Welcome to the NASA STI Repository OpenAPI

Getting Started

I) Overview

This OpenAPI is managed by The NASA Scientific and Technical Information (STI) Program. In an effort to disseminate publicly available NASA research and development to the widest audience possible, we promote the ability for partners and peers to harvest data from the STI Repository. In support of this objective, we maintain an OpenAPI service to provide greater access to publicly available data and further flexibility for dissemination of NASA research results.

The NASA STI Repository OpenAPI is a *[RESTful web service](#), accessible via HTTP protocol at a defined set of URLs, with data returned as JSON-encoded responses. A formal definition of JSON is *[RFC 7159](#). Examples of Request URLs, queries, and responses are available in the following documentation for reference.

If you experience any issues in this API, please contact us by using the [NASA STI Information Desk](#) form.

(* : Links with an asterisk are not maintained by NASA)

II) Terms of Service

The NASA STI Repository, the OpenAPI, and the information contained are services provided by NASA's Scientific and Technical Information (STI) Program. The OpenAPI service, through which you may access publicly available NASA STI data, is subject to these terms, and use of the OpenAPI constitutes acceptance of this agreement.

The NASA STI Repository OpenAPI, https://ntrs.nasa.gov/api/openapi/, serves out unlimited, unclassified, publicly available NASA citations. Persons, organizations, and sites interested in obtaining

NASA information should review [Disclaimers, Copyright Notice, Terms and Conditions of Use](#) for additional guidance.

By accessing or using our APIs, you are agreeing to the terms below. If there is a conflict between these terms and additional terms applicable to a given API, the additional terms will control for that conflict. Collectively, we refer to the terms below, any additional terms, terms within the accompanying API documentation, and any applicable policies and guidelines as the "Terms." You agree to comply with the Terms and acknowledge their control of your relationship with us. Therefore, please read all Terms carefully. The NASA STI Program reserves the right to change the terms at any time, and it is the responsibility of the party accessing the API to review and ensure understanding.

Accepting the Terms of Service

You may not use the APIs and may not accept the Terms if you are a person barred from using or receiving the APIs under the applicable laws of the United States or other countries including the country in which you are resident, or from where you use the API.

Registration

To access certain APIs, you may be required to provide certain information for registration. This can include, but is not limited to, your contact details. This information is used for the registration process, and you are required to ensure accuracy and upkeep of the information provided to the NASA STI program.

Access

You will only access, or attempt to access, the API by the methods described in the API documentation. You will not misrepresent or mask either your identity or your API Client's identity when using the API.

Attribution

While not required, when using content, data, documentation, code, and related materials from the STI Repository in your own work, we ask that proper credit be given. Provided below is an example citation:

Data provided by NASA Scientific and Technical Information Program (https://ntrs.nasa.gov/api/openapi/)

API Monitoring

This system is monitored to ensure proper operation and adherence to security protocols, and anyone using this system expressly consents to such monitoring. Unauthorized attempts to modify any information stored on this system, to defeat or circumvent security features, or to utilize this system for other than its intended purposes are prohibited. Careful attention to the contents of the metadata files associated with the data to evaluate limitations, restrictions or intended use is required. NASA shall not be held liable for improper use of the data.

Privacy

You will comply with all applicable privacy laws and regulations.

Limitations

The OpenAPI provides publicly available data and does not require authentication. The rate limit is 500 requests per 15 minutes and there is a cap at 10,000 records retrieved per query. If additional data is required, please visit the [Harvesting Data from the NASA STI Repository page](#) for more information and access to the Bulk Records Download tool.

Full-text downloads are available by accessing the endpoints described below in Section III "Paths." NASA's expectations for use of full-text downloads are as follows:

a. *Redistributions*: Check the Redistributions endpoint regularly **(weekly at minimum)** for changes in the document availability. When a document or record is redistributed and becomes unavailable, it is expected that any copies be removed and the data be resynced. See the section on Redistributions (Section V) to understand the behavior and use.

b. *Full-text Sharing*: Use the citation URL for a record whenever possible (i.e. ntrs.nasa.gov/citations/{id}), rather than a full-text copy or download link. This will not only ensure that your data is pointing to the most updated version of the record, but it will also decrease the risk of non-compliance with the Terms of Service and Redistributions terms. Additionally, it will help prevent abuse and maintain the cost of services provided by the NASA STI Program, helping ensure NASA information can continue to be disseminated appropriately.

Right to Limit

Your use of the OpenAPI may be subject to certain limitations on access, calls, or use as set forth within this Agreement or otherwise provided by NASA. These limitations are designed to manage load on the system, promote equitable access, and prevent abuse. If NASA reasonably believes that you have attempted to exceed or circumvent these limits, your ability to use the OpenAPI may be temporarily or permanently restricted. NASA may monitor your use of the OpenAPI to improve the service or to ensure compliance with this Agreement.

Feedback

You may submit feedback or suggestions for the API via our NASA STI Information Desk. Feedback does not equate to guaranteed development. API enhancements will be announced via the API documentation.

Ownership

NASA does not acquire ownership in your API Clients, and by using NASA STI APIs, you do not acquire ownership of any rights in our APIs.

III) Paths

The root endpoint is **https://ntrs.nasa.gov/api**
Use the available paths listed below to access the repository data:

Path	Description
GET /health	Retrieve the health status of the OpenAPI service
GET /auth/user	User authentication
POST /citations/search	Retrieve citations based on URL request body parameters
POST /pubspace/search	Retrieve PubSpace citations based on URL request body parameters
GET /citations/redistributions	Retrieve records redistributed to a new audience
GET /citations/autocomplete	Citation autocomplete
GET /citations/{id}	Retrieve citation of a specified document
GET /citations/{id}/downloads	Retrieve links to download a specified document
GET /citations/{id}/downloads/{filename}	Download a specified document

IV) Citations Search and Response

a. Citation Metadata

For definitions of the metadata retrieved in citations and some of the domain values, see the **NASA STI OpenAPI: Data Dictionary**.

b. Query Parameters

Use the following search parameters to return citations. Note that some parameters, such as author, center, or keyword, are case sensitive; See Domain Values (**NASA STI OpenAPI: Data Dictionary**) for additional reference.

Parameter	Data Type	Definition
abstract	string	Abstract; A concise, accurate summary of the content of the document
author	string	Author Name
center	string	NASA Center where the STI originates; [LaRC, GSFC, etc.]
created		Date the record was created in STRIVES
gt	string	greater than (after date)
gte	string	greater than or equal to (on or after date indicated)
lt	string	less than (before date)
lte	string	less than or equal to (on or before date indicated)
format	string	date format of the query
disseminated	stringEnum	Indicates whether the metadata and/or the document has been released to the NASA STI Repository; [METADATA_ONLY, DOCUMENT_AND_METADATA]
fundingNumber	string	Funding number
highlight	boolean	Highlighter
keyword	string	Keywords assigned to the STI
modified	string	Date the record has been modified after release
organization	string	Author Employer Name
page		Page results
size	number	Maximum number of items to be returned in result set (up to 100)
from	number	Specify an arbitrary offset at which to start retrieving results
published		Publication Date (for records available in official publications)
gt	string	greater than (after date)
gte	string	greater than or equal to (on or after date indicated)
lt	string	less than (before date)
lte	string	less than or equal to (on or before date indicated)
format	string	date format of the query
q	string	Free-text query
reportNumber	string	Report Number
sort		Sort results
field	string	Sort results by field specified
order	stringEnum	Sorted results in ascending or descending order; [asc, desc]
stiType	stringEnum	STI Type; Term describing the nature of the document
stiTypeDetails	string	Additional details for records that are STI Type: Other
subjectCategory	string	NASA Subject Categories assigned to the STI
title	stringEnum	Title of STI

c. Example Request URLs

Parameter	Example Request URL
abstract	https://ntrs.nasa.gov/api/citations/search?abstract=Microheater
author	https://ntrs.nasa.gov/api/citations/search?author=Mark%20Schoenenberger
center	https://ntrs.nasa.gov/api/citations/search?center=LaRC
created	https://ntrs.nasa.gov/api/citations/search?created.gt=2020-01-01
disseminated	https://ntrs.nasa.gov/api/citations/search?disseminated=DOCUMENT_AND_METADATA
fundingNumber	https://ntrs.nasa.gov/api/citations/search?fundingNumber=NNA14AB82C
keyword	https://ntrs.nasa.gov/api/citations/search?keyword=International%20Space%20Station
organization	https://ntrs.nasa.gov/api/citations/search?organization=Langley%20Research%20Center
page	https://ntrs.nasa.gov/api/citations/search?keyword=ISS&page.size=25
published	https://ntrs.nasa.gov/api/citations/search?published.gt=2020-01-01
q	https://ntrs.nasa.gov/api/citations/search?q=Microheater
reportNumber	https://ntrs.nasa.gov/api/citations/search?reportNumber=ICES-2020-374
sort	https://ntrs.nasa.gov/api/citations/search?keyword=ISS&sort.field=id&sort.order=asc
stiType	https://ntrs.nasa.gov/api/citations/search?stiType=CONFERENCE_PROCEEDINGS
subjectCategory	https://ntrs.nasa.gov/api/citations/search?subjectCategory=Astronomy
title	https://ntrs.nasa.gov/api/citations/search?title=Microheater

d. Example Query and Citation Response

Path: POST /citations/search

Query (Plain Text): "Retrieve NASA STI records published after 2020 with the Subject Category of Astronomy. Sort the results by Document ID in ascending order."

Query (Executed):

```
{
 "published": {
  "gt": "2020"
 },
 "subjectCategory": [
  "Astronomy"],
 "sort": {
  "field": "id",
  "order": "asc"
 }
}
```

Citation Response:

```
{
```

```
"stats": {
 "took": 679,
 "total": 41,
 "estimate": false,
 "maxScore": 0
},
"results": [
 {
  "_meta": {
   "score": 0
  },
  "copyright": {
   "licenseType": "NO",
   "determinationType": "PUBLIC_USE_PERMITTED",
   "thirdPartyContentCondition": "NOT_SET"
  },
  "subjectCategories": [
   "Astronomy"
  ],
  "exportControl": {
   "ear": "NO",
   "category": 0,
   "itar": "NO"
  },
  "distributionDate": "2020-01-22T14:23:38.2430000+00:00",
  "otherReportNumbers": [
   "ARC-E-DAA-TN75923"
  ],
  "fundingNumbers": [
   {
    "number": "NNX17AK23A",
    "type": "CONTRACT_GRANT"
   }
  ],
  "title": "A Demonstration that Correcting for Completeness and Reliability Is Critical for Robust
Occurrence Rates",
  "stiType": "CONFERENCE_PAPER",
  "distribution": "PUBLIC",
  "submittedDate": "2020-01-16T10:45:05.3500000+00:00",
  "authorAffiliations": [
   {
    "sequence": 0,
    "submissionId": 20200000325,
    "meta": {
     "author": {
      "name": "Bryson, S."
     },
     "organization": {
      "name": "NASA Ames Research Center",
      "location": "Moffett Field, CA, United States"
     }
    },
    "id": "6676df822a684902a70b98f7d962143a",
```

```json
      "primary": true
    },
    {
      "sequence": 1,
      "submissionId": 20200000325,
      "meta": {
        "author": {
          "orcidId": "0000-0003-1634-9672",
          "name": "Coughlin, J."
        },
        "organization": {
          "name": "Search for Extraterrestrial Intelligence (SETI) Institute",
          "location": "Mountain View, CA, United States"
        }
      },
      "id": "978fa2da40064f97b333ebc0017a2611",
      "primary": false
    }
  ],
  "stiTypeDetails": "Conference Paper",
  "technicalReviewType": "NASA_TECHNICAL_MANAGEMENT",
  "id": 20200000325,
  "created": "2020-01-16T10:45:05.3500000+00:00",
  "center": {
    "code": "ARC",
    "name": "Ames Research Center",
    "id": "4540cd94d24c4bf29f8773a27faf96b2"
  },
  "onlyAbstract": true,
  "sensitiveInformation": 2,
```
  "abstract": "A measurement of planetary occurrence rates based on a planet catalog should be robust against details of how initial detections were classified as planets or false positives. This is accomplished by supplying the catalog's rate of missed planets (completeness) and rate of non-planets incorrectly called planets (reliability). The final Kepler data release (DR25) includes products that can be used with the DR25 planet candidate catalog to correct for completeness and reliability in occurrence rate estimates. This is made possible by the Kepler Robovetter, which algorithmically and uniformly selects planets based on a variety of metrics and thresholds. Completeness, reliability, and occurrence rates potentially depend on these Robovetter thresholds. We study the impact of varying these vetting thresholds using the techniques of Bryson et al. 2019 (arXiv:1906.03575). We explore sets of thresholds that result in more or fewer planets (trading off completeness for reliability), as well as thresholds tuned to pass DR25 false positives identified as possible planets by the Kepler False Positive Working Group. We find that when correcting only for completeness, and not reliability, the resulting occurrence rates have a strong dependence on these threshold sets. For example, the value of SAG13 eta-Earth varies by over a factor of 4 when not corrected for reliability. However, when correcting for both completeness and reliability, occurrence rates using our threshold sets are statistically indistinguishable, with differences being well inside 1-sigma error bars. We present occurrence rates integrated over several period-radius ranges. For example, SAG13 eta-Earth is consistent with 0.127 (+0.094)(-0.054) (from Bryson et al. 2019) for all the Robovetter threshold sets. This result emphasizes the importance of correcting occurrence rates for both completeness and reliability. This suggests that inconsistent completeness and reliability correction may be a significant contributor to the large variation of occurrence rates in recent literature. We plan to make the Robovetter results for our threshold sets available, and encourage the community to use them to examine whether other occurrence rate methods yield similarly robust results.",
  "isLessonsLearned": false,

```json
    "disseminated": "DOCUMENT_AND_METADATA",
    "meetings": [
     {
       "country": "United States",
       "submissionId": 20200000325,
       "endDate": "2020-01-08T00:00:00.0000000+00:00",
       "sponsors": [
        {
          "meta": {
            "organization": {
              "name": "American Astronomical Society",
              "location": "Washington, DC, United States"
            }
          },
          "meetingId": "6bda3b5ae49b4a58b51d83fddf65adae",
          "id": "c8c1bbaf911b4b069e75cb8e85e2bd47"
        }
       ],
       "name": "Meeting of the American Astronomical Society",
       "location": "Honolulu",
       "id": "6bda3b5ae49b4a58b51d83fddf65adae",
       "startDate": "2020-01-04T00:00:00.0000000+00:00"
     }
    ],
    "publications": [
     {
       "submissionId": 20200000325,
       "id": "c524d63a0f014a9896635f01478effe7",
       "publicationDate": "2020-01-04T00:00:00.0000000+00:00"
     }
    ],
    "status": "CURATED",
    "related": [],
    "downloads": [
     {
       "draft": false,
       "mimetype": "application/pdf",
       "name": "20200000325.pdf",
       "type": "STI",
       "links": {
         "original": "/api/citations/20200000325/downloads/20200000325.pdf",
         "pdf": "/api/citations/20200000325/downloads/20200000325.pdf",
         "fulltext": "/api/citations/20200000325/downloads/20200000325.txt"
       }
     }
    ],
    "downloadsAvailable": true
},
```

V) Redistributions Search and Response

a. Redistributions Metadata

The Redistributions endpoint, **GET /citations/redistributions/**, returns records modified in distribution or dissemination, and therefore availability has changed. The metadata is defined as follows:

Metadata Field	Data Type	Definition
id	number	Document ID; A unique 11-digit number assigned to a record
distribution	stringEnum	Distribution audience
disseminated	stringEnum	Indicates whether the metadata and/or the document has been released to the NASA STI Repository; [NONE, METADATA_ONLY, or DOCUMENT_AND_METADATA]
redistributedDate	string	Date the record was redistributed (distribution or dissemination modified)

b. Query Parameters

Use the following search parameters to return records redistributed:

Parameter	Data Type	Definition
redistributedDate	string	Date the record was redistributed (dissemination or distribution modified)
gt	string	greater than (after date)
gte	string	greater than or equal to (on or after date indicated)
lt	string	less than (before date)
lte	string	less than or equal to (on or before date indicated)
format	string	date format of the query
page		Page results
size	number	Maximum number of items to be returned in result set (up to 100)
from	number	Specify an arbitrary offset at which to start retrieving results

c. Example Request URLs

Parameter	Example Request URL
redistributedDate	https://ntrs.nasa.gov/api/citations/redistributions?redistributedDate.gt=2021
page	https://ntrs.nasa.gov/api/citations/redistributions?redistributedDate.gt=2021&page.size=50

d. Example Query and Responses

Path Used: GET /citations/redistributions

Query (Plain Text): "Retrieve NASA STI records redistributed during/after 2021."

Query (Executed): https://ntrs.nasa.gov/api/citations/redistributions?redistributedDate.gt=2021

Redistributions Responses:

```
1) {        "disseminated": "NONE",
```

```
                        "redistributedDate": "YYYY-MM-DDT00:00:00.0000000+00:00",
                        "id": 20200000000,
                        "distribution": "PUBLIC"     },
```

Example response #1 indicates this record is available to the Public, however no document or metadata record (NONE) is currently being disseminated. Therefore, this record is currently unavailable and must be removed from your data set.

```
    2)  {       "disseminated": "NONE",
                "redistributedDate": "YYYY-MM-DDT00:00:00.0000000+00:00",
                "id": 20200000000,
                "distribution": "DO_NOT_DISTRIBUTE"      },
```

Example response #2 indicates this record is not available to be distributed, and no document or metadata record (NONE) is currently being disseminated. Therefore, this record is currently unavailable and must be removed from your data set.

```
    3)  {       "disseminated": "DOCUMENT_AND_METADATA",
                "redistributedDate": "YYYY-MM-DDT00:00:00.0000000+00:00",
                "id": 20200000000,
                "distribution": "DO_NOT_DISTRIBUTE"      },
```

Example response #3 indicates this record is not being distributed, even though a document and metadata record is available to be disseminated. Therefore, this record is currently unavailable and must be removed from your data set.

```
    4)  {       "disseminated": "METADATA_ONLY",
                "redistributedDate": "YYYY-MM-DDT00:00:00.0000000+00:00",
                "id": 20200000000,
                "distribution": "PUBLIC"      }
```

Example response #4 indicates this record available to the Public, and includes a metadata record only. The document is no longer being disseminated, so any copies of the document previously indexed must be removed from your data set.