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| **Mississippi River** | **(title sequence)** |
| This is one of the world’s major river systems in size, habitat diversity and biological productivity.  Today we take a look at one of the longest rivers in North America.  **Welcome to Earth from Space.** | Show:  <https://www.gettyimages.it/detail/video/islands-on-the-mississippi-river-muscatine-iowa-usa-filmati-stock/1222684586?phrase=mississippi%20river>  Show:  <https://www.gettyimages.it/detail/foto/curving-road-along-mississippi-river-during-immagine-royalty-free/186409313?phrase=mississippi%20river> |
|  | ROLL INTRO CREDITS |
| The Mississippi River flows 3766 km from its source at Lake Itasca through the centre of the continental United States to the Gulf of Mexico. | Show:  <https://www.gettyimages.it/detail/video/river-traffic-on-the-mississippi-muscatine-iowa-usa-filmati-stock/1224261941?phrase=mississippi%20river&adppopup=true> |
| The area pictured here shows where the Mississippi straddles the states of Louisiana and Mississippi. | Show satellite image (pan from top to bottom) |
| This multi-temporal image combines three radar acquisitions from the Sentinel-1 mission taken 12 days apart to show changes in crop and land conditions over time. | (Continued) |
| Bright colours in the image come from changes on the ground that have occurred between acquisitions. | Show the brown box in the key |
| Water bodies, including the Mississippi River, visible in the far right,  and Catahoula Lake, in the far left, appear black as water surfaces reflect the radar signal away from the satellite. | Showing an overview of the image, can you highlight the river in the right  Then highlight the orange box in the key |
| If we take a closer look, we can see cargo ships travelling along the Mississippi. Ships from 7 April appear in red, those from 19 April appear in green, and those from 1 May appear in blue. | Zoom in as close as possible and follow direction of the blue arrow (showing the river) |
| White areas in the image indicate the various types of vegetation that surrounds the river, including the Kisatchie National Forest – the only national forest in Louisiana. | Pan over the pink box in the key |
| The Mississippi is a classic example of a meandering alluvial river with its loops and curls along its path leaving behind meander scars, cutoffs and free-standing ‘oxbow lakes’. | Zoom in close and pan over the green box in the key |
| The Mississippi River Basin is home to a variety of agricultural activity. Nutrient-rich soil from sediment deposits through the floodplain supports cropland close to the river and its tributaries. | Pan over yellow circle in the key |
| Rectangular fields in the image are cultivated land. The farming of cotton and soybean make up a significant portion of the area’s economic production. | Pan over yellow circle in the key (continued) |
| Sentinel-1A was the first satellite to be launched for Copernicus – the Earth observation component of the European Union’s space programme. | Show [Monitoring changing land with Sentinel-1](https://www.esa.int/ESA_Multimedia/Videos/2014/03/Monitoring_changing_land_with_Sentinel-1#.Y0Us6JbmArE.link) |

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| Looking ahead, the upcoming Sentinel-1C satellite is scheduled to lift off on ESA’s Vega-C rocket from Europe’s Spaceport in French Guiana in the first half of 2023. | Show images I sent you separately:  57405\_A4  57388\_A4  (Credits for these images should be:  ESA - M. Pedoussaut) |
| The satellite is now at Thales Alenia Space’s Cannes plant on the French Riviera after it successfully completed all integration tests this summer in Rome, Italy. | Show: [Sentinel-1C completes thermal vacuum tests](https://www.esa.int/ESA_Multimedia/Videos/2022/06/Sentinel-1C_completes_thermal_vacuum_tests#.Y0Us18YETjQ.link) |
| It will now undergo a final series of tests in Cannes, including radiofrequency performance checks in the facility’s anechoic chamber. | (Continued) |
| The satellite will continue the critical task of delivering key radar imagery for a wide range of services, applications and science. | Show the image:  57384\_A4  (Credits for these images should be:  ESA - M. Pedoussaut) |
|  | ROLL OUTRO CREDITS |