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<Ingest\_LDD

xmlns="http://pds.nasa.gov/pds4/pds/v1"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://pds.nasa.gov/pds4/pds/v1

https://pds.nasa.gov/pds4/pds/v1/PDS4\_PDS\_1F00.xsd">

<name>Hubble Space Telescope Dictionary Full</name>

<ldd\_version\_id>1.0</ldd\_version\_id>

<dictionary\_type>Discipline</dictionary\_type>

<full\_name>Mark R. Showalter</full\_name>

<steward\_id>rings</steward\_id>

<namespace\_id>hst</namespace\_id>

<comment>

version 1.0 2022-10-06

- Initial version

</comment>

<last\_modification\_date\_time>2022-10-06T202:00:00</last\_modification\_date\_time>

<!-- Observing program attributes -->

<!-- Attribute mast\_observation\_id -->

<DD\_Attribute>

<name>mast\_observation\_id</name>

<version\_id>1.0</version\_id>

<local\_identifier>mast\_observation\_id</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

A 9-character identifier used to specify data products, or sometimes sets of

associated data products, in MAST (the Mikulski Archive for Space Telescopes).

In HST data files, this is the value of FITS keyword ROOTNAME. The name ASN\_ID,

for "association identifier" is also sometimes used. Values are always converted

to lower case, if necessary.

In MAST, you can find these products by entering this ID into the search box on

this page:

archive.stsci.edu/cgi-bin/dataset\_lookup/

The nine characters can generally be interpreted as follows:

- the first letter indicates the instrument, 'u' for WFPC2, 'j', for ACS, etc.;

- the next three characters are unique to each HST program;

- the next two characters indicate the HST visit within the program;

- two characters generally increment for successive observations during the

visit, using "base 36" where the characters used are digits 0-9 plus letters

a-z;

- the last character indicates a transmission method, and is generally not

important for scientific purposes. However, if it is a digit, this indicates

that this particular file is the result of merging two or more other HST

observations from this visit.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

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</DD\_Attribute>

<!-- Attribute hst\_proposal\_id -->

<DD\_Attribute>

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<version\_id>1.0</version\_id>

<local\_identifier>hst\_proposal\_id</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The numeric identifier of the proposal or observing program, as assigned by

the Space Telescope Science Institute. In HST data files, this is the value of

FITS keyword PROPOSID.

</definition>

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<enumeration\_flag>false</enumeration\_flag>

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</DD\_Value\_Domain>

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<DD\_Attribute>

<name>hst\_pi\_name</name>

<version\_id>1.0</version\_id>

<local\_identifier>hst\_pi\_name</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The name of the principal investigator for this HST program, in the form "last,

name, first name, optional middle initial".

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>UTF8\_Text\_Preserved</value\_data\_type>

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<DD\_Attribute>

<name>visit\_id</name>

<version\_id>1.0</version\_id>

<local\_identifier>visit\_id</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The two-digit "base 36" code identifying the visit number for this observations.

An individual visit can comprise one or more orbits of HST around the Earth.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Instrument attributes -->

<!-- Attribute instrument\_id -->

<DD\_Attribute>

<name>instrument\_id</name>

<version\_id>1.0</version\_id>

<local\_identifier>instrument\_id</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

An acronym for the HST instrument. This is the value of FITS keyword INSTRUME.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>true</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

<DD\_Permissible\_Value>

<value>ACS</value>

<value\_meaning>Advanced Camera for Surveys</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>COS</value>

<value\_meaning>Cosmic Origins Spectrograph</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>FGS</value>

<value\_meaning>Fine Guidance Sensors</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>FOC</value>

<value\_meaning>Faint Object Camera</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>FOS</value>

<value\_meaning>Faint Object Spectrograph</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>GHRS</value>

<value\_meaning>Goddard High Resolution Spectrograph</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>HSP</value>

<value\_meaning>High Speed Photometer</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>NICMOS</value>

<value\_meaning>Near Infrared Camera and Multi-Object Spectrometer</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>STIS</value>

<value\_meaning>Space Telescope Imaging Spectrograph</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>WFC3</value>

<value\_meaning>Wide Field Camera 3</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>WFPC</value>

<value\_meaning>Wide Field/Planetary Camera</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>WFPC2</value>

<value\_meaning>Wide Field/Planetary Camera 2</value\_meaning>

</DD\_Permissible\_Value>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute channel\_id -->

<DD\_Attribute>

<name>channel\_id</name>

<version\_id>1.0</version\_id>

<local\_identifier>channel\_id</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

An abbreviated name or acronym for the specific channel of the HST instrument

used for this observation. Here, "channel" refers to a distinct optical path

used by one or more of the instrument's detectors.

For HST instruments, such as WFPC2, that do not have multiple channels, this

attribute has the same value as the instrument\_id attribute.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>true</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

<!-- ACS -->

<DD\_Permissible\_Value>

<value>HRC</value>

<value\_meaning>High Resolution Channel of ACS</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>SBC</value>

<value\_meaning>Solar Blind Channel of ACS</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>WFC</value>

<value\_meaning>Wide Field Channel of either ACS</value\_meaning>

</DD\_Permissible\_Value>

<!-- COS -->

<DD\_Permissible\_Value>

<value>FUV</value>

<value\_meaning>

The far-ultraviolet channel on COS.

</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>NUV</value>

<value\_meaning>

The near-ultraviolet channel on COS.

</value\_meaning>

</DD\_Permissible\_Value>

<!-- FGS -->

<DD\_Permissible\_Value>

<value>FGS</value>

<value\_meaning>Fine Guidance Sensor</value\_meaning>

</DD\_Permissible\_Value>

<!-- FOC -->

<DD\_Permissible\_Value>

<value>FOC</value>

<value\_meaning>Faint Object Camera</value\_meaning>

</DD\_Permissible\_Value>

<!-- FOS -->

<DD\_Permissible\_Value>

<value>AMBER</value>

<value\_meaning>The red or "amber" detector channel of FOS</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>BLUE</value>

<value\_meaning>The blue detector channel of FOS</value\_meaning>

</DD\_Permissible\_Value>

<!-- GHRS -->

<DD\_Permissible\_Value>

<value>D1</value>

<value\_meaning>Detector 1, the short-wavelength channel of GHRS</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>D2</value>

<value\_meaning>Detector 2, the longer-wavelength channel of GHRS</value\_meaning>

</DD\_Permissible\_Value>

<!-- HSP -->

<DD\_Permissible\_Value>

<value>HSP</value>

<value\_meaning>High Speed Photometer</value\_meaning>

</DD\_Permissible\_Value>

<!-- NICMOS -->

<DD\_Permissible\_Value>

<value>NIC1</value>

<value\_meaning>

The highest spatial resolution camera of NICMOS, with an 11 x 11 arcsec

field of view and 43 mas pixels. It covers the spectral range 0.8 to 1.8

microns.

</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>NIC2</value>

<value\_meaning>

The intermediate spatial resolution camera of NICMOS, with a 19.2 x 19.2

arcsec field of view and 75 mas pixels. It covers the spectral range 0.8

to 2.45 microns.

</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>NIC3</value>

<value\_meaning>

The lowest spatial resolution camera of NICMOS, with a large 51.2 x 51.2

arcsec field of view and 200 mas pixels. It covers the spectral range

0.8 to 2.5 microns.

</value\_meaning>

</DD\_Permissible\_Value>

<!-- STIS -->

<DD\_Permissible\_Value>

<value>FUV-MAMA</value>

<value\_meaning>

The Far-Ultraviolet Multi-Anode Microchannel Array detector channel on STIS,

which covers the wavelength range 1150 to 1700 Angstroms.

</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>NUV-MAMA</value>

<value\_meaning>

The Near-Ultraviolet Multi-Anode Microchannel Array detector channel on STIS,

which covers the wavelength range 1600 to 3100 Angstroms.

</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>CCD</value>

<value\_meaning>

The Charge Coupled Device imager on STIS.

</value\_meaning>

</DD\_Permissible\_Value>

<!-- WFC3 -->

<DD\_Permissible\_Value>

<value>UVIS</value>

<value\_meaning>Ultraviolet and Visual channel of WFC3</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>IR</value>

<value\_meaning>Infrared channel of WFC3</value\_meaning>

</DD\_Permissible\_Value>

<!-- WFPC -->

<DD\_Permissible\_Value>

<value>PC</value>

<value\_meaning>Planetary Camera channel of WFPC</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>WF</value>

<value\_meaning>Wide Field channel of WFPC</value\_meaning>

</DD\_Permissible\_Value>

<!-- WFPC2 -->

<DD\_Permissible\_Value>

<value>WFPC2</value>

<value\_meaning>Wide Field/Planetary Camera 2</value\_meaning>

</DD\_Permissible\_Value>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute detector\_id -->

<DD\_Attribute>

<name>detector\_id</name>

<version\_id>1.0</version\_id>

<local\_identifier>detector\_id</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

This identifier specifies which of the detectors of this instrument and channel

obtained the data found in this HST product. This parameter is repeated if

multiple detectors were used.

For instruments that do not have multiple detectors, this attribute occurs just

once and has the same value as the channel\_id attribute.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>true</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

<!-- ACS -->

<DD\_Permissible\_Value>

<value>HRC</value>

<value\_meaning>Detector for ACS/HRC</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>SBC</value>

<value\_meaning>Detector for ACS/SBC</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>WFC1</value>

<value\_meaning>Dectector 1 of ACS/WFC</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>WFC2</value>

<value\_meaning>Dectector 2 of ACS/WFC</value\_meaning>

</DD\_Permissible\_Value>

<!-- COS -->

<DD\_Permissible\_Value>

<value>FUVA</value>

<value\_meaning>Detector A of COS/FUV</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>FUVB</value>

<value\_meaning>Detector B of COS/FUV</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>NUV</value>

<value\_meaning>Detector for COS/NUV</value\_meaning>

</DD\_Permissible\_Value>

<!-- FGS -->

<DD\_Permissible\_Value>

<value>FGS1</value>

<value\_meaning>Find Guidance Sensor 1</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>FGS1R</value>

<value\_meaning>Find Guidance Sensor 1R, which replaced FGS1 in February 1997.</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>FGS2</value>

<value\_meaning>Find Guidance Sensor 2</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>FGS2R</value>

<value\_meaning>Find Guidance Sensor 2R, which replaced FGS2 in December 1999.</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>FGS3</value>

<value\_meaning>Find Guidance Sensor 3</value\_meaning>

</DD\_Permissible\_Value>

<!-- FOC -->

<DD\_Permissible\_Value>

<value>FOC</value>

<value\_meaning>Detector for the Faint Object Camera</value\_meaning>

</DD\_Permissible\_Value>

<!-- FOS -->

<DD\_Permissible\_Value>

<value>AMBER</value>

<value\_meaning>Red or "amber" detector of FOS</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>BLUE</value>

<value\_meaning>Blue detector of FOS</value\_meaning>

</DD\_Permissible\_Value>

<!-- GHRS -->

<DD\_Permissible\_Value>

<value>D1</value>

<value\_meaning>GHRS detector side 1</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>D2</value>

<value\_meaning>GHRS detector side 2</value\_meaning>

</DD\_Permissible\_Value>

<!-- HSP -->

<DD\_Permissible\_Value>

<value>UV1</value>

<value\_meaning>Ultraviolet detector 1 for HSP</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>UV2</value>

<value\_meaning>Ultraviolet detector 2 for HSP</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>VIS</value>

<value\_meaning>Visual detector for HSP</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>POL</value>

<value\_meaning>Polarimeter for HSP</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>PMT</value>

<value\_meaning>Photomultiplier for HSP</value\_meaning>

</DD\_Permissible\_Value>

<!-- NICMOS -->

<DD\_Permissible\_Value>

<value>NIC1</value>

<value\_meaning>Detector for the NICMOS/NIC1</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>NIC2</value>

<value\_meaning>Detector for the NICMOS/NIC2</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>NIC3</value>

<value\_meaning>Detector for the NICMOS/NIC3</value\_meaning>

</DD\_Permissible\_Value>

<!-- STIS -->

<DD\_Permissible\_Value>

<value>FUV-MAMA</value>

<value\_meaning>Detector for the STIS/FUV-MAMA</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>NUV-MAMA</value>

<value\_meaning>Detector for the STIS/NUV-MAMA</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>CCD</value>

<value\_meaning>Detector for the STIS/CCD</value\_meaning>

</DD\_Permissible\_Value>

<!-- WFC3 -->

<DD\_Permissible\_Value>

<value>UVIS1</value>

<value\_meaning>Detector 1 of WFC3/UVIS</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>UVIS2</value>

<value\_meaning>Detector 2 of WFC3/UVIS</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>IR</value>

<value\_meaning>Detector for the WFC3/IR</value\_meaning>

</DD\_Permissible\_Value>

<!-- WFPC and WFPC2 -->

<DD\_Permissible\_Value>

<value>PC1</value>

<value\_meaning>Detector PC1 of WFPC2</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>PC5</value>

<value\_meaning>Detector PC5 of WFPC</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>PC6</value>

<value\_meaning>Detector PC6 of WFPC</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>PC7</value>

<value\_meaning>Detector PC7 of WFPC</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>PC8</value>

<value\_meaning>Detector PC8 of WFPC</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>WF1</value>

<value\_meaning>Detector WF1 of WFPC</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>WF2</value>

<value\_meaning>Detector WF2 of either WFPC or WFPC2</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>WF3</value>

<value\_meaning>Detector WF3 of either WFPC or WFPC2</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>WF4</value>

<value\_meaning>Detector WF4 of either WFPC or WFPC2</value\_meaning>

</DD\_Permissible\_Value>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute observation\_type -->

<DD\_Attribute>

<name>observation\_type</name>

<version\_id>1.0</version\_id>

<local\_identifier>observation\_type</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The type of the observation. For most HST data files, this is the value of FITS

keyword OBSTYPE, either IMAGING or SPECTROSCOPIC. IMAGING indicates that a 2-D

image with two spatial axes was obtained. SPECTROSCOPIC indicates that one of

the axes of the data array is related to wavelength. TIME-SERIES indicates a data

array in which the primary axis sampling is by time.

The FITS keyword OBSTYPE does not appear in some data products. However, several

instruments produce only one type of observation. Observations from ACS, NICMOS,

WFC3, WFPC, and WFPC2 are always IMAGES; observations from COS, FOS, and GHRS

are always SPECTROSCOPIC.

For ACS/HRC, the FITS keyword OBSTYPE can have a value of CORONAGRAPHIC.

However, the value of this attribute is IMAGING; the coronagraph\_flag attribute

indicates whether the coronagraph was used.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>true</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

<DD\_Permissible\_Value>

<value>IMAGING</value>

<value\_meaning>

This product contains 2-D image with two spatial axes.

</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>SPECTROSCOPIC</value>

<value\_meaning>

One of the axes of the data array is related to wavelength.

</value\_meaning>

</DD\_Permissible\_Value>

<DD\_Permissible\_Value>

<value>TIME-SERIES</value>

<value\_meaning>

One of the axes of the data array is related to time.

</value\_meaning>

</DD\_Permissible\_Value>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Pointing attributes -->

<!-- Attribute hst\_target\_name -->

<DD\_Attribute>

<name>hst\_target\_name</name>

<version\_id>1.0</version\_id>

<local\_identifier>hst\_target\_name</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The target of the observation as defined by the principal investigator. In HST

data files, this is the value of FITS keyword TARGNAME. Note that targets can be

named arbitrarily in HST observing programs, so the meaning of this character

string might not be obvious to the user.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute moving\_target\_flag -->

<DD\_Attribute>

<name>moving\_target\_flag</name>

<version\_id>1.0</version\_id>

<local\_identifier>moving\_target\_flag</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

A Boolean flag (true, false) indicating whether or not the telescope pointing

was based on tracking a moving target. For HST data files, this is derived from

the value of FITS keyword MTFLAG, which can have values of 1 or "T" for true or

0, "F", or "" for false.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Boolean</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute moving\_target\_keyword -->

<DD\_Attribute>

<name>moving\_target\_keyword</name>

<version\_id>1.0</version\_id>

<local\_identifier>moving\_target\_keyword</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

Keyword values used in the HST planning software to define a moving target. These

often provide easier-to-interpret information about a solar system target.

Examples are "PLANET JUPITER", "TORUS JUPITER", "SATELLITE EUROPA", and

"ASTEROID 216".

These values are obtained from the FITS header of the \_shf.fits or \_spt.fits

file, given as values of keywords TARKEY1, TARKEY2, etc.

If no TARKEY keywords appear in the FITS header, this attribute has a single

value of "Not applicable".

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute moving\_target\_description -->

<DD\_Attribute>

<name>moving\_target\_description</name>

<version\_id>1.0</version\_id>

<local\_identifier>moving\_target\_description</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The detailed information used for targeting HST. This includes information about

standard targets such as planets, satellites, and larger asteroids. It can also

include information used to determine offsets from the center of these bodies.

Here are some sample values of this attribute:

STD = JUPITER

STD = EUROPA

TYPE=TORUS, LONG=90, LAT=0, RAD-3.98E05

They are obtained from the FITS header of an observation's associated \_shf.fits

or \_spt.fits file. They are the values of FITS keywords MT\_LV\_1, MT\_LV\_2, etc.

Consult with HST documentation for detailed interpretations.

If no MT\_LV keywords appear in the FITS header, this attribute has a single

value of "Not applicable".

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute aperture\_name -->

<DD\_Attribute>

<name>aperture\_name</name>

<version\_id>1.0</version\_id>

<local\_identifier>aperture\_name</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The name of the aperture used for the observation. For HST data files, this is

generally the value of FITS keyword APERTURE. Note that these values are

instrument-specific; see the relevant HST Instrument Handbooks and Data

Handbooks for further details.

This attribute is not applicable to FOC data.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute proposed\_aperture\_name -->

<DD\_Attribute>

<name>proposed\_aperture\_name</name>

<version\_id>1.0</version\_id>

<local\_identifier>proposed\_aperture\_name</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The name of the proposed aperture used for the observation. For some data files,

this is the value of FITS keyword PROPAPER. It is needed because the proposed

aperture need not be the same as the aperture actually used. If the FITS keyword

PROPAPER is missing or has a blank value, the value of FITS keyword APERTURE is

used instead.

This attribute is not applicable to FOC data.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute targeted\_detector\_id -->

<DD\_Attribute>

<name>targeted\_detector\_id</name>

<version\_id>1.0</version\_id>

<local\_identifier>targeted\_detector\_id</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The identifier of the detector(s) used to define the targeting of this

observation. For instruments with multiple detectors, this attribute

indicates the one that is most likely to contain the intended target. When

an observation was planned to employ more than one detector to encompass the

target, this attribute will have multiple values. For instruments that do not

have multiple detectors, this attribute will have a single value equal to that

of channel\_id and detector\_id.

For WFPC2, this attribute is derived from the value of the aperture:

- PC1 for apertures PC1, PC1-FIX, POLQP15P, FQCH4P15;

- WF2 for apertures WF2, WF2-FIX, FQUVN33, POLQN33, POLQN18, POLQP15W, FQCH4NW2,

FQCH4N33;

- WF3 for apertures WF3, WF3-FIX, FQCH4NW3, F160BN15;

- WF4 for apertures WF4, WF4-FIX, FQCH4NW4;

- All four for apertures WFALL, WFALL-FIX;

- PC1 and WF3 for aperture FQCH4N15.\*\*

These are found in in Table 3.14 of the WFPC2 Instrument Handbook, Version 10.0.

Note that they often appear in FITS lab

(\*\*Note: aperture FQCH4N15 was targeted relative to PC1, but was often used to

position the methane 0.89 micron quad filter atop the WF3 chip as well.)

For ACS/WFC, most aperture values begin with either "WFC1" or "WFC2", which

indicates which of the detectors was used for targeting. Apertures WFCM, WFC,

WFC-FIX, and WFCENTER are associated with both.

For WFC3/UVIS, most aperture values begin with either "UVIS1" or "UVIS2", which

indicates which of the detectors was used for targeting. Apertures UVIS,

UVIS-CENTER, UVIS-FIX, UVIS-IR-FIX, G280, and G280-REF are associated with both

detectors. The targeting of the UVIS-QUAD, UVIS-QUAD-FIX, and UVIS-QUAD-SUB

apertures is are determined based on the value of the selected quad filter:

UVIS1 for filters FQ378N, FQ387N, FQ437N, FQ492N, FQ508N, FQ619N, FQ674N, FQ750N,

FQ889N, and FQ937N; UVIS2 for filters FQ232N, FQ243N, FQ422M, FQ436N, FQ575N,

FQ634N, FQ672N, FQ727N, FQ906N, and FQ924N. (See Table 6.4 of the WFC3

Instrument Handbook.)

For WFPC, this is derived from the aperture value:

- WF1 for aperture W1; WF2 for aperture W2, etc.

- PC5 for aperture P5; PC6 for aperture P6, etc.

For COS/FUV, this attribute will always match the value(s) of detector\_id.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Tracking attributes -->

<!-- Attribute fine\_guidance\_sensor\_lock\_type -->

<DD\_Attribute>

<name>fine\_guidance\_sensor\_lock\_type</name>

<version\_id>1.0</version\_id>

<local\_identifier>fine\_guidance\_sensor\_lock\_type</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The commanded lock of the Fine Guidance Sensor during the observation. For HST

data files, this is the value of FITS keyword FGSLOCK.

Common values are:

- FINE: Fine lock on guide stars using two Fine Guidance Sensors. This is the

most accurate pointing option, within 0.2 to 1 arcsec.

- COARSE: Until new flight software (version 9.6) came online in September 1995,

if the guide star acquisition failed, the guiding dropped to COARSE track.

- GYRO: This mode produces the least accurate absolute and relative pointing.

Absolute pointing accuracy is about 2-50 arcsec and drift is 1-5 mas/sec.

- FINE/GYRO: Fine lock on a guide star using one FGS to control the pitch/yaw of

the spacecraft, while roll control is handled by the gyros. Absolute

accuracies can range from 0.5-5 arcseconds, while error due to roll drift

about the guide star would be ~ 1-2 mas/sec.

- UNKNOWN: Check the jitter files to find out what happened during the

observation.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute gyroscope\_mode -->

<DD\_Attribute>

<name>gyroscope\_mode</name>

<version\_id>1.0</version\_id>

<local\_identifier>gyroscope\_mode</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The number of gyros scheduled for the observation, 2 or 3. For HST data files,

this is derived from the value of FITS keyword GYROMODE. A value of "3" or "T"

indicates that three gyroscopes were used; a value of "2" indicates that two

gyroscopes were used. However, some earlier HST products do not contain the

keyword GYROMODE; these observations were all obtained using three gyroscopes.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Integer</value\_data\_type>

<minimum\_value>2</minimum\_value>

<maximum\_value>3</maximum\_value>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Exposure attributes -->

<!-- Attribute exposure\_duration -->

<DD\_Attribute>

<name>exposure\_duration</name>

<version\_id>1.0</version\_id>

<local\_identifier>exposure\_duration</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The total duration of the instrument's light integration time, in seconds. For

most HST data files, this is the value of FITS keyword EXPTIME; however, for

some data files, it is the value of keyword TEXPTIME.

Note that, for HST products that are the result of merging multiple exposures,

this is the sum of the exposure times of the individual source products.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Real</value\_data\_type>

<unit\_of\_measure\_type>Units\_of\_Time</unit\_of\_measure\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute exposure\_type -->

<DD\_Attribute>

<name>exposure\_type</name>

<version\_id>1.0</version\_id>

<local\_identifier>exposure\_type</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

This keyword indicates how exposure time was calculated and whether it was

interrupted. For HST data files, this is the value of FITS keyword EXPFLAG.

Common values are NORMAL (the observation completed as requested), INTERRUPTED,

INCOMPLETE, EXTENDED, UNCERTAIN, INDETERMINATE, and PREDICTED.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Wavelength/filter/grating attributes -->

<!-- Attribute filter\_name -->

<DD\_Attribute>

<name>filter\_name</name>

<version\_id>1.0</version\_id>

<local\_identifier>filter\_name</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The name of the filter(s), grating(s), polarizer(s), or other optical elements

used for the observation. If two or more are combined, then both names are

given, separated by a plus sign "+".

For WFPC2 products, this is the name of either FITS keyword FILTNAM1 or FILTNAM2,

whichever is not blank. If neither is blank, the two values are combined using

"+", with the shorter-wavelength filter (the filter name containing the smaller

three-digit number) appearing first.

For ACS products:

- if FILTER1 is CLEAR1S or CLEAR1L and FILTER2 is CLEAR2S or CLEAR2L, the value

is "CLEAR";

- otherwise, if FILTER1 is CLEAR1S or CLEAR1L, the value of FILTER2 is used;

- otherwise, if FILTER2 is CLEAR2S or CLEAR2L, the value of FILTER1 is used;

- otherwise, the values of the two filters are combined with "+". If a polarizer

is used (FILTER1 or FILTER2 starts with "POL"), the name of the polarizer

appears second; otherwise, the filter with the shorter center wavelength (the

three-digit number inside the filter name) appears first.

For STIS products, wavelength response is defined by a grating (FITS keyword

OPT\_ELEM) and the filter (FITS keyword FILTER). If the FILTER name is "Clear", the

grating name appears alone; otherwise, the two values are appended, separated by a

"+".

For FOC products, this is constructed from the values of the FITS keywords FILTNAM1,

FILTNAM2, FILTNAM3, and FILTNAM4. After omitting "CLEAR" values, the remaining

values are sorted and concatenated with "+".

For FOS products, this is the value of FITS keyword SPEC\_1, which is found in the

\_shf.fits file.

For GHRS products, this is the value of FITS keyword GRATING.

For other HST instruments, this is the value of FITS keyword FILTER. For instruments

that do not use filters, the value is "Not applicable".

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute center\_filter\_wavelength -->

<DD\_Attribute>

<name>center\_filter\_wavelength</name>

<version\_id>1.0</version\_id>

<local\_identifier>center\_filter\_wavelength</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The approximate central wavelength of the filter bandpass, in microns. For WFPC2

and STIS data files, this is the value of FITS keyword CENTRWV, divided by

10,000 to convert units from Angstroms to microns. The value is not provided for

other HST instruments.

For other HST instruments, this attribute is not applicable.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Real</value\_data\_type>

<unit\_of\_measure\_type>Units\_of\_Length</unit\_of\_measure\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute bandwidth -->

<DD\_Attribute>

<name>bandwidth</name>

<version\_id>1.0</version\_id>

<local\_identifier>bandwidth</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The approximate full width of the spectral bandpass, in microns. For WFPC2 and

STIS data files, this is the value of FITS keyword BANDWID, divided by 10,000 to

convert units from Angstroms to microns. The value is not provided for other HST

instruments.

For other HST instruments, this attribute is not applicable.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Real</value\_data\_type>

<unit\_of\_measure\_type>Units\_of\_Length</unit\_of\_measure\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute spectral\_resolution -->

<DD\_Attribute>

<name>spectral\_resolution</name>

<version\_id>1.0</version\_id>

<local\_identifier>spectral\_resolution</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The approximate spectral resolution of this data product, in microns. For STIS

data files, this is the value of FITS keyword SPECRES, divided by 10,000 to

convert units from Angstroms to microns.

For other HST instruments, this attribute is not applicable.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Real</value\_data\_type>

<unit\_of\_measure\_type>Units\_of\_Length</unit\_of\_measure\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Operational attributes -->

<!-- Attribute instrument\_mode\_id -->

<DD\_Attribute>

<name>instrument\_mode\_id</name>

<version\_id>1.0</version\_id>

<local\_identifier>instrument\_mode\_id</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The operating mode of the instrument. For most HST data products, this is the

value of FITS keyword OBSMODE. Consult the relevant HST handbooks for details

about each mode.

This attribute is not applicable to FGS data files.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute gain\_setting -->

<DD\_Attribute>

<name>gain\_setting</name>

<version\_id>1.0</version\_id>

<local\_identifier>gain\_setting</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The commanded gain of the CCD, typically in units of electrons per DN.

For WFPC2 data products, this is the value of FITS keyword ATODGAIN, either

7 or 15.

For ACS, STIS, and WFC3, it is the value of FITS keyword CCDGAIN.

This attribute is not applicable to HST instruments that do not have gain

settings.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Real</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute coronagraph\_flag -->

<DD\_Attribute>

<name>coronagraph\_flag</name>

<version\_id>1.0</version\_id>

<local\_identifier>coronagraph\_flag</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

A Boolean flag (true, false) indicating whether a coronagraph was used for this

observation. For HST products, this attribute is generally derived from the value

of the FITS keyword APERTURE.

For ACS/HRC products, the coronagraph is in use if APERTURE is HRC-CORON1.8,

HRC-CORON3.0, or HRC-OCCULT0.8.

For STIS products, a coronagraph is in use if APERTURE is 52X0.2F1, 52X0.2F1-R,

50CORON, or begins with either "BAR" or "WEDGE".

For NICMOS/NIC2 products, a coronagraph is in use if APERTURE is NIC2-CORON.

This attribute is always false for HST instruments that do not have a

coronagraph.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Boolean</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute cr\_split\_count -->

<DD\_Attribute>

<name>cosmic\_ray\_split\_count</name>

<version\_id>1.0</version\_id>

<local\_identifier>cosmic\_ray\_split\_count</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

This is the number of "cosmic ray split" or "CR-split" exposures. CR-split

exposures are used because otherwise identical images can be used to filter out

the frequent but random bright spots in images associated with cosmic rays

hitting the detector. In HST products, this is the value of FITS keyword

CRSPLIT.

For HST products that do not have a value of CRSPLIT, then the value of this

attribute is 1.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Integer</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute repeat\_exposure\_count -->

<DD\_Attribute>

<name>repeat\_exposure\_count</name>

<version\_id>1.0</version\_id>

<local\_identifier>repeat\_exposure\_count</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

This is the number of repeated exposures as commanded for the HST instrument. For

HST products, this is the value of FITS keyword NRPTEXP. For instruments that do not

support repeated exposures, this attribute has a value of 1.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Integer</value\_data\_type>

<minimum\_value>1</minimum\_value>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute subarray\_flag -->

<DD\_Attribute>

<name>subarray\_flag</name>

<version\_id>1.0</version\_id>

<local\_identifier>subarray\_flag</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

A Boolean flag (true, false) indicating whether or not this data product was

obtained using a subarray of the detector. For HST data files, this is derived

from the value of FITS keyword SUBARRAY, which can have values of "T" or 1 for

true or "F" or 0 for false.

For instruments that do not support subarrays, the value of this attribute is

always false.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Boolean</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute binning\_mode -->

<DD\_Attribute>

<name>binning\_mode</name>

<version\_id>1.0</version\_id>

<local\_identifier>binning\_mode</local\_identifier>

<nillable\_flag>false</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

This attribute indicates how pixels have been combined on the detector during

readout. A value of 2 indicates that pixels have been combined in 2x2 squares;

A value of 1 indicates that the detector was read out at full resolution.

For many HST products this is the value of BINAXIS1 or BINAXIS2, whichever is

larger. (HST binning modes need not be square, so this attribute cannot fully

capture all the possibilities. Nevertheless, in practice, BINAXIS1 and BINAXIS2

are almost always equal.) Note that, for some HST products, the values of

BINAXIS1 and BINAXIS2 can be found in the global FITS header; for others, it is

found in the second header, which is the first data header.

For WFPC and WFPC2, this attribute is derived from the value of MODE:

- MODE = FULL -> binning\_mode = 1

- MODE = AREA -> binning\_mode = 2

For instruments that do not support binning options, the value of this attribute

is always 1.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Integer</value\_data\_type>

<minimum\_value>1</minimum\_value>

<maximum\_value>4</maximum\_value>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute plate\_scale -->

<DD\_Attribute>

<name>plate\_scale</name>

<version\_id>1.0</version\_id>

<local\_identifier>plate\_scale</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

This attribute indicates approximate spatial size of one pixel in the data

product, in units of arcseconds per pixel. For a few HST data products, this is

the value of FITS keyword PLATESC. For other HST instruments, we provide the

value if it can be readily determined. In cases where a product contains data

from detectors with different plate scales, it is the smallest value. For

non-imaging instruments, this attribute is not applicable.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Real</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute mast\_pipeline\_version\_id -->

<DD\_Attribute>

<name>mast\_pipeline\_version\_id</name>

<version\_id>1.0</version\_id>

<local\_identifier>mast\_pipeline\_version\_id</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

The value of keyword "OPUS\_VER" found in the FITS header, if any. It is updated

when data files are re-calibrated. This attribute is often missing from older

data products.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute hst\_quality\_id -->

<DD\_Attribute>

<name>hst\_quality\_id</name>

<version\_id>1.0</version\_id>

<local\_identifier>hst\_quality\_id</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

Data quality summary found in the FITS header of the data product, which can

be populated by the HST pipeline if there are problems with the exposure.

Possible values include "OK", "GSFAIL", "EXPSHORT", and "TDF-DOWN". If multiple

values are provided, they are separated by semicolons.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Attribute hst\_quality\_comment -->

<DD\_Attribute>

<name>hst\_quality\_comment</name>

<version\_id>1.0</version\_id>

<local\_identifier>hst\_quality\_comment</local\_identifier>

<nillable\_flag>true</nillable\_flag>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

Data quality comments found in the FITS header of the data product. This

attribute is filled in by the HST pipeline is populated if there are problems

with the exposure.

</definition>

<DD\_Value\_Domain>

<enumeration\_flag>false</enumeration\_flag>

<value\_data\_type>ASCII\_Short\_String\_Collapsed</value\_data\_type>

</DD\_Value\_Domain>

</DD\_Attribute>

<!-- Observing program attributes -->

<DD\_Class>

<name>Program\_Parameters</name>

<version\_id>1.0</version\_id>

<local\_identifier>Program\_Parameters</local\_identifier>

<submitter\_name>Mitchell K. Gordon</submitter\_name>

<definition>

Contains attributes describing the HST observing program.

</definition>

<abstract\_flag>false</abstract\_flag>

<DD\_Association>

<identifier\_reference>mast\_observation\_id</identifier\_reference>

<reference\_type>attribute\_of</reference\_type>

<minimum\_occurrences>1</minimum\_occurrences>

<maximum\_occurrences>1</maximum\_occurrences>

</DD\_Association>

<DD\_Association>

<identifier\_reference>hst\_proposal\_id</identifier\_reference>

<reference\_type>attribute\_of</reference\_type>

<minimum\_occurrences>1</minimum\_occurrences>

<maximum\_occurrences>1</maximum\_occurrences>

</DD\_Association>

<DD\_Association>

<identifier\_reference>hst\_pi\_name</identifier\_reference>

<reference\_type>attribute\_of</reference\_type>

<minimum\_occurrences>1</minimum\_occurrences>

<maximum\_occurrences>1</maximum\_occurrences>

</DD\_Association>

<DD\_Association>

<identifier\_reference>visit\_id</identifier\_reference>

<reference\_type>attribute\_of</reference\_type>

<minimum\_occurrences>1</minimum\_occurrences>

<maximum\_occurrences>1</maximum\_occurrences>

</DD\_Association>

</DD\_Class>

<!-- Instrument attributes -->

<DD\_Class>

<name>Instrument\_Parameters</name>

<version\_id>1.0</version\_id>

<local\_identifier>Instrument\_Parameters</local\_identifier>

<submitter\_name>Mitchell K. Gordon</submitter\_name>

<definition>

Contains attributes related to the HST instrument(s) used.

</definition>

<abstract\_flag>false</abstract\_flag>

<DD\_Association>

<identifier\_reference>instrument\_id</identifier\_reference>

<reference\_type>attribute\_of</reference\_type>

<minimum\_occurrences>1</minimum\_occurrences>

<maximum\_occurrences>1</maximum\_occurrences>

</DD\_Association>

<DD\_Association>

<identifier\_reference>channel\_id</identifier\_reference>

<reference\_type>attribute\_of</reference\_type>

<minimum\_occurrences>1</minimum\_occurrences>

<maximum\_occurrences>1</maximum\_occurrences>

</DD\_Association>

<DD\_Association>

<identifier\_reference>detector\_id</identifier\_reference>

<reference\_type>attribute\_of</reference\_type>

<minimum\_occurrences>1</minimum\_occurrences>

<maximum\_occurrences>4</maximum\_occurrences>

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</DD\_Association>

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<!-- Pointing attributes -->

<DD\_Class>

<name>Pointing\_Parameters</name>

<version\_id>1.0</version\_id>

<local\_identifier>Pointing\_Parameters</local\_identifier>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

Contains attributes related to pointing and the observation target.

</definition>

<abstract\_flag>false</abstract\_flag>

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</DD\_Association>

<DD\_Association>

<identifier\_reference>moving\_target\_keyword</identifier\_reference>

<reference\_type>attribute\_of</reference\_type>

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<!-- Tracking attributes -->

<DD\_Class>

<name>Tracking\_Parameters</name>

<version\_id>1.0</version\_id>

<local\_identifier>Tracking\_Parameters</local\_identifier>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

Contains attributes related to the instrument tracking.

</definition>

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<identifier\_reference>fine\_guidance\_sensor\_lock\_type</identifier\_reference>

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<!-- Exposure attributes -->

<DD\_Class>

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<version\_id>1.0</version\_id>

<local\_identifier>Exposure\_Parameters</local\_identifier>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

Contains attributes related to the observation exposure.

</definition>

<abstract\_flag>false</abstract\_flag>

<DD\_Association>

<identifier\_reference>exposure\_duration</identifier\_reference>

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<!-- Wavelength/filter/grating attributes -->

<DD\_Class>

<name>Wavelength\_Filter\_Grating\_Parameters</name>

<version\_id>1.0</version\_id>

<local\_identifier>Wavelength\_Filter\_Grating\_Parameters</local\_identifier>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

Contains attributes related to wavelengths, filters, and gratings.

</definition>

<abstract\_flag>false</abstract\_flag>

<DD\_Association>

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<!-- Operational attributes -->

<DD\_Class>

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<version\_id>1.0</version\_id>

<local\_identifier>Operational\_Parameters</local\_identifier>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

Contains attributes related to the commanding and operations of an instrument.

</definition>

<abstract\_flag>false</abstract\_flag>

<DD\_Association>

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<version\_id>1.0</version\_id>

<local\_identifier>Processing\_Parameters</local\_identifier>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

Contains attributes related to the processing of the data after receipt.

</definition>

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<!-- HST Parameter class -->

<DD\_Class>

<name>HST\_Parameters</name>

<version\_id>1.0</version\_id>

<local\_identifier>HST\_Parameters</local\_identifier>

<submitter\_name>Mark R. Showalter</submitter\_name>

<definition>

Contains all HST-specific parameters.

</definition>

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