

LUNAR AND PLANETARY INSTITUTE

3303 NASA ROAD 1 HOUSTON, TEXAS 77058



WORKSHOP ON THE TECTONIC EVOLUTION OF GREENSTONE BELTS
Lunar and Planetary Institute, Houston, Texas
January 16-18, 1986

FINAL CIRCULAR
December 18, 1985

More than fifty abstracts have been received for the workshop: 22 have been accommodated as poster presentations, and 29 for oral communications. Greenstone belts from all continents, including South America are now incorporated into the program. A volume of abstracts of all contributions will be available to workshop participants upon registration. A set of late abstracts will also be distributed. All contributions will be included in the final Technical Report.

Workshop Format

Following your responses in the form of abstracts and comments, we have divided the workshop into three technical sessions and one overview session. Each technical session deals with a broad set of geological data which place constraints on tectonic models of greenstone belts. In the review session we anticipate evaluating these models explicitly and to exploit/outline new ways to test/rebuild them.

In order to keep an active workshop spirit, we have allowed ample discussion times between sets of oral presentations. Thus we expect lively interaction between "actors" and "spectators" during each session. Workshop participants are encouraged to attend armed with overhead projection viewgraphs and slides to facilitate illustration of their interjections. Materials will be provided for the preparation of 'ad hoc' overheads. Dual screen projection of 35mm slides and overheads will be available to all speakers throughout the workshop.

Active Student Participation and Working Groups

There is all indication that a large group of degree-students actively engaged in greenstone belt research will attend the workshop. In order to encourage and insure their full participation we have decided to "throw them into the deep-end." We expect them to join one of the two WORKING GROUPS to participate in an evaluation of research in greenstone belt tectonics during the review session. All registered students will form WORKING GROUP I. WORKING GROUP II will consist of non-student volunteers. Be sure to indicate on your registration form if you would like to join WORKING GROUP II. Those not wishing to commit themselves at this stage may join the group sometime during the workshop. Each group will be expected to critically examine the oral and poster data base presented during the workshop and to elect one or two spokespeople to present their thoughts and ideas to the workshop participants

on the last day. They might, for example, be explicit to the audience as to how they would anticipate using the presented data/ideas to follow-up their own programs. A two-hour evening period on the second day has been set aside for working groups to meet, discuss and plan. Problems and disagreements can be further pursued and sorted out during the PARTY which will follow the Working Group sessions. A late-morning start is planned for Saturday.

We would like to include in the post-meeting Technical Report written summaries of the deliberations of both Working Groups. It would be ideal if these could be submitted in draft form before the groups leave Houston. There should be ample time on Saturday morning for these writing assignments. Word-processor facilities will be available at LPI.

Poster Presentation

The posters have been divided into two groups. Group A covers data from the greenstone belts of the Northern Hemisphere and will be displayed in the lobby area of the LPI. Group B represents data from the Southern Hemisphere greenstone belts and will be on display in the Hess Room. A formal POSTER PRESENTATION SESSION has been organized for the first evening (Thursday, January 16th), from 7:00 to 11:00 p.m. Beer will be available throughout this period (assuming a reasonable consumption rate). We anticipate that this session will generate lively 'ad hoc' discussion groups. Poster presenters are encouraged to put up their displays on Wednesday the 15th. The Institute will remain open for that purpose as well as for workshop registration until 11:00 p.m. on the evening of the 15th, coinciding with a welcoming party.

Posters will be displayed throughout the entire workshop period. There will then be ample opportunity to re-examine their contents during the oral sessions at coffee and lunch breaks. Moreover, we encourage poster presenters (or shrewd observers) to interject during the oral presentations and inform the participants about relevant data on one or other of the displays. Controversial evidence can then be re-evaluated by everyone during the workshop break periods. Poster presentations are limited to two square meters. If you have a pressing need for more space, for example, for a particularly important geologic map, PLEASE CONTACT ONE OF THE CONVENERS before January 10, 1985.

Registration/Logistics

It will help us a great deal with the planning for the workshop if you will complete and return the enclosed pre-registration form as soon as possible. We are interested in knowing the number of people coming and in having information to prepare badges, etc., so early receipt of the fee is not the main concern. The workshop fee is \$30, (\$15 for students active in a degree-granting program); you may pay in advance or when you arrive to register. Participants may register on January 15th between 7:00 p.m. and 11:00 p.m., and beginning at 8:00 a.m. on January 16th.

Information on hotels and transportation to this area is enclosed. We hope people will be able to carpool out for lunches. A small map and list of local restaurants will be provided at registration. Those visiting Houston for the first time might consider allowing time to visit the space museum at the adjacent NASA Johnson Space Center. The museum will be open on Wednesday before the meeting and on Saturday and Sunday afternoons after the meeting. Weather could range in temperature from 30-70 degrees F, but the average January temperature is 52 degrees F.

WORKSHOP SESSIONS

- SESSION I. Greenstone Belts: Rock components, sources, provenances and structures
- SESSION II. Greenstone belt externalities: Magmas, heat flow, fluids and strain
- SESSION III. Greenstone belts: Their boundaries, their surrounding rock terrains and their interrelationships
- SESSION IV. Research in greenstone belt tectonics: Synthesis and Destiny

WORKSHOP SCHEDULE

Wednesday, January 15, 1986

7:00 p.m. - 11:00 p.m. Welcoming Social and Registration

Thursday, January 16, 1986

8:30 a.m. - 12:30 p.m. Session I

12:30 p.m. - 2:00 p.m. Lunch

2:00 p.m. - 5:30 p.m. Session I

7:00 p.m. - 11:00 p.m. Poster and Keg Session

Friday, January 17, 1986

8:30 a.m. - 12:30 p.m. Session II

12:30 p.m. - 2:00 p.m. Lunch

2:00 p.m. - 5:30 p.m. Session III

7:00 p.m. - 9:00 p.m. Working Group Sessions

9:00 p.m. - 4:30 a.m. Party

Saturday, January 19, 1986

9:30 a.m. - 12:30 p.m. Session IV

12:30 p.m. WORKSHOP ADJOURNS

Workshop Conveners: Maarten J. de Wit (713) 486-2142
Lewis D. Ashwal (713) 486-2147

Workshop Administrator: Pamela A. Jones (713) 486-2150

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WORKSHOP ON THE TECTONIC EVOLUTION OF GREENSTONE BELTS
Lunar and Planetary Institute, Houston, Texas

January 16-18, 1986

SECOND CIRCULAR

September 24, 1985

Thank you for your response to the announcement of the "Workshop on the Tectonic Evolution of Greenstone Belts." The meeting is scheduled to be held at the Lunar and Planetary Institute, Houston, Texas January 16-18, 1986. More than 180 positive responses have been received to date, from all continents save South America.

Program Format. The workshop will be organized within the framework of five discussion topics, each incorporating a wide range of Earth-science subjects including sedimentology, structure, stratigraphy, igneous and metamorphic petrology, isotope geology, geochronology, mineralization, etc. The preliminary sessions identified by the organizing committee are:

- I. Greenstone belts: Their rock components and structures
- II. Greenstone belts: Their rock sources and provenances
- III. Greenstone belts: Their externalities (exogenous variables such as heat flow, fluids and strain, specifically with respect to metamorphism-metasomatism)
- IV. Greenstone belts: Their boundaries, their surrounding rock terrains and their interrelationships
- V. Research in greenstone belt tectonics: Synthesis and Destiny

The length and character of these sessions will be based upon responses in the form of abstracts and additional comments, BUT FUNDAMENTAL TO ALL OF THESE TOPICS IS THEIR RELEVANCE AND INTEGRATION INTO TECTONICS, BOTH IN TIME AND SPACE. For example, whereas we recognize the fundamental importance of geochemistry per se, in this workshop only geochemical contributions with direct tectonic implications are encouraged.

The program will commence with a "state of the art" keynote review highlighting the problems facing workshop participants vis a vis unresolved topics and new avenues for solutions. Proceeding from this stepping-stone we will use four topical sessions as building blocks towards shaping the final session "Research in greenstone belt tectonics" synthesis and destiny".

Each topical session will consist of one or more short reviews, followed by four to five 15-20 minute presentations based on recently acquired data, preferably from on-going projects. Clearly not all abstracts can be scheduled for oral presentation, although all accepted abstracts will be published in the conference volume. The talks will be spaced to allow for maximum audience interaction. Workshop participants are encouraged to attend armed with overhead projection viewgraphs, to facilitate rapid illustration of their interjections. Materials will be provided for the preparation of "ad hoc" viewgraphs. Some provision will be made for the viewing of slides, for

example, of rock exposures which cannot be communicated otherwise. Talks will be arranged in cratonic order and where possible, integrated with poster presentations.

Participants are asked to attend the meeting with a "pre-programmed" focus on relevant major issues, and to gear their presentations accordingly. Here are some keys: There are greenstone belts and greenstone belts, but can we correlate between them? Greenstone belts are allochthonous: Who can prove it? What was happening outside the greenstone belts during their formation and their subsequent evolution-destruction and how do greenstone belts deform internally? Is there evidence for polyphase tectonic events and how do these events relate to external forces? What do the roots of greenstone belts look like? Have some greenstone belts been incorporated tectonically into deeper crustal levels? What do the rocks tell us about contemporaneous heat-flow, fluid migration, crust-lithosphere thickness, mantle-crust processes, tectonic settings and subsequent emplacement histories? Why are greenstone belts preserved? Have others been recycled?

It is expected that lively interaction between "actors" and "spectators" will determine the course of each session. The organizers will accommodate this as far as possible. We emphasize that the aim of the meeting is to discuss new and even unfinished work: in essence we are soliciting exciting progress reports in an environment of work rather than confrontation.

Abstracts. Abstracts relating to the topics chosen for discussion are hereby solicited. Forms and instructions are enclosed. Papers are to be a maximum of three standard LPI pages including text, figures, tables and references (example enclosed). References may be in the abbreviated format shown on the enclosed instructions. Deadline for the receipt of abstracts with their accompanying forms is NOVEMBER 15, 1985, at the LPI in Houston. Copies will be distributed to all participants at the ~~meeting.~~ There will be an opportunity to submit revised or new abstracts after the workshop for publication in an LPI Technical Report which will also include discussion summaries. Apr 15

Poster Presentations: Poster presentations are likely to play a major role in the meeting. They may either be used as a visual data summary accompanying oral presentations or they may stand on their own as a raw data base. Posters are limited in size to two square meters. Supporting abstracts are required for all poster presentations.

Accommodations. Workshop participants are responsible for making all hotel and travel reservations. It is recommended that hotel reservations be made now. Hotels in the local area with their projected rates for January 1986 are listed below. Hotels are listed in order of distance from LPI (Super-8, the farthest away is approximately 7 miles from LPI). All rates shown are subject to a 10% tax.

	<u>Lowest Single Rate</u>	<u>Other Rates</u>
QUALITY INN 2020 NASA Road 1 Houston, Texas 77058 713-332-3551	\$30.00	\$35.00 (twin)
THE NASSAU BAY HILTON 3000 NASA Road 1 Houston, TX 77058 713-333-9300	\$76.00 (Must identify yourself as with LPI to receive this rate - Applies to single or double occupancy)	

NASSAU BAY RESORT MOTOR INN 1600 NASA Road 1 Houston, Texas 77058 713-488-3402	\$25.00(tower section) \$40.00 \$35.00 (motel section)	
HOLIDAY INN OF HOUSTON - NASA 1300 NASA Road 1 Houston, Texas 77058 713-333-2500	\$55.75	\$61.75 (twin)
SHERATON KINGS INN 1301 NASA Road 1 Houston, Texas 77058 713-488-0220	\$56.00 (Must identify yourself as with LPI to receive this rate)	
COMFORT INN 1001 NASA Road 1 Webster, Texas 77598 713-332-4581	\$30.00	\$35.00 (twin)
SUPER 8 MOTEL 889 West Bay Area Blvd. Webster, TX 77598 713-338-1526	\$34.88	\$30.88 (corporate)

A third and final announcement including a detailed program showing keynote talks, contributed talks and poster presentations will be mailed in December. Please feel free to call any of the organizing committee members or Pam Jones at LPI (713-486-2150) if you need further information regarding this workshop.

The Organizing Committee

Maarten de Wit, Convener
University of Witwatersrand/
Lunar and Planetary Institute
713-486-2142

Donald R. Lowe
Louisiana State University
504-388-3011

Lewis D. Ashwal
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An LPI - ECG Workshop
"The Tectonic Evolution of Greenstone Belts"

January 1986 Houston, TX

FIRST ANNOUNCEMENT

Dear Colleague:

A workshop on "The Tectonic Evolution of Greenstone Belts" will be held at LPI in January 1986, as part of the Early Crustal Genesis Project. Maarten De Wit (University of the Witwatersrand and LPI), Don Lowe (Louisiana State University), Kevin Burke (LPI) and Lewis Ashwal (LPI) have agreed to serve on the Program Committee.

Greenstone belt studies are at an exciting stage as numerous high precision isotopic ages for rocks from them are being reported, and detailed field programs in North and South America, Africa, India, and Australia are currently in progress. Outstanding issues include the tectonic setting of, and intensity of deformation in greenstone belt assemblages. Mobilist (both horizontal and vertical) and stabilist viewpoints are not yet reconciled.

Further details regarding this workshop will be circulated this fall. Please complete and return the enclosed indication of interest form if you wish to receive future announcements concerning the workshop. Additional information can be obtained from members of the Program Committee or from Pam Jones or LeBecca Turner of the LPI Projects Office, 713-486-2150.

Sincerely,

Kevin Burke
for the Program Committee

Enclosure