Coleman N.  
*Spectacular Cataracts (Dry Falls) on the Floor of Kasei Valles, Mars* [#1174]
The largest known cataracts exist on the floor of Kasei Valles. These spectacular dry falls have a vertical relief of ~500 m, and may have migrated by headward erosion as much as 250 km. They are characterized using THEMIS images and MOLA data.

Deák M.  
*The Methodology of Finding Lava Tubes with the Use of Remote Detection on Mars, on the Example of a Newly Found Cave* [#1507]
To find entrances to lava tubes on Mars using remote detection, multispectral images, thermal infrared images and elevation data are needed. Using them makes it possible to find new caves, as it is shown on the example of a new one, the “Catherine.”

Hobbs S. W.  Paull D. J.  Bourke M. C.  
*Aeolian Processes and Dune Morphology In Gale Crater* [#1561]
We used thermal inertia data, dune slip-face morphology and mesoscale modelling to analyse the dune fields in Gale Crater.

*Autonomous Temperature Data Acquisition Compared to Existing Thermal Models of Different Sediments* [#1362]
Our team wanted to improve sampling methods for experiments on the thermal properties of martian sediments. We built a robot that could take the data autonomously over a period of days, and then compared them to existing models.

Lanz J. K.  Wagner R.  Wolf U.  Neukum G.  Kröchert J.  
*Volcanic Rift Zone and Associated Cinder Cone Field in Utopia Planitia, Mars* [#1366]
We have analyzed a small area in SW Utopia Planitia that shows striking similarities to rift zone volcanos on Earth. The area exhibits eruptive fissures, cinder cones, and dyke swarms indicating rifting and magmatic activity prior to the deposition of VBF material.

*The Mars Science Laboratory (MSL) Mast-mounted Cameras (Mastcams) Flight Instruments* [#1123]
The Mars Science Laboratory has two color science mast cameras with 15° and 5° fields of view (FOV). They take 1200 × 1600 RGB and science filter images, with JPEG and lossless compression, into 8-Gigabyte buffers.

Miyamoto M.  Mikouchi T.  Satake W.  Koizumi E.  Kaiden H.  
*The Cooling Rate of Several Olivine-Phyric Shergottites on the basis of Fe-Mg Zoning in Olivine* [#1554]
We have developed a model to calculate the cooling rate and burial depth by using the Fe-Mg zoning of olivine and applied this model to calculating the cooling rate and burial depth for several olivine-phyric shergottites.

Molina A.  de Pablo M. A.  Ramos M.  
*Testing THEMIS-derived Brightness Temperature by MINI-TES (Spirit) Data* [#1150]
Most of the data from Mars comes from orbital sensors, but only few missions had reached the surface of the planet. Spirit sensor, called Mini-TES, provides most direct data (more reliable therefore) and allow to compare them with orbital ones (such as THEMIS).
Papike J. J.  Karner J. M.  Shearer C. K.  Burger P. V.  
Valence State Partitioning of V Between Augite/Melt Crystallized from a Highly Spiked Martian Basalt Composition as a Function of Oxygen Fugacity (IW-1 to FMQ) [#1010]
This abstract explores the partitioning of vanadium between augite and melt in a highly-spiked QUE 94201 composition, at each of four different $f_O^2$ values (IW-1, IW, IW+1, FMQ).

Pendleton Hoffer M.  Greeley R.  
Bright Tracks on Mars: Alternate Dust Devil Tracks [#2713]
Some linear, curved and “curlicue” albedo features on Mars are attributed to the tracks left by the passage of dust devils.

Shean D. E.  
Evidence for Widespread Removal of Martian Mid-Latitude “Fill” Material [#1509]
Evidence is presented for each of the archetypal mid-latitude “fill” material settings (crater and lineated valley fill, aprons, viscous flow features) suggesting that this material was thicker and laterally more extensive in the relatively recent past.

Shih C.-Y.  Nyquist L. E.  Reese Y.  Jambon A.  
Sm-Nd Isotopic Studies of Two Nakhlites, NWA 5790 and Nakhla [#1367]
Sm-Nd ages for Nakhla and the mesostasis-rich nakhlite NWA 5790 are 1.38±0.07 and 1.38±0.10 Ga, respectively. Model calculations suggest nakhlite parental magmas were derived from LREE-depleted, garnet-bearing sources by small percentages of melting.

Syzyakova L.  Perov N. I.  
Size Distributions of Martian Craters [#1025]
Function for martian crater size distribution is considered that (a) is applied to finite and infinite distributions; (b) approximates of small diameters and about the point contrary flexure; (c) turns asymptotically into by standard power law.

Thompson D. R.  Castaño R.  Wettergreen D.  
Compression Ratio as Indicator of Scientist Preference for Rover Images [#1287]
Spacecraft performing onboard image analysis can prioritize interesting data for downlink and potentially improve science return. Images’ compressed size (a rough measure of “visual information”) correlates strongly with desirable content.

Tsang S. W. R.  
The Trade Winds of Mars [#1012]
This abstract examines yardangs to study wind patterns on Mars.

White O. L.  Stofan E. R.  
An Estimation of the Theoretical MARSIS Aquifer Detection Depth [#1220]
A theoretical aquifer detection depth of MARSIS is estimated based on extrapolation of its penetration ability at other martian geological settings. The resulting estimate does not constrain the distribution of martian aquifers.

de Pablo M. A.  Caprarelli G.  
Possible Subglacial Volcanoes in Nepenthes Mensae, Eastern Hemisphere, Mars [#1584]
We report our observations of 50 hilly features in Nepenthes Mensae, Mars, what we interpret to be possible moberg ridges, formed by fissural eruption of lava under thick ice layer. We finally discuss some of their geological implications.