

JWST Field of View

Each JWST instrument observes an area on the sky bounded by the coordinates given in the telescope's (V2, V3) coordinate system.

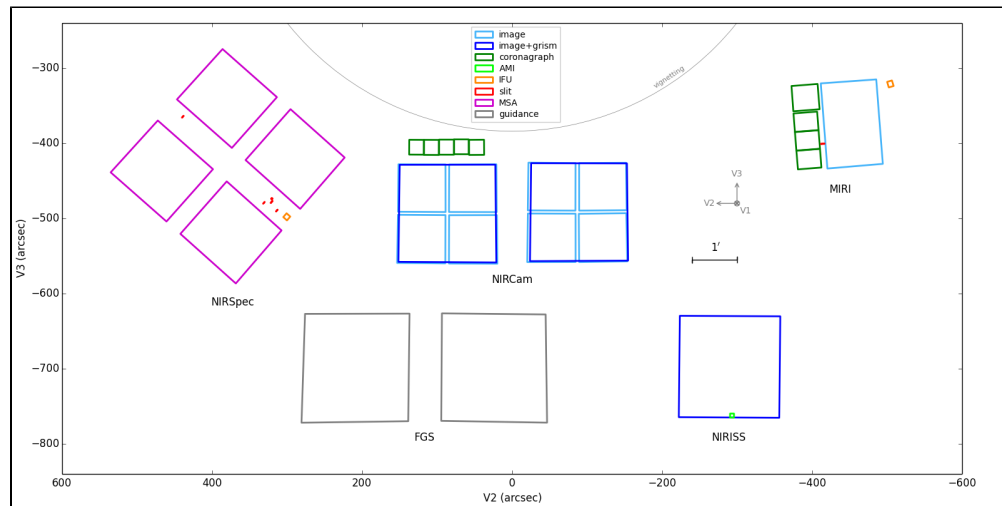
Overview of JWST instruments' fields of view

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Figure 1 shows NIRSpec, NIRCam, MIRI, NIRISS, and FGS fields of view in the JWST focal plane.

Table 1 provides the vertices of each region in the [observatory's coordinate system](#) (V2, V3). This is a small excerpt of data from the JWST Science Instrument Aperture File (SIAF). SIAF is a reference file used in operations that contains the official information on all apertures (e.g., [NIRCam Apertures](#)) and internal instrument coordinates.

Figure 1. The JWST field of view



Each JWST instrument observes an area on the sky shown here in (V2, V3) coordinates. Colors indicate observing modes: [imaging](#), [coronagraphy](#), [grism spectroscopy](#), [slit spectroscopy](#), [NIRISS AMI](#), [NIRSpec MSA](#), [NIRSpec IFU](#), [MIRI MRS \(IFUs\)](#), and [guidance with FGS](#).

The SIAF excerpt table below provides the following information for various apertures defined for each instrument:

- (V2_Ref, V3_Ref) is the reference position in (V2, V3) coordinates (arcsec); some of these entries are used to define telescope pointings.
- V3_IdiYAngle is the rotation (in degrees, counterclockwise) of the aperture's [ideal Coordinate System](#) Y-axis relative to V3.

- (V2_1, V2_2, V2_3, V2_4), (V3_1, V3_2, V3_3, V3_4) are the vertices in the (V2, V3) coordinates (arcsec) of the quadrilateral defined by each aperture.

For a few of the instruments, larger bounding box apertures are excluded from the plot above but included in the table below (marked with *).

The coordinates given below are approximate and subject to frequent minor revisions. More significant revisions are expected after launch based on flight data.

Table 1. Approximate coordinates (V2, V3) of select instrument apertures

Scroll right and down to view the full table.

Instrument	Aperture	V2_Ref	V3_Ref	V3_IdlYAngle	V2_1	V2_2	V2_3	
NIRCam	NRCALL_FULL*	-0.32	-492.59	-0.03	153.16	-153.74	-152.07	1
NIRCam	NRCAS_FULL*	81.35	-498.23	-0.10	153.16	19.49	20.80	1
NIRCam	NRCA1_FULL	120.67	-527.39	-0.57	153.16	88.90	88.69	1
NIRCam	NRCA2_FULL	120.11	-459.68	-0.21	151.95	88.56	88.68	1
NIRCam	NRCA3_FULL	51.93	-527.80	0.19	84.05	19.49	20.15	1
NIRCam	NRCA4_FULL	52.28	-459.81	0.06	84.00	20.39	20.80	1
NIRCam	NRCA5_FULL	86.10	-493.23	-0.09	151.45	20.88	22.23	1
NIRCam	NRCBS_FULL*	-82.29	-496.21	-0.06	-20.32	-153.74	-152.07	-1
NIRCam	NRCB1_FULL	-120.97	-457.75	0.38	-89.59	-152.82	-152.07	-1
NIRCam	NRCB2_FULL	-121.14	-525.46	0.83	-89.55	-153.74	-152.37	-1
NIRCam	NRCB3_FULL	-53.12	-457.78	-0.49	-21.05	-84.57	-84.75	-1
NIRCam	NRCB4_FULL	-52.82	-525.73	-0.34	-20.32	-84.82	-84.77	-1
NIRCam	NRCB5_FULL	-89.39	-491.44	-0.01	-23.98	-154.75	-153.25	-1
NIRCam	NRCA2_MASK210R	127.23	-405.24	-0.24	137.11	117.44	117.39	1
NIRCam	NRCA5_MASK335R	107.51	-405.52	-0.19	117.56	97.59	97.55	1
NIRCam	NRCA5_MASK430R	87.25	-405.19	-0.01	97.27	77.29	77.32	1
NIRCam	NRCA4_MASKSWB	67.61	-404.67	-0.08	77.46	57.75	57.76	1
NIRCam	NRCA5_MASKLWB	47.20	-405.44	0.35	57.20	37.13	37.29	1
NIRISS	NIS_CEN	-290.10	-697.50	-0.57	-222.43	-356.38	-357.71	-1
NIRISS	NIS_AMI1	-293.74	-762.31	-0.57	-290.73	-295.96	-296.02	-1

NIRSpec	NRS_FULL_IFU_IFU	300.15	-498.12	138.89	295.63	300.55	304.96	3
NIRSpec	NRS_S200A1_SLIT	332.14	-479.22	138.76	329.66	329.82	331.90	3
NIRSpec	NRS_S400A1_SLIT	321.87	-477.94	138.78	319.10	319.48	321.91	3
NIRSpec	NRS_S200A2_SLIT	314.98	-489.45	138.83	312.42	312.65	314.73	3
NIRSpec	NRS_S1600A1_SLIT	321.53	-473.68	138.77	319.11	320.26	321.30	3
NIRSpec	NRS_S200B1_SLIT	440.48	-364.52	138.16	437.76	437.92	440.10	4
NIRSpec	NRS_FULL_MSA*	378.77	-428.16	138.49	223.34	385.55	534.72	3
NIRSpec	NRS_FULL_MSA1	466.48	-436.16	138.24	398.68	472.27	535.09	4
NIRSpec	NRS_FULL_MSA2	381.89	-340.89	138.30	313.41	385.93	446.75	3
NIRSpec	NRS_FULL_MSA3	375.82	-516.37	138.74	307.26	380.36	442.15	3
NIRSpec	NRS_FULL_MSA4	291.77	-420.64	138.69	223.11	295.32	355.24	2
MIRI	MIRIM_FULL*	-453.36	-374.07	0.08	-381.41	-494.97	-486.22	-3
MIRI	MIRIM_ILLUM	-453.36	-374.07	0.08	-420.52	-494.42	-485.67	-4
MIRI	MIRIM_MASK1065	-393.11	-421.18	0.08	-381.24	-412.55	-410.66	-3
MIRI	MIRIM_MASK1140	-391.12	-396.53	0.08	-379.18	-410.64	-408.74	-3
MIRI	MIRIM_MASK1550	-389.22	-372.03	0.08	-377.24	-408.75	-406.82	-3
MIRI	MIRIM_MASKLYOT	-389.09	-337.61	0.08	-375.11	-410.13	-407.44	-3
MIRI	MIRIM_SLIT	-414.33	-400.69	4.36	-411.99	-416.72	-416.68	-4
MIRI	MIRIFU_FULL_SHCH1CNTR_CH4	-504.48	-321.06	17.00	-502.41	-508.81	-506.55	-5
FGS	FGS1_FULL	207.19	-697.50	-0.02	280.66	138.36	136.62	2
FGS	FGS2_FULL	24.43	-697.50	0.00	94.31	-46.78	-44.86	1