

# NORTHWEST GEOLOGICAL SOCIETY

A regional association of professionals, students & others interested in geology  
Please browse [www.nwgs.org](http://www.nwgs.org) for more about us



## October 2015 Newsletter

Volume 29, Number 6



### October 13 Program Speaker

**Speaker:** Dr. Susan Kieffer, Professor Emeritus, Department of Geology, Univ. of Illinois at Urbana-Champaign

**Title:** Did Mt. St. Helens Teach Us Something About Impact Craters on Mars, and Can Those Craters on Mars Teach Us Something About Earth?

**Abstract:** The 1980 lateral blast at Mount St. Helens carved an erosion surface that contained large furrows in a number of locations. Kieffer and Sturtevant attributed these to erosion by Görtler vortices in the boundary layer of the blast (JGR, 1988). The ejecta sheets of some martian impact craters are characterized by prominent sets of linear grooves on their surface that Boyce and Mouginitz attributed to Görtler vortices based on an analogy to the furrows at Mount St. Helens (JGR, 2006). However, Görtler vortices form only under certain conditions of ground curvature and boundary layer properties, and it was not clear that the relatively flat ejecta sheets satisfied those conditions. I will briefly discuss our current work on this problem. We propose that the grooves were formed by a late-stage, volatile-rich flow (gas? slurry?) after the ejecta had come to rest. Any features like this on terrestrial impact ejecta would have long been eroded away. Understanding the conditions of their formation will inform us not only about a process that may have occurred on our own planet, but will also tell us about sources of water in the martian crust.

5:30pm: No-host social hour

6:30pm: Buffet dinner

7:30pm: Speaker program

All are welcome to attend –  
reservations are required  
if coming for dinner.

► [Reservations here](#) 

**PROGRAM DINNER RESERVATIONS:** NWGS members: **\$40**; Non-members: **\$45**; Full-time students : **\$20**. Add \$5 for LATE REGISTRATION. Make your reservation and payment on-line at [www.nwgs.org](http://www.nwgs.org) (or mail your payment to *Northwest Geological Society, 4616 25th Ave NE #397, Seattle, WA. 98105* (must be received by Thursday prior to meeting)). Contact Secretary [Beth Tanner](#) with questions about dinner reservations.

*If attending the speaker program only, a \$5 voluntary donation to help defray the meeting room cost is requested.*

**Location:** Pacific Dining Hall at the [Talaris Conference Center](#), 4000 NE 41st St., Seattle, WA., 98105. **Directions:** See [on-line directions with map](#), or: from I-5 northbound or southbound in Seattle, take Exit 168B (NE 45th St.). Drive east on NE 45th St. past UW down the hill and past University Village. Turn south (right) onto Mary Gates Memorial Drive at the 5-way intersection. MGM Drive will curve east (left) and become NE 41st St. Continue several blocks to the [Talaris Conference Center](#) entrance on the north (left) side. We meet in the Pacific Dining room on the left.

### Upcoming Speakers and Field Trips

November 10: Dave Lageson, Earth Sciences, Montana State University, topic TBA.

December 8: TBA.

January 12: TBA.

February 9: TBA.

**Spring, 2016 Field Trip:** Chris Darmon, Down to Earth, will lead a field trip on the geology of Scotland, June 21–July 1, 2016. See *Announcements* below for more details.

If you would like to volunteer to give a talk or lead a field trip for NWGS, please contact President [Grace Winer](#).

Please see the [NWGS website](#) for detailed announcements.

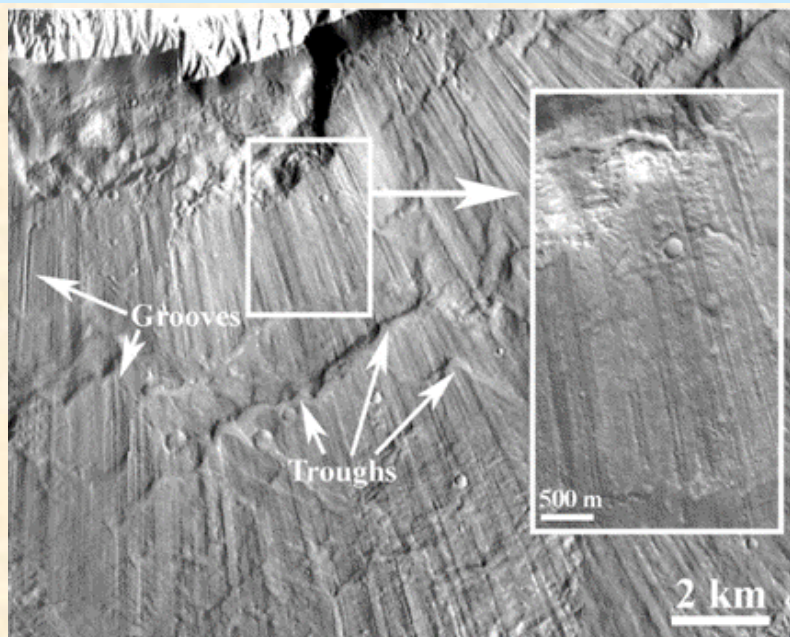
Contact webmaster [Julie Masura](#) if you have any announcements to post on the website.

## Announcements

- The list of interested participants for the **Geology of Scotland** field trip on June 21–July 1, 2016 is FULL, but contact [Kathleen Goodman](#) to be added to the waiting list. Trip cost will be ~\$3,000 plus airfare. **Spots may open up !!!** If you are on the list, watch for details soon.
- Please visit the [Washington Geology Library](#) website to check out their amazing collection of geologic materials, or contact Librarian [Stephanie Earls](#)!
- Next Board Meeting: Tuesday, October 9, 4:00pm, Talaris Conference Center.

*YOU would like to be involved!*

## Photo Spotlight



Prominent sets of linear grooves on the surfaces of martian impact crater ejecta sheets attributed to Görtler vortices (secondary flows that appear in a boundary layer flow along a concave surface). Photo submitted by S. Kieffer).

## About NWGS

**NWGS**, a regional association of professionals, students & other persons interested in **geology**, provides a forum for the presentation and discussion of a wide range of geologic topics, emphasizing those of the Pacific Northwest of fundamental scientific interest.

*YOU would like to be involved!*

**Program meetings:** 2<sup>nd</sup> Tuesdays, October through May in the Pacific Dining Hall at the [Talaris Conference Center](#) in Seattle (see 1<sup>st</sup> page). Anyone may attend the speaker program, but a reservation is necessary for those wanting dinner (see 1<sup>st</sup> page). **Field trips (members only):** one in late spring/early summer and one in late summer/early fall, usually of 1-3 days in length. **Membership** is open to anybody with a professional or amateur interest in geology. **Annual dues:** Professional: \$30; Student: \$5. **To join or pay annual dues:** send a check payable to NWGS to Secretary [Beth Tanner](#), 4616 25th Ave NE #397, Seattle, WA. 98105. Please include your name, address, home phone, email, and employer/affiliation (if any). Professional dues may now also be paid at [www.nwgs.org](http://www.nwgs.org).

*YOU would like to be involved!*

## Recommended Readings

Kieffer, S.W., 2014, [The Dynamics of Disaster](#), W.W. Norton & Company, Inc., New York, 336 p.

Please send your reading recommendations to Newsletter Editor [Tom Bush](#).

To report a change of email or postal address or request to be removed from mailings, notify Membership Chair [George Bennett](#). Questions or comments? Contact President [Grace Winer](#).

### NWGS Board

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