; Nandi, A.; Anandarao, B. G.; Mondal, Soumen, *APJL*, 595, 45.
40. **VLF observation during Leonid Meteor Shower-2002 from Kolkata**  
Chakrabarti, Sandip K.; Pal, S.; Acharyya, K.; Mandal, S.; Chakrabarti, S.; Khan, R.; Bose, B., 2005, *IJP*, 76B, 694.
41. **Monitoring of Sudden Ionospheric Disturbances (SID) from Kolkata (INDIA)**  
Chakrabarti, Sandip K.; Acharyya, K.; Bose, B.; Mandal, S.; Chatterjee, A.; Nandi, N. M.; Pal, S.; Khan, R., 2005, *IJP*, 77, 173.

## Conference Proceedings/Poster Papers

- 1. Galactic and extra-galactic transient radio sources**  
Sabyasachi Pal, Dusmanta Patra, Monique Hollick, Sandip K. Chakrabarti, XXXV Meeting of Astronomical Society of India, 6 – 10 March 2017, Jaipur
- 2. Multi-frequency study of large radio galaxies**  
Dusmanta Patra, **Sabyasachi Pal**, Chiranjib Konar and Sandip K. Chakrabarti, XXXV Meeting of Astronomical Society of India, 6 – 10 March 2017, Jaipur
- 3. Search for transient radio sources near Galactic center region**  
Pal, S.; Hyman, S.; Roy, S.; Lazio, T. J. W.; Ray, P. S.; Kassim, N. E., Recent Trends in the Study of Compact Objects (RETICO-II): Theory and Observation. ASI Conference Series, 2015, Vol. 12, pp 85-86 Edited by Indranil Chattopadhyay, Anuj Nandi, Santabrata Das and Samir Mandal
- 4. Multi-frequency observation of Galactic micro-quasar Cygnus X-3 during flare**  
Patra, D.; **Pal, S.**; Ishwara-Chandra, C. H.; Rao, A. P., Recent Trends in the Study of Compact Objects (RETICO-II): Theory and Observation. ASI Conference Series, 2015, Vol. 12, pp 125-126 Edited by Indranil Chattopadhyay, Anuj Nandi, Santabrata Das and Samir Mandal
- 5. Discovery of a new micro-quasar near Galactic center**  
**Sabyasachi Pal** and Subhashis Roy, National Conference on Recent Trends in the Study of Compact Objects: Theory and Observation (RETICO), 11 – 13 March 2013, Indian Institute of Technology, Guwahati
- 6. Discovery of one of the youngest supernova remnant G354.4 + 0.0**  
**Pal, Sabyasachi**; Roy, Subhashis, *40th COSPAR Scientific Assembly*. Held 2-10 August 2014, in Moscow, Russia, Abstract E1.16-34-14
- 7. Discovery of a transient source close to a micro-quasar**  
**Pal, Sabyasachi**; Sahu, Dipen; Patra, Dusmanta, *40th COSPAR Scientific Assembly*. Held 2-10 August 2014, in Moscow, Russia, Abstract E1.5-87-14
- 8. Observations and discoveries of supernova remnants with GMRT**  
Subhashis Roy and **Sabyasachi Pal**, Supernova Environmental Impacts, Proceedings of the International Astronomical Union, IAU Symposium, Volume 296, pp. 197-201
- 9. Deep GMRT 150 MHz observations of LBDS**  
Ishwara-Chandra, C. H.; Sirothia, S. K.; Wadadekar, Y.; **Pal, S.**; Windhorst, R., Proceedings of the ISKAF2010 Science Meeting. June 10 -14 2010. Assen, the Netherlands. Published online at <http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=112>, p.69
- 10. A GPU based Transient Dedisersion Search Engine for CRAFT**  
Dodson, R.; Harris, C.; **Pal, S.**; Wayth, R., Proceedings of the ISKAF2010 Science Meeting. June 10 -14 2010. Assen, the Netherlands. Published online at <http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=112>, p.64
- 11. The AKARI Deep Fields: Early Results from Multi-wavelength Follow-up Campaigns**  
Chris Sedgwick, Stephen Serjeant, Sandeep Sirothia, **Sabyasachi Pal**, Chris Pearson, Glenn White, Hideo Matsuhara, Shuji Matsuura, Mai Shirahata, Sophia Khan, *AKARI Conference*, Tokyo, February 2009, astro-ph/1002.4968
- 12. XRF 080109/ SN2008D: An Investigation at Radio Frequencies**  
A. P. Kamble, A. J. van der Horst, Z. Paragi, **S. Pal** et al., *The shocking universe - Gamma ray bursts and high energy shock phenomenon in the Universe*, Sept 14-18 2009, Venice, Greece.



13. **Multifrequency observation of Cygnus X-3 at the time of giant flare in 2006 May-June**  
**Sabyasachi Pal**, C. H. Ishwara-Chandra, and A. Pramesh Rao, *Low Frequency Radio Universe*, to appear in ASP Conference Series, Vol. 407, *The Low-Frequency Radio Universe*, eds D. J. Saikia, D. A. Green, Y. Gupta and T. Venturi (Conference held at NCRA, Pune, India from 8th to 12th December 2008)
14. **A programme to search for ultra-steep spectrum radio sources with GMRT**  
C. H. Ishwara-chandra, S. K. Sirothia, **S. Pal**, Y. Wadadekar, *Low Frequency Radio Universe*, Pune, India
15. **SGR A\*: Its Flaring Activity**  
Farhad Yusef-Zadeh, G. Bower, H. Bushouse, W. Cotton, K. Dodds-Eden, D. Dowell, P. Edwards, S. Gillessen, A. Goldwurm, N. Grosso, C. Heinke, D. Marrone, C. Martin, A. Miyazak, **S. Pal**, D. Porquet, M. Reid, D. Roberts, T. Tzioumis, M. Wardle, A. Weiss, H. H. Wiessmeyer, *213 Meeting of the American Astronomical Society*, 4 – 8 January 2009, Long Beach, CA
16. **The AKARI Deep Fields: Early Results from Multi-wavelength Follow-up Campaigns**  
Chris Sedgwick, Stephen Serjeant, Sandeep Sirothia, **Sabyasachi Pal**, Chris Pearson, Glenn White, Hideo Matsuhara, Shuji Matsuura, Mai Shirahata and Sophia Khan, *AKARI, a light to illuminate the misty Universe*, February 16 – 19 2009, Tokeyo, Japan
17. **Radio Observations of Two Large Radio Galaxies**  
Sumana Nandi, Akash Pirya, **Sabyasachi Pal**, Chiranjib Konar, D. J. Saikia and M. Singh, proceeding of *26th Meeting of Astronomical Society of India*, 2009
18. **Radio properties of galactic compact objects**  
**Sabyasachi Pal**, proceeding of *25th Meeting of Astronomical Society of India*, thesis presentation, 2007, Hyderabad, India, published in *BASI*, p19
19. **Multi wavelength radio observations of Cygnus X-3 during the giant flare of May-June 2006**  
**Sabyasachi Pal**, C. H. Ishwara-Chandra, and A. Pramesh Rao, *Observational evidence for black holes in the universe: Proceedings of the 2nd Kolkata Conference on Observational Evidence for Black Holes in the Universe held in Kolkata India, 1015 February 2008 and the Satellite Meeting on Black Holes, Neutron Stars, and Gamma-Ray Bursts held 1617 February 2008*, AIP Conference Proceedings Vol. 1053, p193
20. **Multi wavelength radio observations of Cygnus X-3 during the giant flare of May-June 2006**  
**Sabyasachi Pal**, C. H. Ishwara-Chandra, and A. Pramesh Rao, *10th Asia-Pacific regional IAU meetings*, Kunming, China
21. **Multi-frequency radio observations of Cygnus X-3 at the time of giant flare of May 2006**  
**Sabyasachi Pal**, C. H. Ishwara-Chandra, and A. Pramesh Rao, *VII Microquasar Workshop: Microquasars and Beyond*, Foca, Turkey
22. **New results on radio emission from the transient bursting source GCRTJ 1745-3009**  
Roy, Subhashis; Hyman, Scott; **Pal, Sabyasachi**; Lazio, T. Joseph W.; Ray, Paul S.; Kassim, Namir E.; Bhatnagar, Sanjay *Astronomical Society of India Meeting, 2007*. *BASI*, 25, 44  
**This poster is selected as best poster in the section G**

23. **New Results on Emission from the GCRT**  
Roy, S.; Hyman, S. D.; **Pal, S.**; Lazio, J.; Ray, P.; Kassim, N. E.; Bhatnagar, S., Proceedings of *Bursts, Pulses and Flickering: wide-field monitoring of the dynamic radio sky*. 12 – 15 June 2007, Kerastari, Tripolis, Greece., p.9
24. **Radio properties of Galactic compact objects**  
**Sabyasachi Pal**, Proc. of 25th Meetings of ASI, 2007, *BASI*, 19
25. **Low frequency GMRT observation of Microquasar V4641 Sgr**  
Ishwara-Chandra, **Sabyasachi Pal** and A. Pramesh Rao, *Sixth microquasar workshop: microquasars and beyond - from binaries to galaxies*.
26. **A Search for GCRT J1745-3009 and Other Galactic Center Radio Transients**  
Hyman, Scott D.; **Pal, S.**; Ray, P. S.; Lazio, T. J.; Kassim, N. E.; Roy, S., 2006, *American Astronomical Society Meeting 208; Bulletin of the American Astronomical Society*, Vol. 38, p.123.
27. **Photometric evidence of bullets in SS433 jets**  
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