

JSON key	Type	Boundaries	Description	Corresponding command line argument for help
sep_forecast_submission		required		
contacts		>1 allowed, required	Model developer/administrator points of contact	
name	string	required	Contact name in case of datastream issues or model questions.	contact-name
email	string	required	Contact email	contact-email
model		required	Model information	
short_name	string	required	Short name (e.g. acronym) of model to appear on scoreboard. Consider including version number with acronym if distinction needed. 30 character limit	model-short-name
spase_id	string	required	Link to URL of full model description metadata in CCAC metadata registry in SPASE format (contact CCAC to register your model)	spase-id
issue_time	datetime*	required	Forecast issue time (e.g. model run is complete and forecast is created)	issue-time
mode	string	required	allowed values: forecast, historical	mode
triggers		optional	Provide if forecast is issued based on a trigger. This can be expanded. Contact CCAC to add your trigger if it is missing.	
cme		optional		
start_time	datetime*	required, if cme used	Timestamp of 1st coronagraph image CME is visible in	cme-start-time
ltoff_time	datetime*	optional	Timestamp of coronagraph image with 1st indication of CME ltoff (used by CACTUS)	cme-ltoff-time
lat	float	optional	CME latitude (deg)	cme-lat
lon	float	optional	CME longitude (deg)	cme-lon
pa	float	optional	CME plane-of-sky position angle (measured from solar north in degrees counter-clockwise)	cme-pa
half_width	float	optional	CME half-width (deg)	cme-half-width
speed	float	optional	CME speed (km/s)	cme-speed
acceleration	float	optional	CME acceleration (km/s ²)	cme-acceleration
height	float	optional	CME height at which the above parameters were derived (solar radii from Sun center)	cme-height
time_at_height	datetime*	optional	CME time at specified height	
time	datetime*	required, if time_at_height used		cme-time-at-height-time
height	float	required, if time_at_height used		cme-time-at-height-height
coordinates	string	required, if lat or lon used	Coordinate system for CME lat/lon parameters (e.g. HEQ or Carrington)	cme-coordinates
catalog	string	optional	Name of catalog where CME information was pulled from. allowed values: ARTEMIS, DONKI, HULCATS, IHU APL, CACTUS_NRL, CACTUS_SPOC, CORNAP, SILEX, SOWI, CDAW, STEREO_CMR (contact us to add a new catalog name)	cme-catalog
urls	string	> 1 allowed, optional	List of urls where CME information can be found, or information was pulled from.	cme-urls
flare		optional		
last_data_time	datetime*	required, if flare used	Last time data timestamp that was used to create forecast (relevant for forecasts issued before flare end time)	flare-last-data-time
start_time	datetime*	required, if flare used	Flare start time	flare-start-time
peak_time	datetime*	optional	Flare peak time	flare-peak-time
end_time	datetime*	optional	Flare end time	flare-end-time
location	string	optional	Flare location in Stonyhurst coordinates. N00W00/S00E00 format	flare-location
intensity	float	optional	Flare intensity (W/m ²)	flare-intensity
integrated_intensity	float	optional	Flare integrated intensity (J/m ²)	flare-integrated-intensity
noaa_region	integer	optional	Associated NOAA active region number (including the preceding 1)	flare-noaa-region
urls	string	> 1 allowed, optional	List of urls where flare information can be found, or information was pulled from.	flare-urls
cme_simulation		optional		
model	string	required, if cme_simulation used	Model name	cme-sim-model
simulation_completion_time	datetime*	optional	Simulation completion time	cme-sim-completion-time
urls	string	> 1 allowed, optional	List of urls where simulation information can be found, or information was pulled from.	cme-sim-urls
particle_intensity		optional		
observatory	string	required, if particle_intensity used	Name of observatory/spacecraft data are from	pi-observatory
instrument	string	required, if particle_intensity used	Name of instrument data are from	pi-instrument
last_data_time	datetime*	required, if particle_intensity used	Last time data timestamp used to create forecast	pi-last-data-time
ongoing_events		> 1 allowed, optional	If an ongoing event triggers your forecast, list the properties you used.	
start_time	datetime*	required, if ongoing_event used	start time	pi-ongoing-events-start-time
threshold	float	required, if ongoing_event used	threshold used to define the event in pfu	pi-ongoing-events-threshold
energy_min	float	required, if ongoing_event used	min of energy channel range in MeV	pi-ongoing-events-energy-min
energy_max	float	required, if ongoing_event used	max of energy channel range in MeV. -1 represented an unbounded integral channel	pi-ongoing-events-energy-max
forecasts		> 1 allowed, at least 1 required	>1 allowed such that forecasts for multiple energy channels can be submitted in one file (if they have the same issue time)	
energy_channel		required	Each forecast is defined by the energy channel specified	
min	float	required	min of energy channel range	energy-min
max	float	required	max of energy channel range. -1 represented an unbounded integral channel	energy-max
units	string**	required	energy channel units	energy-units
species	string	required	allowed values: electron, proton, helium, helium3, helium4, oxygen, iron, boron	species
location	string	required	allowed values: mercury, venus, earth, mars, pio, stereo, stereob, dawn, juno, l1, l2, l4, l5	location
prediction_window		required	all forecast values provided are relevant only in this prediction window	prediction-window
start_time	datetime*	required	start of forecast prediction window (must be within one hour of forecast issue time for "forecast" mode)	(first value given for "prediction-window")
end_time	datetime*	required	end of forecast prediction window	(second value given for "prediction-window")
peak_intensity		optional		
intensity	float	required, if peak_intensity used	forecast peak intensity value	peak-intensity
units	string**	required, if peak_intensity used	forecast peak intensity value units	peak-intensity-units
uncertainty	float	optional	forecast peak intensity uncertainty value (same units as peak intensity)	peak-intensity-uncertainty
time	datetime*	optional	forecast time for reaching peak intensity value	peak-intensity-time
peak_intensity_esp		optional		
intensity	float	required, if peak_intensity_esp used	forecast peak intensity value in the vicinity of shock passage	peak-intensity-esp
units	string**	required, if peak_intensity_esp used	forecast peak intensity units in the vicinity of shock passage	peak-intensity-esp-units
time	datetime*	optional	forecast time for reaching peak intensity value in the vicinity of shock passage	peak-intensity-esp-time
fluence		optional		
fluence_value	float	required, if fluence used	forecast fluence value (corresponds to event length)	fluence
units	string**	required, if fluence used	forecast fluence units	fluence-units
event_length		optional		
start_time	datetime*	required	must fall within prediction window	event-length-start-time
end_time	datetime*	optional	forecast energetic particle event start time ("onset" time)	event-length-end-time
threshold	float	required	forecast energetic particle event end time	event-length-threshold
threshold_units	string**	required	threshold used to extract start and end times	event-length-threshold-units
threshold_crossings		> 1 allowed, optional	multiple threshold_crossings can be provided for the same forecast energy channel	
crossing_time	datetime*	required, if threshold_crossings used	forecast threshold crossing time	thresh-crossing-times
uncertainty	float	optional	forecast crossing time uncertainty in hours	thresh-uncertainties
threshold	float	required, if threshold_crossings used	forecast threshold value crossing time refers to	crossing-thresholds
threshold_units	string**	required, if threshold_crossings used	units of threshold	crossing-threshold-units
probabilities		> 1 allowed, optional	multiple probabilities can be provided for the same forecast energy channel	
probability_value	float	required, if probabilities used	forecast probability value (range 0 to 1)	probabilities
uncertainty	float	optional	plus/minus error bar for probability value (in probability, value units)	prob-uncertainties
threshold	float	required, if probabilities used	particle intensity threshold value probability forecast refers to	prob-thresholds
threshold_units	string**	required, if probabilities used	units of threshold	prob-threshold-units
all_clear		optional		
all_clear_boolean	boolean	required, if all_clear used	if you do not provide an all-clear forecast do not enter this key. There are three situations for setting all_clear_boolean=false: (1) for >10MeV energy channel, your forecast of peak intensity OR threshold crossing exceeds 10 pfu OR your probability forecast for a threshold of 10 pfu exceeds your custom probability_threshold; (2) for the >100MeV energy channel, your forecast of peak intensity OR threshold crossing exceeds 1 pfu OR your probability forecast for a threshold of 1 pfu exceeds your custom probability_threshold; (3) for your custom (non-integral) energy channel, your forecast peak intensity OR threshold crossing exceeds your custom threshold. Custom cases (3) are being stored but will not be used in the all-clear scoreboard display. particle intensity threshold value all_clear_boolean refers to. Can be (1) 10 pfu for >10MeV channel (2) 1 pfu for >100MeV channel (3) custom	all-clear
threshold	float	required, if all_clear used		all-clear-threshold
threshold_units	string**	required, if all_clear used	units of threshold	all-clear-threshold-units
probability_threshold	float	optional	probability threshold value all_clear_boolean refers to. Must specify this threshold if setting all_clear_boolean based on probability forecast.	all-clear-probability-threshold
sep_profile	string	optional	See file with 2 columns: datetime* string, predicted SEP intensity for this energy channel	sep-profile
native_id	string	optional	Specify only if forecast has a native id from your model run	native-id

*datetime expected in UTC and in the format: "YYYY-MM-DDTHH:MMZ"
 **units string format: Example: "MeV^-1*s^-1*cm^-2*sr^-1". Another example: "pfu" where 1 pfu = 1 s^-1*cm^-2*sr^-1