



DLR delivers satellite images for Indian flood assistance

24 June 2013

Following severe flooding in northern India and Nepal, the Indian government activated the 'International Charter Space and Major Disasters' on 19 June 2013 at 10:30. The German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) tasked its radar satellite TerraSAR-X with acquiring images of the affected areas and made these available to the Indian civil protection authorities.

Situation is worse than first thought

"After activation of the Charter, we provide our satellite data as soon as possible, free of charge. We provide crisis relief from space for people in the affected regions," says Jens Danzeglocke of the DLR Space Administration who, as Charter Secretary, coordinates the German contributions to this international federation of 15 space organisations.

"Our colleagues at the Center for Satellite Based Crisis Information (Zentrum für satellitengestützte Kriseninformation; ZKI) at DLR Oberpfaffenhofen led the re-commanding of the satellite immediately after the emergency call and delivered the data to the Charter's Project Manager in India as soon as possible," explains Danzeglocke.

In India, the situation is far worse than first thought. The heavy rains surprised the people in the disaster areas. So far, the floods are known to have killed more than 680 people and thousands are still missing; about ten thousand military personnel have been deployed. The biggest rescue operation in the history of the Indian military is underway. The effects are especially bad in the mountainous state of Uttarakhand, where the Ganges River and its tributaries have flooded. TerraSAR-X has imaged this region over the last few days.

The TerraSAR-X radar satellite has been orbiting Earth since 2007 at an altitude of just over 500 kilometres. It has the advantage of being able to acquire images through cloud cover at a very high resolution – better than 1.5 metres when using what is referred to as 'spotlight' mode. In the current case, DLR is providing satellite imagery. Indian experts then process these data and combine them with maps. This allows the support staff to see where villages have been destroyed by floodwaters or mountain valleys have been cut off from the outside world.

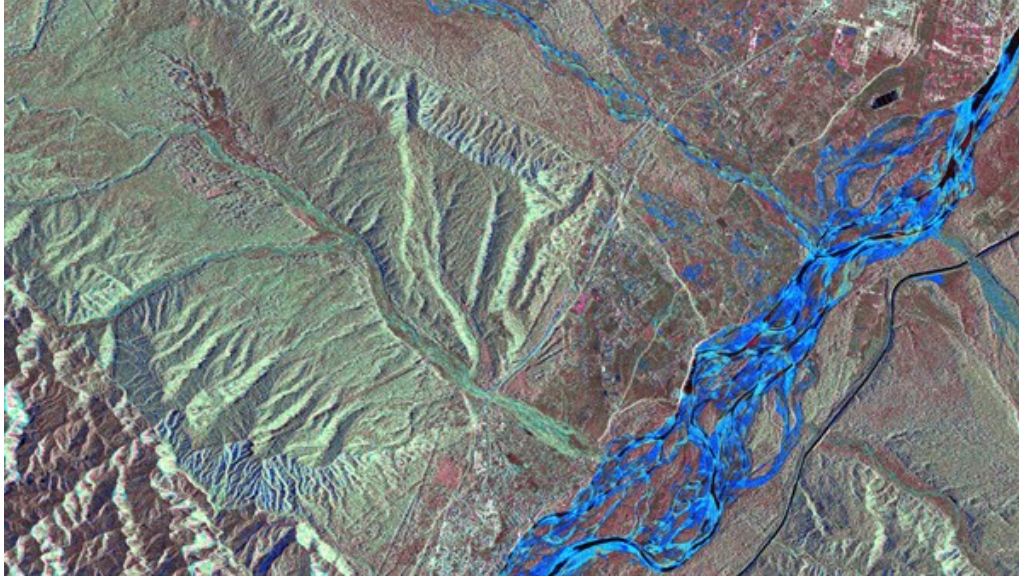
German participation in the Charter is made possible by the Federal Ministry of Economics and Technology (Bundesministerium für Wirtschaft und Technologie; BMWi) and is jointly implemented by the DLR Space Administration and the DLR German Remote Sensing Data Center (Deutsches Fernerkundungsdatenzentrum; DFD), which is part of ZKI. DLR has been a member of the Charter since 2010 and took over the chairmanship of the international network in April 2013. In 2012, the Charter was activated 40 times and it has been activated 10 times so far this year.

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Uttarakhand under water



Flooded area in the Indian state of Uttarakhand. Here, where there was severe flooding of the Ganges and its tributaries, the effects are particularly bad. This image was acquired by the German radar satellite TerraSAR-X. It combines an archive image from before the floods with a current image of the area. The light blue areas in the river valleys are the flooded areas, which were not covered by water in the archive image.

Credit: DLR.

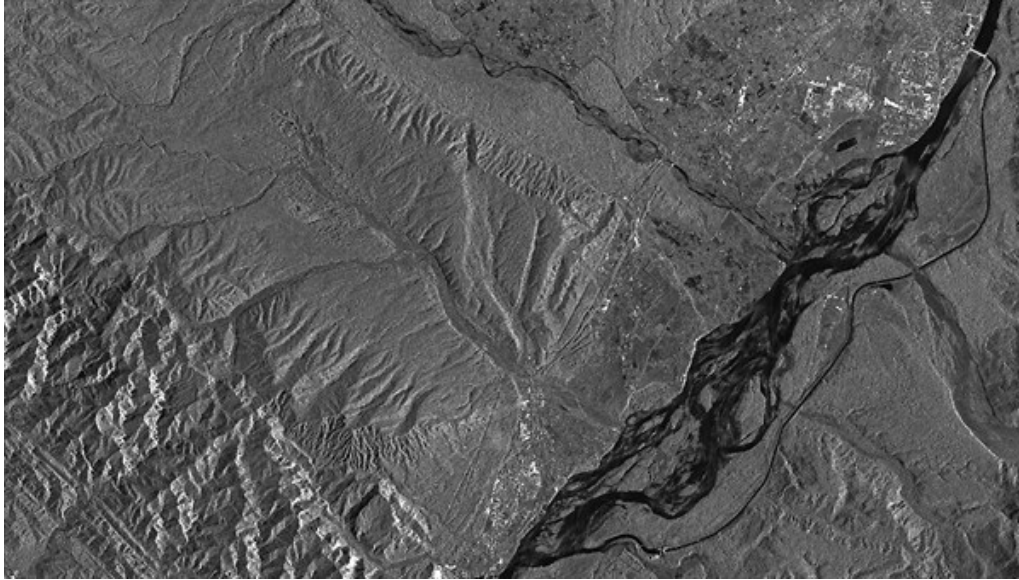
Before the flood



This image from 4 August 2010 shows the area before the flood.

Credit: DLR.

During the flood



This image, acquired using 'spotlight mode' on 23 June 2013, shows the flooded regions.

Credit: DLR.

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