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Data Access

- [FTPS from the MMS SDC \(not with most browsers\)](#)
- [HTTPS from the MMS SDC](#)
- [FTPS from SPDF \(not with most browsers\)](#)
- [HTTPS from SPDF](#)
- [CDAWeb](#)
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MMS 1 Active Spacecraft Potential Control (ASPOC), Sensors 1 and 2, Level 2 (L2), Survey Mode, 1 s Data

Nakamura, R., Torkar, K.M., Jeszenszky, H., and Burch, J.L. (2022). MMS 1 Active Spacecraft Potential Control (ASPOC), Sensors 1 and 2, Level 2 (L2), Survey Mode, 1 s Data [Data set]. NASA Space Physics Data Facility. <https://doi.org/10.48322/541v-1f57>. Accessed on 2023-April-5.

ResourceID

spase://NASA/NumericalData/MMS/1/ASPOC/Survey/Level2/PT1S

Description

MMS 1 Active Spacecraft Potential Control (ASPOC) - Sensors 1 and 2 Ion Beam Current Rates, Beam Energies, and Instrument Status variables. In tenuous plasma regions, the floating potential of a sunlit spacecraft is positively charged, reaching up to tens of Volts. The corresponding electric field disturbs the ambient plasma measurements obtained from electron and ion sensors and the large fluxes of attracted photo-electrons can significantly reduce the lifetime of the micro-channel plate. The electric field measurements can be also contaminated by the high spacecraft potential values. The Active Spacecraft Potential Control neutralizes the spacecraft potential by releasing positively charged Indium ions. The ASPOCs neutralize the electrical potential of the spacecraft, limiting or eliminating spurious electric fields that can contaminate measurements. This allows observations of the more scientifically important low-energy ions and electrons.

Details

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Version:2.5.0

NumericalData**ResourceID**

spase://NASA/NumericalData/MMS/1/ASPOC/Survey/Level2/PT1S

ResourceHeader**ResourceName**

MMS 1 Active Spacecraft Potential Control (ASPOC), Sensors 1 and 2, Level 2 (L2), Survey Mode, 1 s Data

AlternateName

MMS1_ASPOC_SRVY_L2

DOI

<https://doi.org/10.48322/541v-1f57>

ReleaseDate

2023-03-04 12:34:56.789

RevisionHistory**RevisionEvent****ReleaseDate**

2021-04-27 15:38:11

Note

Only known prior ReleaseDate of the metadata

RevisionEvent**ReleaseDate**

2022-08-04 12:34:56.789

Note

Added DOI and PublicationInfo minted by LFB, updated the RepositoryID, updated the SPDF MetadataContact Person to Robert M. Candey, metadata updated to SPASE 2.4.1, reviewed by LFB 20220803

RevisionEvent**ReleaseDate**

2023-03-04 12:34:56.789

Note

Standardized the ResourceName Format, Set AlternateName equal to the ProductKey, Revised the Acknowledgement, PublicationInfo Authors, and Contact Person list per request of the MMS ASPOC team, metadata updated to SPASE 2.5.0, reviewed by LFB 20230304

Description

MMS 1 Active Spacecraft Potential Control (ASPOC) - Sensors 1 and 2 Ion Beam Current Rates, Beam Energies, and Instrument Status variables. In tenuous plasma regions, the floating potential of a sunlit spacecraft is positively charged, reaching up to tens of Volts. The corresponding electric field disturbs the ambient plasma measurements obtained from electron and ion sensors and the large fluxes of attracted photo-electrons can significantly reduce the lifetime of the micro-channel plate. The electric field measurements can be also contaminated by the high spacecraft potential values. The Active Spacecraft Potential Control neutralizes the spacecraft potential by releasing positively charged Indium ions. The ASPOCs neutralize the electrical potential of the spacecraft, limiting or eliminating spurious electric fields that can contaminate measurements. This allows observations of the more scientifically important low-energy ions and electrons.

Acknowledgement

Please acknowledge R. Nakamura, K.M. Torkar, H. Jeszenszky, and J.L. Burch for use of these data

PublicationInfo**Authors**

Nakamura, Rumi; Torkar, Klaus, M.; Jeszenszky, Harald; Burch, James, L.

PublicationDate

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PublishedBy

NASA Space Physics Data Facility

Contacts

<i>Role</i>	<i>Person</i>	<i>StartDate</i>	<i>StopDate</i>	<i>Note</i>
1. InstrumentLead CoInvestigator	spase://SMWG/Person/Rumi.Nakamura			
2. InstrumentLead CoInvestigator	spase://SMWG/Person/Klaus.M.Torkar			Retired
3. TechnicalContact	spase://SMWG/Person/Harald.Jeszenszky			
4. PrincipalInvestigator	spase://SMWG/Person/James.L.Burch			
5. HostContact	spase://SMWG/Person/MMS_SDC_POC			
6. MetadataContact	spase://SMWG/Person/Robert.M.Candey			
7. MetadataContact	spase://SMWG/Person/Lee.Frost.Bargatze			

InformationURL**Name**

The Magnetospheric Multiscale (MMS) Mission home page at Goddard Space Flight Center (GSFC)

URL

<https://mms.gsfc.nasa.gov/>

Description

The Magnetospheric Multiscale (MMS) Mission Home Page hosted by the Goddard Space Flight Center (GSFC).

InformationURL**Name**

Data Caveats and Current Release Notes at LASP MMS SDC

URL

<https://lasp.colorado.edu/mms/sdc/public/datasets/aspoc/>

Description

The Magnetospheric Multiscale (MMS) Mission home page hosted by the Laboratory of Atmospheric and Space Physics, Science Data Center (LASP, SDC) at the University of Colorado, Boulder.

InformationURL**Name**

The MMS Graz ASPOC Team home page at IWF, OAW

URL

<https://www.oeaw.ac.at/en/iwf/research/space-missions/current-missions/magnetospheric-multiscale/aspoc>

Description

The Magnetospheric Multiscale (MMS) ASPOC home page hosted by the Graz ASPOC team located at the Institut für Weltraumforschung (IWF), Österreichische Akademie der Wissenschaften (OAW).

PriorIDs

spase://VSP0/NumericalData/MMS/1/ASPOC/Survey/Level2/PT1S

AccessInformation**RepositoryID**

spase://SMWG/Repository/UCOLO/LASP/MMS_SDC

Availability

Online

AccessRights

Open

AccessURL**Name**

FTPS from the MMS SDC (not with most browsers)

URL

<ftps://lasp.colorado.edu/mms/sdc/public/data/mms1/aspoc/srvy/I2/>

Description

In CDF via ftp from the MMS Science Data Center

AccessURL**Name**

HTTPS from the MMS SDC

URL

<https://lasp.colorado.edu/mms/sdc/public/data/mms1/aspoc/srvy/I2/>

Description

In CDF via http from the MMS Science Data Center

Format

CDF

Encoding

None

Acknowledgement

Please acknowledge R. Nakamura, K.M. Torkar, H. Jeszenszky, and J.L. Burch. Also please acknowledge the data providers and CDAWeb when using these data.

AccessInformation**RepositoryID**

<spase://SMWG/Repository/NASA/GSFC/SPDF/CDAWeb>

Availability

Online

AccessRights

Open

AccessURL**Name**

FTPS from SPDF (not with most browsers)

URL

<ftps://spdf.gsfc.nasa.gov/pub/data/mms/mms1/aspoc/srvy/I2/>

Description

In CDF via ftp from SPDF

AccessURL**Name**

HTTPS from SPDF

URL

<https://spdf.gsfc.nasa.gov/pub/data/mms/mms1/aspoc/srvy/I2/>

Description

In CDF via http from SPDF

AccessURL
Name

CDAWeb

URL

https://cdaweb.gsfc.nasa.gov/cgi-bin/eval2.cgi?dataset=MMS1_ASPOC_SRVY_L2&index=sp_phys

ProductKey

MMS1_ASPOC_SRVY_L2

Description

Access to ASCII, CDF, and plots via NASA/GSFC CDAWeb

Format

CDF

Encoding

None

Acknowledgement

Please acknowledge R. Nakamura, K.M. Torkar, H. Jeszenszky, and J.L. Burch. Also please acknowledge the data providers and CDAWeb when using these data.

AccessInformation
RepositoryID

<spase://SMWG/Repository/NASA/GSFC/SPDF/CDAWeb>

Availability

Online

AccessRights

Open

AccessURL**Name**

CDAWeb HAPI Server

URL

<https://cdaweb.gsfc.nasa.gov/hapi>

Style

HAPI

ProductKey

MMS1_ASPOC_SRVY_L2

Description

Web Service to this product using the HAPI interface

Format

CSV

Acknowledgement

Please acknowledge R. Nakamura, K.M. Torkar, H. Jeszenszky, and J.L. Burch. Also please acknowledge the data providers and CDAWeb when using these data.

ProcessingLevel

Calibrated

InstrumentIDs

<spase://SMWG/Instrument/MMS/1/InstrumentControl/ASPOC>

MeasurementType

InstrumentStatus

TemporalDescription**TimeSpan****StartDate**

2015-04-16 00:00:00.000

RelativeStopDate

-P2M

Cadence

PT1S

ObservedRegion

Earth.Magnetosheath

ObservedRegion

Earth.Magnetosphere

ObservedRegion

Earth.Magnetosphere.Magnetotail

ObservedRegion

Earth.Magnetosphere.Main

ObservedRegion

Earth.Magnetosphere.RadiationBelt

ObservedRegion

Earth.NearSurface.EquatorialRegion

ObservedRegion

Earth.NearSurface.Plasmasphere

ObservedRegion

Heliosphere.NearEarth

Parameter #1

Name

Epoch

ParameterKey

Epoch

Description

Interval centered time tag rounded to nearest msecond

Caveats

This parameter exhibits an increasing monotonic progression.

Cadence

PT1S

Units

ns

UnitsConversion

1.0e-9>s

RenderingHints**DisplayType**

TimeSeries

AxisLabel

Epoch

ScaleMin

6.2798349819904e+13

ScaleMax

6.6269642620904e+13

ScaleType

LinearScale

ValidMin

1990-01-01T00:00:00.000000000

ValidMax

2100-01-01T00:00:01.000000000

FillValue

9999-12-31T23:59:59.999999999

Support**SupportQuantity**

Temporal

Parameter #2

Name

Beam Current Sum

Set

Time series defined by using: EPOCH

ParameterKey

mms1_aspoc_ionc

Description

ASPOC Ion Emission Current Sum

Cadence

PT1S

Units

uA

UnitsConversion

1.0e-6>A

RenderingHints**DisplayType**

TimeSeries

AxisLabel

I_ion

ValueFormat

f5.1

ScaleMin

0.0

ScaleMax

100.0

ScaleType

LinearScale

ValidMin

0.0

ValidMax

100.0

FillValue

-1.0e+31

Particle**ParticleType**

Ion

Qualifier

Median

ParticleQuantity

CountRate

Parameter #3

Name

Beam Current, Unit 1

Set

Time series defined by using: EPOCH

ParameterKey

mms1_asp1_ionc

Description

ASPOC Unit 1 Ion Emission Current

Cadence

PT1S

Units

uA

UnitsConversion

1.0e-6>A

RenderingHints**DisplayType**

TimeSeries

AxisLabel

I_ion

ValueFormat

f5.1

ScaleMin

0.0

ScaleMax

100.0

ScaleType

LinearScale

ValidMin

0.0

ValidMax

100.0

FillValue

-1.0e+31

Particle**ParticleType**

Ion

Qualifier

Median

ParticleQuantity

CountRate

Parameter #4

Name

Beam Current, Unit 2

Set

Time series defined by using: EPOCH

ParameterKey

mms1_asp2_ionc

Description

ASPOC Unit 2 Ion Emission Current

Cadence

PT1S

Units

uA

UnitsConversion

1.0e-6>A

RenderingHints**DisplayType**

TimeSeries

AxisLabel

I_ion

ValueFormat

f5.1

ScaleMin

0.0

ScaleMax

100.0

ScaleType

LinearScale

ValidMin

0.0

ValidMax

100.0

FillValue

-1.0e+31

Particle

ParticleType

Ion

Qualifier

Median

ParticleQuantity

CountRate

Parameter #5

Name

Beam Energy, Unit 1

Set

Time series defined by using: EPOCH

ParameterKey

mms1_asp1_energy

Description

ASPOC Unit 1 Emitted Beam Energy

Cadence

PT1S

Units

kV

UnitsConversion

1.0e3>V

RenderingHints**DisplayType**

TimeSeries

AxisLabel

Energy

ValueFormat

f5.2

ScaleMin

0.0

ScaleMax

12.5

ScaleType

LinearScale

ValidMin

0.0

ValidMax

12.5

FillValue

-1.0e+31

Particle**ParticleType**

Ion

Qualifier

Median

ParticleQuantity

Energy

Parameter #6

Name

Beam Energy, Unit 2

Set

Time series defined by using: EPOCH

ParameterKey

mms1_asp2_energy

Description
ASPOC Unit 2 Emitted Beam Energy

Cadence
PT1S

Units
kV

UnitsConversion
1.0e3>V

RenderingHints

DisplayType
TimeSeries

AxisLabel
Energy

ValueFormat
f5.2

ScaleMin
0.0

ScaleMax
12.5

ScaleType
LinearScale

ValidMin
0.0

ValidMax
12.5

FillValue
-1.0e+31

Particle

ParticleType
Ion

Qualifier
Median

ParticleQuantity
Energy

Parameter #7

Name
Instrument Status

Set
Time series defined by using: EPOCH

ParameterKey
mms1_aspoc_status

Description
ASPOC Instrument Status

Cadence
PT1S

RenderingHints

DisplayType
TimeSeries

ValueFormat
i3

ScaleType
LinearScale

Structure

Size
4

Element

Name
Data Quality

Index
1

RenderingHints
AxisLabel
Data Quality

Element

Name
Unit 1 Mode

Index
2

RenderingHints
AxisLabel
Unit 1 Mode

Element

Name
Unit 2 Mode

Index
3

RenderingHints
AxisLabel
Unit 2 Mode

Element

Name
On/Off Status

Index
4

RenderingHints
AxisLabel
On/Off Status

ValidMin
0

ValidMax
254

FillValue
255

Support
SupportQuantity
InstrumentMode

Parameter #8

Name
Half Interval

ParameterKey
mms1_aspoc_var

Description
Half width of measurement interval

Cadence
PT1S

Units
ns

UnitsConversion
1.0e-9>s

RenderingHints
AxisLabel

Half_int

ValueFormat

f13.1

ValidMin

0.0

ValidMax

1.275e+10

Support

SupportQuantity

Temporal