CURRICULUM VITAE of Dr. BINITA PHARTIYAL

Birbal Sahni Institute of Palaeosciences, 53, University Road, Lucknow, U.P., 262007, India

PERSONAL DETAILS

Designation: Scientist 'F'
Permanent address: Hawthorne Villa; Nainital-263001, Uttarakhand, India
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Date of Birth: 17.12. 1971 **Nationality**: Indian **Sex**: Female **Marital Status**: Married

HIGHER EDUCATION

Degree	Board & Institution	Subject	Division/Award	Year
High School	ICSE Board; St. Mary's Convent, Nainital, Uttarakhand	English, Hindi, Mathematics, Science, History, Geography, Economics	Ist Division	1987
Intermediate	UP Board; GGIC, Nainital, Uttarakhand	English, Hindi, Physics, Chemistry, Biology	Ist Division	1989
B.Sc.	Kumaun University, Nainital, Uttarakhand, India	Geology, Botany, Zoology	Ist Division	1992
M.Sc	Kumaun University, Nainital, Uttarakhand, India	**Geology***	Ist Division	1994
CSIR(NET) Examination	CSIR Delhi	**Earth and atmospheric Sciences**	Lectureship	1998
Ph.D	Kumaun University, Nainital, Uttarakhand, India	**Geology** **	Awarded	2000
PDF	Tuebingen University, Germany	**Mineral Magnetism*****	DAAD Fellow Visiting Scientist	1999-2000
D.Sc.	Kumaun University, Nainital, Uttarakhand, India	**Geology********	Submitted September 2023	

***M.Sc. Dissertation title**: Upper Pliocene Soricidae (Insectivora, Mammalia) from the Karewa Intermontane basin, Northwest Himalaya
****Ph.D. title**: Magnetostratigraphy and Clay Mineralogy of selected palaeolake deposits of Kumaun and Ladakh and of Siwalik sequences of Kumaun
*****Post Doctoral Fellowship (PDF) Project title**: The use of mineral magnetic parameters to decipher environmental and climatic changes in the Quaternary palaeolakes of Lesser Himalaya, India
****** **D.Sc. title** Late Quaternary Sedimentation in Ladakh region, Trans Himalaya: Implications on climate and tectonics

AWARDS/MEMBERSHIPS

Academy/National Awards

- **Member**, National Committee for the International Union of Geological Sciences (IUGS) and International Quaternary Research (INQUA), **2024-2026**
- **INSA Bilateral Exchange Award-2014,** visited Institute of Tibetan Plateau Research, Beijing, China
- **Guide/Supervisor for Summer Research Fellowship Programme,** jointly sponsored by the three National Science Academies of India (**2016**,**2018, 2019,2020, 2021, 2022, 2023)**

- **Member of the 3rd Indian Arctic Scientific Expedition**, conducted by National Center for Polar and Ocean Research, Goa (**2008)**
- **Member of the 25th (Silver Jubilee)Indian Antarctic Scientific Expedition**, conducted by National Center for Polar and Ocean Research, Goa (**2005-2006)**

Other prestigious awards/recognitions/honours

I. Member of National Committees& Expeditions:

- **Member, Research Advisory Committee**, Wadia Institute of Himalayan Geology, Dehradun **(2022-24)**
- Expert Member, Subject Expert Committee (SEC) on Earth and Atmospheric Sciences under '**WISE-KIRAN-Post Doctoral Fellowship (WISE-PDF)' Program** of Department of Science and Technology, India (**2021-24**)
- **Founder Member & Secretary**, Association of Quaternary Researchers (www.aoqr.org)**(2019-2023),**
- **Expert Member of Subject Expert Committee,** Women Scientific Scheme-A, Department of Science and Technology, India (**2016-19**)

II. National and International Grants

- The British Academy's **Leverhulme Small Grants** (SRG22\220841; co-applicant/collaboration) (**2022-23**)
- **SERB-DST project** (under Himalayan Glaciology Research Programme) **2013** (**SB/DGH-69/2013**)
- **DAAD** (German Academic Exchange Services) **re-invitation Award**, visiting Scientist at Tübingen University, Germany (**2009**)
- DST FASTRACK Young Scientist Project **2009 (SR/FTP/ES-123/2009)**
- **DAAD Fellow**; Awarded the DAAD (German Academic Exchange Services) Fellowship; visiting scientist at the University of Tuebingen, Germany(**1999-2000)**
- **Research Associateship of CSIR,** at Department of Geology, Kumaun University, Nainital-263002, Uttarakhand (**2001**)
- **Joint CSIR-UGC (NET)** examination (India) for Lectureship (**1998)**

III. Field trainings and Conferences/workshops

- **Convener, Indian Quaternary Congress (2022)**
- **Mentor, Earth and Space Exploration Programme (ESEP-2021)**
- **NASA Spaceward Bound India** (Member and Logistic Coordinator) (**2016**)
- **Field expert** at Field Training Workshop- Quaternary setup of Arid NW Himalaya with main focus on Ladakh, organized by WIHG, Dehradun; Sponsored by DST, New Delhi (**2012)**
- **Member of the Organizing Committee** of National Workshop-Climatic Changes during the Quaternary: Special reference to Polar Regions and Southern Ocean, organized jointly by NCAOR, Goa and BSIP, Lucknow in October (**2009)**
- Awarded the **D. N. Wadia Best Poster Award**, by Jammu University Geology Alumni Association, Jammu University (**2007**)

IV. Others

- **Plaque of Honor** from CSIR-IITR, Lucknow on **National Science Day-2022**
- **Distinguished Alumni Award**, for Science and Research from St. Joseph's College and St. Mary's Convent, Nainital (**2018)**
- **Member of Jury in 6thUttrakhand State Science and Technology Congress (2011)**
- **Best Trainee Award by Indo Tibetan Border Police (ITBP), Auli** for the 25th Indian Antarctica Scientific expedition pre-training and acclimatization course (**2005**)
- Awarded the **D. N. Wadia Best Poster Award**, **2007**; by Jammu University Geology Alumni Association, Jammu University.

Several in-house (BSIP, Lucknow) medals-

- **Dr. P.N. Srivastava Medal-2015** for best piece of research work done in category Scientists 'D'.
- **Shri Chandra Dutt Pant Memorial Medal-2011**, for best piece of research work done in the last three years in category Scientists 'C'
- **Team Medal-2008** from BSIP, amongst scientists of the Institute who have excelled to inculcate team sprit and collaborative integrated work within the Institute.
- **Best Trainee Award 2005 by ITBP, Auli** for the 25th Indian Antarctica Scientific expedition pre-training and acclimatization course
- **Dr. Chunnilal Kathiyal Medal 2004**, for best piece of research work done in the last three years in category Scientists 'A'

List the memberships of Professional Bodies

Fellow& Life Member:

- Geological Society of India
- Indian Geophysical Union

Founder Member &Secretary:

- Association of Quaternary Researchers

Life member:

- Indian Science Congress
- Indian Society of Earthquake Science
- Ladakh Science Foundation
- Indian Institute of Geomorphologists
- The Palaeobotanical Society of India
- Palaeontological Society of India
- Himalayan Geology

Positions held in other Scientific Boards:

- Tuebingen Research Alumni Center (TRACe)
- Advisory Editorial Committee-Journal of Geosciences Research (JGSR) (Formerly Gondwana Geological Magazine) 2021 onwards
- Editor-Journal of Palaeosciences(Formerly The Palaeobotanist) 2020 onwards

EMPLOYMENT

Post	Place	Duration	Nature of work
Research Fellow	Department of Geology, Kumaun	1996-1999	Pursued PhD and carried out field and lab studies

	University, Nainital, UA		
Senior Research Fellow	Department of Geology, Kumaun University, Nainital, UA	4 months (Feb-May 1999)	Worked on project-'Neotectonic, Geomorphological, Sedimentological, Palaeoenvironmental and Palaeoclimatic Investigations in the Kumaun Lesser Himalaya' (**CSIR Project No. 24 (0240)/98/EMR-II, dated 22.12.1998**)
Post Doctoral Fellow	Tuebingen University, Germany	7th June 1999-30th September 2000	• German language course (June-September 1999) • Worked as DAAD Fellow on- The use of mineral magnetic parameters to decipher environmental and climatic changes in the Quaternary palaeolakes of Lesser Himalaya, India' (**DAAD Fellow**) (October 1999-Sep 2000)
Research Associate (CSIR):	Department of Geology, Kumaun University, Nainital, UA	1st May 2001 to 30th September 2001	Worked on -Quaternary Geology, Neotectonics and Climate of the selected palaeolake basins in Himachal Pradesh, NW India' (**CSIR Project No. 9/428(42)/200/-EMR-I**).
Scientist 'A'	BSIP, Lucknow	8th October, 2001 to 14th September, 2008	Quaternary Palaeoclimate researches using multi-proxy analysis and geomorphological studies of the Ladakh and Lahaul Spiti region
Scientist 'C'	BSIP, Lucknow	15th September 2008 -30th June 2013	Quaternary Geology, magnetic studies, tectonics and palaeoclimate of Ladakh and Lahaul Spiti (Tethys and Trans Himalaya), Antarctica and Gujarat.
NCAOR, Goa	Deputation from December 2005-March 2006		to visit Antarctica for field work
NCAOR, Goa	Deputation from June-July 2008		to visit Arctic for field work in Spitzbergen (Svalbard).
Scientist 'D'	BSIP, Lucknow	1st July 2013-30th June 2017	Geomorphology and Quaternary Geology, magnetic studies, tectonics and palaeoclimate of Ladakh and Lahaul Spiti
Scientist 'E'	BSIP, Lucknow	1st July 2017-30th June 2022	Geomorphology and Quaternary Geology of cold and hot desert regions Magnetostratigraphy and palaeomonsoon signatures in Palaeogene –Miocene Successions of Himalaya. BSIP-Mega Lake Project Geomorphology and Quaternary Geology of Karewa sequence
Scientist 'F'	BSIP, Lucknow	1st July 2022 onwards	BSIP-Mega Lake Project Geomorphology and Quaternary Geology of Karewa sequence Magnetostratigraphy and palaeomonsoon signatures in Palaeogene –Miocene Successions of Himalaya.

PROJECTS

Total No of Projects: 22 (In-house: 14; Extramural: 5); Others 3
Completed: 19 **Ongoing**: 3

SN	Period	Title	Status
In-house Projects (BSIP 2001-2022)			
1	March 2021 Onward	Quaternary Monsoon/Climate reconstruction through high resolution multi-proxy studies of lacustrine archives from Central India (Core Monsoon Zone and Indo-Gangetic Plain)	Ongoing
2	2019 onwards	Astrogeology studies in the Ladakh region: Mars analogue (Collaboration)	Ongoing
3	2020 onwards	Sediment Characterization and climate of the Karewa sequence, Kashmir (PhD Students thesis work)	Ongoing
4	2019-2021	Holocene climate variations in Tethyan and Trans Himalaya with reference to local, regional and global forcings: a multi proxy approach	Completed
5	2019-2021	Towards a basin level synthesis for palaeoclimate modeling: case study from the Kachchh basin (Collaboration)	Completed
6	2019- 2021	Monsoon evolution based on the study of Neogene sequences of NW Himalaya	
7	2018-2021	Oligo-Miocene and associated sedimentary sequences of NW Himalaya: studies on magnetostratigraphy and monsoon intensification and its variability	Completed
8	2017-2020	Factors responsible for driving the glaciation in Ladakh Himalaya during the late Quaternary with special emphasis on Zanskar valley; a multiproxy approach	Completed
9	2017-2019	Palaeogene to Pleistocene sequences of Himalaya: implications to monsoon intensification, its variability and magnetostratigraphy (chronology)	Completed
10	2012-2015	Geomorphological and tectono-climatic signatures in Trans and Tethyan Himalaya during Quaternary period: a multi-proxy approach using sedimentological, mineral magnetic, geochemical and geochronological parameters	Completed
11	2008-2011	Arctic Project: Multi proxy geological studies in Svalbard area and surrounding Ocean: Implications to Quaternary palaeoclimate and pre-Quaternary biostratigraphy.	Completed
12	2006-2009	Antarctic Project: Late Quaternary climatic change of Schirmacher and Larseman Oasis, East Antarctica and surrounding Ocean: a multi proxy approach.	Completed
13	2008-2012	Tectonoclimatic signatures in Ladakh and Lahaul sectors of Tethyan Himalaya during Quaternary period: a multi-proxy approach using mineral magnetic, geochemical and geochronological parameters.	Completed
14	2002-2007	Accretionary Evolution, Tectonics and Palaeoclimate in Lahaul-Spiti, Ladakh and Eastern Karakoram regions: study based on Tectonics, Geochemistry, Sedimentology, Petrography, Magnetostratigraphy and palaeobotanical evidences	Completed
Extra mural			
15	2022-2-23		
16	2008-2011	Co-Principal Investigator: Quaternary Sedimentary Records of Baroda Corridor, Mainland Gujarat: A Multidisciplinary Approach; DST Sponsored Project	Completed
17	2011-2014	Principal Investigator: Tectono-climatic variations during Late-Quaternary in the Tangtse valley, Ladakh, NW India. DST Sponsored FAST TRACK Project (SR/FTP/ES-123/2009)	Completed
18	2014-2018	Principal Investigator:Characterization of glacial lake deposits of the Ladakh, NW Trans Himalaya: Implications on landscape evolution and palaeoclimate. SERB DST Sponsored Project (SB/DGH-69/2013)	Completed

19	2022 onwards	Co-Investigator: Ecologies of water care in the Himalaya-water security and climate adaptation in Changthang (British Academy/Leverhulme Small Grants SRG 2022	Completed
	Others		
20	1994	Upper Pliocene Soricidae (Insectivora, Mammalia) from the Karewa Intermontane basin, Northwest Himalaya (Masters Dissertation Project)	Completed
21	1996-1999	Magnetostratigraphy and Clay Mineralogy of selected palaeolake deposits of Kumaun and Ladakh and of Siwalik sequences of Kumaun (Doctoral Research work)	Completed
22	1999-2000	The use of mineral magnetic parameters to decipher environmental and climatic changes in the Quaternary palaeolakes of Lesser Himalaya, India (Post Doctoral Research Project)	Completed

FIELD WORK

Polar regions:

Antarctica (December 2005-March 2006)

Carried out field work and collected several samples from the Schirmacher Oasis region of East Antarctica, over an area of 35 sq km, for palaeoclimatic studies in the Quaternary period.

Arctic, Svalbard region (June July, 2008)

Sample collection in area around Ny Alesund for Quaternary palaeoclimatic studies and sampling of the pre-Quaternary sediments.

Himalayas (Higher, Tethys and Trans)

Himanchal Pradesh*; Lahaul-Spiti Valley (June-July 2007, August 2008; September, 2014)*

Field work in the Spiti and Pin valleys for the study of Quaternary palaeolake sections for palaeoclimatic and tectonic studies.

Collection of glacial lake samples for palaeoclimate studies.

Jammu and Kashmir- Karewa Lake Basin in &adjoining areas of Srinagar which includes Burzahama, Wanihama, Makaibagh, Karapur, Shankerpora, Dilpur, Hirpora, Pallor, Raithan, Shoipan, Parigram *(September 2021, June 2023)*

Ladakh and Zanskar *(April 2001, July-August 2002, August-September, 2004, September 2009, August 2011, August-Sep. 2012; 2013, 2015, 2016 (NASA Spaceward bound India), 2017, March, August 2018, March, July, August-September 2019, July-August 2021 (ESPS); March-April 2023)*

Field work and sample collection in the palaeolake sediments of Leh, and Lamayuru, Sample collection at Khalsi, Mullbeck, Bodhkharbu, Kargil, Turtuk along Shyok river valley, upto Batalik and Nubra valley up-to Sasoma village (mapping of Quaternary deposits and sample collection). Field work and geomorphological studies around Pangong Tso, Tso Morari, Tsokar lakes; Changla, Nyoma, Hanley valley, Koyul, Fuchke, Tangtse, Chushul; Padum, PensiLa, Kargil, Dras, Sankoo etc.,

Himalayas (Lesser Himalayas)

Uttaranchal (Jan-Feb 1997, May-June 1998)

Kumaun Lesser Himalayas- Sample collection for magnetostratigraphy and sedimentological analysis in Kumaun Siwaliks (Ramnagar Garjiya; Ranibagh-Kathgodam and Tanakpur Sukhidang transacts); Sample collection in the palaeo lake deposits in Kumaun; Bageshwar, Pithoragarh, Champawat, Askot, Jauljivi, Tehri Dam site, Tehri, Garhwal

Nepal Himalayas

(December 2000)

Study of the palaeolake deposits at Kathmandu valley, Lukhundul.

Western India
Gujarat (January 2008)
Mainland Gujarat, along the river Mahi; Rayaka, Dodka, Jaspur, Mujhpur, Kavi etc., for multi-proxy palaeoclimatic studies
Rajasthan and Gujarat (December 1993)
Khetri Copper Mines, Chittorgarh, Mehsana, during the B.Sc. and M.Sc. field trips.

Central Ganga Plain
Bihar (March-April 2022)
Kawar wetland, Begusarai

Madhya Pradesh
Bandhavgarh (May 2023; November 2023)

RESEARCH INTERESTS

Quaternary palaeoclimate and neotectonics; Mars Analogue Research; Astrogeology; monsoon variations; multi-proxy studies; Environmental studies; Geoheritage

TRAININGS/COURSES ATTENDED

Institute/University	Period/Duration	Training/Research
National Geophysical Research laboratory, Hyderabad	• December 1997-March 1998 • September-October 1998	**Palaeomagnetism;** Worked in association with Dr. M. S. Bhalla.
National Institute of Oceanography, Goa	October-November 1998	**Clay mineralogy**; Worked with Dr. H. N. Hashmi.
Department of Geology, Lucknow University	March-April 1999	Carried a part of the Clay mineral analysis; Worked with Prof. S. Kumar
Institute for Geology and Paleontology, University of Tuebingen, Germany	October 1999- September 2000	**Mineral/environmental magnetism** Worked with Prof. Erwin Appel
Institute for Geophysics, University of Munchen, Germany	January/February 2001	Mineral magnetic measurements of ARM
Department of Geology, Panjab University, Chandigarh	8-11th October 2002	Participated in a short course of '**Palaeoseismology and Earthquake Geology**'
Wadia Institute of Himalayan Geology, Dehradun	• November-December 2002; • March-April 2006; May-June 2007; • May, 2008	Analysis of Quaternary sediments of Ladakh for rock magnetic parameters from sediments of Ladakh, Lahaul-Spiti, Gujarat and Antarctica,
National Center for Antarctic and Ocean Research, Goa	Deputation from December 2005-March 2006	To visit Antarctica for field work
National Center for Antarctic and Ocean Research, Goa	Deputation from 14th June- 19th July 2008	To visit Arctic (Svalbard region) for field work.
Institute for Geology and	May-July 2009	Mineral magnetic analysis for

Paleontology, University of Tuebingen, Germany		palaeoclimate from the arid cold desserts (Ladakh, Schirmacher Oasis and Svalbard)
Institute of Tibetan Plateau Research, CAS, Beijing, China	Deputation from 9th October -10th November 2014	*n*-alkenes biomarker analysis of lake sediments.

INSTRUMENT HANDLING AND QUALITY DATA GENERATION

- Well versed in operating several sophisticated instruments for magnetic data generation such as Magnetometers (Cryogenic, Digital spinner, Molspin slow speed fluxgate, Micromag), susceptibility meters, kappa bridge (KLY 2, KLY 3), AFD's, furnaces, magnetizers, etc. and Seifert and Phillips X-ray diffractometer for clay mineralogy and bulk mineralogy data generation.
- Well versed in various mineral magnetic, palaeomagnetic and clay mineralogical techniques for sample preparation.
- Have generated preliminary data of the water analysis by Soil and water analysis kit in lakes of east Antarctica as well as the rivers of Ladakh.

VISITS ABROAD

Country Visited	Duration of Visit	Reason of visit
Pakistan	April 1998	Participation and presentation of paper at 13th HKT (Himalayan Karakorum Tibet) Workshop; Peshawar
Germany	June1999-September 2000	Visiting Scientist under DAAD fellowship; Tuebingen
Nepal	December 2000	Field work in Katmandu lake basin
Germany	November-December 2001	Analysis of samples and finalization of paper for publication; Tuebingen
South Africa	December 2005 and March 2006	On the way to Antarctica participating in the 25th IASE 2005-2006; Cape Town
Antarctica	January-March 2006	To carry out field work in the Schirmacher Oasis Region.
Australia	July-August 2007	Participation and presentation of research paper at XVII INQUA; Cairns
Arctic (Svalbard, Norway)	June-July, 2008	To carry out field work in the Ny Alesund region of Spitzbergen; Svalbard
Germany	May-July, 2009	Visiting scientist under DAAD re-invitation scheme; Tuebingen
China	September, 2012	Participation and presentation of research paper at 3rd Sino-Indian Workshop; Biodiversity and Environmental Changes in the Himalaya in Beijing, Hunan and Kaifeng, Xinxiang, China
Nepal	November, 2012	Participation and presentation of research paper at 27th HKT; Kathmandu
Germany	August, 2013	Participation and presentation of research paper at a joint conference 28h HKT and 6th ISTP (International Symposium on Tibetan Plateau); Tuebingen
France	August, 2013	Participation and presentation of research paper at 8th IAG International Conference on Geomorphology; Paris

China	October-November 2014	INSA Bilateral Exchange Award -2014; Visited Institute of Tibetan plateau Research (ITP); Beijing.
USA	December 2016	Participation and oral paper presentation in the American Geophysical Union Fall Meeting; San Francisco.
China	July 2017	Paper presentation in the Third Pole Summit-TPE-CSTP-HKT Joint Conference; Kunming
Ireland	July 2019	India's bid (for INQUA-2023 presentation) and Paper presentation in the INQUA-2019, Dublin
Italy	July 2023	India's bid (for INQUA-2027 presentation) and Paper presentation in the INQUA-2023, Rome

COMPUTER KNOWLEDGE

A fair knowledge to handle computers; has worked with various software related to the research field. Learnt the SQL (structured query language) at NIIT, Can work perfectly with MS Office, Coral Draw, Grapher, Surfer, SQL, Abode pagemaker, Statistica, Internet Surfing and Browsing etc.

LANGUAGES

Languages	**Read**	**Write**	**Speak**
Hindi	VG	VG	VG
English	VG	VG	VG
German	G	F	F

G-Good; VG-Very Good; F-Fair

PUBLICATION LIST OF BINITA PHARTIYAL

A) **Total publications** Total 78- (44 International; 34 National)

In high impact factor journals, like Geomorphology; Palaeogeography, Palaeoclimatology, Palaeoecology; Chinese Science Bulletin; Journal Asian Earth Science; Catena, International Journal of Earth Sciences; Zeitschrift für Geomorphologie; Quaternary International; Holocene, Frontiers of Earth Science, Journal of Archeological Science, Polar Science, Current Science, Journal Geological Society of India, Himalayan Geology etc.,

Citations (as on December 2023)

ResearchGate
https://www.researchgate.net/profile/Binita-Phartiyal
Citations 1518

Google Scholar
https://scholar.google.com/citations?hl=en&user=QSV_Bk4AAAAJ

Citations	**1308**
h-index	**20**
i10-index	**32**

Research Papers in refereed journals (* corresponding author)

1. Debarati Nag, **Binita Phartiyal*,** Sailesh Agrawal, Pankaj Kumar, Rajveer Sharma, Kamlesh Kumar, Anupam Sharma, Mallickarjun Joshi. 2023. Westerly-Monsoon variations

since the last deglaciation from semi-arid Ladakh region, Trans Himalaya, India. 618, 111515, Palaeogeography, Palaeoclimatology, Palaeoecology https://doi.org/10.1016/j.palaeo.2023.111515

2. Swati Tripathi, Biswajeet Thakur, Anupam Sharma, **Binita Phartiyal**, Sadhan Kumar Basumatary, Ruby Ghosh, Kamlesh Kumar, Manoj MC, Shailesh Agrawal, Anjum Farooqui, Pooja Tiwari, Korobi Saikia, Arvind Tiwari, Arya Pandey, Nazakat Ali, Rajesh Agnihotri, Prasanna K, P. Morthekai, Parminder Singh Ranhotra, Shilpa Pandey, Trina Bose. 2023. Modern biotic and abiotic analogues from the surface soil of Ganga-Ghaghara-Gandak interfluves of the Central Ganga Plain (CGP), India: Implications for the palaeoecological reconstructions. Catena https://doi.org/10.1016/j.catena.2023.106975

3. Joshi Priyanka, **Phartiyal Binita*** Joshi Mallickarjun, Agrawal Shailesh and Pankaj Baghel. 2023. Reconstruction of landscape and climate during last 7000 cal yr BP of the largest basin of the Ladakh Range, NW Indian Himalaya. Catena https://doi.org/10.1016/j.catena.2022.106907

4. Sunil Kumar Shukla , Amritpal Singh Chaddha , Kamlesh Kumar , Anupam Sharma, Santosh Kumar Pandey, Vivesh Vir Kapur, **Binita Phartiyal**, A. Shivam, Ankur Dabhi, Ravi Bhushan. 2023. Hot spring diatoms are linked to extreme cold conditions: A new perspective for astrobiological implication from the sinter deposit of Puga hot spring, Ladakh, India ESS Open Archive DOI:10.22541/essoar.170158324.46307742/v1

5. Abhishek Kumar, D M Maurya, **Binita Phartiyal**, Md. Arif, Niteshkumar Khonde, Ravi Bhushan and L. S. Chamyal. 2023. Holocene evolution of the Banni plain, NW margin of Arabian sea: constraints from a ~50 m sediment core. The Depositional Record, 00:1–26. DOI: 10.1002/dep2.241

6. Farooqui, A., Khan, S., Agnihotri, R., **Phartiyal, B**., & Shukla, S. 2023. Monitoring hydroecology and climatic variability since ~4.6 ka from palynological, sedimentological and environmental perspectives in an Ox-bow lake, Central Ganga Plain, India. The Holocene, 33(12). https://doi.org/10.1177/09596836231183067

7. Ghosh R, Korobi Saikia, Oindrila Biswas, Shailesh Agrawal, P. Morthekai, Mohd. Arif, **Binita Phartiyal**, Anupam Sharma, Neha Singh, Dipak Kumar Paruya, Pyarimohan Maharana, Mayank Shekhar, Subir Bera, 2023. Last 10 millennial history of Indian summer monsoon in the Bengal region – a multi-proxy reconstruction from a lacustrine archive. Palaeogeography, Palaeoclimatology, Palaeoecology 609 (2023) 111308 https://doi.org/10.1016/j.palaeo.2022.111308

8. **Phartiyal B** & Nag D 2022. Sedimentation, tectonics and climate in Ladakh, NW Trans-Himalaya-with a special reference to Late Quaternary Period. Special Issue-Continental Lithosphere: Integrated Geoscientific Aspects. Geosystems and Geoenvironment. 1-100031:1-12 https://doi.org/10.1016/j.geogeo.2022.100031

9. Verma S, **Phartiyal B*** and Chandra R. 2022. Quaternary Geoheritage sies of Northwest Himalaya: Loesss-Palaeosol and palaeo fluvio-lacustrine-a necessitate protection Geoheritage 14:109 https://doi.org/10.1007/s12371-022-00743-3

10. **Phartiyal B**, Ali Nawaz, Sharma A, Agrawal S, Nag D, Tiwari P, Kumar M, Morthekai P, Govil P, Thakur B, Bhushan R, Jena PS and Shivam A. 2022. Palaeoclimatic variability

during last eight millennia from a morainal lake in Zanskar, northwest Himalaya, India. Journal of Palaeosciences 71 (1), 75-88 https://doi.org/10.54991/jop.2022.545

11. Nag D, **Phartiyal B***, Kumar P, Joshi P and Singh R. 2022. Geomorphological and sedimentological evidences of palaeo-outburst flood events from TanglangLa-Gya catchment of River Indus, Ladakh, India. Physical Geography DOI:10.1080/02723646.2021.2022339

12. Kumar M, Saikia K, Agrawal S, Ghosh R, Ali S Nawaz, Arif Md., Singh D S, Sharma A, **Phartiyal B**, Bajpai S. 2021. Climatic control on the C3 and C4 plant abundance during the late Pleistocene – Holocene in the northern Gangetic Plain, India. Palaeogeography, Palaeoclimatology, Palaeoecology https://doi.org/10.1016/j.palaeo.2022.110890

13. **Phartiyal B**, Singh R, Nag D, Sharma A, Agnihotri R, Prasad V, Yao T, Yao P, Joshi P, Balasubramanian K, Singh SK & Thakur B. 2021. Reconstructing Climate variability during the last four millennia from Trans-Himalaya (Ladakh-Karakoram, India) using multiple proxies. Palaeogeography, Palaeoclimatology, Palaeoecology https://doi.org/10.1016/j.palaeo.2020.110142

14. **Phartiyal B**, Clarke Jonathan D A & Pandey S 2021. Prospects of Astrogeology and Astrobiology researches in India: Ladakh as an example. Journal of Palaeosciences 70: 326-337 DOI: https://doi.org/10.54991/jop.2021.24

15. Tiwari AK, Singh AK, **Phartiyal B** & Sharma A. 2021. Hydrogeochemical characteristics of the Indus river water system, Chemistry and Ecology, DOI: 10.1080/02757540.2021.1999425

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PhD GUIDANCE

Name of Ph.D. Scholar	**Subject**	**Date of Award/Registration**	**University**	**Supervisor(s)**	**Title of Ph.D. Thesis**
1.Debarati Nag	Geology	Awarded in September 2018	Banaras Hindu University, Varanasi	External Supervisor Dr. Binita Phartiyal Internal Supervisor Prof. M. Joshi	Geomorphological architecture and palaeoclimate of the Late Quaternary sequence of Indus catchment (between Gupuk and Batalik), Ladakh.
2.Priyanka Joshi	Geology	Awarded August 2023	Banaras Hindu University, Varanasi	External Supervisor Dr. Binita Phartiyal Internal Supervisor Prof. M. Joshi	Geomorphological evolution and the climatic variations in the ChangLa-Tangste Basin, Ladakh Range, Trans Himalaya.
3. ArvindTewari	Geology	Registration August 2020	AcSIR	Supervisor Dr. Binita Phartiyal Co-Supervisor Dr. Ruby Ghosh	Human-climate relationship in the Central Ganga Plain during The Late Quaternary: A multi-proxy approach
4.Shirish Verma	Geology	Registration January 2021	AcSIR	Supervisor Dr. Binita Phartiyal Co- Supervisor Dr. Rakesh Chandra	Sediment Characterization and palaeoclimatic history of the Karewa deposits, J&K: a multi-proxy approach

Masters Dissertations/Training Imparted

Name		**Department/University**	**In fulfillment of/for**	**year**	**Title of Masters Thesis**
1.Anjana Mathew	M.Sc. student	Department of Geology, University of Kerala, Trivandrum , Kerala	Masters dissertation as IASc Summer Research	2017	Quaternary climate and proxy methods

			Fellow		
2.Omer M. Ahmed (Native of Sudan)	M.Sc. student	Department of Geology, University of Kerala, Trivandrum , Kerala	Masters dissertation	2017	Rock magnetic characterization of Ultramafics and Gneisses rocks from Wayanad, Kerala
3.Rupali Sharma	M.Sc. student	HNB Garhwal University, SRTC, Tehri Garhwal, Uttarakhand	Masters dissertation	2018	Mineral and Environmental Magnetic Proxies Implication to Quaternary Climate
4.Deeksha Bora	M.Sc. student	Department of Geology, Kumaun University, Nainital	Masters dissertation	2018	Palaeoenvironmental reconstruction using mineral magnetism of Dewar lake
4.Nayan Todariya	M.Sc. student	HNB Garhwal University, SRTC, Tehri Garhwal, Uttarakhand	Masters dissertation	2019	Mineral Magnetic Proxy study of Pashkyum Palaeolake section, Kargil, J&K
5.Zunaid Pradhan, M.Sc, Assam University	M.Sc. student	Department of Geological Sciences, Gauhati University, Jalukbari, Guwahati, Assam	Masters dissertation	2021	Magnetic Characterisation of surface sediments in Central Ganga Plain
6.Sakshi Mishra	M.Sc. student	Department of Energy and Environment, School of Environmental Sciences, Babasaheb Bhimrao Ambedkar University (BBAU), Lucknow	Masters dissertation	2021	Environmental Magnetism- A Proxy for Sediment Characteristics and Paleoclimate Rangdum Section Ladakh
7.Uma Yadav	M.Sc. student	Department of Energy and Environment, School of Environmental Sciences, Lucknow	Masters dissertation	2021	Environmental Magnetism- proxy to study the Palaeoclimate and Quaternary sediments characteristics of Zingral Lake, Ladakh
8. Adhra Renny	M.Sc. student	Andhra University, Vishakhapatnam, AP	Two months laboratory training on proxy analysis for palaeoclimate	2021-2022	Training on the multi proxies used for climate study
9. Pragya Saikia	M.Sc. 1st year	Department of Geology, Pondicherry University	Three months laboratory training	Feb-April 2022	Use of physical and biotic proxies for defining the sediment characteristics and vegetation of Ganga Plains surface sediments
10. Anu Joseph	M.Sc. student	Department of Geology and geophysics, Cochin University of Science and Technology (CUSAT), Kochi	Masters dissertation	April-June 2022	Mineral Magnetic mapping of the Upper Central Ganga Plain (CGP)

11. Jitheesh Krishnan KV	M.Sc. student	Department of Geology and geophysics, Cochin University of Science and Technology (CUSAT), Kochi	Masters dissertation	April-June 2022	Surface sample study of Lower Central Ganga Plain (CGP)
12. Parvathy EM	M.Sc. student	Department of Geology and geophysics, Cochin University of Science and Technology (CUSAT), Kochi	Masters dissertation	April-June 2022	Mineral magnetic variations in Kanwar lake core, Bihar
13. Sithulya Das KC	M.Sc. student	Department of Geology and geophysics, Cochin University of Science and Technology (CUSAT), Kochi	Masters dissertation	April-June 2022	Mineral magnetic variations of Sediment profile in Lucknow, UP
14. Rajshree Biswas	B.Sc. 2nd year	Department of Geology, MS University Baroda, Varodara	IASc Summer Research Fellow for two months training	May-June 2022	Fluvial geomorphology of the Jhelum River, India
15. Prakarsh Sinha	M.Sc. student	Amity Institute of Biotechnology, Amity University, Mumbai	Masters dissertation	July-August 2022	Applications of Rock magnetism and Scanning Electron Microscopic analysis of the Geological Samples: Implications to Mars Analogue studies
16. Rujal Pachichigar	M.Sc. student	Department of Geology, K J Somaiya College, Mumbai	Masters dissertation	November 2022-April 2023	Paleoclimatic Reconstruction of the Kanwar Wetland Core, Begusarai, Bihar, India
17. Heet Joshi	M.Sc. student	Department of Geology, K J Somaiya College, Mumbai	Masters dissertation	November 2022-April 2023	Environmental Magnetism: A study of Heerpur formation, Karewa basin, Jammu & Kashmir, India
18. Puspanjali Nayak	M.Sc. student	Geology Department, Central University of Tamil Nadu, Thiruvarur	Masters dissertation	January-May 2023	Mineral Magnetic studies of the downcore section in the Central Ganga Plain: Implication to Late Quaternary palaeoclimate
19. Susmita Nayak	M.Sc. student	Geology Department, Central University of Tamil Nadu, Thiruvarur	Masters dissertation	January-May 2023	Mineral Magnetic mapping of the Central Ganga plain
20.Liya Thomas	MSc.	Kerela	Masters dissertation	January-May 2023	Analogue site for Mars: Karewa-Understanding the morphology and climatic setup of Raithan Formation
21. S Rajalakshmi	MSc. 1	IIT-Bhuveneshwara	Masters dissertation	May-July 2023	Report on mineral magnetic characterisation of lake sediments from Bakhira tal, central Ganga plain: Implication to palaeoclimate
22. Shubham Yadav	MSc.	Department of Geology, Lucknow University, Lucknow, UP	Masters dissertation	December 2022-May 2023	Environmental Magnetic variation in Lahuradewa Lake Site :Implication to Quaternary Climate
23 Siddharth Pratap Singh	MSc.	BBAU, Lucknow	Masters dissertation	January 2024 onwards	Mineral magnetic mpping of the interfluves between Ghaghra and Ganga Rivers, Central Ganga Plain, India

Invited Talks:

Title	**Date**	**Organisation where Lecture/Seminars delivered or Training imparted (with the name (s) of trainee (s))**
Quaternary Geology	5th June 2014	GSI, Lucknow
Palaeolakes in Ladakh in reference to Quaternary climate	14th October 2014	ITPCAS, Beijing

Poles (Antarctic, Arctic, Third Pole)-Scientific Scope, Opportunities and Challenges	23rd August 2015	Swayam Siddha, Lucknow
Antarctica-the Frozen Continent: Scientific Scope, Challenges and Opportunities	22nd October 2016	Rotary Club of Greater, Lucknow
3 lectures were delivered at Geology on Quaternary geology, Palaeomagnetism and environmental magnetism Under CAS Programme of UGC	16th February 2018	Department, Lucknow University, Lucknow
Quaternary palaeoclimate studies in India-a review of our current status in the global context	12th January 2019	INQUA-EC Meeting, NIO, Goa
Earth Science opportunities in the three poles	18th October 2019	on the occasion of India International Science Festival Open Day at Agharkar Research Institute, Pune
Quaternary landscape evolution and climatic variability in Ladakh (Trans-Himalaya)	19th October 2019	Department of Geology Savitribai Phule Pune University, Pune
Cold Arid deserts (Antarctic, Arctic, Third Pole)-Scientific Scope, Opportunities and Challenges	23rd December 2019	Refreshers course at Lucknow University, Lucknow
Let's explore our poles (talk on virtual platform)	16thApril 2020	Invited talk for students of T.I. Matriculation Higher Secondary School, Ambattur, Chennai,
Ladakh-the cold arid desert: landscape and climate variations during Quaternary (talk on virtual platform)	5-7 July, 2020	Invited talk at International Webinar on "Global Climate Change: Evidences, Causes, Effects and Solutions" organized by Botany Department, ECC, University of Allahabad from 5-7 July, 2020 Allahabad University
Ladakh-cold arid desert: a terrestrial analogue of Mars Astrobiology Webinar	28th July 2020	Invited talk – organized by Physical Research laboratory, Ahmadabad
AOQR-Webinar series	(Every Monday) Between 7th September-26th October 2020	Organized AOQR-ECR Webinar Series-2020 on 'Emerging Areas of Research in Quaternary Science'
Interview with Swati Nagar, NCPOAR, Goa	August 2020	In conversation with Polar Maidens; Science Reporter; 2020 page 43
Ladakh as analogue of Mars (talk on virtual platform) https://www.youtube.com/watch?v=EmE1TR158xo	23rd October 2020	Invited talk – organized by Amity University, Mumbai
SES conference (Virtual)	16-19 October 2020	Organizing Secretary from BSIP
Foundation day of AOQR (virtual platform)	12th December 2020	Organized the programme https://www.aoqr.org/web/webinar
AcSIRAugust Course Lectures (Module 1 & 4)		
Nearing a topic/area of research	19thOctober 2020	BSIP & AcSIR
Atmosphere and Cryosphere	9th December 2020	BSIP & AcSIR
Serendipity	23rd December 2020	BSIP & AcSIR
Palaeomagnetism-An Introduction		BSIP & AcSIR

Challenges in Earth Science: a perspective from a women's angle in the Leadership programme for women officers-through webex by BIRD, Lucknow (23-27 November 2020	25th November, 2020	Leadership programme for women officers-through webex by BIRD Foundation, NABARD, Lucknow (23-27 November 2020)
Organized AOQR-Legends Talks	January 2021	Prof. Martin Williams (8th January 2021); Prof. Victor R. Baker (29th January 2021) https://www.aoqr.org/web/webinar
AOQR-Palynological Training	22-24th Feb 2021	Organizing Secretary of the training https://www.aoqr.org/web/webinar
Women in field Science: Challenges on International Women's Day	8th March 2021	Botany Department, Lucknow University
Reimaging role of women in STEM: reference to Earth Science	9th May 2021	Kalpana-SHE for STEM Foundation, Vigyanshala
Quaternary Geology and palaeoclimate of Ladakh-cold arid desert (Focus on geomorphology, sedimentology, neotectonics and climate)	1st June 2021	GSI training, Central Region, Nagpur
AOQR Student Colloquium-2021	1-2 July 2021	Organized the programme https://www.aoqr.org/web/webinar
ESEP-2021 (Earth and Space Exploration Programme, Ladakh)	18 July to 3rd August 2021	Mentor and field expert of the field training programme of Geology and Geomorphology
Live History India	September 2021	https://www.youtube.com/watch?v=GVCjxsWjvXs
World Space Week	#WomenInSTEM #WorldSpaceWeek2021	https://twitter.com/astrobiologyin/status/1446161965412327439?t=wg4YQjsyJUsgRdduVTlfoA&s=08
It happens Only In India series on Ladakh	National Geographic Running in Hotstar	It Happens Only in India on Disney+ Hotstar! https://www.hotstar.com/1260074401
Film on The Secrets of Ladakh: A Rare Journey December, 17, 2021. Interview with Mini Menon, Journalist Live History India for this documentary	Produced by Team LHI (Live History Channel) Published 05 January 2022	https://www.livehistoryindia.com/films/trails/ladakh-a-rare-journey
1st Indian Quaternary Congress (IQC-2022)	January 19-21, 2022	Organized and convened the three day conference (virtual mode)
1st Meeting of the Subject Expert Committee (SEC)-Earth & Atmospheric Sciences Women Scientists Scheme-A (WOS-A)	January 24-25, 2022	(online mode)
National Science Day-2022	28th February 2022	CSIR-IITR, Lucknow; Invited talk on-Cold arid desert of India (Offline mode)
TV show on environment (Eh Mulakat)	8th June 2022	Doordarshan Kendra, Lucknow
Opportunities in Polar Earth sciences	25-26 August 2022	"*Women Driving Science and Technology in India*"; organized by CBMR & SERB -DST
Participated in a panel discussion of Geoarcheology in Himalayas in the worksgop-'Scientific Applications within South Asian Archaeology: An integrative platform for research on reconstruction of the past in India'	December 9th-11th 2022	Hotel Japfü, Kohima, Nagaland.
National Training Workshop Paleoclimate Archives-Proxies and analysis/measurement techniques (NT-	16-20 January, 2023	Cold arid desert of Ladakh, India (geology, landform evolution, climate and neotectonics)

PALEO), IITM, Pune		
Assessment Panel of the GATI program meeting, DST, New Delhi	18th-19th Jan 2023	online
Conference on Geology: Emerging Methods and Applications (GEM-2023) Christ College, Thrissur, Kerala,	23-25 January, 2023	Landscape evolution and climatic variations in Ladakh, NW Trans-Himalaya during Late Quaternary
Annual General Meeting-Association of Quaternary Researchers, Christ College, Thrissur, Kerala,	24 January, 2023	Conducted the meeting
Invited lecture in the Monsoon lecture series of Professor Peter Clift, LSU Department of Geology & Geophysics, USA https://www.youtube.com/watch?v=Gk_7_TGXjY8	8 February, 2023	Late Quaternary hydroclimatic variations in the Ladakh sector of NW Himalaya
Invited lecture in the lecture series UDAN* in the frame of the UGC and DAAD-funded project Co-PREPARE https://ir.iitr.ac.in/COPREPARE/UDAN_lectures.html	24 February, 2023	Climatic and neotectonic interplay during Late Quaternary in Ladakh-the high altitude cold desert of India (online mode)
SUEZ, India-Invited talk on International Womens Day 2023	3rd March 2023	Journey through the Poles
LEM-ISS 2023 International School and Symposium, March 13–26, 2023	22 March 2023	Decoding palaeoclimate, human and climate interactions: environmental magnetic proxies (online)
Workshop on Water Availability & Security in Ladakh: Past, Present, and future scenario, Ladakh University, Leh	1st April 2023	Ladakh-Hydroclimate in the last 10000 years
Invited talk on International Environment Day 2023 CBMR, Lucknow	5th June 2023	The fragile cryosphere in the present climate scenario: consequences to plastic pollution and biota health
1st meeting of the Subject Expert Committee (SEC) on Earth and Atmospheric Sciences under 'WISE-Post Doctoral Fellowship (WISE-PDF)' Program of DST	**September 29-30,** 2023	North-Eastern Hill University, Shillong (**40** new projects were reviewed by the committee).
World Space Week (4-10 October) 2023 celebrations, AADYA- Planetary and Geoscience Research	8 October 2023	Role of Geology in Planetary Science
1st meeting of the Subject Expert Committee (SEC) on Earth and Atmospheric Sciences under 'WISE-Fellowship for Ph.D. (WISE-PhD)' Program of DST	**November 27,** 2023	Assessment of the PhD projects
Program of DST is scheduled to be held on at 09.30 AM at.		
39th Convention of the Indian Association of Sedimentologists & International Conference, organized by Annamalai University, Tamil Nadu	6-8 December 2023	Landscape evolution, sediment characterization and climatic record of Northwest Trans-Himalaya during Late Quaternary
Master's Course in Astrobiology and Space Sciences :Geosciences-1. Geomorphology; Amity University, Mumbai	8 December 2023	Geomorphology and Landscape evolution
Interaction programme with CBSE Principals organized by CBSE and	14 December 2023	Overview of Birbal Sahni Institute of Palaeosciences: work done and its applications

Higher education institution (HEI)		
Science Outreach Program under India International Science Festival IISF 2023 "Science and Technology Public Outreach in Amrit Kaal" Curtain raiser of ISSF 2024	29 December 2023	Palaeoscience-Research and Applications
JK Women Science Congress, Jammu University	13 February 2024	Unwinding the mysteries of climate and tectonic interplay in Ladakh, NW Himalayas-Records hidden in the Quaternary sediments of Indus River catchment

- Attended 1st meeting of the Subject Expert Committee (SEC) on Earth and Atmospheric Sciences under 'WISE-Post Doctoral Fellowship (WISE-PDF)' Program of DST, 20-30 September 2023 at NEHU, Shillong
- Convener, Selection Committee, JRF to SRF of AcSIR, at BSIP Lucknow (Directors Nominee) 17th November 2023
- Selection Committee Member, JRF Interview for the Permafrost DMSP IIRS Project on 16 Nov 2023

TEACHING EXPERIENCE

Pre-PhD course work and AcSIR course work for PhD Students registered in BSIP **(2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022)**
Geology-a field science: Introduction & Basic Concepts
Geomorphology and Landscape evolution
Magnetostratigraphy and environmental magnetism
AcSIR Course Lectures (Module 1(a); 66-1D-004) –Research Methodology; Palaeomagnetism; Earth System Science
AcSIRCourse Lectures –Research Problem, Identification and Design (Plan) | Atmosphere and Cryosphere| Earth System History | Global Warming

Lecture Series on Palaeoclimate for MSc Final Semester course, Department of Geology, Kumaun University: May 2017; Feb-March 2018; March 2019
Quaternary Geology and Paleoclimatology
Glacial and Interglacial Cycles
Marine Isotopic Stages
Magnetostratigraphy and Biostratigraphy
Quaternary Dating Methods
Glacial, Coastal and Fluvial landscapes

Lectures; under CAS Programme of UGC; Geology Department, Lucknow University, Lucknow; February 2018
Quaternary Palaeoclimate: Archives and Proxies
Quaternary Palaeoclimate: Major climatic variations/changes
Palaeomagnetism: Technique, Importance and Applications

Amity University Mumbai: Master's Course in Astrobiology and Space Sciences : Geosciences – Geomorphology, December 2023
Geomorphology and Landscape evolution

OUTREACH ACTIVITIES

Association of Quaternary Researchers: Founder Member and Secretary
2019
The Association of Quaternary Researchers (AOQR) was registered as an Association under The Societies Act, 1860, with its Headquarters at Birbal Sahni Institute of Palaeosciences , Lucknow on 12th December 2019, when AOQR. This association is committed towards the overall ascent of Quaternary research in the Indian subcontinent, in general, and in India, in particular. The association aims to bring together the different researchers, students, and enthusiasts of the Quaternary of this region. One of the key objectives of the association is to bring Indian Quaternary researchers at par with global research developments in terms of the latest techniques, methods and practices and enable to fill the gaps in available datasets. In line with this objective, the association seeks to organize regular meetings, national and international conferences, field workshops, laboratory training sessions, brainstorming sessions, and open panel discussions. Just after the association was constituted the global pandemic came and times of increased virtual meetings and seminars stared, therefore the association sought the need to adapt and organise a virtual webinar series, talks and also start the trainings. Have, been conducting the governing body meetings regularly four times a year on the solstices and equinoxes of the year ever since the association was formed.

2020
AOQR- ECR Webinar series
(September-October 2020)
Organized a ECR Webinar series, entitled '***Emerging Areas of Research in Quaternary Science***', to provide Early Career Researchers (ECRs) a platform to share their work to a global network of interested individuals and students. On average, over 250 viewers attended the lectures, ~80 % of which were students and ECRs. Participants represented various regions of India (and the series drew in an international crowd, with participants from diverse countries such as Sweden, Nigeria, the United Kingdom, the United States, Switzerland, Brazil, Pakistan, the Philippines, Israel, and Taiwan. Overall, the series was critically acclaimed, received tremendous support and an overwhelmingly positive feedback.
The lecture conducted in the month of the Sept. 2020 are tabularised below and can be seen at https://www.aoqr.org/webinarsecond.aspx

AOQR-INQUA ECR Interaction (November 02, 2020)
An online interaction between early career scientists under the banner Association of Quaternary Researchers (AOQR) and International Quaternary Association (INQUA) was organized on November 02, 2020. The discussion related to funding opportunities and schemes along with Neptune project were carried out. The meeting also emphasized the more structured editing and managing of Quaternary Perspective Magazine where quaternary researchers share their scientific views. The meeting was attended by more than 30 early career scientists from all across the world.

1st Foundation Day Function of the Association of Quaternary Researchers (AOQR)
(December 12, 2020)
The first Foundation Day function of the Association of Quaternary Researchers (AOQR) was organized on Saturday, December 12, 2020. Prof. Thijs van Kolfschoten, President INQUA, Emeritus Professor of Palaeoecology and Quaternary Biostratigraphy, Faculty of Archaeology, Leiden University, The Netherlands was the Guest of Honour. Dr. Marie-France Loutre, Executive Director, PAGES, PAGES - Past Global Changes, Bern, Switzerland was the Chief Guest and Prof. Ashok Singhvi, Vice President, INSA Indian National Science Academy, New

Delhi, India presided over the function. The programme started with a welcome address by Dr. Vandana Prasad, President, AOQR followed by an introduction about AOQR by Dr. Binita Phartiyal, Secretary, AOQR, 1st Foundation Day talk on INQUA by Prof. Thijs van Kolfschoten, President INQUA, 2nd Foundation Day talk on PAGES by Dr. Marie-France Loutre, Exec. Director, PAGES, Presiding Address by Prof. Ashok Singhvi, Vice President, INSA and finally a Vote of Thanks by Dr. Pradeep Srivastava, Vice-President, AOQR. Around 75 researchers from all over the world attended the programme.

2021

Organized Legends Talks

Talk 1-Prof. Martim Williams; 18th January 2021

Prof. Martin Williams from University of Adelaide, Australia delivered the 1st lecture in the bimonthly talk series on January 18, 2021. The title of the talk was '*When the Sahara was green*' and it was attended by about 100 researchers from across the globe.

Talk 2-Prof. Victor Baker; January 28, 2021

Organized a talk of Prof. Victor R. Baker, University of Arizona, USA on January 28, 2021 which was attended by about 100 researchers from across the globe.

AOQR-BSIP Palynology TrainingProgramme 22-24 Febuary 2021

A National virtual training program "*Training on Quaternary Palynology*" was organized by AOQR in association with BSIP, during February 22-24, 2021. This virtual training constituted online lectures and practical demonstration by expert palynologists in India. The training constituted a broad spectrum of topics related to palnological studies and practical training to the participants. Sixty-one participants from various institutes and universities across India attended the online training

National Quiz on Geoarchaeology; May 2021

Keeping an ultimate goal in view of bringing the status of India onto a global map of geoarchaeology and human evolutionary research and to meet the requirement of future Quaternary scientists and geoarchaeologists from the country, Association of Quaternary Researchers under its *Human-Climate Interaction* working group, organized a national level quiz competition for U.G., P.G. and Ph.D. students on 9th May 2021. The primary objective of the quiz was to spread awareness of geoarchaeological research in India and abroad amongst Indian students.

AOQR Students Colloquium; July 2021

The Primary Objective of this colloquium was to enhance the interaction and collaborations amongst the young researchers. To make the session active a panel of both a young scholar (peer Scholar) and a stalwart (Session Chair) was kept. The peer scholar was there for every presentation to review and give his/her views about the presenter's work. This enabled an interaction of the young peers and also get suggestion and guidance from experiences experts of each session who were there as Session Chair.
https://www.aoqr.org/webinar.aspx

Indian Quaternary Congress-2022 (IQC-2022)

Convened and organised the first IQC in January 2022, with 250 participants under the AOQR Banner

This first IQC with a focal theme of "Integrative Quaternary Sciences for Societal Service", brought out three keynote addresses and contributions from 267 researchers working across India

in different aspects of the Quaternary sciences. The papers received by the congress were classified into thematic sessions on Climate: Past, Present, and Future; Earth Surface Processes in Quaternary; Oceans in Quaternary; Humans in Quaternary; Fossil records from Quaternary and Quaternary landscape evolution. The congress besides 3 keynote talks, delivered 42 oral and 49 poster presentations.

Third Foundation Day (2022) Organised Talks of Prof. A. P. Dimri, IIG-Mumbai and Dr Doris Barboni French Institute, Pondicherry

4th Paleoschool Field Workshop-2022-23:Integrating field and lab results in Human-Climate interactions
was organized with a focal theme of "Integrating field and lab results in Human-Climate interactions". The event was specifically planned during the visit of Prof. Stanley Ambrose to India so that we would be able to informally disseminate first-hand knowledge to young, early career researchers. Prof. Ambrose is an internationally acclaimed stable isotope geochemist and paleoanthropology researcher based at the University of Illinois in the USA.

National Training Workshop on Paleoclimate - Archives, Proxies, and Analysis/ Measurement Techniques (NT-PALEO 2023) was conducted by the Development of Skilled Manpower (DESK), MoES, and Paleoclimatology teams at CCCR, IITM, from January 16–20, 2023, at IITM and was live-streamed to BIMSTC (Bangladesh, India, Myanmar, Sri Lanka, Thailand, Nepal and Bhutan) nation's institutes via the IITM YouTube channel. The training workshop was part of the activities of the Association of Quaternary Researchers (AOQR), which aimed to motivate young students from India pursuing their master's degree courses or in the early stages of their Ph.D. by making them aware of the advancements in the field of paleoclimate research in India. The workshop had lectures, hands-on training experience, lab visits, and field trips. A total of 57 participants attended the workshop. All the participants were provided free lodging, boarding, and return train fares to participate in the workshop.

Annual General Body Meeting of the Association of Quaternary Researchers (AOQR): The Annual General Body Meeting was held on Tuesday, January 24, 2023, at 05:00 PM in the Natural History Museum of the Department of Geology and Environmental Science, Christ College Autonomous.

LEM first International School and Symposium (LEM-ISS) from 13th to 26th March 2023

The first International School and Symposium (LEM-ISS) from 13th to 26th March 2023 in western Vidarbha, Maharashtra, India, with the aim to understand Tropical Dry Evergreen Forests. The LEM-ISS-2023 is supported by the Department of Forest, Government of Maharashtra; the Science and Engineering Research Board (SERB), Government of India; Ministry of Earth Sciences (MoES), Government of India; and the Association of Quaternary Researchers (AOQR). For the first time, a project from the subcontinent of this size has been approved by the International Union for Quaternary Research (INQUA). The Landcover-Landuse of Ecological Regions of the Monsoon (LEM) project as approved under the Humans & Biosphere commission (HABCOM) of INQUA is hosted at the Birbal Sahni Institute of Paleosciences (BSIP), Lucknow. This project aims to map and model landuse and landcover indicators in different ecological regions of the monsoon to quantify modern analogues of the climate variations in the last 100 thousand years.

XXI International Union for Quaternary Research (INQUA) Congress, 14-20 July 2023, Rome, Italy

India participated in the bid process, and Dr. Binita Phartiyal and her team successfully presented the bid proposal in the council meeting to organize the XXII INQUA congress in Lucknow. The Indian delegates were also involved in advertising India's bid on the Indian Expo stall to all the other country delegates. Thijs Van Kolfschoten (INQUA President) declared India's prestigious win, to host the INQUA meeting in Lucknow during February 2027.

Indian Quaternary Congress-2024 (IQC-2024)

AOQR Newsletter- Quaternary Chronicles (https://www.aoqr.org/web/publication)
Quaternary Chronicles-a quarterly newsletter published online by AOQR on-
August 2019 (Volume 1(1))
December 2019 (Volume 1(2))
April 2020 (Volume 2(1))
August 2020 (Volume 2(2))
December 2020 (Volume 2(3))
April 2021(Volume 3(1))
August 2021 (Volume 3(2))
December 2021 (Volume 3(3))
April 2022 (Volume 4(1))
August 2022 (Volume 4(2))
December 2022 (Volume 4(3))
April 2023 (Volume 5(1))
August 2023 (Volume 5(2)
December 2022 (Volume 5(3))

AOQR, Registered on 12 December 2019

August 2019 (Volume 1(1)

December 2019 (Volume 1(2))

2019

2020

April 2020 (Volume 2(1))

August 2020 (Volume 2(2))

December 2020 (Volume 2(3))

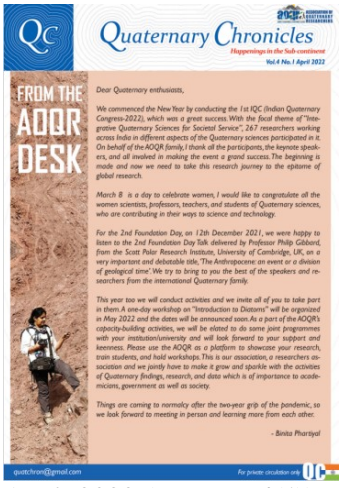
2021

April 2021(Volume 3(1))

August 2021 (Volume 3(2))

December 2021 (Volume 3(3))

2022

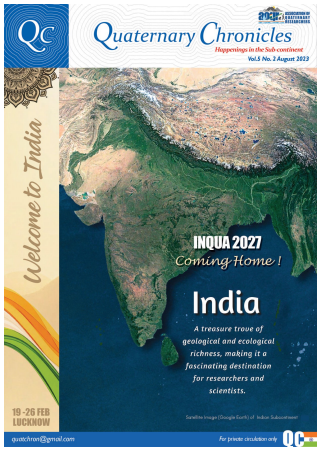


April 2022 (Volume 4(1))

August 2022 (Volume 4(2))

December 2022 (Volume 4(3))

April 2023 (Volume 5(1))



August 2023 (Volume 5(2))

December 2023 (Volume 5(2))

OTHER OUTREACH ACTIVITIES

September 2021: **Live History India**
लद्दाख का भूविज्ञान: अतीत और भविष्य की कड़ी | Ladakh: A Link of Past and Future | Geology with LHI

https://www.youtube.com/watch?v=GVCjxsWjvXs

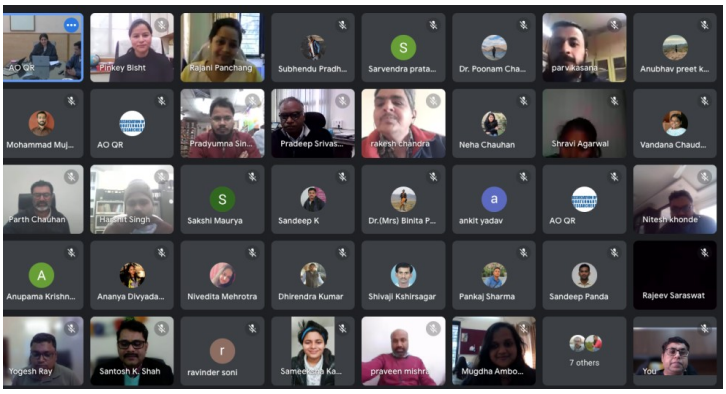
(LHI is the country's fastest-growing digital platform on Indian history, bringing together the best works and brightest minds on the subject since 2017. They have done over 2000 articles and 650 videos covering subjects like India's history, heritage, culture, geology, architecture, art and literature in English and Hindi).

https://www.peepultree.world/livehistoryindia/films/trails/ladakh-a-rare-journey

December 12, 2021. Organized the AOQR Foundation Function, Talk of Professor Phillip Gibbard from USA.

December, 17, 2021. Interview with Mini Menon, Journalist Live History India for a documentary entitled The story of Ladakh: A rare journey; Produced by Team LHI; Published on 05 January 2022

January 19-21, 2022. Organized and convened and the 1st Indian Quaternary Congress (virtual mode)



March 30 2022. An outreach program was carried out at a local government school (Uchya Madhyamik Vidyalaya, Majhlaul-3) near the Kawar lake on the 30th March. Class 7 to 10 students were briefed about science and shown different types of rocks, fossils and were briefed about the works we carry out at BSIP and the work we plan to do at Kawar lake. Students were also taught about reduce reuse and recycling plastic as the area is also coming under the bane of plastic use.

The BSIP team scientists also talked to the local news channel “Bihar ki Aawaz’ and were on social media-

https://youtu.be/zYpLVP-jW4Q

https://fb.watch/c45e3sI2Xt/

July 2023: Drsihyam TV 9: A show on Moonland, Lamayuru, Ladakh with Akshay Shukla

https://www.youtube.com/watch?v=CCmRu3zMIqw

September 2023 Issue: Vanitha Hindi magazine: महिला साइंटिस्ट्स: बड़ी चुनौतियां नयी उम्मीदें

Three Poles and Mars Webinar: Dr Binita Phartiyal
https://www.youtube.com/watch?v=x8EB9SF4_RQ&t=4s
The Three Poles: Terrestrial Analogues of Mars by Dr Binita Phartiyal
https://www.youtube.com/watch?v=EmE1TR158xo&t=74s
Binita Phartiyal, Late Quaternary hydroclimatic variations in Ladakh, NW Himalaya
https://www.youtube.com/watch?v=Gk_7_TGXjY8&t=452s

Papers presented in Conferences/Workshops

Presented in **66** Conferences in India and abroad
Total Abstracts published **110**

1. B. S Kotlia and **B. Phartiyal,** 1997. Quaternary lake basins of Kumaun Lesser Himalaya, India. **XVIth Colloqium of Stratigraphy and Micropalaeontology**, 1997, **Goa**, India. **pp. 68.**

2. B. S Kotlia and **B**. **Phartiyal, 1998**. Palaeoclimatic conditions in the late Pleistocene lacustrine profiles of Central Himalaya, India. **13th HKTW, Peshawar, Pakistan. pp. 106.**

3. **B. Phartiyal** and B. S. Kotlia. **2001.** Feasibility of 'Environmental Magnetism' studies in the Late Quaternary sediments of Kumaun Lesser Himalaya. **Geology and Natural Environment of Lesser Himalaya; Present Status and Strategies for the next two decades**, **Nainital**, India. **pp. 115**.

4. T. Kosaka., B. S. Kotlia and **B. Phartiyal. 2001.** Magnetostratigraphy, Lithology and Tectonics of Siwaliks between Ramnagar and Tanakpur areas, Kumaun Himalaya. **Geology and Natural Environment of Lesser Himalaya; Present Status and Strategies for the next two decades**, **Nainital**, India.

5. B. S. Kotlia., K. Nakayama., M. S. Bhalla., **B., Phartiyal.,** P. D. Mathur., T. Kosaka., M. Joshi., J. Sanwal and R. N. Pandey. **2001.** Lithology and Magnetic stratigraphy of the Lower

Middle succession between Kathgodam and Ranibagh, Kumaun Himalaya. **Geology and Natural Environment of Lesser Himalaya; Present Status and Strategies for the next two decades**, **Nainital**, India. **pp. 61**

6. C. M. Bhatt., J. Sanwal., M. Joshi., **B. Phartiyal.,** S. Bhandari., P. D. Mathur and B. S. Kotlia. **2001.** Late Quaternary climatic changes in the Kumaun Lesser Himalaya, India. **Geology and Natural Environment of Lesser Himalaya; Present Status and Strategies for the next two decades**, **Nainital**, India. **pp. 67-69**

7. Attended the **89th session of the Indian Science Congress**, January 3-7, **2002** Lucknow University, **Lucknow**. India

8. Participated in **6th Annual conference on Map India 2003,** 28th-31st January **2003, New Delhi**

9. **B. Phartiyal** and B. S. Kotlia. **2002**. 21,000 Year Climatic Record And Neotectonics In The Kumaun Himalaya, India. **Quaternary Climate, Tectonics and Environment of the Himalaya: comparison with other Regions (QUCTEHR-2002)**, Kumaun University, **Nainital**, India

10. A. K. Sinha., A. Sharma., R. Upadhyay., **B**. **Phartiyal** and Ram-Awatar. **2003**. Soil formation process in Ladakh region. **National Seminar on Himalayan Orogen-Foreland Interaction,** Lucknow University, **Lucknow**. **pp. 72**

11. **Binita Phartiyal. 2005**. Feasibility of mineral magnetic studies in the Quaternary sediments. **Diamond Jubilee National Conference on "Challenges in Indian Palaeobiology–Current status, Recent Developments and Future Directions"** November 15-16, **Lucknow**. **pp. 91**

12. **B. Phartiyal.,** A. Sharma., S. Chakraborty and Ram-Awatar. **2006**. Palaeoseismic importance of the Quaternary sediments of Ladakh, Northwest Indian Himalayas. **Diamond jubilee National Conference on Changing Scenario in Palaeobotany and Allied Subjects**, 15-17 November, **Lucknow**. **pp. 97.**

13. A. Sharma., **B. Phartiyal** and Ram Awatar. **2006**. Weathering of rocks in Trans-Himalayan region and its effect of fertility in lower reaches. **Diamond jubilee National Conference on Changing Scenario in Palaeobotany and Allied Subjects,** 15-17 November, Lucknow. **pp. 133**.

14. **Binita Phartiyal.,** A. Sharma and Ram-Awatar. **2007.** Palaeoclimatic importance of the Quaternary deposits of Ladakh, NW Himalayas; Khalsar palaeolake a case study. **International Conference on Geo-environment-Challenges Ahead, Jammu**, 23-25 April, 2007. **pp. 42.**

15. **Binita Phartiyal. 2007**. Antarctica- Scientific Scope, Opportunities and Challenges. **Humboldt Workshop on Global Warming, Nainital**, India, 8-10th June, 2007.

16. **B. Phartiyal** and S. K. Bera, **2007**. Quaternary sedimentation in the Schirmacher Oasis, East Antarctica. **XVIIth INQUA, Cairns, Australia**, 28th July -3rd August, 2007. **pp 323**

17. **B**. **Phartiyal** and A. Sharma **2007**. Climate variations in Ladakh (NW Indian Himalayas) between the Past 30 Kyr to Middle Holocene as deduced from rock magnetism. **Asian**

Monsoon Variability in Past Global Changes (AMS-PGS), **Nainital,** India**,** 11th-14th September, 2007 **pp 63**.

18. Kamlesh Kumar, **Binita Phartiyal** and Anupam Sharma. **2007**. Palaeoclimatic signatures during mid-late Holocene period in the mainland Gujarat-A rock magnetic approach. **Asian Monsoon Variability in Past Global Changes (AMS-PGS)**, **Nainital,** India**,** 11th-14th September, 2007. **pp 54-55**.

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