

 An official website of the United States government
[Here's how you know](#)

{ NASA APIs }

Welcome to the NASA API portal. The objective of this site is to make NASA data, including imagery, eminently accessible to application developers. This catalog focuses on broadly useful and user friendly APIs and does not hold every NASA API.

[Get Started](#)

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Generate API Key



{ APIs }

...

nfU3RVhrltBaoTez42hpvcMK2wkCCjk4cNf6fLIL

You can start using this key to make web service requests. Simply pass your key in the URL when making a web request. Here's an example:

https://api.nasa.gov/planetary/apod?api_key=...

For additional support, please [contact us](#). When contacting us, please tell us what API you're accessing and provide the following account details so we can quickly find you:

Account Email: mr.umair.ali3@gmail.com

Account ID: 9e7cd553-40f3-4bb8-aefb-85c8977ac097

Authentication

You do not need to authenticate in order to explore the NASA data. However, if you will be intensively using the APIs to, say, support a mobile application, then you should sign up for a [NASA developer key](#).

Web Service Rate Limits

Limits are placed on the number of API requests you may make using your API key. Rate limits may vary by service, but the defaults are:

- Hourly Limit: 1,000 requests per hour

For each API key, these limits are applied across all api.nasa.gov API requests. Exceeding these limits will lead to your API key being temporarily blocked from making further requests. The block will automatically be lifted by waiting an hour. If you need higher rate limits, contact us.

DEMO_KEY Rate Limits

In documentation examples, the special DEMO_KEY api key is used. This API key can be used for initially exploring APIs prior to signing up, but it has much lower rate limits, so you're encouraged to signup for your own API key if you plan to use the API (signup is quick and easy). The rate limits for the DEMO_KEY are:

- Hourly Limit: 30 requests per IP address per hour
- Daily Limit: 50 requests per IP address per day

How Do I See My Current Usage?

You can check your current rate limit and usage details by inspecting the `X-RateLimit-Limit` and `X-RateLimit-Remaining` HTTP headers that are returned on every API response. For example, if an API has the default hourly limit of 1,000 request, after making 2 requests, you will receive this HTTP header in the response of the second request:

```
X-RateLimit-Remaining: 998
```

The hourly counters for your API key reset on a rolling basis.

Example: If you made 500 requests at 10:15AM and 500 requests at 10:25AM, your API key would become temporarily blocked. This temporary block of your API key would cease at 11:15AM, at which point you could make 500 requests. At 11:25AM, you could then make another 500 requests.

Anyone can register for an api.nasa.gov key, which can be used to access data across federal agencies.

API Key Recovery

Please [contact us](#) for help recovering an old API key 

Browse APIs



APOD: Astronomy Picture of the Day 

Asteroids NeoWs: Near Earth Object Web Service 

DONKI: Space Weather Database Of Notifications, Knowledge, Information 

Earth: Unlock the significant public investment in earth observation data 

EONET: The Earth Observatory Natural Event Tracker 

EPIC: Earth Polychromatic Imaging Camera 

Exoplanet: Programmatic access to NASA's Exoplanet Archive database 

GeneLab: Programmatic interface for GeneLab's public data repository website 

Insight: Mars Weather Service API 

InSight: Mars Weather Service API

(Last Updated: 3/30/2021)

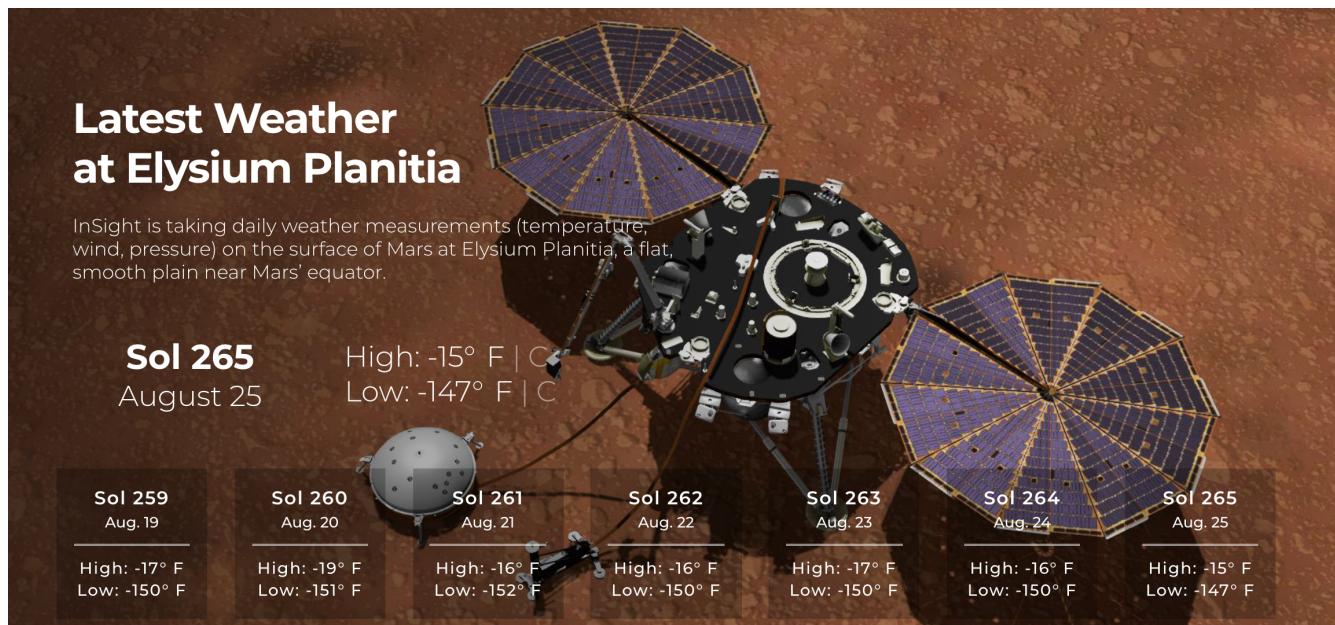
THIS SERVICE HAS SIGNIFICANT MISSING DATA DUE TO INSIGHT NEEDING TO MANAGE POWER USE:

Please check out the [seasonal weather report plot](#) for an illustration of missing data and read [this article](#) about how dust and distance from the sun affect Insight's power situation.

NASA's InSight Mars lander takes continuous weather measurements (temperature, wind, pressure) on the surface of Mars at Elysium Planitia, a flat, smooth plain near Mars' equator. Please note that there are sometimes problems with the sensors on Mars that result in missing data! If you see a long gap, a search result may bring up more information on whether it is a long-lasting problem. Summaries of these data are available at <https://mars.nasa.gov/insight/weather/>.

This API provides per-Sol summary data for each of the last seven available Sols (Martian Days). As more data from a particular Sol are downlinked from the spacecraft (sometimes several days later), these values are recalculated, and consequently may change as more data are received on Earth. Additionally, please note that wind and other sensor data may not exist for certain date ranges. You can check out <https://mars.nasa.gov/insight/weather/> and scroll down to the 'seasonal weather report' you'll see the gaps where no data exists for some sensors.

Example image:



This API is maintained and provided by NASA Jet Propulsion Laboratory and Cornell University. If you find bugs in this API, please use the contact form found at <https://mars.nasa.gov/feedback/>. The rate limit for this API is every hour no more than 2000 hits for each individual IP.

Defining the Data

The summary data are provided as an object in a JSON stream, a formal definition of JSON is [RFC 7159](#). Appendix A contains an abridged, typical JSON stream for this API as an example.

HTTP Request

```
GET https://api.nasa.gov/insight_weather/?  
api_key=DEMO_KEY&feedtype=json&ver=1.0
```

Query Parameters

Parameter	Type	Default	Description
version	float	1.0	The version of this API
feedtype	string	json	The format of what is returned. Currently the default is JSON and only JSON works.

Parameter	Type	Default	Description
api_key	string	DEMO_KEY	api.data.gov key for expanded usage

Example query

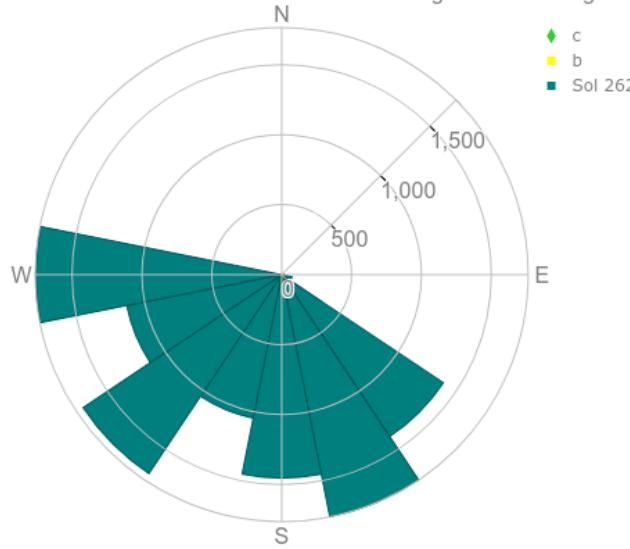
https://api.nasa.gov/insight_weather/?api_key=DEMO_KEY&feedtype=json&ver=1.0

[This document](#) describes the API in more detail.

[This self-contained HTML document](#) is an example that draws a wind rose using InSight Wind Direction frequency distribution data, which data are part of the JSON object returned by this API.

Here is something like what that wind rose looks like:

Wind Direction Distribution on Sol 262 at InSight Mars landing site



Most common wind direction is from SSE

Mars Rover Photos: Image data gathered by NASA's Curiosity, Opportunity, and Spirit rovers on Mars +

NASA Image and Video Library: API to access the NASA Image and Video Library site at images.nasa.gov +

TechTransfer: Patents, Software, and Tech Transfer Reports +

Satellite Situation Center: System to cast geocentric spacecraft location information into a framework of (empirical) geophysical regions +

SSD/CNEOS: Solar System Dynamics and Center for Near-Earth Object Studies +

Techport: API to make NASA technology project data available in a machine-readable format +

TLE API: Two line element data for earth-orbiting objects at a given point in time +

Vesta/Moon/Mars Trek WMTS: A Web Map Tile Service for the Vesta, Moon, and Mars Trek imagery projects +

If you find a bug, please note that this page acts as a central catalog and key service for public APIs. It does not hold the actual API code. For bugs in the APIs, please look for a link to the individual API pages and reach out there. For a problem in this page, please add an issue or pull request to the [GitHub repository](#).

code.nasa.gov

data.nasa.gov

api.nasa.gov



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