



Send to UNESCO and IUGS
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by 10/12/2022

***NOTE: MAXIMUM LENGTH OF THE TEXT REPORT IS 5 (FIVE) PAGES (starting from question 1)** Reports exceeding this length will be returned to the author(s) with the request of reducing the text to the above standard.

List of Meetings (Section 3.2); Publications (Section 3.6); Financial Statement (Section 8) should be added as an Annex (See form IV-meeting report and form III-financial statement).

***REMINDER: if this is the final year of the project, please submit a review article about the project to the IUGS journal 'EPISODES'.**

The scientific information in this report will further be used for publications by UNESCO (please feel free to attach any additional information you may consider relevant to the assessment of the project).

IGCP project short title: IGCP673. The End of a Supereon – Winners and Losers at the Precambrian-Phanerozoic Transition.

Duration: Please indicate the start year of the project and initial duration approved by IGCP Council, specify if the project activities were stopped in 2020 or 2021

Please tick this box if the report is for a Project on Extended Term (OET):

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date of PhD 1990

Project leader(s):

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date of Masters 2015

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Project leader(s):

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Date of submission of report: 13 January 2023

Signature of project leader(s): *Patricia V. Reich*

Guidelines for Annual Report

Please use the following headlines to report the present status and scientific achievements of your project (write N/A where not applicable) and explain abbreviations used in the report.

1. Website address(es) related to the project

<https://www.monash.edu/science/research-groups/earth-atmosphere-environment/igcp493-587-and-673>

2. Summary of major past achievements of the project (maximum 250 words excluding 2022 achievements, not applicable for the 1st year of the project).

3.

The most significant outcomes of this project have been the pulling together of all the data gathered from this important end of the Precambrian period that is preserved in Southern Namibia by a global team over nearly two decades, clarifying the events and the timing of this major change in life.

4. Achievements of the project for 2022 only

3.1. General scientific and societal achievements (maximum 500 words)

(Meetings are not considered as scientific achievements, they should be listed under heading 3.2.)

The societal achievements are the bringing together a large global team of researchers who have provided not only their time and most of the finances needed but also their lab facilities to allow geochemical, geochronological (e.g. the Cambrian-Precambrian date established as 538.8 million on the latest Geological Time Scale 2022) and stratigraphic documentation of a long known sequence in southern Namibia that crosses the line when life was so different to the one we know today. A large number of the researchers involved were young and around half were female – and they were walking alongside longterm researchers in this field. What happened across this biotic interval offers insights for planning of our future.

3.2. List of IGCP project meetings/symposia in 2022 (*please provide Form IV as attachment file*).

Field conference to compile significant data gathered over the last 20 years of projects 493, 587, and currently 673 (as well as all previous published work) was held this year in September with attendance of the principle leaders of the 673 project in contact with other global members who were unable to attend but were communicating via email and phone. This is now under compilation and will result in a lengthy research summary paper, a book, and a popular publication for use of the general public, tourism, primary, secondary and tertiary student us.

3.3. What kinds of activities in respect to society and science outreach has the project undertaken?

As is the case with all previous years, students, especially from Namibia were engaged and involved. Work continued on the exhibitions that this project has put in place in Windhoek at the Geological Survey of Namibia, the Geology Museum in Luderitz, and in the Aus region, both in Aus and also on Farm Aar and new plans were put in place to do a similar expo at Farm Plateau. Visits to other possible venues were also made.

3.4. List of countries involved in project delivery.

Countries represented in the 2022 activities include: Namibia, Australia, Germany, USA, Canada, United Kingdom, Russia, Spain.

3.5. Participation of international scientists to project meetings

	<i>Total number of scientists</i>	<i>Number of male scientists</i>	<i>Number of female scientists</i>
<i>Number of participating scientists</i>	52	33	19+
<i>Number of young scientists/students (<35 years old)</i>	14+	4	10+
<i>Number of scientists from developing countries</i>	12	5	7

3.6. Provide a list of this year's publications (including maps), (*please provide an annex as attachment file*).

Provided

3.7. Activities involving other IGCP projects, UNESCO programmes, IUGS Commissions or Task Groups or others

3.8. Scientific Legacy:

All of the material collected in the way of specimens will be stored at the Geological Survey of Namibia in Windhoek. Several of the outstanding specimens have been moulded and casts prepared for storage in Museums globally and high quality photographs as well as art reconstructions by Dr Peter Trusler have been crafted and distributed to many museums globally. All of this mainly financed by the participants in this project. Data and publications also kept at the Geological Survey of Namibia in Windhoek and significant private funding has been received to build new cabinets to house all of the significantly large collections that have increased the known number of specimens from this significant area by more than 20-fold.

3.9. What kind of public information (media reports, social media, etc.) has the project generated? And how is their impact evaluated?

As in the past there have been a number of public lectures provided by members of this project in Namibia, the USA, Australia, Canada and Germany. The results of this project have been highlighted in exhibitions, such as the Dino Quest, which is to become a permanent part of the Science Centre Singapore exhibition to be launched when the new facility of this science education facility is launched in a new building. In the meantime, this expo is due to travel in 2023. All of these activities come with a significant amount of media. PrimeSCII, an internationally known Primary and early Secondary Outreach group, based at Swinburne University in Melbourne has also developed a number of educational modules that are being used globally.

3.10. Project highlight: Select one achievement that happened during the project this year to be highlighted on the UNESCO-IGCP website (*for example the publication of a book, the release of a documentary, a high-profile publication (level Science or Nature), the discovery of a fossil, etc.*).

You should provide a short text in layman's terms (max. 400 words) and an associated picture or video link, etc. which can be used for the IGCP website.

The highlight was the discovery of a new site with a significant collection of well preserved material that has never been found before.

Please also see Attachment of Detail of the Work for 2022.

5. Project response: *Please indicate if the project was provisionally accepted for one year in 2022. Explain how IGCP Council 2022 recommendations were addressed by the project (if applicable).*

NOT APPLICABLE

6. Deviations/changes from initial project proposal:

7.

No changes. Project on track.

8. Activities planned for 2023

A return to the area around Aus is paramount as a new site with a large number of newly preserved Ediacaran materials was discovered near the end of the meeting and this site needs assessment and collection. This is the first truly new discovery of material in this region over the 20 years that the IGCP projects for the region have been underway. Also, an upgrade to the Museum Exhibitions in Luderitz, Aus, Windhoek and Swakopmund needs to be undertaken.

7. Request for extension, on-extended-term-status, or intention to propose successor project (applicable only if 2022 was the last year of your project)

We are not sure where are project stands and would like it to continue as a UNESCO project even if no funds are available.

9. Financial statement (\$ USD only): *Please indicate total funding received from UNESCO/IUGS since the start of the project (i.e. 2019: \$5k; 2020: \$0k; 2021: \$7k; 2022: \$10k)*

\$US 5K for 2022. I do not have the records with me as I am in the state of a big move in location, but I think that this project has received two further injections of \$5K in the past.

9. What additional funding besides the IGCP seed funding has the project obtained due to the IGCP label? *Please estimate the budget received for meetings, research or other activities and identify the source. Indicate total additional funding has been obtained since the start of the project.*

Most all of the funding for this project was provided personally by Drs P. V. Rich, Thomas H. Rich and Michael Hall. Some limited funding was also provided by Monash University but most of this was personally funded. Considerable field support was provided by the Namibian Geological Survey as it has in past years.

10. Did all project leaders and participants inform their respective IGCP/IUGS National Committees? *Did you as project leaders encourage all project participants to inform their respective IGCP/IUGS National Committees? Did you inform the IGCP/IUGS National Committees of the countries where you had activities (meetings, workshops, capacity building activities, etc.) this year? If not, please explain why?*

Yes, to all the above

11. Attach any information you may consider relevant

Attachments (check the box if document is attached or included)

Form V

Financial statement-Form III	X
Meeting report(s)-Form IV	X
Publication list	X
Other - Details of Field Work IGCP673 – 2022, Helke Moeke Statement	X