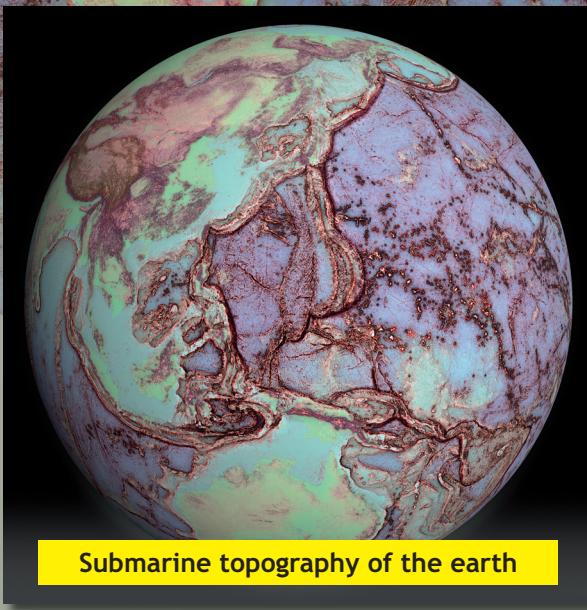




RED RELIEF IMAGE MAP

Innovation in 3D data visualisation



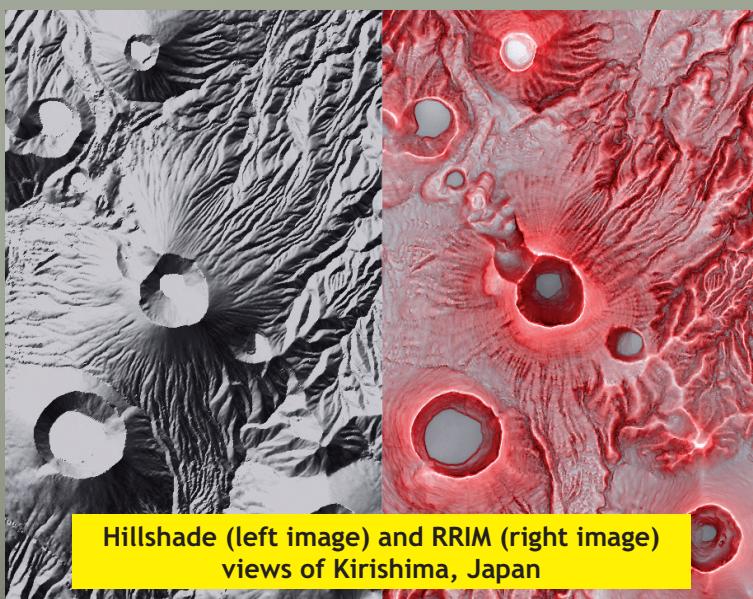
Submarine topography of the earth

WHAT IS RED RELIEF IMAGE MAP?

Red Relief Image Map (RRIM) is a novel 3D visualisation technique developed by Asia Air Survey to represent and interpret features on the land surface, sea floor as well as on other celestial bodies. RRIM is developed from different topographic elements (i.e., slope angle, and angular measures between the surface relief and horizontal distance), which can be computed from LiDAR, ASTER GDEM, SRTM, GTOPO30 and ETOPO2.

THE POWER OF 3D VISUALISATION

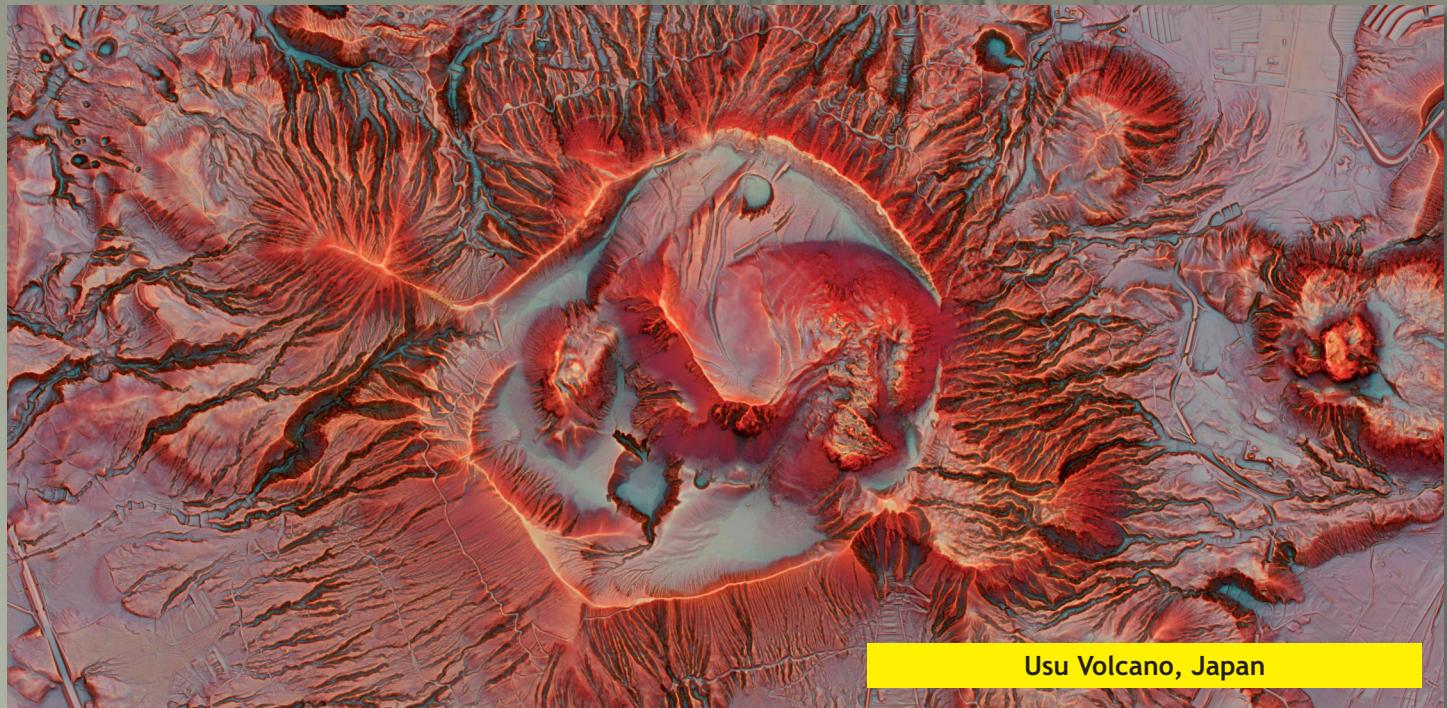
While other 3D visualization techniques such as hillshade represent terrain features from a single viewing angle, RRIM uses multiple viewing angle geometry and a red graduated colour scheme to represent and visualize terrain features clearly. RRIM can be used to classify landforms, map active faults and distribution of volcanic features (e.g., craters and lava flows) as well as assess landslides.



Hillshade (left image) and RRIM (right image)
views of Kirishima, Japan



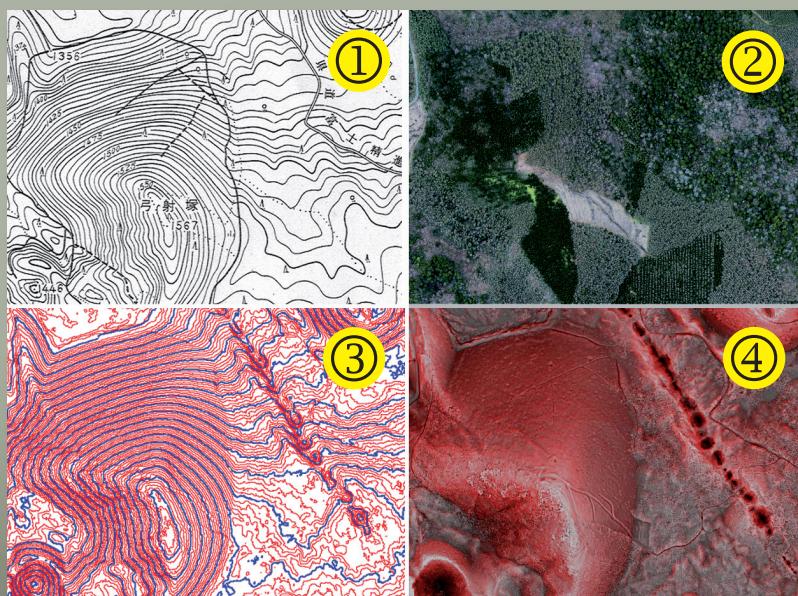
ASIA AIR SURVEY



Usu Volcano, Japan

RRIM OFFERS THE FOLLOWING:

1. Capacity to visualize landscape from multiple viewing angles (no shade)
2. Capacity to view 3D topographic features without specialised hardware (e.g., 3D monitors)
3. Capacity to enhance visualization and interpretation of topographic features by combining RRIM and other additional layers (e.g., contours) as well as through colour level slicing
4. Compared to other 3D visualization techniques or non-orthorectified images, distances and angles can be measured correctly



RED RELIEF IMAGE MAP IS AN EXTREMELY HIGH STEREOSCOPIC COLOUR IMAGE GENERATED FROM DEM USING ALGORITHMS DEVELOPED BY ASIA AIR SURVEY

① Contour map (photogrammetry)
② Aerial photography ③ Contour map (LIDAR) and ④ RRIM