

Objectives & Requirements

Objectives:

- Harvest literally all [available] Planetary surface-captured vision data
- Process in 3D Vision terms
- Embed into 3D data base / GIS & Visualization
- New Modes of Scientific Exploitation

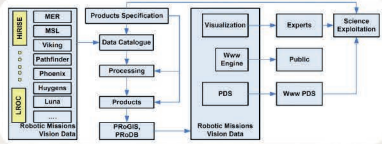
Requirements for science:

- Geological analysis of rock outcrops requires ability to seamlessly move between multi-resolution datasets
- Geologic data investigation requires ability to visualize image data from orbit down to the handlens-scale imagery
- Field geologists study rock outcrops by moving forwards and backwards, and sideways to get different perspectives

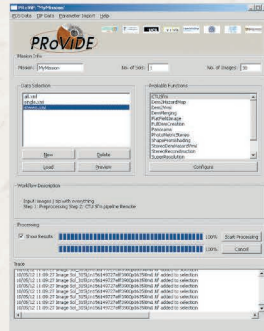
Mission	Height (km)	Orbit Altitude (km)	Altitude (km)	Altitude (km)
Orion	36	21000	240	210
Orion 2	36	21000	240	210
Orion 3	36	21000	240	210
Orion 4	36	21000	240	210
Orion 5	36	21000	240	210
Orion 6	36	21000	240	210
Orion 7	36	21000	240	210
Orion 8	36	21000	240	210
Orion 9	36	21000	240	210
Orion 10	36	21000	240	210
Orion 11	36	21000	240	210
Orion 12	36	21000	240	210
Orion 13	36	21000	240	210
Orion 14	36	21000	240	210
Orion 15	36	21000	240	210
Orion 16	36	21000	240	210
Orion 17	36	21000	240	210
Orion 18	36	21000	240	210
Orion 19	36	21000	240	210
Orion 20	36	21000	240	210
Orion 21	36	21000	240	210
Orion 22	36	21000	240	210
Orion 23	36	21000	240	210
Orion 24	36	21000	240	210
Orion 25	36	21000	240	210
Orion 26	36	21000	240	210
Orion 27	36	21000	240	210
Orion 28	36	21000	240	210
Orion 29	36	21000	240	210
Orion 30	36	21000	240	210
Orion 31	36	21000	240	210
Orion 32	36	21000	240	210
Orion 33	36	21000	240	210
Orion 34	36	21000	240	210
Orion 35	36	21000	240	210
Orion 36	36	21000	240	210
Orion 37	36	21000	240	210
Orion 38	36	21000	240	210
Orion 39	36	21000	240	210
Orion 40	36	21000	240	210
Orion 41	36	21000	240	210
Orion 42	36	21000	240	210
Orion 43	36	21000	240	210
Orion 44	36	21000	240	210
Orion 45	36	21000	240	210
Orion 46	36	21000	240	210
Orion 47	36	21000	240	210
Orion 48	36	21000	240	210
Orion 49	36	21000	240	210
Orion 50	36	21000	240	210
Orion 51	36	21000	240	210
Orion 52	36	21000	240	210
Orion 53	36	21000	240	210
Orion 54	36	21000	240	210
Orion 55	36	21000	240	210
Orion 56	36	21000	240	210
Orion 57	36	21000	240	210
Orion 58	36	21000	240	210
Orion 59	36	21000	240	210
Orion 60	36	21000	240	210
Orion 61	36	21000	240	210
Orion 62	36	21000	240	210
Orion 63	36	21000	240	210
Orion 64	36	21000	240	210
Orion 65	36	21000	240	210
Orion 66	36	21000	240	210
Orion 67	36	21000	240	210
Orion 68	36	21000	240	210
Orion 69	36	21000	240	210
Orion 70	36	21000	240	210
Orion 71	36	21000	240	210
Orion 72	36	21000	240	210
Orion 73	36	21000	240	210
Orion 74	36	21000	240	210
Orion 75	36	21000	240	210
Orion 76	36	21000	240	210
Orion 77	36	21000	240	210
Orion 78	36	21000	240	210
Orion 79	36	21000	240	210
Orion 80	36	21000	240	210
Orion 81	36	21000	240	210
Orion 82	36	21000	240	210
Orion 83	36	21000	240	210
Orion 84	36	21000	240	210
Orion 85	36	21000	240	210
Orion 86	36	21000	240	210
Orion 87	36	21000	240	210
Orion 88	36	21000	240	210
Orion 89	36	21000	240	210
Orion 90	36	21000	240	210
Orion 91	36	21000	240	210
Orion 92	36	21000	240	210
Orion 93	36	21000	240	210
Orion 94	36	21000	240	210
Orion 95	36	21000	240	210
Orion 96	36	21000	240	210
Orion 97	36	21000	240	210
Orion 98	36	21000	240	210
Orion 99	36	21000	240	210
Orion 100	36	21000	240	210

Surface Image Candidates

Solutions



Provide Scheme



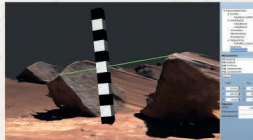
Processing Engine PROVP



Apollo Landing Site Analysis

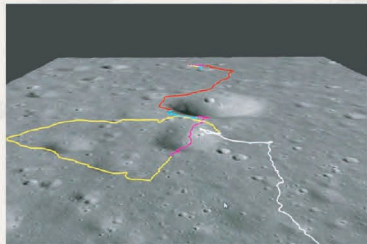


Consolidation with Running Missions

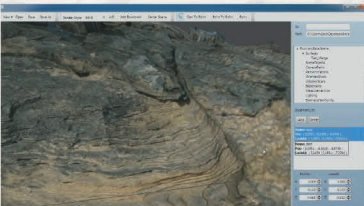


Realistic Real-Time Rendering Tool

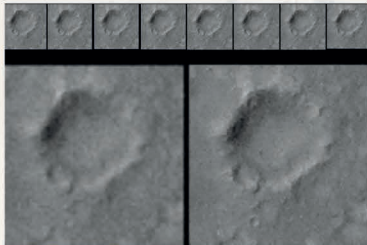
Achievements



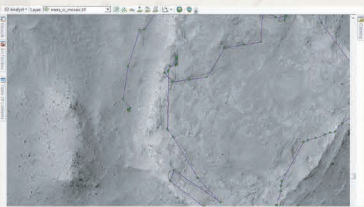
Lunokhod Path Rendering



Multiresolution



HIRISE Super Resolution
Tao & Muller (Mars 8 & EPSC 2014)



EXACT MER Locations from Rover tracks
Tao & Muller (Mars 8 & EPSC 2014)



Public Rendering Demonstrations in CAVE