

ENGAGE IN A SHARED DIALOGUE BETWEEN NAVAJO & NASA

Not to Scale

JÓHONAA'ÉÍ

THE SUN

The Sun pushes out parts of itself as energetic particles like a wind which envelops the Earth and all other planets.

Johonaa'éei binilch'i bee bits'ánijilgish éí Nahasdzáán, so', nilch'i yee yik'inideitih.

The Sun and Earth both have changing electromagnetic fields and through these fields they communicate.

NAHASDZÁÁN
EARTH

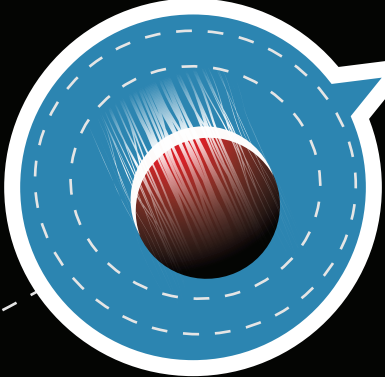
Johonaa'éei dóo Nahasdzáán atsinil'ish dóo adinidíin yee alk'inágish dóo yee ahil halne.

EARTHSAURORA

Electromagnetic fields get out of balance. The Sun restores balance to its electromagnetic fields through a solar storm near sunspots that releases energy and/or mass outward.

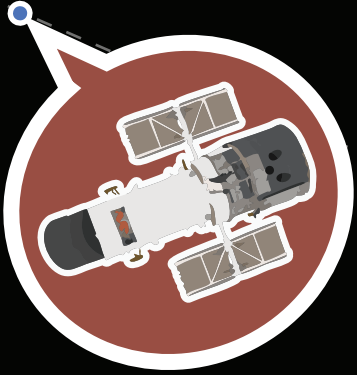
Johonaa'éei biko' bee adinidíin ak'iji' dóo ats'áájigo atsinilt'ish bil' silá yee nahaná / yee ahidiyoolnáál doo akwe'é silkid da yileghgo. Johonaa'éei biko' bee adinidíin yéigo bee bits'á nijilgishgo chahahleq biyi'di shá binilch'i bee bits'á niyolígíi atsinilt'ish yii dii ch'íid.

MÁAZ
MARS



MARS AURORA

The electromagnetic fields we live in protect us from outside sources of harmful energy.

**HUBBLE**
NASA MISSION SATELLITE

Nahasdzáán Góol

NAHASDZÁÁN
BI NAAALWOŁÍGGÍ
THAT WHICH MOVES AROUND THE EARTH

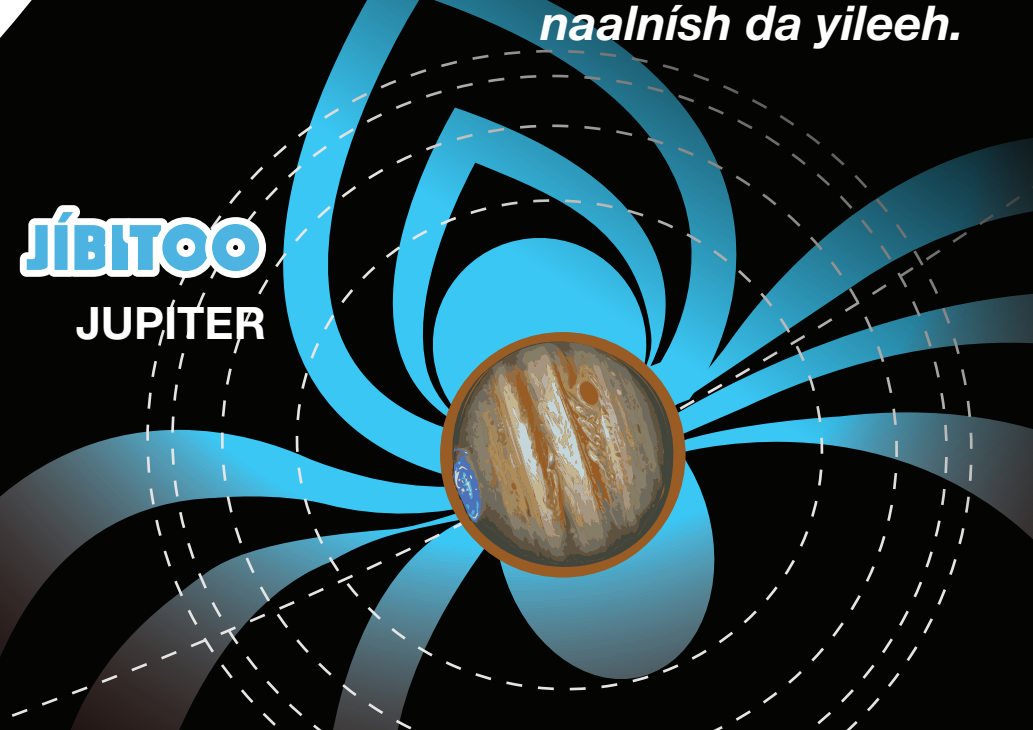
Atsinilt'ish dóo adinidíin, éí nihaa'áhalyá t'áa ha'át'ii shíi dóo nihá ya'át'ééh'ígíi dah shéegish'ígíi nihits'ąąhji'kóyosin.

SATURN'S AURORA

Storms in space can disrupt the balance of satellites and radio communications. The technology we use every day, like the internet or cell phones, can be disrupted by solar storms.

Johonaa'éei yéigo biko' bits'á jilgish yileehgo ko' bee adziit yileehgo béesh bee hane'i dóo béesh naat'a'ii halne'é bee hane'á ą tayooghas dóo hazhó'ó naalnish da yileeh.

JÉETOO
JUPITER

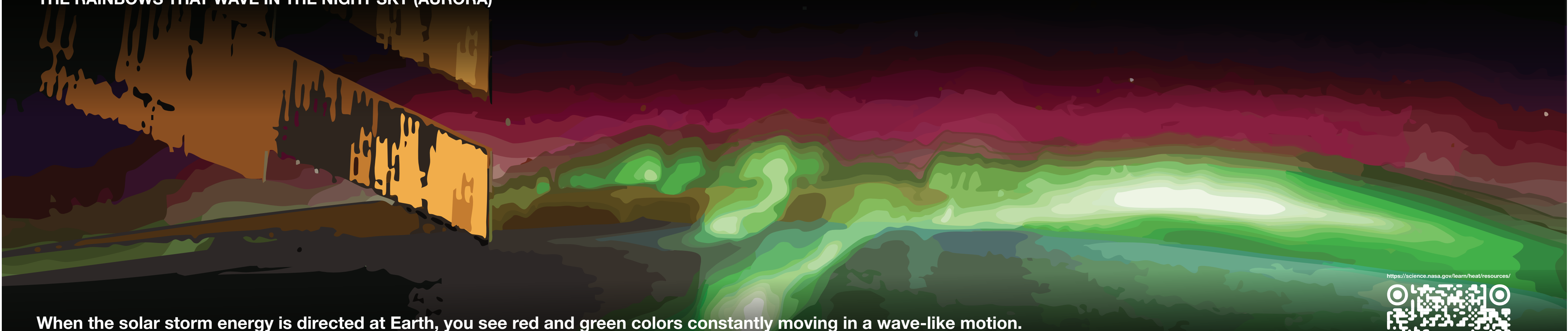


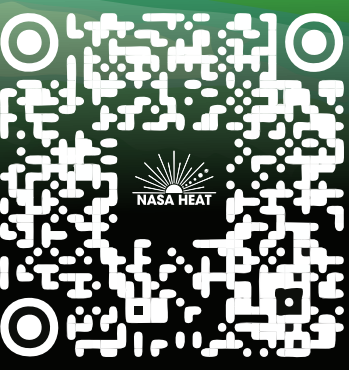
JUPITER'S AURORA

YÁDILHIL NÁÁTS'ÍLID YILNAAGIZH
THE RAINBOWS THAT WAVE IN THE NIGHT SKY (AURORA)

When the solar storm energy is directed at Earth, you see red and green colors constantly moving in a wave-like motion.

Shá binilch'i bee bits'á niyolígíi atsinilt'ish Nahasdzáán bik'iji ayiil'igo, éí binahj doot'i'izh dóo łichí'go naashch'ąą'go náats'ílid nahalingo t'ée'go anidil'ijingo yit'.





<https://science.nasa.gov/team/teal/resources/>

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NAHASDZÁÁN SO' DÓO NILCH'I DÓO JOHONAA'ÉI YI NA KA

THE PLANETS GOING AROUND OUR SUN (THE SOLAR SYSTEM)

The Sun is the center of the solar system of which we are a part.

Nahasdzáán so' dóo nilch'i dóo Johnaa'éei ałnii'gi sí ágo bináákago ahít naalnish.

The Sun's gravity holds the Earth and other planets in our solar system in orbit. The Earth goes through a yearly cycle of four seasons while the Sun goes through a cycle of two phases over 11 years – a minimum and a maximum.

Nahasdzáán dóo Yádilhił biyij' yee ahótą'igii yee bidziilgii naalnish. Nahasdzáán bikáa'gi éi yá, daan, shj, aak'ee, hai náhoodleet bąąh yiszjįd. Johnaa'éei éi ta'ts'adah nináháháago yéigo nániidoh bita'gii t'éiya doo yéigo nániidoh da. Johnaa'éei naaki yee ałąą' at'éego naagháh.

SOLAR FLARES

We can see dark spots on the Sun that are cooler using telescopes. There are more spots in the maximum season and fewer in the minimum.

Johnaa'éei ta'ts'adah nináháháa góne' yéigo nániigah bitahgi éi doo t'áa iiyisii sidoda ndi doo neezgai da. Yéigo sidogo éi t'óó'ahayói díłhiłgo danimazgo bikaá'yistlish naleehigii t'áa iishjáni ayiit'įi. Doo t'áa iiyisii sidogo éi yistlishigii t'áa alch'idi yíleeh.

SUN SPOTS

The Sun is the most massive of everything in the solar system.

So dóo nilch'i éi t'áa' ádaalts'isi bináákah.

CORONAL MASS EJECTIONS

The Sun gives off energy as light, of which we can see a small portion but can feel much more.

Johnaa'éei bíbee adinidíin áá'ats'isigo bee iit'ligo ánihi't'iilyaa. Akondi Johnaa'éei bee adinidíin yee bidziilgii bee á t'é niidziin.

SOLAR RADIATION

The electromagnetic spectrum describes the range of light energies that any heated object gives off, including us and everything on Earth.

AARONYAZZIE
MECHANICAL ENGINEER

Johnaa'éei atsinilt'ish yee hadit'é éi yéé naalnish dóo bee adinidíin yee bidziilgii kodi t'áa altsó yiniildoh, nihi atah.

Electromagnetic spectrum visualization

The Sun is a massive ball of hot particles, like all stars, and forged from the same material as us.

Johnaa'éei bíbee adziilisdogo t'áa also yee hadit'é, so' yee hadit'e, so' yee hadit'éhigii nihidó bee hadinii'e.

QR code linking to NASA resources

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NASA



NIŁGHI

AIR / ATMOSPHERE

Astronauts in space are outside the protective atmosphere and electromagnetic fields of Earth. To protect them, NASA has to make artificial shields to keep them safe from solar energy.

Wót'áahgoo alnaadaakahígíí dóó béesh nidaat'a'ígíí yee ádaa'áhalyanígíí dabi'ée'ígíí t'áá Johonaa'éei yéigo sidogo t'áá binyé ádaalyaa yee ádaa'áhátá. Haalá Johonaa'éei dóó atsinilt'ish wódáadi baa at'é hóló.

YÁDIIHE

DARK OUTER SPACE / UNIVERSE

Scientists monitor the Sun's energy interacting with the Earth to understand and predict future solar storms.

T'áá sahdii Johonaa'éei nídeelkaahígíí, Johonaa'éei anáádoolníł'ígíí náásgó Nahasdzáán bikaá'iji' yee bił béehózin.



WEATHER



HEAT

The Sun is the source of all energy on Earth.

Johonaa'éei Nahasdzáán yił naalnish. Johonaa'éei bi bee'adziil Nahasdzáán yee bidziilgo anáyil'ijh.



OZONE

Changes in the Sun's energy will change the Earth's energy.

Humans may not be sensitive enough to detect these changes, but plants and animals do.

Bikaa'gi al'aq' ánafooniił nanise' dóó naaldłqoshii Johonaa'éei bee al'aq' ánafooniiłigił bił béehózin. Diné dóó ayóó bił béehózin da.

HADO BEE BIDZIIL
HEAT MAKES ENERGY

