

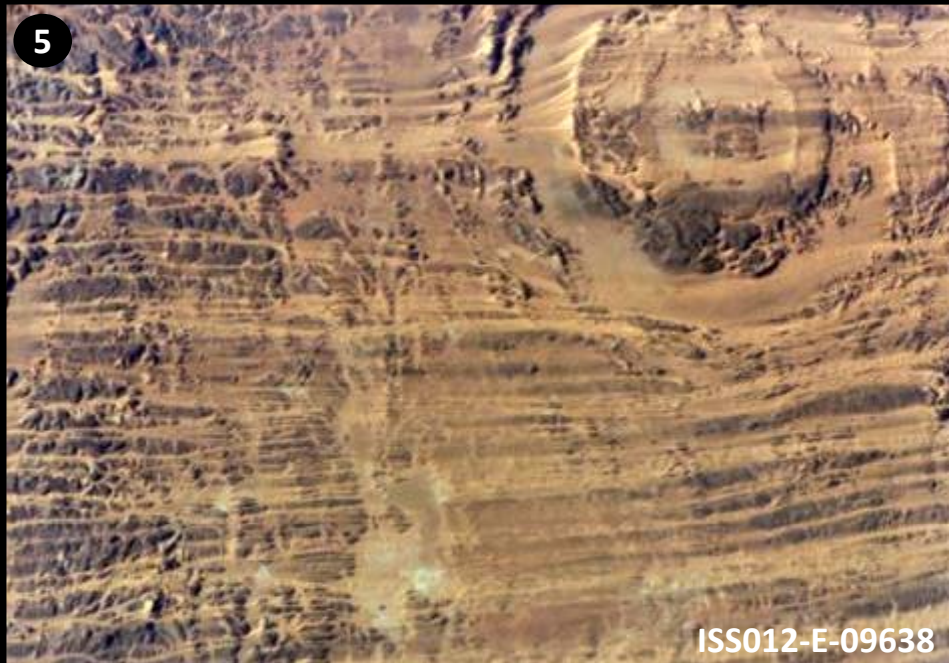
Expedition Earth and Beyond
ARES Education Program
NASA Johnson Space Center

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EARTH

AEOLIAN FEATURES



2 AEOLIAN FEATURE: SAND DUNES

Geographic Location: ALGERIA
Image ID#: STS070-705-94



- This astronaut image is showing a large area of orange colored sand dunes in Algeria called the Tifernine Dunes. This area is part of the Sahara desert. Drainage channels show where water once flowed through the area when the climate was wetter.
- **OTHER VISIBLE FEATURE(S):** Drainage channels

1 AEOLIAN FEATURE: SAND DUNES

Geographic Location: EGYPT
Image ID#: ISS017-E-020929



- This astronaut image is taken of an area in northern Egypt almost completely covered in sand dunes. This area, west of Cairo, is part of the Sahara Desert.
- **OTHER VISIBLE FEATURE(S):** Clouds, cloud shadows

4 AEOLIAN FEATURE: YARDANGS

Geographic Location: NAMIBIA
Image ID#: STS040-17-26



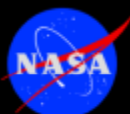
- This astronaut image is taken of yardangs in an area along the northern coast of Namibia called the Skeleton Coast.
- **OTHER VISIBLE FEATURE(S):** Coastline

3 AEOLIAN FEATURE: SAND DUNES

Geographic Location: UNITED STATES
Image ID#: ISS016-E-6986



- This astronaut image is taken of the Sangre de Cristo Mountains and sand dunes located in Great Sand Dunes National Park in Colorado.
- The mountains are outlined by dark green forests at lower elevations and white, snow-capped peaks at the highest elevations.
- **OTHER VISIBLE FEATURE(S):** Mountains, forests, snow



EARTH

AEOLIAN FEATURES

6 AEOLIAN FEATURE: YARDANGS

Geographic Location: NIGER
Image ID#: STS052-73-12



- This astronaut image is taken of yardangs in the Djado plateau of Niger. This area is located in the Sahara and is heavily eroded by wind.
- **OTHER VISIBLE FEATURE(S):** n/a

5 AEOLIAN FEATURE: YARDANGS

Geographic Location: CHAD
Image ID#: ISS012-E-09638



- This astronaut image is taken of wind eroded ridges (yardangs) that have modified a multi-ringed impact crater called Aorounga. The Aorounga crater is located to the southeast of Emi Koussi (a volcano not seen in this image) on the Tibesti mountains in Chad.
- **OTHER VISIBLE FEATURE(S):** Impact crater

8 AEOLIAN FEATURE: WIND STREAKS

Geographic Location: SUDAN
Image ID#: ISS013-E-18533



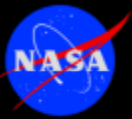
- This astronaut image showing numerous wind streaks is taken of an area affected by strong winds in the northern part of Sudan.
- **OTHER VISIBLE FEATURE(S):** Escarpments

7 AEOLIAN FEATURE: WIND STREAKS

Geographic Location: CHAD
Image ID#: ISS016-E-16058



- This astronaut image is taken of an area where a channel once flowed that is now affected by strong winds on the Tibesti mountains in Chad. This image is dominated by features created by effects of wind erosion.
- **OTHER VISIBLE FEATURE(S):** Channel (visible in the center of image)



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FLUVIAL FEATURES



2 FLUVIAL FEATURE: DRAINAGE NETWORK

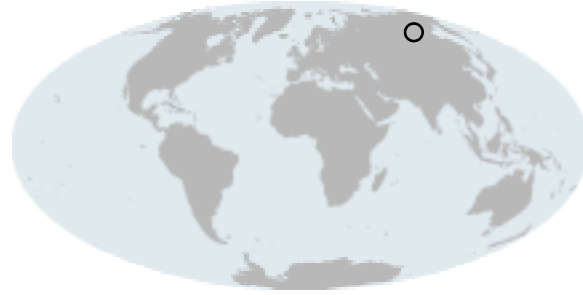
Geographic Location: CHAD
Image ID#: ISS018-E-7208



- This astronaut image is centered on a set of valley or drainage networks in Chad, Africa. In arid regions these drainage networks consist of a network of wadis. Wadis are channel-like features that are dry but have intermittent streamflow during periods of rain.
- **OTHER VISIBLE FEATURE(S):** n/a

FLUVIAL FEATURE: DRAINAGE NETWORK 1

Geographic Location: CHINA
Image ID#: ISS014-E-20488



- This astronaut image is centered on valley or drainage networks located in China. The dendritic pattern as seen in this image is common for these networks.
- **OTHER VISIBLE FEATURE(S):** Snow

4 FLUVIAL FEATURE: CHANNEL

Geographic Location: ARGENTINA
Image ID#: ISS010-E-5070



- This astronaut image is centered on the Parana River in northern Argentina just to the south of Paraguay. The Parana River is the third largest river in South America. Sun glint on the river gives it a silvery glow and allows varying currents to be visible.
- **OTHER VISIBLE FEATURE(S):** Urban area, channel islands, meander scars

FLUVIAL FEATURE: CHANNEL 3

Geographic Location: ARGENTINA
Image ID#: ISS012-E-13327



- This astronaut image is centered on the Bermejo River in northern Argentina. This river meanders along the dark green dense forests visible on both sides of its banks. The lighter green squares are agricultural areas.
- **OTHER VISIBLE FEATURE(S):** Forests, agricultural areas



EARTH

FLUVIAL FEATURES

6 FLUVIAL FEATURE: DELTA

Geographic Location: INDIA
Image ID#: STS032-72-61



- This astronaut image highlights a portion of the Krishna River Delta that flows into the Bay of Bengal in India. Sediment deposits are tan to brownish in color.
- **OTHER VISIBLE FEATURE(S):** River channel, sediment deposits, bay

FLUVIAL FEATURE: CHANNEL 5

Geographic Location: PERU
Image ID#: ISS007-E-14816



- This astronaut image is centered on the Ucayali River east of the Andes Mountains in Peru. This river is one of four rivers considered as the main headwater of the Amazon River.
- **OTHER VISIBLE FEATURE(S):** Oxbow lakes, meander scars

8 FLUVIAL FEATURE: DELTA

Geographic Location: EGYPT
Image ID#: STS077-718-56



- This astronaut image is centered on the Nile River Delta in Egypt. This area is where the Nile River spreads out and drains into the Mediterranean Sea.
- **OTHER VISIBLE FEATURE(S):** River channel, sea, clouds

FLUVIAL FEATURE: DELTA 7

Geographic Location: RUSSIA
Image ID#: STS059-213-65



- This astronaut image is centered on the Selenga River Delta flowing into Lake Baikal in Russia. Sunlight gives a silver-white sheen to the water surface of Lake Baikal. The Selenga River is the main river that stretches between Mongolia and Russia.
- **OTHER VISIBLE FEATURE(S):** Lake, river channels, clouds



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IMPACT FEATURES



2**IMPACT FEATURE: CRATER**

Geographic Location: CANADA
 Image ID#: ISS012-E-15881



- This astronaut image is centered on the Manicouagan Impact Crater located in Quebec, Canada. The rim of the crater is now filled with water and referred to as the Manicouagan reservoir. Part of the central mound of the crater is still visible.
- **OTHER VISIBLE FEATURE(S):** Reservoir or lakes

1**IMPACT FEATURE: CRATER**

Geographic Location: NAMIBIA
 Image ID#: ISS006-E-16068



- This astronaut image is taken of the Roter Kamm Impact Crater, found in the Namib Desert in Namibia.
- **OTHER VISIBLE FEATURE(S):** Sand dunes, mountains

4**IMPACT FEATURE: CRATER**

Geographic Location: UNITED STATES
 Image ID#: ISS014-E-15775



- This astronaut image is centered on Barringer Crater (also known as Meteor Crater) located in northern Arizona. It is one of the best-known impact craters in the world.
- **OTHER VISIBLE FEATURE(S):** River channel, wind streak

3**IMPACT FEATURE: CRATER**

Geographic Location: LIBYA
 Image ID#: ISS014-E-11841



- This astronaut image is centered on the Oasis Impact Crater found in the Sahara Desert in Libya.
- **OTHER VISIBLE FEATURE(S):** n/a

**EARTH****IMPACT FEATURES****6****IMPACT FEATURE: CRATER**

Geographic Location: AUSTRALIA
 Image ID#: ISS015-E-17360



- This astronaut image is centered on Gosses Bluff, an impact crater located in Australia's Northern Territory.
- **OTHER VISIBLE FEATURE(S):** River channel

5**IMPACT FEATURE: CRATER**

Geographic Location: ALGERIA
 Image ID#: ISS014-E-19496



- This astronaut image shows the Ouarkiz Impact Crater and sedimentary layers located in western Algeria close to the border of Morocco.
- **OTHER VISIBLE FEATURE(S):** Sedimentary rocks & layers, small circular hills

8**IMPACT FEATURE: CRATER**

Geographic Location: INDIA
 Image ID#: ISS018-E-23713



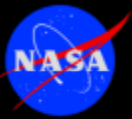
- This astronaut image is centered on the Lonar Impact Crater located in Central India. The central portion of this crater is now filled with water.
- **OTHER VISIBLE FEATURE(S):** Lake, agricultural fields, urban area

7**IMPACT FEATURE: CRATER**

Geographic Location: MAURITANIA
 Image ID#: ISS018-E-14908



- This astronaut image is centered on the Tenoumer Impact Crater located in the Sahara Desert in Mauritania.
- **OTHER VISIBLE FEATURE(S):** n/a



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VOLCANIC FEATURES



2 VOLCANIC FEATURE: VOLCANOES

Geographic Location: RUSSIA
Image ID#: STS61A-45-98



- This astronaut image includes two of more than 100 volcanoes that exist in this region. These snow covered volcanoes are located in the Kamchatka Peninsula in Russia. This area is part of the “Ring of Fire” and has many active volcanoes.
- **OTHER VISIBLE FEATURE(S):** Caldera, lava drainage channels, snow, lake

VOLCANIC FEATURE: VOLCANOES 1

Geographic Location: UNITED STATES
Image ID#: ISS013-E-24184



- This astronaut image captured the beginning of an eruption of a stratovolcano in Alaska called the Cleveland Volcano. Carlisle Island, another volcano, is visible in the upper left hand portion of the image.
- **OTHER VISIBLE FEATURE(S):** Ash plume, central vent, ocean, snow

4 VOLCANIC FEATURES: VOLCANO, CALDERA, LAVA FLOWS

Geographic Location: CHAD
Image ID#: ISS016-E-8402



- This astronaut image shows the Emi Koussi Volcano located at the south end of the Tibesti Mountains in Chad. Extensive lava flows are visible all around the volcano.
- **OTHER VISIBLE FEATURE(S):** n/a

VOLCANIC FEATURES: VOLCANOES, CALDERAS, LAVA FLOWS 3

Geographic Location: SAUDI ARABIA
Image ID#: ISS016-E-034524



- This astronaut image is taken of a volcanic field in Saudi Arabia. There are volcanoes of different sizes, shapes, and chemical compositions. Lava flows vary in color. Features that look like impact craters were actually caused by volcanic eruptions in the presence of water (some of which are now filled with light-colored sand and silt).
- **OTHER VISIBLE FEATURE(S):** n/a



EARTH

VOLCANIC FEATURES

6 VOLCANIC FEATURES: LAVA FLOWS, CALDERA

Geographic Location: UNITED STATES
Image ID#: ISS017-E-013065



- This astronaut image shows lava flows on either side of the summit caldera of the tallest volcano on Earth. Mauna Loa, located on the Big Island of Hawaii rises ~9 km (~5.6 mi) above the sea floor.
- **OTHER VISIBLE FEATURE(S):** Clouds

VOLCANIC FEATURE: CALDERA 5

Geographic Location: SUDAN
Image ID#: ISS018-E-6051



- This astronaut images is taken of the Deriba Caldera, a dormant volcanic structure located at the top of the Marra Mountains in western Sudan. Numerous drainage networks are visible around the caldera. Within the caldera are two inner volcanic depressions called craters.
- **OTHER VISIBLE FEATURE(S):** Drainage networks, inner crater lakes

8 VOLCANIC FEATURE: LAVA FLOWS

Geographic Location: CHAD
Image ID#: ISS016-E-035095



- This astronaut image shows distinct, dark lava flows of the Tousside Peak Volcano in Chad. The Tousside Peak Volcano (not shown in this image) is the westernmost volcano of the Tibesti Mountains in northwestern Chad.
- **OTHER VISIBLE FEATURE(S):** n/a

VOLCANIC FEATURE: LAVA FLOWS 7

Geographic Location: ETHIOPIA
Image ID#: ISS017-E-5656



- This astronaut image shows distinct, dark lava flows in the Afar volcanic region of Ethiopia. Although not visible in this image, three large volcanoes are located to the north of these lava flows.
- **OTHER VISIBLE FEATURE(S):** n/a