MAY 2022
NASA SOUNDING ROCKETS
FISCAL YEAR 2022

NASA MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR
1.	41.131 UO	STUDENT OUTREACH	KOEHLER	COLORADO SPACE GRANT	ROCKON	WI	06/23/22	DAY	T. PAUL	G. MARSH
2.	36.347 UH	HIGH ENERGY ASTROPHYSICS	MCCAMMON	UNIV. OF WISCONSIN	XQC	AUS*	06/26/22	NIGHT	J. SCOTT	G. MARSH
3.	36.339 UG	UV/OPTICAL ASTROPHYSICS	FRANCE	UNIV OF COLORADO	SISTINE	AUS*	07/05/22	NIGHT	E. ROPER	S. BISSETT
4.	36.350 UG	UV/OPTICAL ASTROPHYSICS	FLEMING	UNIV OF COLORADO	DEUCE	AUS*	07/12/22	NIGHT	E. ROPER	L. WEST
5.	46.036 UO	STUDENT OUTREACH	KOEHLER	COLORADO SPACE GRANT	ROCKSAT-X	WI	08/09/22	DAY	T. GASS	L. WEST
6.	36.355 UH	HIGH ENERGY ASTROPHYSICS	FIGUEROA	NORTHWESTERN	Micro-X	WS	08/22/22	NIGHT	D. BROOKS	C. BRODELL
7.	46.025 UE	GEOSPACE SCIENCES	BARJATYA	EMBRY RIDDLE	SpEED Demon	WI	08/22/22	NIGHT	S. DONOHUE	M. KING
8.	36.367 UH	HIGH ENERGY ASTROPHYSICS	MCENTAFFER	PENN STATE UNIV	tREXS	WS	09/25/22	NIGHT	T. PAUL	L. WEST
9.	46.032 WT	TEST & SUPPORT	HESH	NASA WFF	SUBTEC 9	WI	09/26/22	DAY	S. DONOHUE	C. HESH

*Arnhem Space Center, Australia

REIMBURSABLE MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME	NASA/NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR

MAY 2022
NASA SOUNDING ROCKETS
FISCAL YEAR 2023

NASA MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR
1.	36.337 DS	SOLAR & HELIOSPHERIC	CRUMP	NRL	VERIS 2	WS	10/25/22	DAY	T. GASS	C. BRODELL
2.	12.089 WT	TEST ROUND	EDWARDS	NASA/WFF	MesOrion	WI	11/01/22	DAY	T. PAUL	C. MILLINER
3.	12.090 WT	TEST ROUND	EDWARDS	NASA/WFF	MesOrion	WI	11/01/22	DAY	T. PAUL	C. MILLINER
4.	36.359 UE	GEOSPACE SCIENCES	BOUNDS	UNIV OF IOWA	ACES-2	NOR	11/16/22	NIGHT	J. SCOTT	L. WEST
5.	36.364 UE	GEOSPACE SCIENCES	BOUNDS	UNIV OF IOWA	ACES-3	NOR	11/16/22	NIGHT	J. SCOTT	L. WEST
6.	36.383 UG	UV/OPTICAL ASTROPHYSICS	ZEMCOV	RIT	CIBER	WS	01/27/23	NIGHT	S. DONOHUE	C. MILLINER
7.	36.361 UE	GEOSPACE SCIENCES	LEMACHER	CLEMSON UNIV	VortEX	NOR	02/10/23	NIGHT	E. ROPER	S. BISSETT
8.	36.362 UE	GEOSPACE SCIENCES	LEMACHER	CLEMSON UNIV	VortEX	NOR	02/10/23	NIGHT	E. ROPER	S. BISSETT
9.	41.127 UE	GEOSPACE SCIENCES	LEMACHER	CLEMSON UNIV	VortEX	NOR	02/10/23	NIGHT	E. ROPER	S. BISSETT
10.	41.128 UE	GEOSPACE SCIENCES	LEMACHER	CLEMSON UNIV	VortEX	NOR	02/10/23	NIGHT	E. ROPER	S. BISSETT
11.	45.007 GE	GEOSPACE SCIENCES	BENNA	NASA/GSFC	DISSIPATION	FB	02/12/23	NIGHT	E. ROPER	D. BOWDEN
12.	52.009 AE	GEOSPACE SCIENCES	REEVES	LOS ALAMOS NATIONAL LAB	Beam-PIE	FB	02/12/23	NIGHT	J. SCOTT	G. MARSH
13.	46.034 UE	GEOSPACE SCIENCES	CONDE	UNIV OF ALASKA	AWESOME	FB	03/13/23	NIGHT	S. DONOHUE	M. KING
14.	46.035 UE	GEOSPACE SCIENCES	CONDE	UNIV OF ALASKA	AWESOME	FB	03/13/23	NIGHT	S. DONOHUE	M. KING
15.	52.010 UE	GEOSPACE SCIENCES	CONDE	UNIV OF ALASKA	AWESOME	FB	03/13/23	NIGHT	S. DONOHUE	M. KING
16.	36.384 UG	UV/OPTICAL ASTROPHYSICS	MCCANDLISS	JOHNS HOPKINS	OAxFORTIS	WS	04/10/23	NIGHT	S. DONOHUE	L. WEST
17.	36.375 UG	UV/OPTICAL ASTROPHYSICS	FLEMING	UNIV OF COLORADO	INFUSE	WS	04/24/23	NIGHT	E. ROPER	L. WEST
18.	36.366 US	SOLAR & HELIOSPHERIC	KANKELBORG	MONTANA STATE UNIV	FURST	WS	05/22/23	DAY	S. DONOHUE	C. MILLINER
19.	46.026 UE	GEOSPACE SCIENCES	BARJATYA	EMBRY RIDDLE	SEED	KWAJ	06/16/23	NIGHT	E. ROPER	L. WEST
20.	46.037 UE	GEOSPACE SCIENCES	BARJATYA	EMBRY RIDDLE	SEED	KWAJ	06/16/23	NIGHT	E. ROPER	L. WEST
21.	36.385 NS	SOLAR & HELIOSPHERIC	WINEBARGER	NASA/MSFC	MaGIXS 2	WS	08/01/23	DAY	T. PAUL	D. BOWDEN
22.	36.335 CE	GEOSPACE SCIENCES	CLEMMONS	AEROSPACE CORP.	TOMEX-Plus	WI	08/08/23	NIGHT	T. GASS	S. BISSETT
23.	41.123 CE	GEOSPACE SCIENCES	CLEMMONS	AEROSPACE CORP.	TOMEX-Plus	WI	08/08/23	NIGHT	T. GASS	S. BISSETT
24.	41.124 CE	GEOSPACE SCIENCES	CLEMMONS	AEROSPACE CORP.	TOMEX-Plus	WI	08/08/23	NIGHT	T. GASS	S. BISSETT
25.	36.382 UE	GEOSPACE SCIENCES	GILCHRIST	UNIV OF MICHIGAN	B-SPICE	WS	09/17/23	NIGHT	D. BROOKS	M. KING

REIMBURSABLE MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME	NASA/NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR
1.	36.354 DR	DEFENSE REIMBURSABLE	KRUEGER	MDA	SOFE-1	WI	02/01/23		T. PAUL	G. MARSH

MAY 2022
NASA SOUNDING ROCKETS
FISCAL YEAR 2024

NASA MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR
1.	36.386 UE	GEOSPACE SCIENCES	BARJATYA	EMBRY RIDDLE UNIVERSITY	Apophis	WS	10/01/23	DAY	J. SCOTT	M. KING
2.	36.387 UE	GEOSPACE SCIENCES	BARJATYA	EMBRY RIDDLE UNIVERSITY	Apophis	WS	10/01/23	DAY	J. SCOTT	M. KING
3	36.388 UE	GEOSPACE SCIENCES	BARJATYA	EMBRY RIDDLE UNIVERSITY	Apophis	WS	10/01/23	DAY	J. SCOTT	M. KING
4.	36.380 GE	GEOSPACE SCIENCES	MICHELL	GSFC	GIRAFF	FB	02/05/24	NIGHT	T. PAUL	D. BOWDEN
5.	36.381 GE	GEOSPACE SCIENCES	MICHELL	GSFC	GIRAFF	FB	02/05/24	NIGHT	T. PAUL	D. BOWDEN
6	36.298 UH	HIGH ENERGY ASTROPHYSICS	MCENTAFFER	PENN STATE UNIV	OGRE	FB	02/06/24	NIGHT	T. GASS	C. HESH
7.	36.372 US	SOLAR AND HELIOSPHERIC	CHAMBERLIN	UNIV OF COLORADO	SNIFS	FB	03/19/24	DAY	T. PAUL	D. BOWDEN
8.	36.370 US	SOLAR AND HELIOSPHERIC	GLESENER	UNIV OF MINNESOTA	FOXI-4	FB	03/29/24	DAY	T. GASS	G. MARSH
9	36.371 NS	SOLAR AND HELIOSPHERIC	SAVAGE	NASA MSFC	HI-C Flare	FB	03/29/24	DAY	S. DONOHUE	L. WEST

REIMBURSABLE MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME	NASA/NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR

MAY 2022
NASA SOUNDING ROCKETS
FISCAL YEAR 2025

NASA MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR
1.	52.011 UE	GEOPACE SCIENCE	LESSARD	UNIV OF NEW HAMPSHHIRE	RENU 3	NOR	11/01/24	NIGHT	J. SCOTT	M. KING

REIMBURSABLE MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME	NASA/NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR
1.	36.376 NR	NASA REIMBURSABLE	JACKMAN	NASA MSFC & JPL	MAV-FT	WI	10/01/24	DAY	T. PAUL	G. MARSH
2.	45.008 NR	NASA REIMBURSABLE	O'FARRELL	NASA JPL	ASPIRE 2	WI	01/01/25	DAY	J. SCOTT	L. WEST

NASA SOUNDING ROCKETS
MISSIONS LAUNCHED
FISCAL YEAR 2022

NASA MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME (Z)	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR	FLIGHT RESULTS			
											VEHICLE	PL SUPPORT SYSTEMS	SCIENTIFIC INSTRUMENT(S)	OVERALL MISSION SUCCESS
1.	36.374 NS	SOLAR & HELIOSPHERIC	MCKENZIE	NASA/MSFC	CLASP-2.1	WS	10/08/21	17:40:00	S. DONOHUE	D. BOWDEN	S	S	S	S
2.	36.373 UG	UV/OPTICAL ASTROPHYSICS	FRANCE	UNIV OF COLORADO	SISTINE 2	WS	11/08/21	09:25:00	D. BROOKS	D. BOWDEN	S	S	S	S
3.	49.004 UE	GEOSPACE SCIENCE	CONDE	UNIV OF ALASKA	C-REX 2	NOR	12/01/21	09:25:00	S. DONOHUE	D. BOWDEN	S	S	S	S
4.	36.363 UH	HIGH ENERGY ASTROPHYSICS	GALEAZZI	UNIV OF MIAMI	DXL 3	WI	01/04/22	05:00:00	T. PAUL	C. BRODELL	S	S	S	S
5.	36.351 GE	GEOSPACE SCIENCES	HALFORD	GSFC	LAMP	FB	03/05/22	11:27:30	J. SCOTT	G. MARSH	S	S	S	S
6.	36.307 DS	SOLAR & HELIOSPHERIC	TUN	NAVAL RESEARCH LAB	HERSCHEL	WS	03/09/22	18:25:00	T. PAUL	S. HESH	S	S	F	F
7.	36.360 UE	GEOSPACE SCIENCES	KAEPPLER	CLEMSON UNIVERSITY	INCAA	FB	04/07/22	12:47:00	E. ROPER	G. MARSH	S	S	S	S
8.	46.031 UE	GEOSPACE SCIENCES	KAEPPLER	CLEMSON UNIVERSITY	INCAA	FB	04/07/22	12:50:00	E. ROPER	G. MARSH	S	S	S	S
9.	47.001 GE	GEOSPACE SCIENCES	COLLINSON	GSFC	Endurance	SVAL	05/11/22	01:31:00	T. GASS	S. BISSETT	S	S	S	S

REIMBURSABLE MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME (Z)	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR	FLIGHT RESULTS			
											VEHICLE	PL SUPPORT SYSTEMS	SCIENTIFIC INSTRUMENT(S)	OVERALL MISSION SUCCESS
1.	46.027 DR	DEFENSE REIMBURSABLE	HOLDEN	USAF	BOLT-2	WI	03/21/22	23:12:00	T. GASS	L. WEST	S	S	S	S

* MISSION IS SUCCESSFUL UNLESS THERE IS AN "F" IN ANY FLIGHT RESULT COLUMN

* N/A DENOTES NOT APPLICABLE IN MISSION SUCCESS/FAILURE ASSESSMENT

NASA SOUNDING ROCKETS
MISSIONS LAUNCHED
FISCAL YEAR 2021

NASA MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME (Z)	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR	FLIGHT RESULTS			
											VEHICLE	PL SUPPORT SYSTEMS	SCIENTIFIC INSTRUMENT(S)	OVERALL MISSION SUCCESS
1.	36.368 UG	UV/OPTICAL ASTROPHYSICS	GREEN	UNIV OF COLORADO	DEUCE	WS	11/02/20	10:00:00	E. ROPER	C. HESH	S	S	S	S
2.	36.324 US	SOLAR & HELIOSPHERIC	HARRIS	UNIV OF ARIZONA	SHIELDS	WS	04/19/21	08:30:00	T. GASS	G. MARSH	S	S	S	S
3.	52.007 UE	GEOSPACE SCIENCES	DELAMERE	UNIV OF ALASKA FAIRBANKS	KiNET-X	WI	05/07/21	00:44:00	J. SCOTT	C. BRODELL	S	S	S	S
4.	36.322 GS	SOLAR & HELIOSPHERIC	DAW	NASA/GSFC	EUNIS	WS	05/18/21	17:30:00	T. PAUL	G. MARSH	S	S	S	S
5.	46.028 UE	GEOSPACE SCIENCES	BONNELL	UNIV. OF BERKELEY	VIPER	WI	05/27/21	01:15:00	S. DONOHUE	C. HESH	S	S	S	S
6.	36.281 UG	UV/OPTICAL ASTROPHYSICS	ZEMCOV	RIT	CIBER-2	WS	06/07/21	06:25:00	E. ROPER	C. MILLINER	S	S	S	S
7.	41.130 UO	STUDENT OUTREACH	KOEHLER	COLORADO SPACE GRANT	ROCKON	WI	06/25/21	12:32:00	T. PAUL	G. MARSH	S	S	S	S
8.	36.358 GE	GEOSPACE SCIENCES	PFAFF	GSFC	DYNAMO-2	WI	07/07/21	18:00:00	T. GASS	C. MILLINER	S	S	S	S
9.	36.357 GE	GEOSPACE SCIENCES	PFAFF	GSFC	DYNAMO-2	WI	07/11/21	17:56:00	T. GASS	C. MILLINER	S	S	S	S
10.	36.319 NS	SOLAR & HELIOSPHERIC	WINEBARGER	NASA/MSFC	MaGIXS	WS	07/30/21	18:20:00	J. SCOTT	L. WEST	S	S	S	S
11.	46.030 UO	STUDENT OUTREACH	KOEHLER	COLORADO SPACE GRANT	ROCKSAT-X	WI	08/19/21	21:00:00	S. DONOHUE	L. WEST	S	S	S	S
12.	36.353 US	SOLAR & HELIOSPHERIC	WOODS	UNIV OF COLORADO	EVE	WS	09/09/21	17:25:00	T. GASS	L. WEST	S	S	S	S

REIMBURSABLE MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME (Z)	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR	FLIGHT RESULTS			
											VEHICLE	PL SUPPORT SYSTEMS	SCIENTIFIC INSTRUMENT(S)	OVERALL MISSION SUCCESS
1.	12.088 NR	TEST & SUPPORT	GILBERT	NESC	ABFT	WS	03/30/21	15:00:00	E. ROPER	C. BRODELL	S	S	S	S
2.	46.033 AR	TECHNOLOGY DEVELOPMENT	LEATHE	SANDIA	HOTShot	WI	09/11/21	22:07:30	E. ROPER	M. KING	S	S	S	S

* MISSION IS SUCCESSFUL UNLESS THERE IS AN "F" IN ANY FLIGHT RESULT COLUMN

* N/A DENOTES NOT APPLICABLE IN MISSION SUCCESS/FAILURE ASSESSMENT

NASA SOUNDING ROCKETS
MISSIONS LAUNCHED
FISCAL YEAR 2020

NASA MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME (Z)	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR	FLIGHT RESULTS			
											VEHICLE	PL SUPPORT SYSTEMS	SCIENTIFIC INSTRUMENT(S)	OVERALL MISSION SUCCESS
1.	36.343 GB	LAB ASTRO	NUTH	NASA GSFC	DUST	WS	10/07/19	15:00:00	E. ROPER	N. EMPSON	S	S	S	S
2.	46.020 GT	TEST & SUPPORT	HESH	NASA WFF	SUBTEC 8	WI	10/24/19	0:00:00	J. SCOTT	C. HESH	S	S	S	S
3.	36.352 UG	UV/OPTICAL ASTROPHYSICS	MCCANDLISS	JOHNS HOPKINS	FORTIS	WS	10/28/19	04:30:00	T. PAUL	L. WEST	S	S	S	S
4.	46.029 IE	GEOSPACE SCIENCE	MOEN	UNIV OF OSLO	ICI-5	SVAL	11/26/19	07:43:04	D. BOWDEN	S. BISSETT	F	S	F	F
5.	36.349 UE	GEOSPACE SCIENCES	LARSEN	CLEMSON UNIVERSITY	CHI	SVAL	12/10/19	09:30:00	D. BOWDEN	G. MARSH	S	S	S	S
6.	36.356 UE	GEOSPACE SCIENCES	BAILEY	VA TECH	PolarNOx	FB	01/26/20	13:40:00	J. SCOTT	G. MARSH	S	S	S	S
7.	36.365 GB	LAB ASTRO	NUTH	NASA GSFC	DUST-2	WS	09/08/20	18:00:00	E. ROPER	T. THORNES	S	S	S	S

REIMBURSABLE MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME (Z)	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR	FLIGHT RESULTS			
											VEHICLE	PL SUPPORT SYSTEMS	SCIENTIFIC INSTRUMENT(S)	OVERALL MISSION SUCCESS

* MISSION IS SUCCESSFUL UNLESS THERE IS AN "F" IN ANY FLIGHT RESULT COLUMN
* N/A DENOTES NOT APPLICABLE IN MISSION SUCCESS/FAILURE ASSESSMENT

NASA SOUNDING ROCKETS
MISSIONS LAUNCHED
FISCAL YEAR 2019

NASA MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME (Z)	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR	FLIGHT RESULTS			
											VEHICLE	PL SUPPORT SYSTEMS	SCIENTIFIC INSTRUMENT(S)	OVERALL MISSION SUCCESS
1.	35.039 GE	GEOSPACE SCIENCE	ROWLAND	NASA GSFC	VISIONS 2	SVAL	12/07/18	11:06:00	T. GASS	J. HICKMAN	S	S	S	S
2.	35.040 GE	GEOSPACE SCIENCE	ROWLAND	NASA GSFC	VISIONS 2	SVAL	12/07/18	11:08:00	T. GASS	J. HICKMAN	S	S	S	S
3.	52.003 UE	GEOSPACE SCIENCE	KLETZING	UNIVERSITY OF IOWA	TRICE-2	NOR	12/08/18	08:26:00	J. SCOTT	L. WEST	S	S	S	S
4.	52.004 UE	GEOSPACE SCIENCE	KLETZING	UNIVERSITY OF IOWA	TRICE-2	NOR	12/08/18	08:28:00	J. SCOTT	L. WEST	S	S	S	S
5.	36.331 UG	UV/OPTICAL ASTROPHYSICS	GREEN	UNIVERSITY OF COLORADO	DEUCE	WS	12/18/18	07:46:00	E. ROPER	N. EMPSON	S	S	S	S
6.	52.005 UE	GEOSPACE SCIENCES	LABELLE	DARTMOUTH COLLEGE	CAPER-2	NOR	01/04/19	09:27:00	D. BOWDEN	N. EMPSON	S	S	S	S
7.	46.018 UO	STUDENT OUTREACH	KOEHLER	UNIV. OF COLORADO	RockSat-XN	NOR	01/13/19	09:13:00	M. KING	G. MARSH	S	S	S	S
8.	51.001 UE	GEOSPACE SCIENCES	LARSEN	CLEMSON UNIVERSITY	AZURE	NOR	04/05/19	22:14:00	D. BOWDEN	B. HALL	S	S	S	S
9.	51.002 UE	GEOSPACE SCIENCES	LARSEN	CLEMSON UNIVERSITY	AZURE	NOR	04/05/19	22:16:00	D. BOWDEN	B. HALL	S	S	S	S
10.	36.332 NS	SOLAR & HELIOSPHERIC	MCKENZIE	NASA MSFC	CLASP 2	WS	04/11/19	16:51:00	R. WEAVER	N. EMPSON	S	S	S	S
11.	36.344 UE	GEOSPACE SCIENCES	HYSELL	CORNELL UNIVERSITY	TooWINDY	KWAJ	06/19/19	11:28:00	J. SCOTT	N. EMPSON	S	S	S	S
12.	36.345 UE	GEOSPACE SCIENCES	HYSELL	CORNELL UNIVERSITY	TooWINDY	KWAJ	06/19/19	11:33:00	J. SCOTT	N. EMPSON	S	S	S	S
13.	41.126 UO	STUDENT OUTREACH	KOEHLER	COLORADO SPACE GRANT	RockOn	WI	06/20/19	09:30:00	D. BOWDEN	G. ROSANOVA	S	S	S	S
14.	36.346 UG	UV/OPTICAL ASTROPHYSICS	FRANCE	UNIV. OF COLORADO	SISTINE	WS	08/11/19	06:07:00	M. DANOWSKI	G. MARSH	S	S	F	F
15.	46.022 UO	STUDENT OUTREACH	KOEHLER	COLORADO SPACE GRANT	RockSat-X	WI	08/12/19	09:44:30	T. PAUL	C. MIILINER	S	S	S	S
16.	36.320 US	SOLAR & HELIOSPHERIC	KANKELBORG	MONTANA STATE UNIVERSITY	ESIS	WS	09/30/19	18:04:00	E. ROPER	C. MIILINER	S	S	S	S

REIMBURSABLE MISSIONS

NO.	MISSION	DISCIPLINE	EXPERIMENTER	ORGANIZATION	PROJECT	RANGE	DATE	TIME (Z)	NSROC RESPONSIBILITY	NASA MISSION OVERSIGHT MONITOR	FLIGHT RESULTS			
											VEHICLE	PL SUPPORT SYSTEMS	SCIENTIFIC INSTRUMENT(S)	OVERALL MISSION SUCCESS
1.	36.340 DR	DOD	ABBETT	TOYON RESEARCH CORP.		WI	09/17/19	9:36:00	T. GASS	C. HESH	S	S	S	S

* MISSION IS SUCCESSFUL UNLESS THERE IS AN "F" IN ANY FLIGHT RESULT COLUMN

* N/A DENOTES NOT APPLICABLE IN MISSION SUCCESS/FAILURE ASSESSMENT

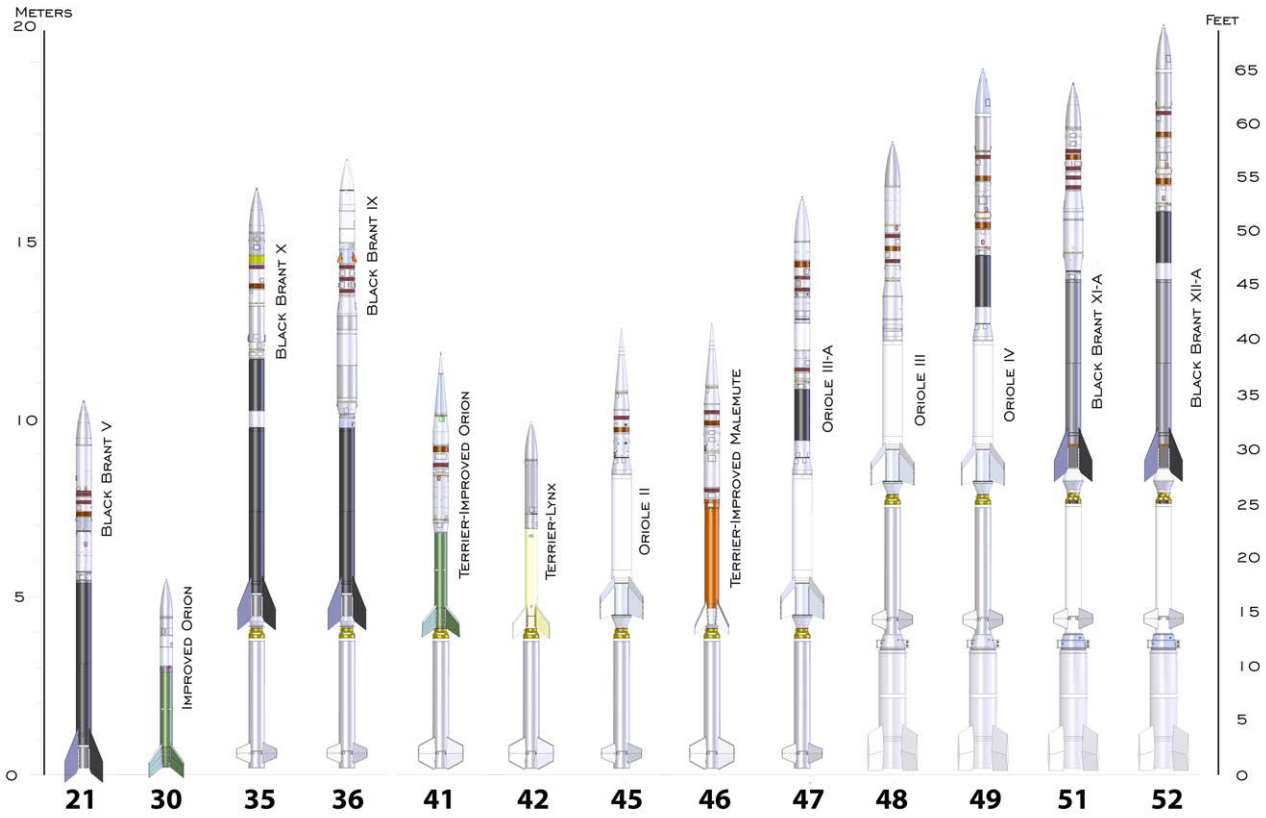
Mission Acronyms 2017 - 2023

ABFT	Aerodynamic Buffet Flight Test
ACCESS #1	Absolute Color Calibration Experiment for Standard Stars
ACES-2	Aurora Current and Electrodynamics Structure
ASPIRE	Advanced Supersonic Parachute Inflation Research and Experiments
AWESOME	Auroral Waves Excited by Substorm Onset Magnectic Events
AZURE	Auroral Zone Upwelling Rocket Experiment
B-SPICE	Beam-Spacecraft Plasma Interaction and Charging Experiment
Beam-PIE	Beam - Plasma Interactions Experiment
CAPER-2	Cusp Alfven and Plasma Electrodynamics Rocket
CHESS	Colorado High-resolution Echelle Stellar Spectrograph
CHI	Cusp Heating Investigation
CIBER-2	Cosmic Infrared Background Experiment
CLASP-2	Chromospheric LAyer Spectro-Polarimeter 2
C-REX-2	Cusp-Region Experiment 2
DEUCE	Dual-channel Extreme Ultraviolet Continuum Spectrograph
DUST	Determining Unknown yet Significant Traits
DXL	Diffuse X-ray emission from the Local galaxy
ESIS	EUV Snapshot Imaging Spectrograph
EUNIS	Extreme Ultraviolet Normal-Incidence Spectrograph
FORTIS	Far-ultraviolet Off Rowland-circle Telescope for Imaging and Spectroscopy
FOXSI	Focusing Optics X-ray Solar Imager
FURST	Full-Sun Ultraviolet Rocket SpecTrograph
GIRAFF	Ground Imaging to Rocket investigation of Auroral Fast Features
HERSCHEL	HElium Resonance Scatter in the Corona and HELiosphere
INCAA	Ion-Neutral Coupling During Active Aurora
INFUSE	INtegral Field far-Ultraviolet Spectroscopic Experiment
ISINGLASS	Ionospheric Structuring: In Situ and Ground based Low Altitude StudieS
KiNET-X	Kinetic-scale Energy and momentum Transport eXperiment
LAMP	Loss through Auroral Microburst Pulsations
MaGIXS	Marshall Grazing Incidence X-ray Spectrometer
MAV-FT	Mars Ascent Vehicle - Flight Test
OAxFORTIS	Off Axis Far-ultraviolet Off Rowland-circle Telescope for Imaging and Spectroscopy
OGRE	Off-Plane Grating Rocket Experiment
POLARNOX	Polar Night Nitric Oxide
XQC	X-ray Quantum Calorimeter
RAISE	Rapid Acquisition Imaging Spectrograph Experiment
SEED	Sporadic E Electrodynamics
SHIELDS	Spatial Heterodyne Interferometric Emission Line Dynamics Spectrometer
SISTINE	Suborbital Imaging Spectrograph for Transition region Irradiance from Nearby Exoplanet host stars
SMART	Space Measurement of Rocket-released Turbulence
SNIFS	Solar eruptioN Integral Field Spectrograph
SOFE	Suborbital Flight Experiment
SUBTEC 7	Sub-orbital Technology
TOMEX-Plus	Turbulent Oxygen Mixing Experiment-Plus
tREXS	The Rockets for Extended-source X-ray Spectroscopy
TRICE-2	Twin Rockets to Investigate Cusp Electrodynamics
USIP	University Student Instrument Program
VERIS-2	Very high angular Resolution Imaging Spectrograph
VIPER	Vlf trans-Ionospheric Propagation Experiment Rocket
VortEX	Vorticity Experiment
VISIONS 2	VISualizing Ion Outflow vie Neutral atom imaging during a Substorm
WINDY	Waves and Instabilities from a Neutral Dynamo
WRX-R	Water Recovery X-ray Rocket

Mission Names (not acronyms)

JETS	Neutral Jets Associated with Auroral Arcs
MICRO-X	X-ray Microcalorimeter
SUPER SOAKER	Transport, Chemistry, and Energetics of Water in the Mesosphere and Lower Thermosphere and Implications for Polar Mesospheric Cloud Occurrence (aka Super Soaker)
ENDURANCE	Mission is named after Ernest Shackleton's ship Endurance.
Apophis	Apophis: Rocket campaign to investigate eclipse induced ionospheric electrodynamics

NASA SOUNDING ROCKET LAUNCH VEHICLES



12 – IS A GENERIC NUMBER ASSIGNED TO TEST VEHICLES

****

LEGEND

LAUNCH SITES

ANT -Antarctica
AUS -Woomera, Australia
BRAZ -Alcantara, Brazil
CRR -Fort Churchill, Canada
FB -Poker Flat Research Range
GRN -Sondre Stromfjord, Greenland
KWAJ -Kwajalein
NOR -Andoya, Norway
PERU -Punta Lobos, Peru
PR -Puerto Rico, Camp Tortuguero
SM -San Marco (Italian)
SP -El Arenosillo, Spain
SVAL -Svalbard (NOR)
SW -Kiruna, Sweden
TAB -Thule Air Base, Greenland
WI -Wallops Island, Virginia
WS -White Sands Missile Range, New Mexico
HI -Kauai, Hawaii

AGENCY

G - Goddard Space Flight Center (other than WFF)
W - Wallops Flight Facility
N - Other NASA Centers
U - College or University
D - Department of Defense
A - Other U.S. Government Agency
C - Industrial Corporations
I - International

DISCIPLINE

B – Laboratory Astrophysics
E - Geospace Sciences
G - UV/Optical Astrophysics
H - High Energy Astrophysics
L - Solar System Exploration
P - Special Projects
S - Solar & Heliospheric Sciences
T - Test and Support
M - Microgravity Research
O - Student Outreach
R - Reimbursable

Example of Mission Number - 36.120 UE

36.	120	U	E
Black Brant IX	120th Assigned Mission	College or University	Geospace Sciences

MISSION	EXPERIMENTER	PROJECT	SCIENCE DESCRIPTION
12.081 DR	CREEKMORE	ZOMBIE	The purpose of the **Zombie** missions is to conduct flight tests of new guided vehicle configurations for use as DOD targets and defense systems testing. The 12.081 mission will be the first test flight for the guided Pathfinder configuration that utilizes a MK70 first stage booster. The MK70 enhances performance and increases range capabilities.
12.085 DR	CHRISLEY	ZOMBIE	The purpose of the **Zombie** missions is to conduct flight tests of new guided vehicle configurations for use as DOD targets and defense systems testing. The 12.085 and 12.086 missions are the first two guided launches to be used as actual targets. Defense systems will be used to engage the vehicles in flight.
12.086 DR	CHRISLEY	ZOMBIE	The purpose of the **Zombie** missions is to conduct flight tests of new guided vehicle configurations for use as DOD targets and defense systems testing. The 12.085 and 12.086 missions are the first two guided launches to be used as actual targets. Defense systems will be used to engage the vehicles in flight.
21.144 UE 21.145 UE	PFAFF	DYNAMO-2	Two identical instrumented payloads will be launched to an apogee of 135 km with instruments to measure DC electric fields, plasma density, currents, neutral winds, neutral density, temperature and ions mass distribution. Additionally, data from the ICON satellite, ground based magnetometers, and ionosonde will be incorporated in this mission.
29.042 UE	HYSELL	WINDY	The science goals for the **WINDY** (Waves and Instabilities from a Neutral Dynamo) equatorial spread F (ESF) missions are to study the stability of the post sunset equatorial F region ionosphere and the factors that predispose it to equatorial spread F, a spectacular phenomenon characterized by broadband plasma turbulence which degrades radio and radar signals at low magnetic latitudes. The goal of the investigation is to lay the foundation for a strategy to forecast this disruptive phenomenon.
35.039 GE	ROWLAND	VISIONS 2	The purpose of the VISualizing Ion Outflow via Neutral atom Sensing-2 (**VISIONS-2)** missions is to study the nature and extent of low altitude ion outflow (>10 eV) from the cusp. The investigation will determine the spatial and temporal variations of ion outflow; the total energetic ion outflow in the remotely sensed volume; and how regions of enhanced ion outflow compare in detail to the locations of field aligned currents, optical auroral emissions, enhanced electric fields, energetic particle precipitation, wave activity, and regions of enhanced/depressed electron density.
35.040 GE	ROWLAND	VISIONS 2	The purpose of the VISualizing Ion Outflow via Neutral atom Sensing-2 (**VISIONS-2)** missions is to study the nature and extent of low altitude ion outflow (>10 eV) from the cusp. The investigation will determine the spatial and temporal variations of ion outflow; the total energetic ion outflow in the remotely sensed volume; and how regions of enhanced ion outflow compare in detail to the locations of field aligned currents, optical auroral emissions, enhanced electric fields, energetic particle precipitation, wave activity, and regions of enhanced/depressed electron density.
35.041 GE 35.042 GE	COLLINSON	Endurance	The goal of the Endurance mission is to make the first measurement of the magnitude and structure of the electric field generated by Earth's ionosphere.

36.245 UH	FIGUEROA	MICRO-X	The **Micro-X** sounding rocket payload will obtain the first imaging X-ray microcalorimeter spectra from an astronomical source. The microcalorimeter array and associated transition edge sensors (TES) will be cooled to a temperature of about a hundredth of a degree above absolute zero by utilizing an Adiabatic Demagnetization Refrigerator (ADR). The first flight of Micro-X will investigate the plasma conditions (such as temperature, electron density and ionization) and the velocity structure of the Bright Eastern Knot of the Puppis A Supernova remnant (SNR). It will also search for the presence of supernova ejecta, measure or place upper limits on turbulent flows, and measure bulk motions of the plasma.
36.262 UG	KAISER	ACCESS #1	The Absolute Color Calibration Experiment for Standard Stars (**ACCESS-1**), is the first of four flights of a new payload to obtain absolute spectrophotometric calibration of the National Institute of Standards and Technology (NIST) laboratory irradiance standards to a precision of 1% in the 0.35 – 1.7μm bandpass at a spectral resolution greater than 500 by directly tracing the observed stellar fluxes to NIST laboratory irradiance standards. Transfer of the NIST detector standards to the target stars will produce an absolute calibration of these standards in physical units, including the historic absolute standard Vega. This improved network of standard stars, extending to 10^{th} magnitude, will be available to all telescopes as standard sources.
36.281 UG	BOCK	CIBER-2	The primary scientific objective of the Cosmic Infrared Background ExpeRiment (**CIBER-2**) mission is to conduct a deep multi-band search for extragalactic background fluctuations from the first generation of stars. These first stars and their remnants are likely responsible for the reionization of the intergalactic medium, which is observed to be ionized out the most distant quasars at a redshift of 6.
36.298 UH	MCENTAFFER	OGRE	The purpose of the Off-Plane Grating Rocket Experiment (**OGRE)** mission is to observe Capella in the soft X-ray spectrum and to flight test the instrument concept of the Off-Plane Grating Spectrometer for use on future X-ray missions.
36.301 GE	PFAFF	JETS	The purpose of the **JETS** investigation is to understand the height-dependent coupling processes that create localized neutral “jets” in the upper atmosphere associated with the aurora, their driving conditions, and their associated heating and neutral structuring.
36.302 UE	BAILEY	POLARNOX	The purpose of Polar Night Nitric Oxide (**Polar NOx**) experiment is to measure the concentration of nitric oxide in the mesosphere and lower thermosphere in the nighttime polar region. The reason this experiment needs to be conducted in the polar region is twofold. First, the NO is created by the reaction of atomic nitrogen (N) and O_2. A major source of atomic nitrogen (N) is auroral energetic electrons impacting Nitrogen (N_2) and splitting the atom into two. Secondly, the primary destruction mechanism of NO is photo dissociation and thus in the absences of sunlight, the NO loss mechanism disappears. Hence, the experiment needs to be conducted in the polar region at night to measure what is expected to be peak concentrations of NO.
36.303 UE	LYNCH	ISINGLASS	The purpose of the Ionospheric Structuring: In Situ and Ground Based Low Altitude Studies (**ISINGLASS**) investigation is to study how auroral energy sources impact ionospheric response gradients and the effects of ionspheric structures on M-I coupling.

36.304 UE	LYNCH	ISINGLASS	The purpose of the Ionospheric Structuring: In Situ and Ground Based Low Altitude Studies (**ISINGLASS**) investigation is to study how auroral energy sources impact ionospheric response gradients and the effects of ionspheric structures on M-I coupling.
36.306 GE	PFAFF	JETS	The purpose of the **JETS** investigation is to understand the height-dependent coupling processes that create localized neutral "jets" in the upper atmosphere associated with the aurora, their driving conditions, and their associated heating and neutral structuring.
36.307 DS	TUN	HERSCHEL	The scientific objectives of the **HERSCHEL II** mission are to: 1) Investigate the origin of the slow solar wind; 2) Investigte the variation of helium abundance in the coronal structures (a) departures from primordial composition (b) fractionation region for helium in the solar atmosphere; 3) Facilitate future investigation of Coronal Mass Ejections (CMEs), kinematics, and solar cycle evolution of the electron, proton, and helium corona.
36.309 US	HASSLER	RAISE	The Rapid Acquisition Imaging Spectrograph Experiment (**RAISE**) Sounding Rocket payload is a high speed scanning-slit imaging spectrograph designed to observe and analyze dynamics and heating of the solar chromosphere and corona. RAISE is a UV/EUV Imaging Spectrographs that use only two reflections to provide high cadence stigmatic imaging over multiple wavelengths and spatial fields simultaneously. This third flight will explore active region loop dynamics, high frequency waves in the corona and mechanisms of small scale energy release.
36.311 UG	GREEN	DEUCE	The goal of the **DEUCE** (Dual-channel Extreme Ultraviolet Continuum Spectrograph) mission is to measure the amount of the Lyman continuum (LyC) radiation that is being produced by the only two non-white-dwarf stars in our galaxy known to have a sufficiently low enough neutral hydrogen column density to measure their ionizing radiation directly. The results of this mission will help to answer one of the major questions of modern astrophysics concerning how and when galaxies first formed and how did their formation "feedback" into their circumgalactic environments to modify early galaxy formation during the Epoch of Re-ionization at Z=6-11.
36.317 GP	HESH	SUBTEC 7	The primary objectives of the **SubTec7** flight are to demonstrate the NSROC Forward OGIVE Recovery System (N-FORSe) with a representative vehicle and payload prior to the need date for science missions, and to perform water recovery on a representative BBIX telescope payload. The secondary objectives of this mission are to provide NASA and NSROC an opportunity to test new technology experiments.
36.319 NS	WINEBARGER	MaGIXS	The purpose of the Marshall Grazing Incidence X-ray Spectrometer (**MaGIXS**) mission is to determine the frequency of heating in active region cores of the Sun by observing different solar structures to establish: the relative amount of high-temperature plasma; the elemental abundance; the temporal variability at high temperatures; and the likelihood of Maxwellian or non-Maxwellian distributions.
36.320 US	KANKELBORG	ESIS	The purpose of the **ESIS/MOSES** mission is to make direct observations of the Sun surface to view explosive events, reconnection, and waves in the solar transition region. This will be achieved by using two instruments that are designed to map Doppler shifts and line widths over a wide field view and at rapid cadence.

36.321 UE	HYSELL	WINDY	The science goals for the **WINDY** (Waves and Instabilities from a Neutral Dynamo) equatorial spread F (ESF) missions are to study the stability of the post sunset equatorial F region ionosphere and the factors that predispose it to equatorial spread F, a spectacular phenomenon characterized by broadband plasma turbulence which degrades radio and radar signals at low magnetic latitudes. The goal of the investigation is to lay the foundation for a strategy to forecast this disruptive phenomenon.
36.322 GS	DAW	EUNIS	The purpose of the **EUNIS** (Extreme Ultraviolet Normal-Incidence Spectrograph) mission is to: 1) probe the structure and dynamics of the solar corona with high cadence enabled by unprecedented sensitivity (100 times the throughput of the highly successful SERTS payload that preceded EUNIS); 2) study diagnostics of wave heating and reconnection in the solar wind acceleration region and inner corona; and 3) provide absolute intensity calibration of orbital instruments such as Hinode/EIS, SOHO/CDS, SDO/AIA.
36.323 UG	FRANCE	CHESS	The Colorado High-resolution Echelle Stellar Spectrograph (**CHESS-3**) mission will be the third flight of a payload designed to enable new scientific studies of the local interstellar medium. The CHESS instrument allows for observations of the local interstellar medium by observing nearby stars that are too bright for the Hubble Space Telescope or the Far Ultraviolet Spectrograph Explorer (FUSE) satellite, thus providing detailed composition and temperature maps at the diffuse/transitional interstellar medium boundary for the first time.
36.324 US	HARRIS	SHIELDS	The purpose of the Spatial Heterodyne Interferometric Emission Line Diagnostic Spectrometer (**SHIELDS**) mission is to study the physics associated with the Heliopause, which is the point where the Local interstellar Cloud (LIC) and solar wind plasmas meet. It will accomplish this by taking measurements of Hydrogen Lyman-alpha (H Ly-α) light reflected by interplanetary hydrogen (IPH).
36.325 US	GLESENER	FOXSI	The purpose of the Focusing Optics X-ray Solar Imager **(FOXSI)** mission is to measure High-energy X-rays and photon energies from the "quiet" part of the Sun.
36.326 NR	CLARK	ASPIRE	The purpose of the **ASPIRE** series of missions (36.326, 27, & 28) is to demonstrate the high velocity deployment of parachute systems towards the ultimate goal of developing a system that can be utilized to land payloads onto the surface of Mars.
36.327 NR	CLARK	ASPIRE	The purpose of the **ASPIRE** series of missions (36.326, 27, & 28) is to demonstrate the high velocity deployment of parachute systems towards the ultimate goal of developing a system that can be utilized to land payloads onto the surface of Mars.
36.328 NR	CLARK	ASPIRE	The purpose of the **ASPIRE** series of missions (36.326, 27, & 28) is to demonstrate the high velocity deployment of parachute systems towards the ultimate goal of developing a system that can be utilized to land payloads onto the surface of Mars.
36.329 UH	GALEAZZI	DXL	The purpose of the Diffuse X-Rays from the Local Galaxy (**DXL-3**) mission is to study the physics associated with the Solar Wind Charge Exchange (SWCX) and the Local Hot Bubble (LHB). The investigation will obtain geometric measurements of the SWCX and differentiate the foreground SWCX emission from the background LHB emissions. It will also determine the compound cross section with helium and hydrogen.

36.330 UH	MCENTAFFER	WRX-R	The Water Recovery X-ray - Rocket (**WRX-R**) is a X-ray spectroscopy payload that is capable of providing moderate spectral resolution, R($\lambda/\Delta\lambda$) 30 and will be used to study the Vela Supernova Remnant on a flight from Kwajalein, Marshall Islands. The mission will attempt to measure the key lines that indicate the temperature and ionization state of this plasma. Characterization and comparison of the soft X-ray emission will lead to a more complete understanding of the evolution of supernova remnants and their interaction with the surrounding interstellar medium as well as shedding light on matter and energy feedback in the galaxy in general.
36.331 UG	GREEN	DEUCE	The goal of the **DEUCE** (Dual-channel Extreme Ultraviolet Continuum Spectrograph) mission is to measure the amount of the Lyman continuum (LyC) radiation that is being produced by the only two non-white-dwarf stars in our galaxy known to have a sufficiently low enough neutral hydrogen column density to measure their ionizing radiation directly. The results of this mission will help to answer one of the major questions of modern astrophysics concerning how and when galaxies first formed and how did their formation "feedback" into their circumgalactic environments to modify early galaxy formation during the Epoch of Re-ionization at Z=6-11. This mission is a re-fly of 36.311 UG.
36.332 NS	MCKENZIE	CLASP-2	The Chromospheric LAyer Spectro-Polarimeter 2 (**CLASP2**) mission will serve as a pathfinder for potential satellite missions to measure the magnetic field in the upper chromosphere and transition region of the Sun, by extending spectro-polarimetric measurements to UV lines with a range of magnetic sensitivities relevant for field strength found in this layer of the solar atmosphere. CLASP2 will measure all four Stokes parameters in the 280nm range to study wavelength-dependent variations in polarization caused by the joint action of scattering processes and the Hanle and Zeeman effects.
36.333 UG	FRANCE	CHESS	The Colorado High-resolution Echelle Stellar Spectrograph (**CHESS**) is designed to study the interstellar medium (ISM) in the ultraviolet part of the spectrum, the matter between stars, and specifically translucent clouds of gas which provide fundamental building blocks for star and planet formation. These clouds have very low densities and the only way to study them is to measure absorption spectra of light from stars passing through the cloud. CHESS will be pointed at the star Gamma Ara, in the southern constellation Ara. With this fourth flight of the Colorado High-resolution Echelle Stellar Spectrograph (CHESS-4) sounding rocket payload, sightlines at the lower-edge of the translucent cloud regime can be sampled. This mission aims to study translucent clouds by analyzing the ultraviolet absorption spectra of the two most abundant molecules (H_2 and CO) that reside within them.
36.334 NR	CLARK	ASPIRE	The purpose of the **ASPIRE** series of missions (36.326, 27, & 28) is to demonstrate the high velocity deployment of parachute systems towards the ultimate goal of developing a system that can be utilized to land payloads onto the surface of Mars.
36.336 UE	WOODS	EVE	The primary objective for this mission is to provide an underflight calibration for the EUV Variability Experiment (**EVE**) aboard the NASA Solar Dynamics Observatory (SDO) satellite. The EVE program provides solar EUV irradiance data for NASA's Living With the Star (LWS) program, including near real-time data products for use in operational atmospheric models that specify the space environment and to assist in forecasting space weather operations.

36.337 DS	KORENDYKE	VERIS-2	VERIS-2 combines very high spatial resolution (0.32" or 240 km) with spectroscopic observations of emission lines formed in the chromosphere, transition region, and corona (931-1076 A) at high cadence (5s nominal). By combining high spatial and spectral resolution with high cadence the investigation will measure the time-dependent transition region velocity structure in active region moss. Spectrometer measurements will investigate the origins of high temperature active region plasma by observing the Doppler signatures of nano flare and Alfven wave heating in the corona.
36.335 CE 41.123 CE 41.124 CE	CLEMMONS	TOMEX-Plus	Turbulent Oxygen Mixing Experiment-plus (TOMEX-Plus) builds on the TOMEX mission launched in 2000 from WSMR and examines how turbulence and mixing of atomic oxygen are related to each other and to underlying instabilities. TOMEX-Plus aims to determine how the vertical profile of the atomic oxygen mixing ratio varies as the atmosphere changes from regions of large layered turbulence at or below the mesopause to decreasing and possibly vanishing turbulence around the turbopause. Additionally, the horizontal variations in the atomic oxygen density that can be related to variations in turbulent fluctuations are studied. TOMEX-Plus will also characterize the 3D turbulence spectrum, its spatial variability and relationship to larger scale features of the flow, especially those relatable to instabilities.
36.339 UG	FRANCE	SISTINE	Investigation of low-mass star UV environments and their effects on potential exoplanet atmospheres.
36.340 DR	ABBETT		This mission will test high definition cameras to view free flying test objects ejected from the payload under exo-atmospheric conditions.
36.341 UH	MCENTAFFER	WRX2	The Water Recovery X-ray rocket (**WRX-2**) is a X-ray spectroscopy payload that is capable of providing moderate spectral resolution, R(λ/Δλ) 30 and will be used to study the Vela Supernova Remnant on a flight from Australia. The mission will attempt to measure the key lines that indicate the temperature and ionization state of this plasma. Characterization and comparison of the soft X-ray emission will lead to a more complete understanding of the evolution of supernova remnants and their interaction with the surrounding interstellar medium as well as shedding light on matter and energy feedback in the galaxy in general.
36.342 NS	WINEBARGER	Hi-C 2	The purpose of this sounding rocket mission is to identify the connections between the solar corona and the cooler chromosphere and transition region. Hi-C 2 will observe the high transition region/low corona at the same resolution as IRIS.
36.343 GG	NUTH	DUST	Measure important variables in the end-to-end process of grain formation in circumstellar outflows around AGB stars and model the physical and chemical properties of the dust.
36.344 UE 36.345 UE	HYSELL	TooWINDY	The science goals for the **TooWINDY** (Waves and Instabilities from a Neutral Dynamo 2) equatorial spread F (ESF) missions are to study the stability of the post sunset equatorial F region ionosphere and the factors that predispose it to equatorial spread F, a spectacular phenomenon characterized by broadband plasma turbulence which degrades radio and radar signals at low magnetic latitudes. The goal of the investigation is to lay the foundation for a strategy to forecast this disruptive phenomenon.
36.346 UG	FRANCE	SISTINE	Investigation of low-mass star UV environments and their effects on potential exoplanet atmospheres.
36.347 UH	MCCAMMON	XQC	The objective is to measure high resolution spectra of the diffuse X-ray background at 0.1-3 keV.

36.348 UE	BONNELL	VIPER	The VIPER mission is an observational and modeling effort to understand VLF wave penetration through and propagation above the Earth's ionosphere.
36.349 UE	LARSEN	CHI	Obtain high resolution measurements of the fluctuating plasma drifts and estimates of the associated Joule heating over a horizontal region of several hundred kilometers within the cusp region.
36.350 UG	GREEN	DEUCE	The goal of the DEUCE (Dual-channel Extreme Ultraviolet Continuum Spectrograph) mission is to measure the amount of the Lyman continuum (LyC) radiation that is being produced by the only two non-white-dwarf stars in our galaxy known to have a sufficiently low enough neutral hydrogen column density to measure their ionizing radiation directly. The results of this mission will help to answer one of the major questions of modern astrophysics concerning how and when galaxies first formed and how did their formation "feedback" into their circumgalactic environments to modify early galaxy formation during the Epoch of Re-ionization at Z=6-11. The science target is Alpha Centauri A+B.
36.351 GE	JONES	LAMP	The LAMP mission will seek to answer how microbursts are related spatially and temporally to optical signatures of pulsating aurora.
36.352 UG	MCCANDLISS	FORTIS	The **FORTIS** mission aims to demonstrate the scientific utility and feasibility of multi-object spectroscopy over wide angular fields in the far-UV.
36.360 UE 41.129 UE	KAEPPLER	INCAA	The INCAA mission will investigate the role ion-neutral coupling has on the altitude profile of energy deposition. This is accomplished by measuring in situ the ion-demagnetization altidue and the altitude-resolved Joule heating rate.
36.363 UH	GALEAZZI	DXL-3	The purpose of the Diffuse X-Rays from the Local Galaxy (DXL-3) mission is to study the physics associated with the Solar Wind Charge Exchange (SWCX) and the Local Hot Bubble (LHB). The investigation will obtain geometric measurements of the SWCX and differentiate the foreground SWCX emission from the background LHB emissions. It will also determine the compound cross section with helium and hydrogen.
36.366 US	KANKELBORG	FURST	The FURST experiment will obtain the first high resolution, high quality VUV spectrum of the Sun-as-a-star.
36.367 UH	MCENTAFFER	tREXS	The tREXS mission will observe diffuse X-ray sources, targeting emission from ~0.2 - 0.8 keV (~1.5 - 5 nm) in the Cynus Loop Supernova Remnant (SNR).
36.369 GE	BENNA	DISSIPATION	The goal of the DISSAPATION is to study the effect of Joule Heating on the high-latitude upper atmosphere. It will use a suite of complementary instruments and aims to provide the first comprehensive, concurrent, and continuous in situ measurements of neutral densities, composition, winds, and temperatures, electric fields, currents, electron densities, and precipitating energetic particles in the lower auroral ionosphere\thermosphere (100 -350 km).
36.376 NR	AZEEM	SUPER SOAKER	The purpose of the **Super Soaker** missions is to study the time dependent neutral chemistry and transport of water in the upper atmosphere and to determine the resultant impact on the local temperature and Polar Mesospheric Cloud (PMC) formation.
36.376 UH 36.377 UH 36.378 UH	JACKMAN	MAV-FT	The purpose of the Mars Ascent Vehicle - Flight Test missions is to test systems for the future Mars Sample Return Missions.
36.380 GE 36.381 GE	MICHELL	GIRAFF	GIRAFF is a combined rocket and ground-based imaging experiment to investigate the physical processes responsible for creating the Flickering and Fast Pulsating Aurora.

36.382 UE	GILCHRIST	B-SPICE	B-SPICE will use a variety of instruments to study spacecraft neutralization via ion emission while firing a high current electron beam.
36.386 UE 36.387 UE 36.388 UE	KOEHLER	ROCKON - RockSAT-C	The primary objective of the **RockOn/RockSat** mission is to provide university undergraduate level students and instructors with a space flight opportunity that involves minimal cost, minimal time investment, minimal complexity, and minimal impact on the NASA Sounding Rocket Program. The mission is intended to be an introductory flight opportunity to provide exposure to, and spark interest in, space-based science missions.
41.121 UO	BARJATYA	Apophis	The experiment will use a variety of science instruments to study upper atmospheric conditions before, during and after a solar eclipse.
41.130 UO	KOEHLER	ROCKON - RockSAT-C	The primary objective of the **RockOn/RockSat** mission is to provide university undergraduate level students and instructors with a space flight opportunity that involves minimal cost, minimal time investment, minimal complexity, and minimal impact on the NASA Sounding Rocket Program. The mission is intended to be an introductory flight opportunity to provide exposure to, and spark interest in, space-based science missions.
46.015 GT	HALL		The purpose of the 46.015 mission is to provide risk mitigation for rocket propelled ejectable chemical ampoule systems that will be employed on future science missions. The mission goals are to demonstrate repeatable success of the ignition trains of both the ampoule rocket motors and the ampule deflagration.
36.361 UE 36.362 UE 41.127 UE 41.128 UE	LEHMACHER	VORTEX	The science goal of VortEX is to better understand nonlinear gravity wave (GW) interactions in the upper mesosphere and lower thermosphere (MLT), and the formation of vortices and stratified turbulence (ST).
46.016 CE	AZEEM	SUPER SOAKER	The purpose of the **Super Soaker** missions is to study the time dependent neutral chemistry and transport of water in the upper atmosphere and to determine the resultant impact on the local temperature and Polar Mesospheric Cloud (PMC) formation.
46.017 UO	KOEHLER	RockSat-X	The primary objective of the **RockSat-X** mission is to provide university undergraduate level students and instructors with a space flight opportunity that involves the use of a standard carrier payload with predefined mechanical, telemetry, power and attitude control capabilities and parameters that participating schools can adapt to in order to meet their individual experiment objectives. The mission is intended to provide expanded opportunities to RockOn participants and other interested schools with experiment bays exposed to the space environment.
46.018 UP	KOEHLER	RockSat-XN	The purpose of the **RockSat-XN** mission is to provide university undergraduate level students and instructors (both domestic and foreign) a space flight opportunity that involves minimal cost, time investment, complexity and impact to the NASA Sounding Rocket Program. This exposure to space based scientific investigations will encourage participants to seek career paths that result in future involvement in space-based scientific research.
46.019 UO	VIERIA	USIP	The purpose of the University Student Instrument Program (**USIP**) is to encourage participants to seek future involvement in space-based science missions by providing university undergraduate level students and faculty with a space flight opportunity that will allow their custom built experiments to be exposed to the space environment.

46.025 UE 46.026 UE	BARJATYA	SEED	The goal of the SEED missions is to collect the first simultaneous multipoint spatial and temporal observations of low-latitude Sporadic-E layers and their associated electrodynamics and neutral dynamics.
46.030 UO	KOEHLER	RockSat-XN	The purpose of the **RockSat-XN** mission is to provide university undergraduate level students and instructors (both domestic and foreign) a space flight opportunity that involves minimal cost, time investment, complexity and impact to the NASA Sounding Rocket Program. This exposure to space based scientific investigations will encourage participants to seek career paths that result in future involvement in space-based scientific research.
49.004 UE	CONDE	C-REX-2	The purpose of the Cusp-Region Experiment Version 2.0 (C-REX-2) mission is to identify mechanisms responsible for creating a region of enhanced neutral mass density at 400 km altitude that appears to be a permanent feature of Earths cusp-region thermosphere. The foundation of the investigation will be to obtain absolute neutral wind measurements by following the drift of 20 neutral strontium clouds released from the rocket at altitudes between 200 and 400 km. Drift tracking will be done by photographic triangulation, using cameras located on Svalbard and aboard a NASA aircraft flying along the east coast of Greenland.
51.001 UE	LARSEN	AZURE	The purpose of the Auroral Zone Upwelling Release Experiment (**AZURE**) missions is to determine the relative contribution of the barometric (compression and expansion) and dynamic (divergence and convergence) vertical velocity components in the lower E region across the altitude range of maximum Joule heating.
51.002 UE	LARSEN	AZURE	The purpose of the Auroral Zone Upwelling Release Experiment (**AZURE**) missions is to determine the relative contribution of the barometric (compression and expansion) and dynamic (divergence and convergence) vertical velocity components in the lower E region across the altitude range of maximum Joule heating.
52.003 UE	KLETZING	TRICE-2	The purpose of the Twin Rockets to Investigate Cusp Electrodynamics II (**TRICE-2)** missions is to measure cusp signatures of reconnection occurring at the magnetopause during steady IMF Bz southward conditions. This will be accomplished by launching two nearly identical instrumented payloads, flying at low and high altitudes, with a variety of separations in time and space.
52.004 UE	KLETZING	TRICE-2	The purpose of the Twin Rockets to Investigate Cusp Electrodynamics II (**TRICE-2)** missions is to measure cusp signatures of reconnection occurring at the magnetopause during steady IMF Bz southward conditions. This will be accomplished by launching two nearly identical instrumented payloads, flying at low and high altitudes, with a variety of separations in time and space.

52.005 UE	LABELLE	CAPER-2	The Cusp Alfven and Plasma Electrodynamics Rocket (**CAPER**) is designed to investigate the interactions between electrical waves and charged particles in a region of space known as the "polar cusp." The dayside high-latitude polar cusp is a unique environment where direct access of solar wind particles to low altitudes leads to similar particle precipitation and acceleration processes as on the nightside, but dominated by a rather different set of magnetospheric processes, such as dayside reconnection and interactions with interplanetary pressure pulses and discontinuities. CAPER will establish the role and nature of Alfvén wave acceleration in the cusp and discover the causes of the observed differences in the Langmuir waves in the cusp versus the nightside. CAPER also includes the first ever wave-particle correlator measurements in the cusp. The results affect a range of NASA programs in geospace, planetary, heliospheric and astrophysical sciences and are pertinent to multiple objectives of NASA's Heliophysics research program.
52.007 UE	DELAMERE	KiNET-X	KiNET-X studies how momentum transport is affected by kinetic-scale physics, i.e. formation of parallel electric fields and dissipation, how electromagnetic energy is converted into plasma kinetic and thermal energy, and what the interplay is between fluid- and kinetic-scale processes.
52.009 UE	REEVES	Beam-PIE	The Beam-PIE mission will use an electron beam to produce VLF radiowaves. The radio waves are to be detected with an antenna on a separate receiver payload section. Addionally, ambient plasma conditions, and the possible effects of the radio waves on the local plasma environment, will be measured. Optical and radar measurements will be used to detect effects of the waves on the atmosphere.