



The International Charter Space and Major Disasters NEWSLETTER

May 2018 | Issue 16



Web site



Activations on map

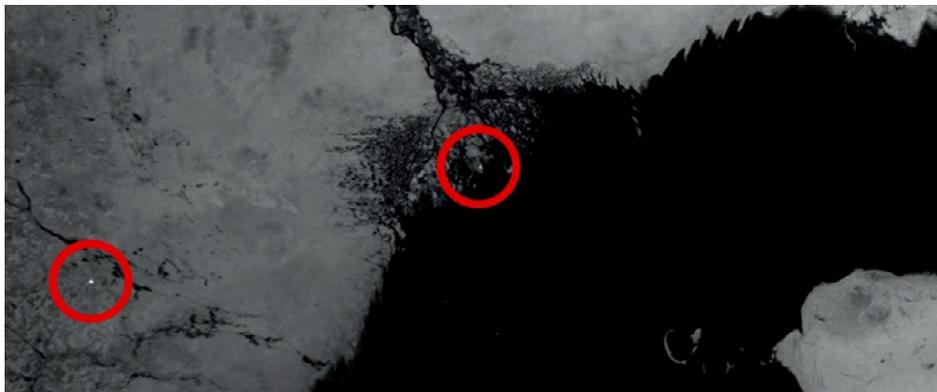


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Charter wins Pecora Team Award

The International Charter Space and Major Disasters has won the 2017 William T. Pecora Team Award for outstanding support to the global community during



New Russian KANOPUS-V-IK to benefit the Charter

The new satellite is to complement the Russian EO orbital constellation for the purposes of the Charter and to enhance civilian application.



Active hurricane season – nine Charter activations

The 2017 North Atlantic Hurricane season saw a busy time for the Charter with nine activations in just two months.

Bringing together new and efficient space technologies to support disaster management

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Charter wins Pecora Team Award

The International Charter Space and Major Disasters has won the 2017 William T. Pecora Team Award for outstanding support to the global community during times of crisis.

Sponsored by the US Department of the Interior and NASA, the award recognises outstanding contributions made by those using remote sensing to understand Earth, educate the next generation of scientists, inform decision makers and support disaster response.

An Individual Award and a Team Award are presented every year in honour of William Thomas Pecora, former director of the US Geological Service. He was also a driving force in establishing remote-sensing from space for civilian purposes.

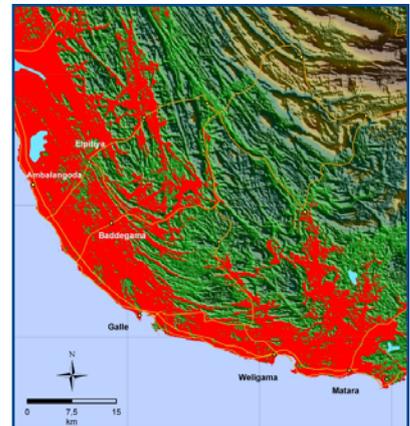
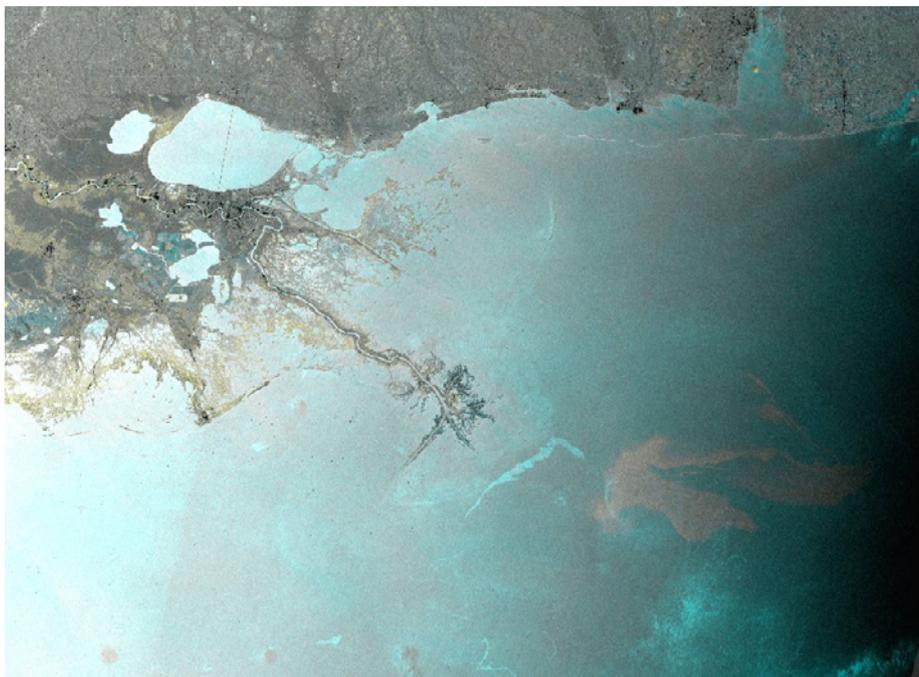
The awards were presented at the William T. Pecora Memorial Conference, which was held in Sioux Falls, South Dakota, US, on 14–16 November.

Recognised for providing free satellite imagery, data and information to the global community during times of crises and changing the way civil protection agencies respond to disasters, the Charter won the Team Award.

Since the Charter was founded in 2000, response efforts include the massive 7.9 magnitude earthquake in Nepal in 2015, the devastating Typhoon Haiyan in the Philippines in 2013, the major earthquake in Haiti in 2010, the massive Deepwater Horizon oil spill in the Gulf of Mexico in 2010, the tsunami in Indonesia and Thailand in 2004 more than 500 other disasters spanning the globe.

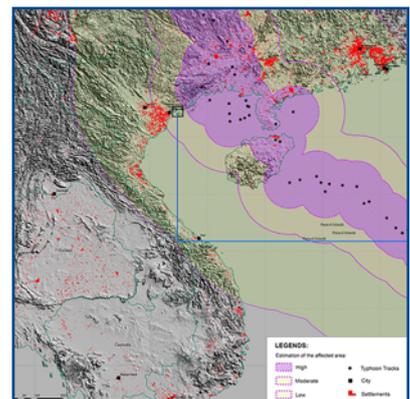
Every six months, a different member takes the role of 'Primus Inter Pares' – or Charter lead. In October 2017, ESA took over this role for the sixth time, and was responsible for ensuring that the Charter's policies and rules were respected.

ESA's Maurice Borgeaud, Chair of the Board of the Charter, said, "In the name of the Charter, it is a true honour to receive the Pecora Team award and I would like to thank the 16 Agencies that are working with great professionalism in the coordination of satellite resources, so that Earth observation data can be delivered as soon as possible after a natural or man-made disaster has struck."



Satellite map of Sri Lanka, lowlands of Galle area 90m resolution.

Principal imagery MNT USGS SRTM.



Super Typhoon Haiyan 2013.

Principal imagery Terrasar X, Meteosat.

Oil Spill in the Gulf of Mexico 2010.

Principal imagery Envisat ASAR WS.

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New Russian KANOPUS-V-IK to benefit the Charter

The Russian multi-purpose satellite Kanopus-V-IK, equipped with panchromatic, multispectral and infrared imaging payload was successfully launched on July 14, 2017 by a Soyuz-2.1a spacecraft from the Baikonur Cosmodrome (Kazakhstan). It operates in a circular sun-synchronous orbit at an altitude of 510 km and provides high resolution optical images and very low resolution infrared images. The spatial resolution is 2.1 m for the panchromatic band, 10.5 m for the multispectral bands and 200 m for the infrared band. The swath width is 23 km, 20 km and 2,000 km respectively. The new satellite is to complement the Russian EO orbital constellation for the purposes of the Charter and to enhance civilian applications such as terrestrial change detection, environmental monitoring and disaster management.



Caspian Sea

Kanopus-V-IK working in the infrared range captured fires on the territory of Russia and Kazakhstan in the Caspian Sea area.



Soyuz-2.1a / Kanopus-V-IK launch.

Photo Credit: Roscosmos.

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Active hurricane season – Nine Charter Activations

On 25 August Hurricane Harvey reached Category 4 intensity as it hit Rockport in Texas, USA. As it stalled over the state it brought unprecedented torrential rainfall causing severe flooding. At least 90 died in the US and Harvey was declared as the country's most costly hurricane ever.

The Charter was activated on 24 August by USGS on behalf of Governor's Texas Emergency Management Council, including the Texas Division of Emergency Management. Radar satellites produced two maps for identification of flooded areas due to the heavy rains that occurred.

Two weeks later, Hurricane Irma, a Category 5 storm, ploughed through the Caribbean and the US. Hurricane Irma originated from a tropical storm which developed on 30 August 2017, and quickly developed into a full Category 5 storm.

When Irma passed over the Caribbean Isles it came with winds in excess of 250 km/h and brought heavy rain. Estimates suggest 95% of the buildings on Barbuda and Saint Martin were destroyed or suffered damage, and 42% of the buildings on Anguilla were damaged. The devastating storm left at least 44 dead and thousands of people were made homeless.

Later, on 10 September, Hurricane Irma made landfall in Florida as a Category 4 storm. At least 50 people were killed and the storm left flooding and damage to infrastructure in its wake.

The Charter was activated four times for the effects of Irma in the Caribbean, the Dominican Republic, Haiti and the US. In total 16 maps were produced. Ten days later the Charter was again activated for a hurricane. On 19 September Hurricane Maria, a Category Five storm, passed through the Antilles Islands. Two people were killed in Guadeloupe, and the island suffered widespread damage and the island of Marie-Galante close to the south also suffered damage.

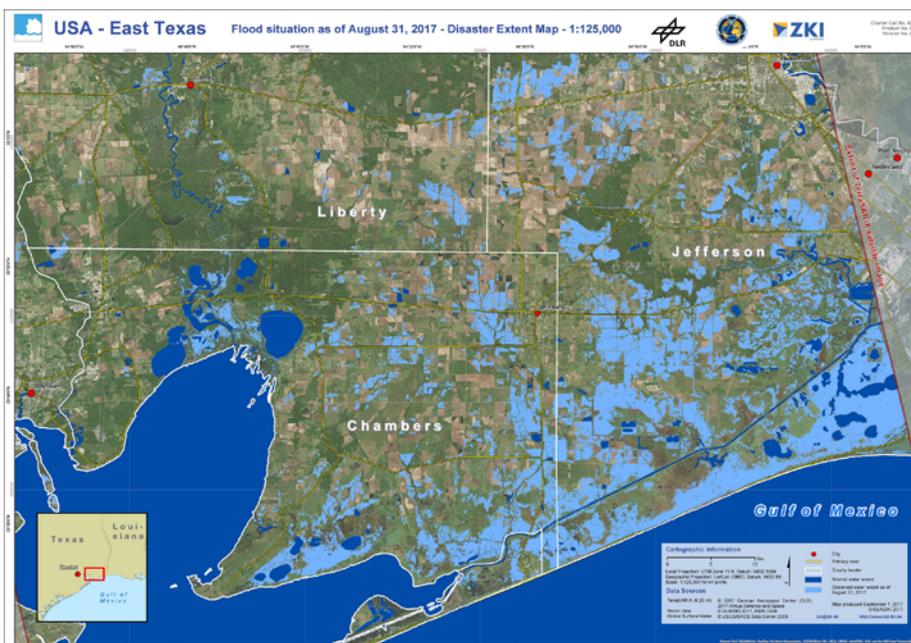
The Charter was activated four times for the Antilles Islands, the Caribbean, Puerto Rico and the U.S. Virgin Islands and the Dominican Republic. Twenty-seven maps were produced.



Damage assessment in South Caicos Island from Pleiades, processed by UNITAR/UNOSAT



Flooded areas on the River Soco in San Pedro de Macoris Province in Dominican Republic, Sentinel-1, processed by EIGEO



Disaster extent map of East Texas from TerraSAR-X, for Charter Call 547 in the US.

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First Copernicus constellations set for completion

The launch of Sentinel-3B in the spring of 2018 marks an important milestone for Europe's Copernicus programme. Carrying a suite of instruments, the satellite will join its Sentinel-3A twin in orbit to measure Earth's oceans, land, ice and atmosphere. With a pair of Sentinel-1 satellites and a pair of Sentinel-2 satellites already in orbit delivering key information to monitor our environment, the launch of Sentinel-3B means that three mission constellations will be complete.

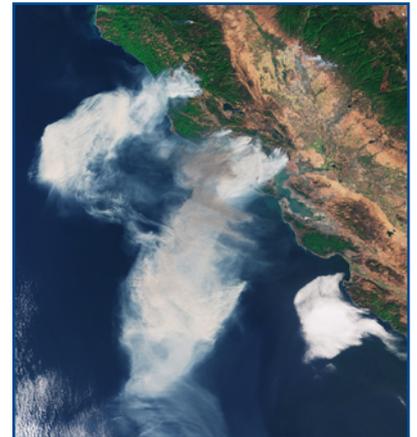
Led by the European Commission, Copernicus is the biggest Earth observation programme in the world. ESA is responsible for the space component, which includes developing the Sentinels. Each mission carries state-of-the-art technology to deliver a stream of complementary imagery and data tailored to the needs of Copernicus users. These first three missions have also each been designed as a two-satellite constellation to optimise data coverage and data delivery for Copernicus.

They provide a unique set of observations, starting with all-weather, day and night radar images from Sentinel-1A and Sentinel-1B, which were launched in April 2014 and April 2016, respectively. Sentinel-2A was launched on 23 June 2015 and Sentinel-2B followed on 7 March 2017. They carry high-resolution multispectral imagers to map changes vegetation, improve agricultural practices, detect pollution in lakes and coastal waters, and contribute to disaster mapping.

Sentinel-3A has been in orbit since 16 February 2016 and once launched, Sentinel-3B will complete the constellation. As well as supplying a wealth of data related mainly to the marine environment, the mission also provides unique and timely information for tracking wildfires.

While this constellation of satellite pairs is now almost complete, the Sentinel missions also include Sentinel-5P – a single satellite mission to monitor air pollution – which was launched on 13 October 2017. In the future, Sentinel-4 and Sentinel-5 will also focus on our atmosphere and Sentinel-6 will map the topography of the global ocean.

The Copernicus Emergency Management Service (EMS) service collaborates with the International Charter Space and Major Disasters for major crises outside the EU area. An agreement has been set up to exploit the advanced crisis mapping capability of the EMS to support Charter requests pertinent to European policy sectors.



The Copernicus Sentinel-3A satellite captured this image of smoke from wildfires in the US state of California on 9 October 2017.

Credit: Contains modified Copernicus Sentinel data (2017), processed by ESA.

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The Copernicus Sentinel missions.

Project Manager training in Myanmar and Sri Lanka

The role of the Project Manager (PM) is critical during Charter activations. The PM is the sole link between Charter member agencies, data suppliers, local disaster management authorities and data users. Given the importance of the role, Charter member agencies organise regular sessions to train and engage with PM candidates.

Sentinel Asia is a regional collaboration for Earth observation based emergency response in 31 Asia Pacific countries.

In 2009, the Charter established a mechanism with Sentinel Asia that allows request submissions from the Asian Disaster Reduction Centre on behalf of national users of Sentinel Asia. In this context, in 2017, JAXA organised two PM training events in Sentinel Asia member countries; one in Myanmar and one in Sri Lanka. Both countries are approved as Authorized Users of the Charter under the Universal Access programme. Universal Access allows national disaster management authorities to submit requests and access observations from satellites for disaster response.

The training in Myanmar was held on 19 September at the Relief and Resettlement Department of Myanmar in Nay Pyi Taw. The training in Sri Lanka was held at Disaster Management Center of Sri Lanka. Event participants are expected work as PMs if disaster strikes in their country and other Sentinel Asia member countries.



PM training participants in Myanmar.



PM training participants in Sri Lanka.

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