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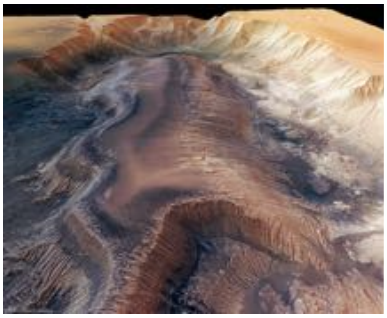


Institute of Geological Sciences

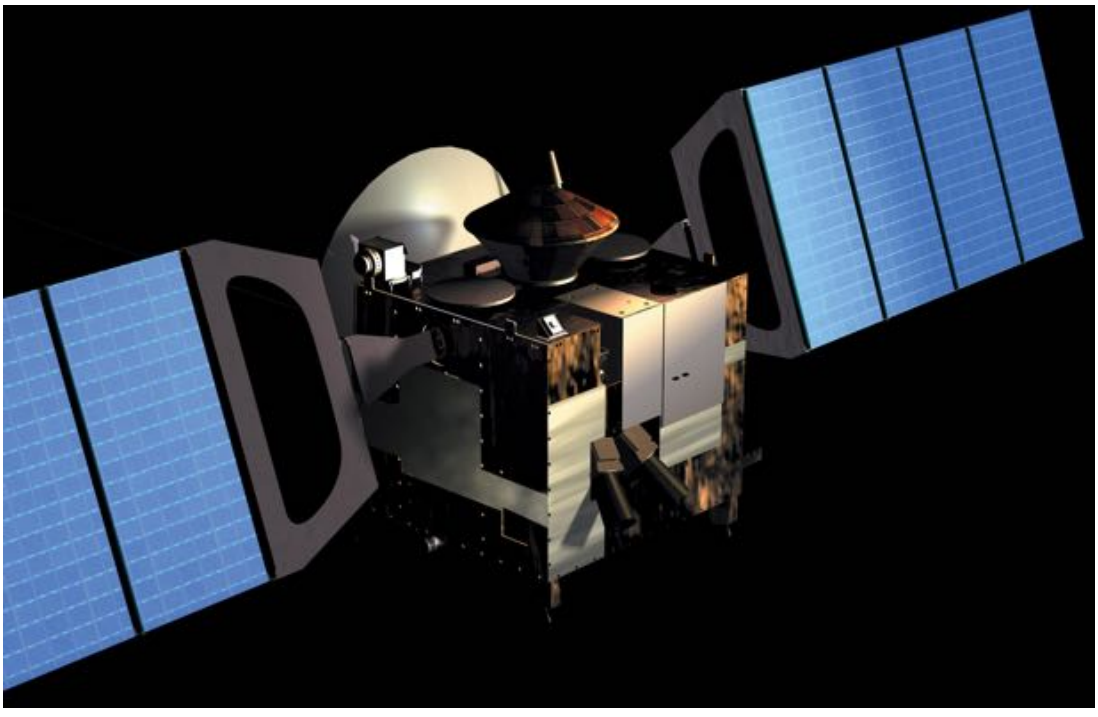
Dept. of Planetology and Remote Sensing

3D-Visualisation of Mars HRSC Image Data iMars EUROPLANETS RPIF-3D Workshop, MSSL

Björn Schreiner, Ralf Steikert, Sebastian Walter

Freie Universität Berlin

ESA Mars Express Spacecraft



HRSC und SRC: Technische Parameter

The Camera consists of:
High **R**esolution **S**tereo **C**amera (HRSC)
Super **R**esolution **C**hannel (SRC)

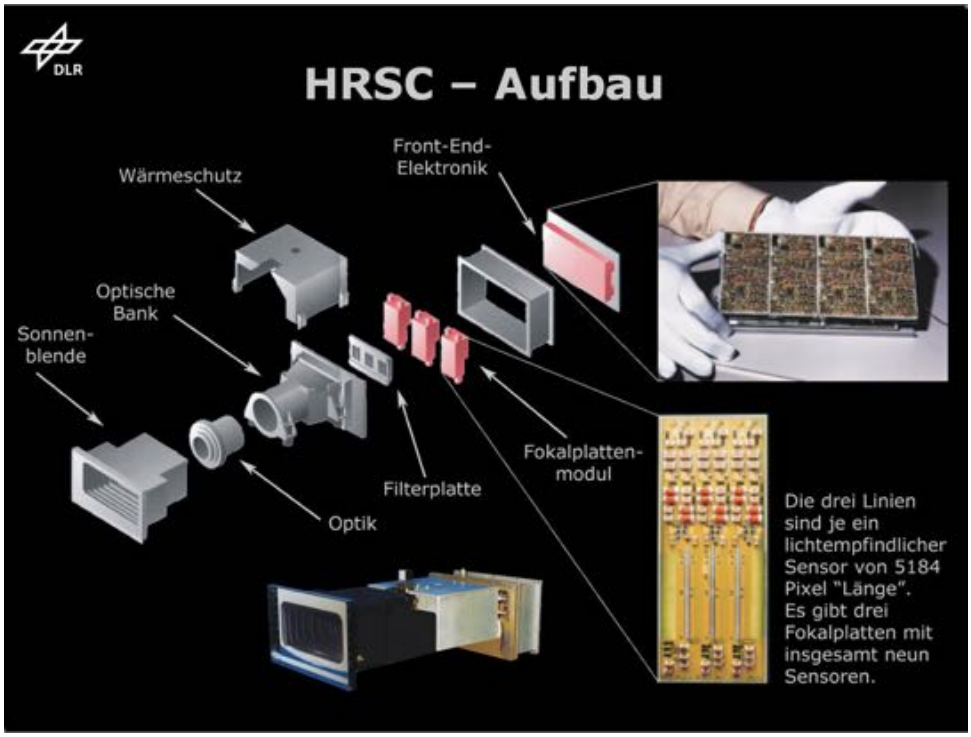
HRSC:
focal length
175 mm

SRC:
focal length
975 mm

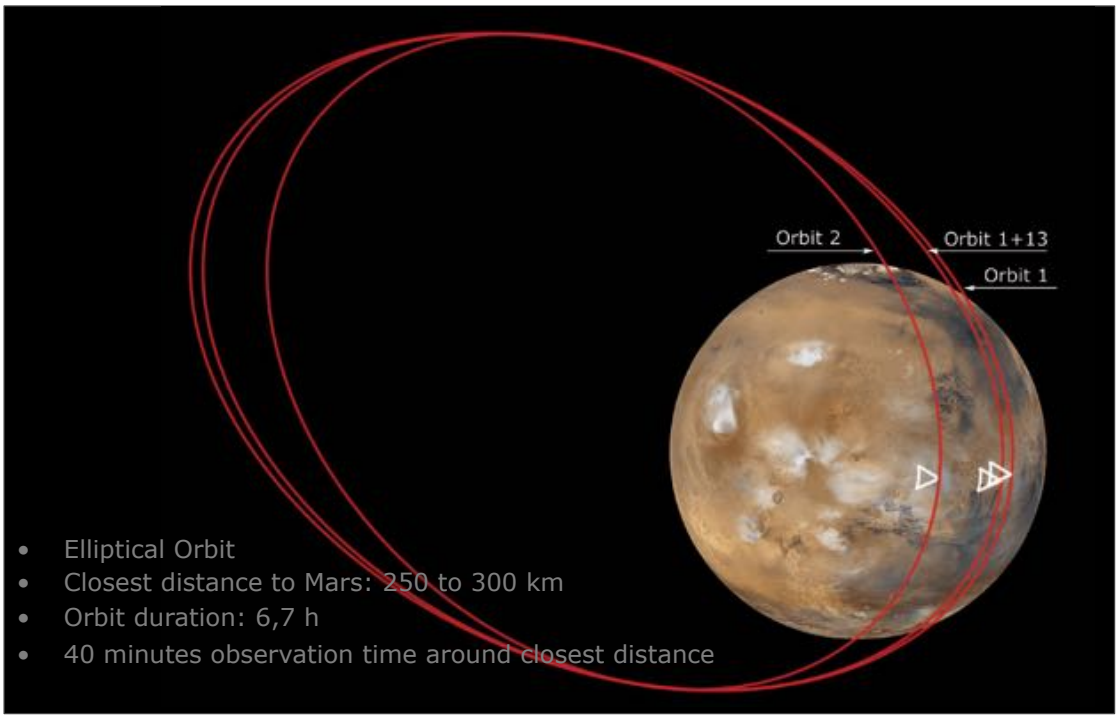
Simultaneous image recording in:

• High resolution:	Nadir sensor, 10 m/pixel from 250 km hight
• Stereo:	4 sensors, 10-20 m/pixel from 250 km hight
• Colour:	4 sensors, red, green, blue, near Infrared
• Maximal resolution (SRC):	2.3 m/pixel from 250 km
• Output date rate:	25 Mbit/s, online compression
• Weight:	19.6 kg

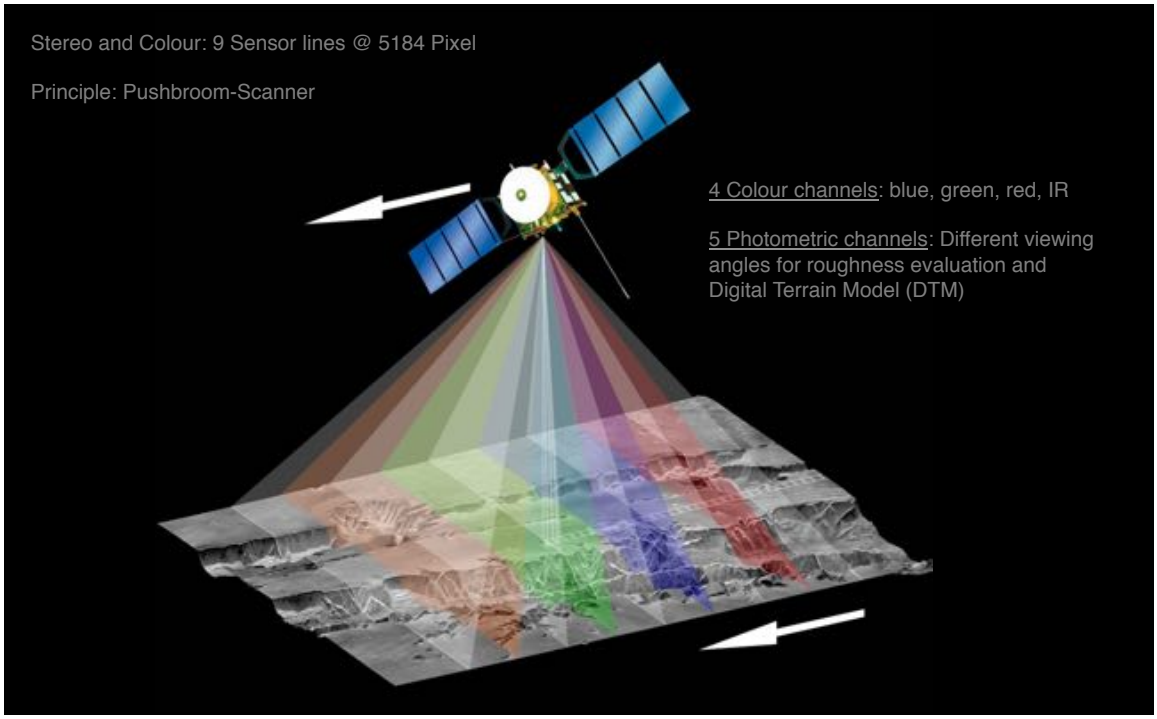
Aufbau der HRSC



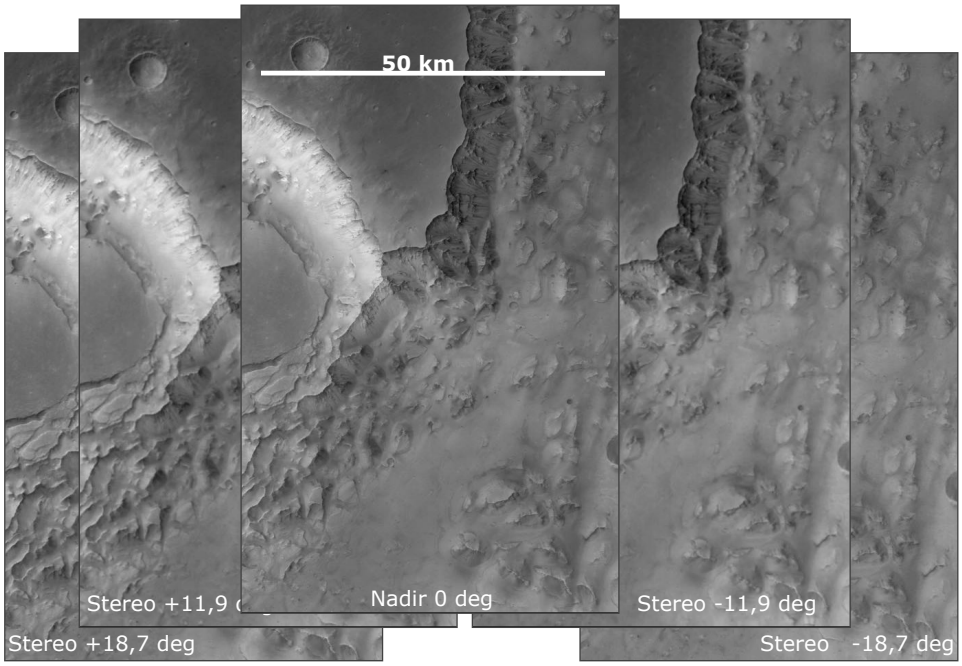
Mars Orbit Properties



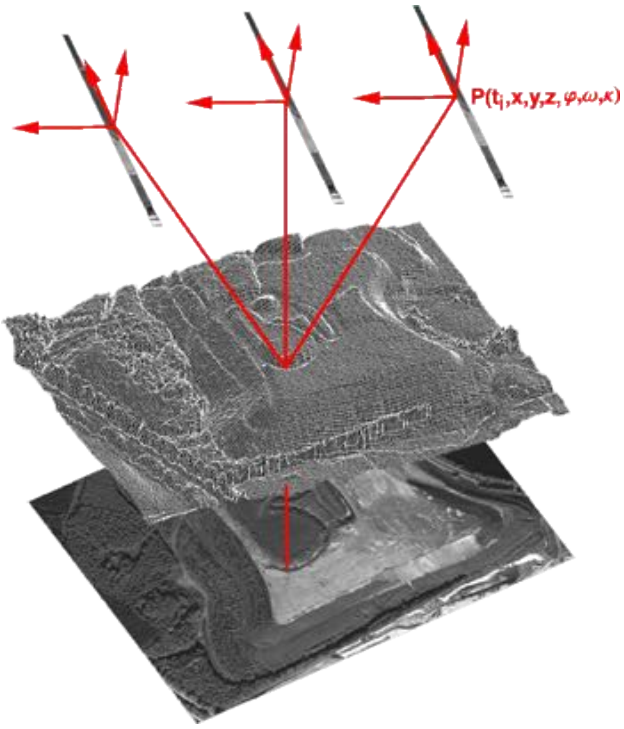
Imaging Principle of HRSC



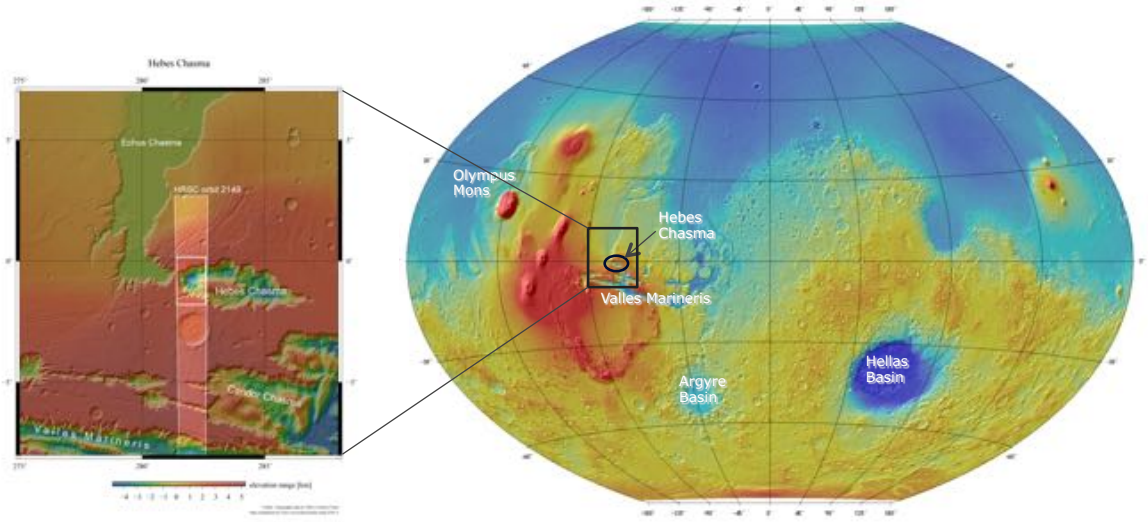
3D-Modelling with 5 Stereo channels



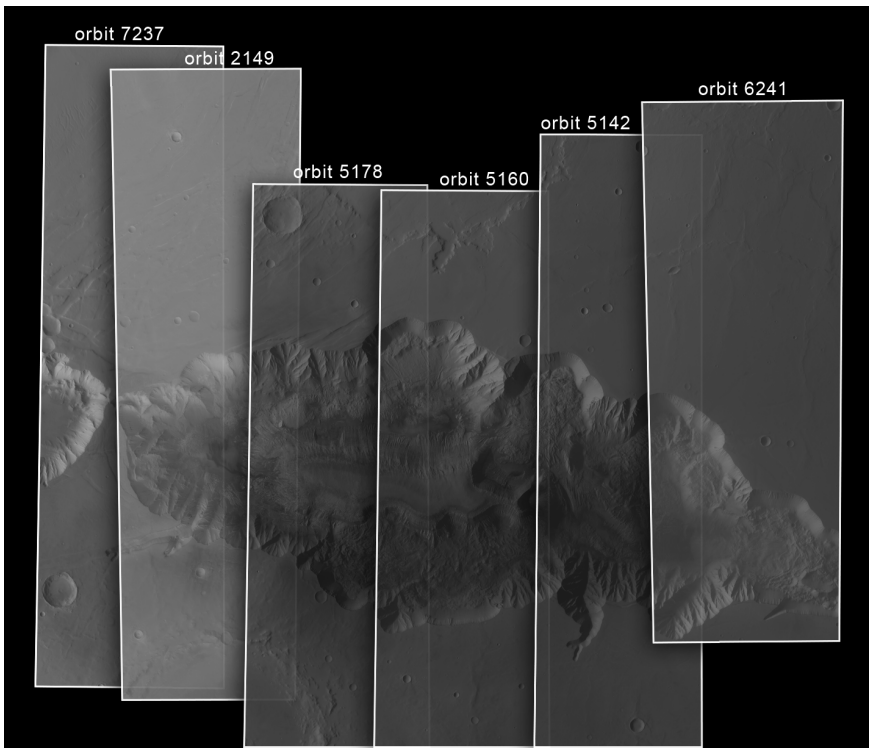
3D-Modelling using the collinearity principle



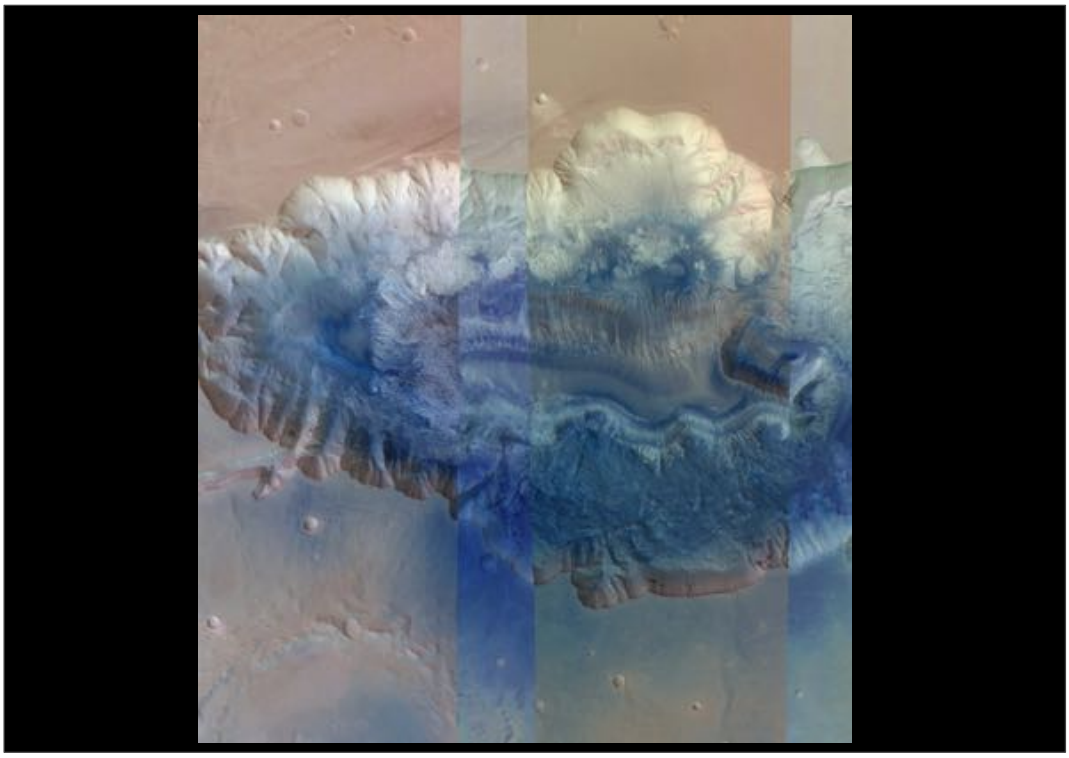
Topographic Map of Mars (MOLA)



HRSC Coverage of Hebes Chasma



HRSC Colour mosaic uncorrected



Hebes Chasma: DTM and Colour Mosaics

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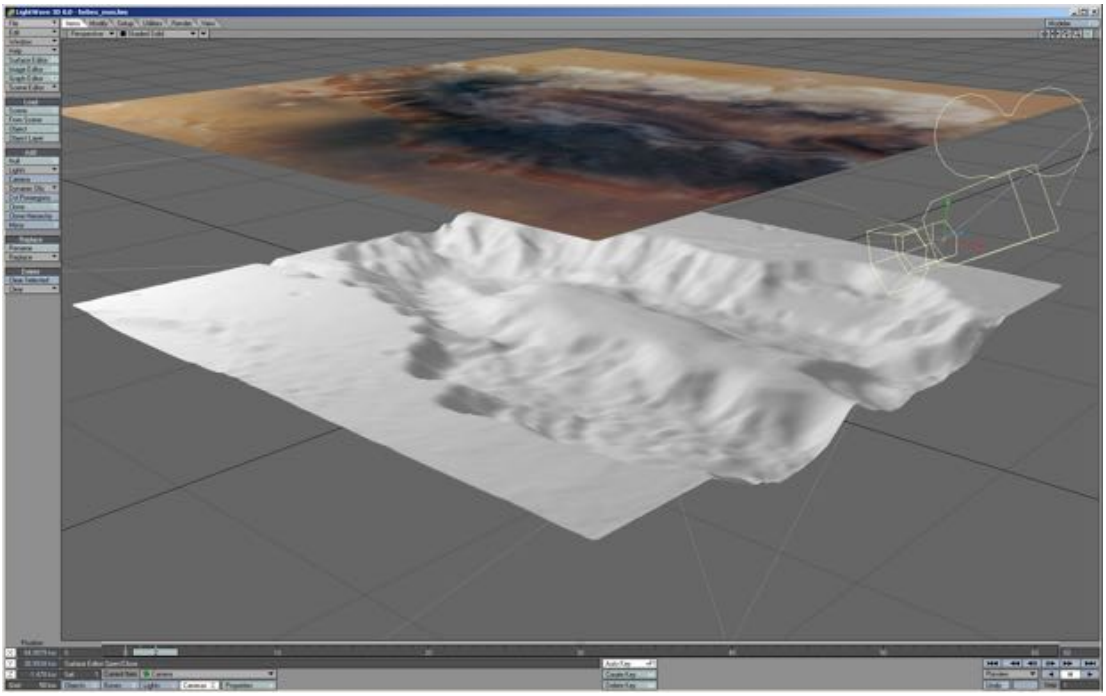
Lightwave: Terrain Model and Colour Composit



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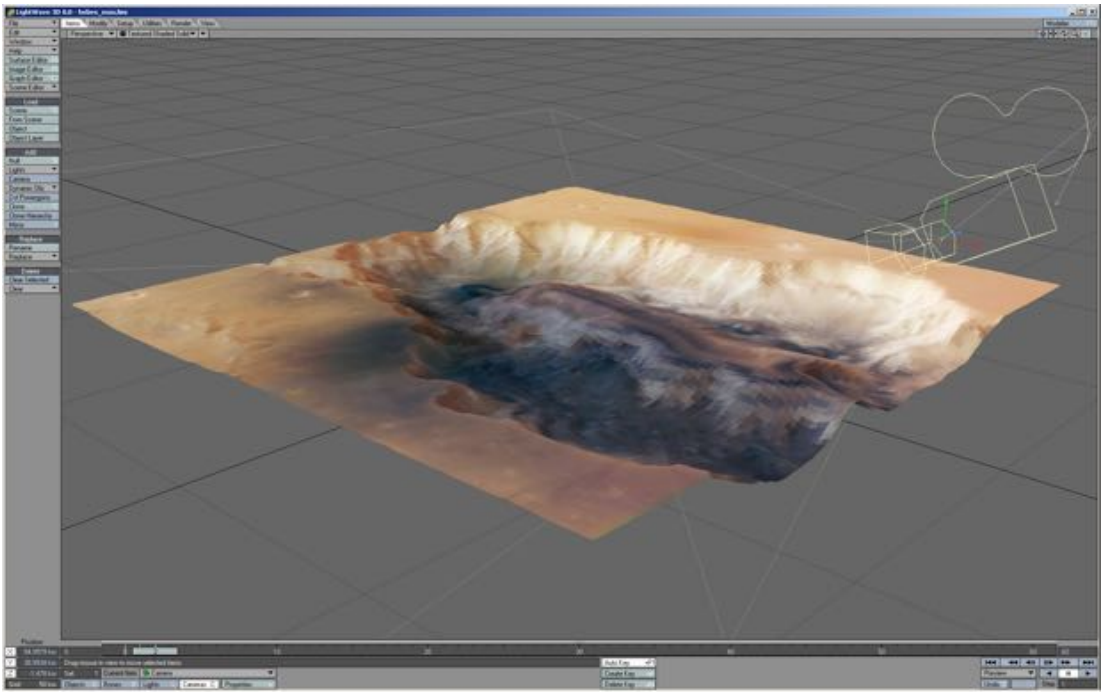
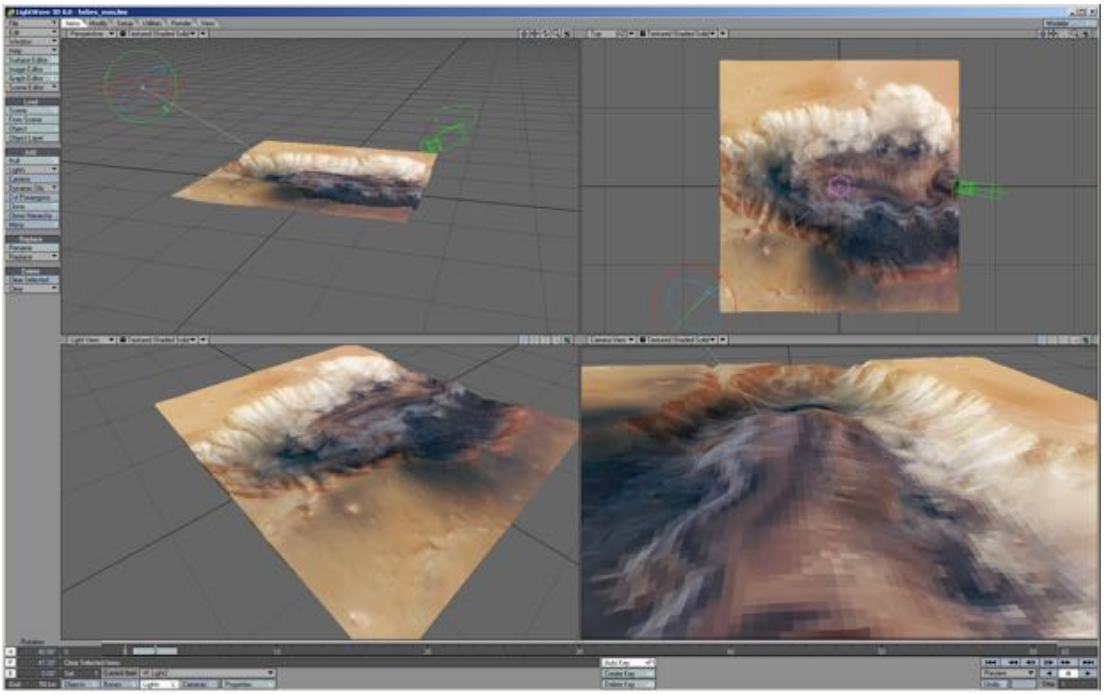
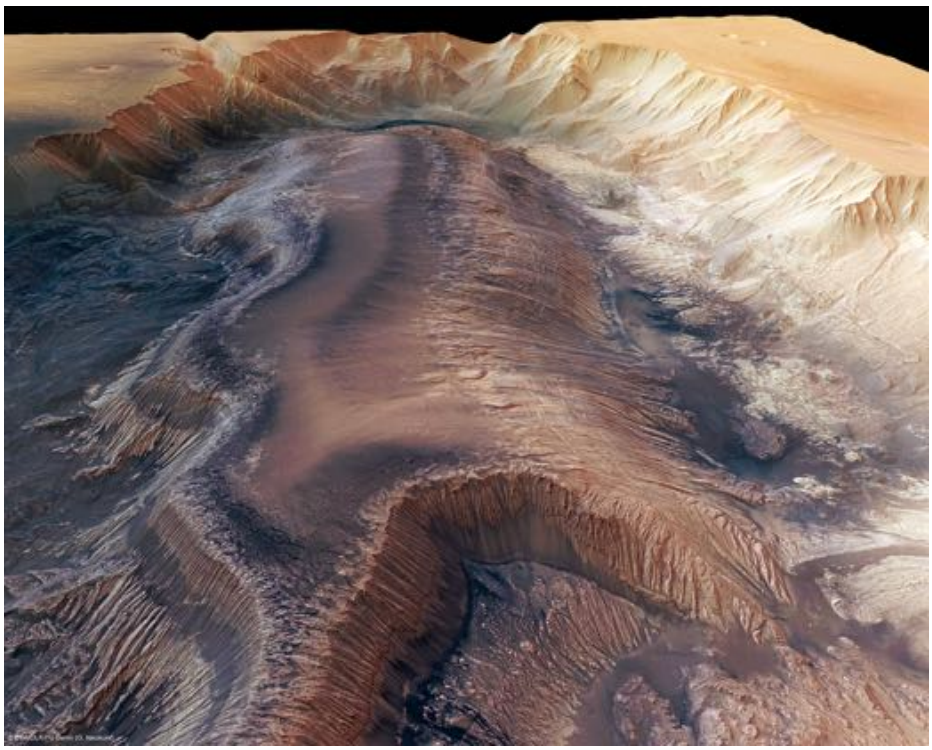
Lightwave: Terrain Model with draped Colour



Lightwave: Adjustment of viewing parameters



3D oblique view of Hebes Chasma from East



http://www.geoinf.fu-berlin.de/projekte/mars/hrsc375-HebesChasma.php

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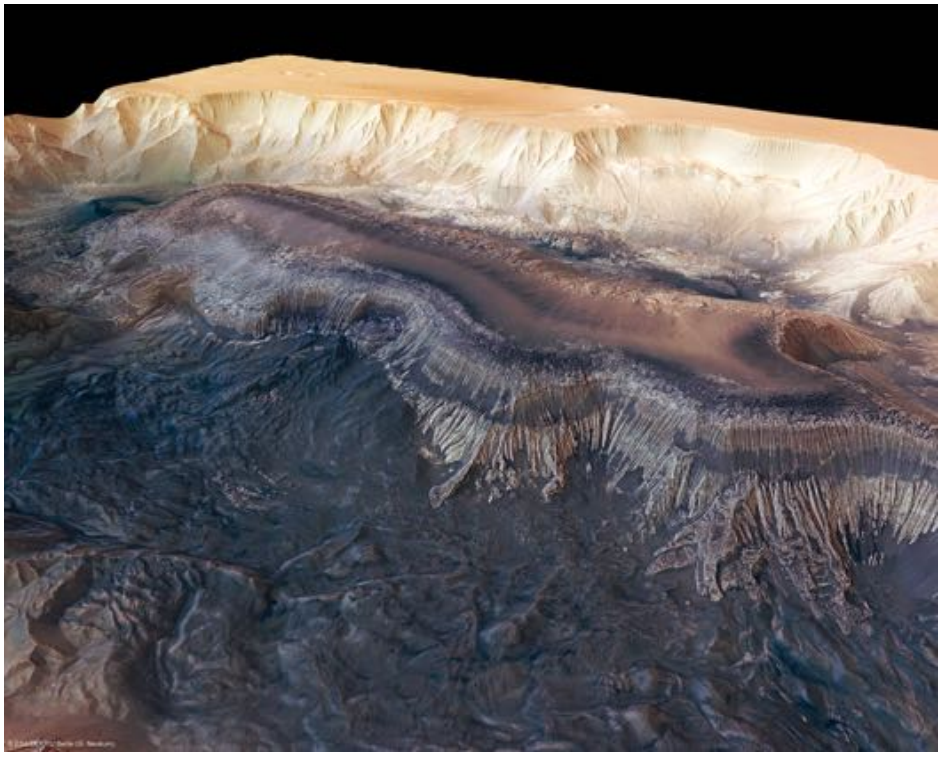
3D oblique view of Hebes Chasma from SE



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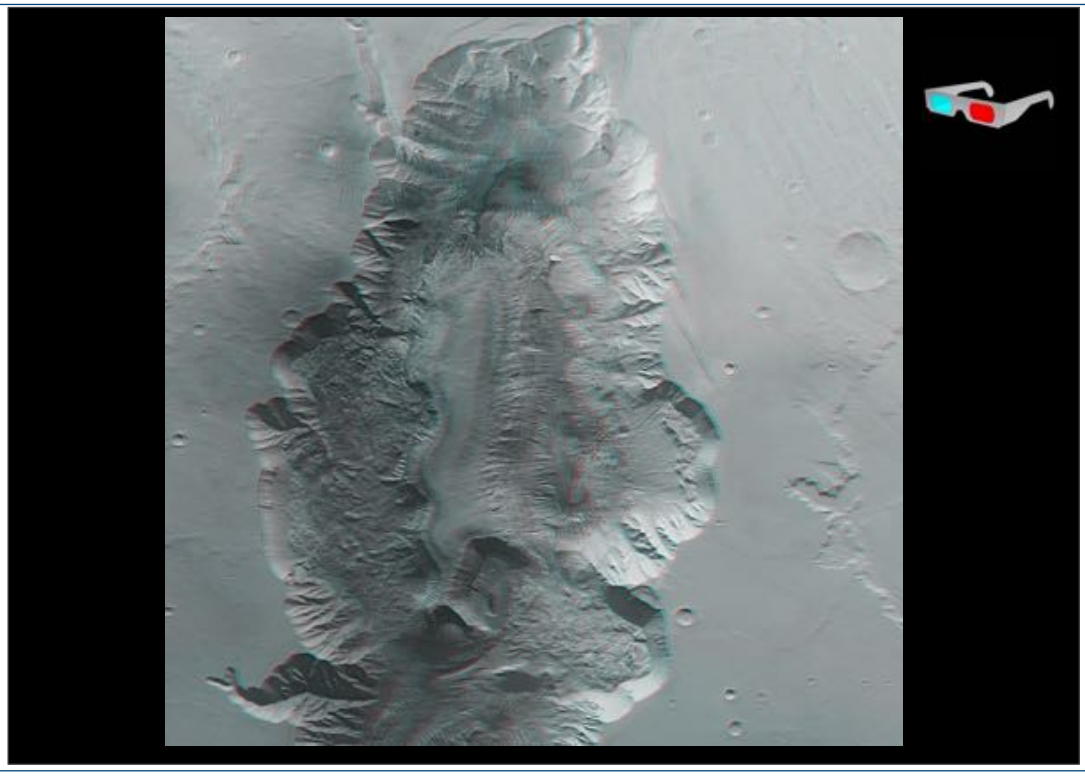
Hebes Chasma Anaglyph Mosaic (North to the right)



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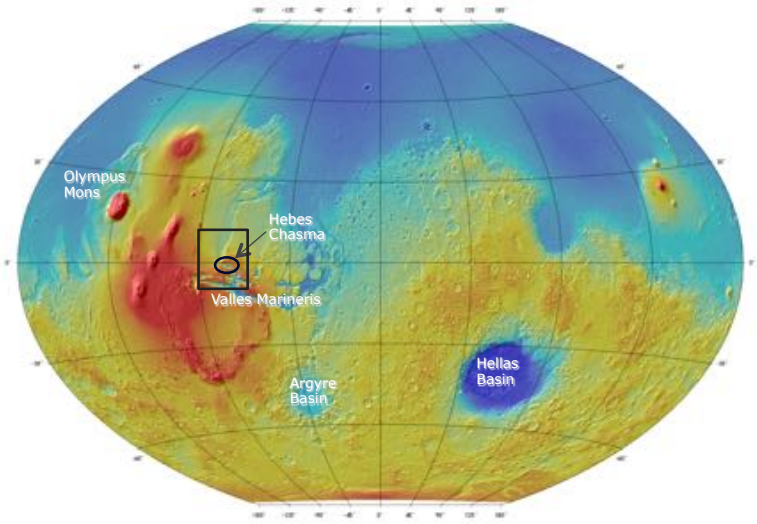

Mars HRSC on the Internet

Information about Mars, MarsExpress and the HRSC-Camera:

www.geo.fu-berlin.de/en/geol/fachrichtungen/planet/index.html

www.geo.fu-berlin.de/en/geol/fachrichtungen/planet/press/index.html