Curriculum Vitae

Ashley Gerard Davies, Ph. D.
Research Scientist

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Current Position Research Scientist (IV), Jet Propulsion Laboratory

Career

Jet Propulsion Laboratory, Pasadena, CA, USA (1996 – present)

- Research Scientist, Comets, Asteroids and Satellites Group (2003 - present)
- Research Scientist, *Galileo* NIMS Team (2001 - 2002)
- Scientist, *Galileo* NIMS team (1996 - 2001)
- New Millennium Program-Autonomous Sciencecraft Experiment (ASE) Co-I and Lead Scientist (2001 - present)
- ASTER Team Associate (2004 - present)

National Research Council Resident Research Associate, NASA/JPL (1994 - 1996)

UK Meteorological Office: Higher Scientific Officer (1990 - 1994)

- Short-Range Forecast Division (Research Scientist) (1991 - 1994)
- Systems Programmer (ARTIFAX) (1990 - 1991)

Expertise

- Planetary science: in particular, the jovian satellite Io
- Remote sensing of volcanic activity
- Analysis of hyperspectral and multispectral data (*Galileo* NIMS and SSI; *EO-1* Hyperion and ALI; *Terra* ASTER and *Terra/Aqua* MODIS)
- Numerical and analytical modelling of volcanic processes on Io, Earth, Titan and Enceladus
- Autonomous spacecraft and sensor web operations

Broad fieldwork experience: includes Antarctica (Erebus), Ethiopia (Erta'Ale), Hawai'i (Kilauea and Mauna Loa), and Iceland (Eyjafjallajökull, Laki)

Education

Undergraduate: Bachelor of Science degree with Honours in Combined Studies (Astronomy and Geology) from the University of Hertfordshire, UK, 1984.

Doctorate: Ph.D. in planetary volcanism from Lancaster University, UK, 1988. Prof. Lionel Wilson and Prof. Harry Pinkerton, advisors. Thesis: "Sulphur-Silicate Interactions on the Jovian Satellite, Io".

National Research Council Post-Doctoral Research Associateship: 1994-1996 Jet Propulsion Laboratory, with Dr. Dennis Matson and Dr. Torrence V. Johnson, modelling ground-based observations of volcanic thermal emission from Io.

Leadership

- Autonomous Sciencecraft Experiment Lead Scientist: 2001 – present
- Volcano Sensor Web Lead Scientist: 2004 – present
- JIMO Mission Study Science Lead (single-spacecraft option): 2003
- P.I. on multiple successful NASA-funded investigations (see below)

Spacecraft missions

- *Galileo* Near Infrared Mapping Spectrometer (NIMS) Team Member – Quantifying volcanic processes on Io; modelling volcanic processes.
- *Terra* ASTER - Associate Team Member - Data mining the ASTER Volcano Archive.
- *Earth Observing 1* Autonomous Sciencecraft Experiment (ST-6) Lead Scientist – increasing mission science return through use of autonomy.
- Volcano Sensor Web – Lead Scientist – a world-spanning eruption alert system using eruption alerts to generate spacecraft observations: a fully-autonomous system.
- *Io Volcano Observer* (IVO): Co-I on Discovery proposal (P.I. A.S. McEwen, U. Arizona).

Research awards (as P.I. – as Co-I not shown)

- NASA Planetary Geology & Geophysics Program: 2001-present (multiple awards)
- NASA Outer Planets Research Program: 2002-present (multiple awards)
- NASA Jupiter Data Analysis Program: 2000-2003
- NASA Advanced Information Science and Technology Program: 2005
- JPL Research and Technology Development Program, P.I.: 2003-2006 (multiple awards)

Professional Societies

Fellow, Royal Astronomical Society
Member, Royal Astronomical Society Joint Association for Geophysics
Member, American Geophysical Union
Member, Division of Planetary Science, American Astronomical Society
Member, International Association for Volcanism and the Chemistry of the Earth's Interior
Member, International Astronomical Union (IAU Commission 16)

Awards

2011: NASA Software of the Year: Honourable mention: "Sensor Web Toolbox"
2007: NASA Space Act Award: "Autonomous Volcano Sensor Web"
2005**: NASA Software of the Year Award Winner** "Autonomous Sciencecraft Experiment".
2005: NASA Group Achievement Award to the Autonomous Sciencecraft Experiment Team.
2003: Technically Significant Technology Award: "Software for the *Techsat-21* Autonomous Sciencecraft Experiment (ASE)".
2003: JPL Team Bonus Award: "*Jupiter Icy Moon Orbiter* (*JIMO*) Studies".
1998: NASA Group Achievement Award to the *Galileo* Project Team.
1997: NASA Group Achievement Award to the *Galileo* Orbital Operations Recovery Team.

Awards (continued)
1994: National Research Council Postdoctoral Fellowship (1994-1996)

New Technology Reports and Technical Brief Awards
(C= Computer Program. H = Hardware)
48583 Automated estimation of volcanic plume heights in satellite imagery using machine learning and computer vision processing – 26 Jan 2012 (C)
48148 Multi-source autonomous response for targeting and monitoring of volcanic activity – 01 Apr 2011 (C)
48123 Autonomous Hyperspectral Data Processing, Product Generation and dissemination for Rapid Response in Volcanic Emergencies – 18 Mar 2011 (C)
47471 Onboard science and applications algorithm for hyperspectral data reduction – 14 Dec 2009 (H)
45998 Web Processing Service (WPS) software framework – 11 Mar 2008 (C)
45445 Volcano Monitor: Autonomous Triggering of *in situ* Sensors on Kilauea volcano, HI, from Eruption Detection by the *EO-1* Spacecraft – 14 Aug 2007 (H)
42523 An Autonomous Earth-Observing Sensor Web – 13 Jul 2005 (C)
41993 The NMP ST-6 Autonomous Sciencecraft Experiment (ASE) - 18 Mar 2005 (C)
30784 Software for the *TechSat-21* Autonomous Sciencecraft Experiment (ASE) – 15 Aug 2002 (C)
30442 Software for Onboard Science Analysis – 16 Nov 2001 (C)
30355 Software for the *Techsat-21* Autonomous Sciencecraft Constellation (ASC) – 20 Aug 2001 (C)
30201 Goal-directed scientific exploration using multiple rovers – 15 Mar 2001 (C)

Other activities: Member, JPL Urban Search and Rescue (USAR) Team, specializing in medical and rope rescue. FEMA certifications in Incident Management IS-100b and IS-200b.

Television work
- **"NOVA".** PBS. "**Finding Life Beyond Earth**". PBS's *NASA Year of the Solar System* 2-hour special. First broadcast 19 Oct 2011.
- **"Known Universe".** National Geographic's "**Biggest Cosmic Blasts**". Broadcast 2 June 2011.
- "**Wonders of the Solar System**". BBC, episode 4 (UK/US version); episodes 3 and 4 (worldwide version). Broadcast in US August 2010.
- "**95 Worlds and Counting**". Discovery Channel. Broadcast September 1999.

Online
A lecture entitled "**Volcanoes Near, Far and Really Far Away**", given at the Library of Congress, Washington, DC, on 27 October 2010, can be viewed on YouTube at http://www.youtube.com/watch?v=3GldOHRG9p4

References

Book

1. **"Volcanism on Io: a Comparison with Earth"**, A. G. Davies (2007) Cambridge University Press, Planetary Science Series no. 7. 372 pages.

Refereed Publications

2. Matson, D. L., J. C. Castillo-Rogez, A. G. Davies, T. V. Johnson and J. Lunine (2012) Enceladus: A Hypothesis For Bringing Both Heat And Chemicals To the Surface, *Icarus.* In press.

3. Davies, A. G., G. J. Veeder, D. L. Matson and T. V. Johnson (2012) Charting thermal emission variability at Pele, Janus Patera and Kanehekili Fluctus with the *Galileo* NIMS Io Thermal Emission Database (NITED), *Icarus*. In press. doi:10.1016/j.icarus.2012.04.01.

4. Veeder, G. J., A. G. Davies, D. L. Matson, T. V. Johnson, D. A. Williams and J. Radebaugh (2012) Io: Volcanic Thermal Sources and Global Heat Flow, *Icarus*. **219**, 701-722. doi:10.1016/j.icarus.2012.04.004.

5. Davies, A. G. G. J. Veeder, D. L. Matson and T. V. Johnson (2012) Io: Charting thermal emission variability with the *Galileo* NIMS Io Thermal Emission Database (NITED): Loki Patera, *Geophysical Research Letters*, **39**, L01201, doi:10.1029/2011GL049999.

6. Davies, A. G., L. Keszthelyi and A. S. McEwen (2011) Estimating Eruption Temperature From Thermal Emission Spectra of Lava Fountain Activity in the Erta'Ale (Ethiopia) Volcano Lava Lake – Implications for Observing Io's Volcanoes, *GRL*, **38**, L21308, doi: 10.1029/2011GL049418.

7. Davies A. G. (2011) Lava lakes on Earth and Io, *Planetary Report*, vol. **XXXI**, no. 2, 10-15.

8. Davies A. G. and M. E. Ennis (2011) The variability of volcanic activity at Zamama, Culann, and Tupan Patera on Io as seen by the *Galileo* Near Infrared Mapping Spectrometer, *Icarus*, **215**, 401-416.

9. Veeder, G. J., A. G. Davies, D. A. Williams, D. L. Matson, T. V. Johnson and J. Radebaugh (2011) Io: Heat flow from Dark Paterae, *Icarus*, vol. **212**, no. 1, p. 236-261. doi:10.1016/j.icarus.2010.09.026.

10. Leone, G., Wilson, L. and Davies, A. G. (2011) The geothermal gradient of Io: consequences for lithosphere structure and volcanic eruptive activity, *Icarus*, **211**, 623-635, doi:10.1016/j.icarus.2010.10.016.

11. Wright, R. H. Garbeil and A. G. Davies (2011) The cooling rate of some active lavas determined using an orbital imaging spectrometer, JGR (Solid Earth), **115**, B06205, doi:10.1029/2009JB006536.

12. Davies, A. G., C. Sotin, D. L. Matson, J. C. Castillo-Rogez, T. V. Johnson, M. Choukroun, and K. H. Baines (2010) Atmospheric control of the cooling rate of impact melts and cryolavas on Titan's surface, *Icarus*, **208**, 887-895, doi:10.1016/j.icarus.2010.02.025.

13. Davies, A.G., L. P. Keszthelyi and A. J. L. Harris (2010) The Thermal Signature of Volcanic Eruptions on Io and Earth, *JVGR*, **194**, 75-99, doi:10.1016/j.jvolgeores.2010.04.009.

14. Vaughan, R. G., L. P. Keszthelyi, A. G. Davies, D. Schneider, J. Lowenstern, C. Jaworowski, H. Heasler (2010) Exploring Limits of Sub-Pixel Thermal Feature Resolution using ASTER TIR Data, *JVGR*, **189**, 225-237, doi:10.1016/j.jvolgeores.2009.11.010

15. Song, W-Z., B. Shirazi, H. R. Huang, X. Mingsen, N. Peterson, R. LaHusen, J. Pallister, D. Dzurisin, S. Moran, M. Lisowski, S. Kedar, S. Chien, F. webb, A. Kiely, J. Doubleday, A. Davies and D. Pieri (2010) Optimised Autonomous Space In-Situ Sensor Web for Volcano Monitoring, *IEEE J. Selected Topics in Applied Earth Observations and Rem. Sens.*, **3**, no. 4., 1939-1404.

16. Chien, S., D. Silverman, A. G. Davies and D. Mandl (2009), Onboard science processing concepts for the HyspIRI mission, *IEEE Intelligent Systems*, **24**, no. 6, 12-19.

17. Leone, G., A. G. Davies, L. Wilson, D. A. Williams, L. P. Keszthelyi, W. L. Jaeger and E. P. Turtle (2009) Volcanic history, geologic analysis and map of the Prometheus Patera region on Io, *Icarus*, **187**, 93-105.

18. Veeder, G. J., A. G. Davies, D. L. Matson and T. V. Johnson (2009) Io: Heat flow from dark volcanic fields, *Icarus*, **204**, 239-253.

19. Davies, A. G., J. Calkins, L. Scharenbroich, R. G. Vaughan, R. Wright, P. Kyle, R. Castaño, S. Chien, and D. Tran (2008) Multi-Instrument Remote and In Situ Observations of the Erebus Volcano (Antarctica) Lava Lake in 2005: a Comparison with the Pele Lava Lake on the Jovian Moon Io, *J. Volc. Geotherm. Res.*, **177**, v3, 705-724.

20. Dohm, J. M., R. C. Anderson, V. R. Baker, N. G. Barlow, W. V. Boynton, A. G. Davies, A. G. Fairén, J. C. Ferris, M. Glamoclija, J. Keller, K. Kerry, L. Marinangeli, H. Miyamoto, G. G. Ori, J. A. P. Rodríguez, D. Schulze-Makuch, R. G. Strom, G. J. Taylor, M. A. de Pablo Hdez, and S. Karunatillake (2008) Tharsis/Elysium corridor: a marker for an internally-active Mars, *Plan. and Space Sci.*, **56**, no. 7, 985-1013.

21. Davies, A. G., R. Castaño, S. Chien, D. Tran, L. Mandrake, R. Wright, P. Kyle, J.-C. Komorowski, D. Mandl and S. Frye (2008) Rapid Response to Volcanic Eruptions with an Autonomous Sensor Web: The Nyamulagira Eruption of 2006. *Proc. IEEE Aerospace Conference*, Big Sky, Montana, March 2008.

22. Keszthelyi, L. P., W. Jaeger, M. Milazzo, J. Radebaugh, A. G. Davies and K. Mitchell (2007) New estimates for Io eruption temperatures: implications for the interior, *Icarus*, **192**, 491-502.

23. Chien, S., R. Doyle, A. G. Davies, A. Jónsson and R. Lorenz (2006) The future of AI in space, *IEEE Intelligent Systems*, **21**, no 4, 64-69.

24. Matson, D. L., A. G. Davies, J. A. Rathbun, G. J. Veeder, T. V. Johnson and J. C. Castillo

(2006) Io: Loki Patera as a magma sea, *JGR-Planets,* **111**, E09002, doi:10.1029/2006JE002703

25. Davies, A. G., L. Wilson, D. L. Matson, G. Leone, L. P. Keszthelyi and W. Jaeger (2006) The pulse of the volcano: discovery of episodic activity at Prometheus on Io, *Icarus*, **184**, 460-477.

26. Davies, A. G., S. Chien, V. Baker, T. Doggett, J. Dohm, R. Greeley, F. Ip, R. Castaňo, B. Cichy, G. Rabideau, D. Tran and R. Sherwood (2006) Monitoring Active Volcanism with the Autonomous Sciencecraft Experiment on EO-1, *Rem. Sens. Environ.*, **101**, no. 4, 427-446.

27. Doggett, T., R. Greeley, A. G. Davies, S. Chien, B. Cichy, R. Castano, K. Williams, V. Baker, J. Dohm and F. Ip (2006) Autonomous detection of cryospheric change with Hyperion onboard Earth-Observing 1, *Rem. Sens. Environ.*, **101**, no. 4, 447-462.

28. Ip, F., J. M. Dohm, V. R. Baker, T. Doggett, A. G. Davies, R. Castaňo, S. Chien, B. Cichy, R. Greeley, R. Sherwood (2006) Flood detection and monitoring with the Autonomous Spacecraft Experiment (ASE) onboard EO-1, *Rem. Sens. Environ.*, **101**, no. 4, 463-481.

29. Davies, A. G., S. Chien, R. Wright, A. Miklius, P. R. Kyle, M. Welsh, J. B. Johnson, D. Tran, S. R. Schaffer, and R. Sherwood (2006) Sensor web enables rapid response to volcanic activity, *Eos*, **87** (1), 1&5.

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31. Davies, A. G., D. L. Matson, G. J. Veeder, T. V. Johnson and D. L. Blaney (2005) Post-solidification cooling and the age of Io's lava flows, *Icarus*, **176**, 123-137.

32. Marchis, F., D. Le Mignant, F. H. Chaffee, A. G. Davies, S. H. Kwok, R. Prange, I. de Pater, P. Amico, R. Campbell, T. Fusco *et al.* (2005) Keck AO survey of Io global volcanic activity between 2 and 5 µm, *Icarus*, **176**, 96-122.

33. Buratti, B. J., Hicks, M. D. and A. G. Davies (2005), Spectrophotometry of the small satellites of Saturn and their relationship to Iapetus, Phoebe, and Hyperion, *Icarus*, **175**, 490-495.

34. Chien, S., B. Cichy, A. G. Davies, D. Tran, G. Rabideau, R. Castano, R. Sherwood, D. Mandl, S. Frye, S. Schulman, J. Jones and S. Grosvenor (2005) An Autonomous Earth-Observing Sensorweb, *IEEE Intelligent Systems*, **20**, no. 3, 16-24.

35. dePater, I., F. Marchis, B. A. Macintosh, H. G. Roe, D. Le Mignant, J. R. Graham and A. G. Davies (2004) Keck AO Observations of Io in and out of eclipse, *Icarus*, **169**, 250-263.

36. Veeder, G. J., D. L. Matson, T. V. Johnson, A. G. Davies and D. L. Blaney (2004) The polar contribution to the heat flow of Io, *Icarus*, **169**, 264-270.

37. Radebaugh, J., A. S. McEwen, M. Milazzo, L. Keszthelyi, A. G. Davies, E. Turtle and D. Dawson (2004) Observations and Temperatures of Io's Pele Patera from *Cassini* and *Galileo* Spacecraft Images, *Icarus*, **169**, 65-79.

38. Schenk, P., R. Wilson and A. G. Davies (2004) Shield volcano topography and rheology of flows on Io, *Icarus*, **169**, 98-110.

39. Davies, A. G. (2003) Volcanism on Io: estimation of eruption parameters from *Galileo* NIMS data. *J. Geophys. Res.*, **108**, 5106-5120.

40. Davies, A. G., (2003) Temperature, Age and Crust Thickness Distributions of Loki Patera on Io from *Galileo* NIMS data: Implications for Resurfacing Mechanism. *Geophysical Research Letters*, **30**, 2133-2136.

41. Kargel, J. S., R. W. Carlson, A. G. Davies, B. Fegley Jr., A. Gillespie, R. Greeley, R. R. Howell, K. L. Jessup, L. Kamp, L. P. Keszthelyi, R. M. Lopes, T. J. MacIntyre, F. Marchis, A. S. McEwen, M. Milazzo, J. Perry, J. Radebaugh, L. Schaefer, N. Schmer, W. D. Smythe, J. R. Spencer, D. A. Williams, J. Zhang, and M. Zolotov (2003) Extreme Volcanism on Io: Latest Insights at the End of the *Galileo* Era. *Eos*, **84**, no 33, 313 and 318.

42. Rathbun, J., J. R. Spencer, A. G. Davies, R. R. Howell and L. Wilson (2002) Loki: a predictable volcano? *Geophysical Research Letters*, **29**, no 10, 84-88.

43. Marchis, F., I. dePater, A. G. Davies, H. G. Roe, T. Fusco, D. Le Mignant, P. Deschamps, B. A. Mackintosh and R. Prange (2002) High-resolution Keck adaptive optics imaging of violent activity on Io. *Icarus*, **160**, 124-131.

44. Davies, A. G., L. P. Keszthelyi, D. Williams, C. B. Phillips, A. S. McEwen, R. M. C. Lopes, W.D. Smythe, L. W. Kamp, L. A. Soderblom and R. W. Carlson (2001) Thermal signature, eruption style and eruption evolution at Pele and Pillan on Io. *J. Geophys. Res.*, **106**, E12, 33,079-33,104.

45. Lopes, R. M. C., L. W. Kamp, S. Doute, W. D. Smythe, R. W. Carlson, A. S. McEwen, P. E. Geissler, S. W. Kieffer, F. E. Leader, A. G. Davies, E. Barbinis, R. Mehlman, M. Segura, J. Shirley and L. A. Soderblom (2001) Io in the near-infrared: NIMS results from the *Galileo* flybys in 1999 and 2000. *J. Geophys. Res*, **106**, E12, 33,053-33,078.

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49. Davies, A. G. (2001) Volcanism on Io: the view from *Galileo*. *Astronomy and Geophysics*, **42**, 2, 10-15.

50. Davies, A. G. and S. Bowler (2001) Extraterrestrial Active volcanism, *Geoscientist*, **11**, no 8, 4-7.

51. Davies, A. G. and S. Doute (2001) *Galileo*-NIMS observations of Io. Proceedings of the 24th IAU Congress, *ASP Conference Proceedings*, **12**.

52. Davies, A. G., R. Lopes-Gautier, W.D. Smythe and R.W. Carlson (2000) Silicate cooling model fits to *Galileo* NIMS data of volcanism on Io. *Icarus*, **148**, 212-225.

53. Lopes-Gautier, R., S. Doute, W.D. Smythe, L.W. Kamp, R.W. Carlson, A.G. Davies, F.E. Leader, A.S. McEwen, P.E. Geissler, S.W. Keiffer, L. Keszthelyi, E. Barbinis, R. Mehlman, M Segura, J. Shirley and L.A. Soderblom (2000) A close-up look at Io in the Infrared: Results from *Galileo*'s Near Infrared Mapping Spectrometer. *Science*, **288**, 1201-1204.

54. Lopes-Gautier, R., A.S. McEwen, W.D. Smythe, P. Geissler, L. Kamp, A.G. Davies, J. Spencer, R. Carlson, F.E. Leader, R. Mehlman, L. Soderblom and the *Galileo* NIMS and SSI Teams. (1999) Hot spots on Io: global distribution and variations in activity. *Icarus*, **140**, 243-264.

55. McEwen, A.S., L. Keszthelyi, J.R. Spencer, G. Schubert, D.L. Matson, R. Lopes-Gautier, K.P. Klassen, T.V. Johnson, J.W. Head, P. Geissler, S. Fagents, A.G. Davies, M.H. Carr, H.H. Breneman and M.J.S. Belton (1998). Very-high temperature volcanism on Jupiter's moon, Io. *Science*, **280**, 87-98.

56. Davies, A. G., A.S. McEwen, R. Lopes-Gautier, L. Keszthelyi, R.W. Carlson and W.D. Smythe (1997) Temperature and Area constraints of the South Volund volcano on Io from the NIMS and SSI Instruments during the *Galileo* G1 orbit. *Geophysical Research Letters*, **24**, 2447-2450.

57. Lopes-Gautier, R., A. G. Davies, R. Carlson, W. Smythe, L. Soderblom and the *Galileo* NIMS Team (1997) Hot spots on Io: initial results from *Galileo*'s Near Infrared Mapping Spectrometer. *Geophysical Research Letters*, **24**, 2439-2442.

58. Carlson, R. W., W. D. Smythe, R. Lopes-Gautier, A. G. Davies, L. W. Kamp, J. A. Mosher, L. A. Soderblom, F. E. Leader, R. Mehlman and R. N. Clark. The Distribution of Sulfur Dioxide and Other Infrared Absorbers on the Surface of Io in 1996. *Geophysical Research Letters*, **24**, 2479-2482.

59. Schenk, P. M., A. S. McEwen, A. G. Davies, T. Davenport, K. Jones and B. Fessler (1997) Geology and Topography of Ra Ratera, Io, in the *Voyager* Era: Prelude to Eruption. *Geophysical Research Letters*, **24**, 2467-2470.

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Granahan, G. Hansen, P. Herrera, C. Hibbits, J. Hui, P. Irwin, T. Johnson, L. Kamp, H. Kieffer, F. Leader, E. Lellouch, R. Lopes-Gautier, D. Matson, T. McCord, R. Mehlman, A. Ocampo, G. Orton, M. Roos-Serote, M. Segura, J. Shirley, L. Soderblom, A. Stevenson, F. Taylor, J. Torson, A. Wier and P. Weissman (1996) Near-infrared spectroscopy and spectral mapping of Jupiter and the Galilean satellites: results from *Galileo*'s initial orbit. *Science*, **274**, 385-388.

61. Davies, A. G. (1996) Io's volcanism: thermo-physical models of silicate lavas compared with observations of thermal emission. *Icarus*, **124**, no 1, 45-61.

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Publications submitted to refereed journals – under review

64. Davies, A. G., S. Chien, J. Doubleday, D. Tran, T. Thordarson, M. T. Gudmundsson, Á. Höskuldsson, S. S. Jakobsdóttir, R. Wright and D. Mandl (2012) Observing Iceland's Eyjafjallajökull 2010 Eruptions with the Autonomous NASA Volcano Sensor Web, submitted to *JGR-Solid Earth*. *Under revision.*

65. Chien, S., D. Silverman, A. G. Davies and D. Mandl (2012) *EO-1* Onboard Processing as Heritage for the Intelligent Payload Module on the proposed HyspIRI Mission, IEEE JSTARS Special Issue on the *Earth Observing One* (*EO-1*) Satellite Mission: Over a Decade in Space. *Under review.*

66. Cataldo, E., L. Wilson, A. G. Davies. Near-vertical supersonic and shock-free gas/magma flow at fissure volcanoes: Application to Pillan, Io. Submitted to *Geophysical Research Letters*.

Technical Conference Proceedings (reviewed)

67. Chien, S., J. Doubleday, D. Mclaren, A. G. Davies, D. Tran, V. Tanpipai, A. Ratanasuwan, D. Mandl (2011) Space-based sensorweb monitoring of wildfires in Thailand (2011) Proc. IGARSS 2011, Vancouver, BC, 24-29 July 2011.

68. Chien, S., A. G. Davies, J. Doubleday, D. Tran, S. Jones, E. Kjartansson, K. Vogfjord, M. T. Gudmundsson, T. Thordarson and D. Mandl (2011) Integrating Multiple Space and Ground Sensors to Track volcanic Activity, Proc. 34th International Symposium on Remote Sensing of Environment, (ISRSE 2011), Sydney, Australia, April 2011.

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2. Davies, A. G. Lunar and Planetary Institute, Houston, TX. "Active lava lakes as windows into Io's interior". 11 November 2011.

3. Davies, A. G. Pomona College, Pomona, CA Geology Department Colloquium. "Lava lakes on Io and Earth – the Key to Unlocking the Secrets of the Jovian System?". 22 March 2011.

4. Davies, A. G. Goddard Space Flight Center, MD. "Lava lakes on Earth and Io – the Key to Understanding the Jovian System?". 29 October 2010.

5. Davies, A. G. Library of Congress, Washington, DC. "Volcanoes: Near, Far and Really Far Away", 27 October 2010. Streaming video of this lecture is available at:

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