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GOES R REQ ID #	Observational Requirement	User & Priority (LO-#)**	LEVEL	Geo-graphic Coverage (G,FD,C,M) / Conditions	Vertical Res.	Horizontal Res.	Mapping Accuracy	Msmnt. Range	Msmnt. Accuracy	Refresh Rate/ Coverage Time	Data Latency	Long-term Stability
3.4.4	AEROSOLS											
3.4.4.1	Aerosol Detection: CONUS (including Smoke and Dust)	GOES R Baseline	T	C	total col.	2 km	1 km	Binary yes/no detection	tbd	15 min	15 min	tbd
			O	C	1 km	1 km	0.2 km	Binary yes/no detection	tbd	15 min	3 min	tbd
3.4.4.2	Aerosol Detection: Hemispheric (including Smoke and Dust)	GOES R Baseline	T	FD	total col.	2 km	1.0 km	Binary yes/no detection	tbd	15 min	3 min	tbd
			O	H	1 km	0.5 km	0.2 km	Binary yes/no detection	tbd	10 min	3 min	tbd
3.4.4.3	Aerosol Detection: Mesoscale (including Smoke and Dust)	GOES R Baseline	T	M	total col.	2 km	1 km	Binary yes/no detection	tbd	15 min	15 min	tbd
			O	M	tbd	2 km	1 km	Binary yes/no detection	tbd	15 min	15 min	tbd
3.4.4.4	Aerosol Particle Size	GOES R Baseline	T	FD	Total Column	2 km	1.0 km	tbd	tbd	15 min	5 min	tbd
			O	H	0.5 km	0.5 km	0.2 km	tbd	tbd	10 min	5 min	tbd
3.4.4.5	Dust/Aerosol: Loading: CONUS	GOES R Baseline	T	C	Total column	10 km	5 km	Light/ Mod/ Heavy	tbd	60 min	3 min	tbd
			O	C	tbd	1 km	0.2 km	tbd	tbd	15 min	3 min	tbd
3.4.4.6	Dust/Aerosol: Loading: Hemispheric	GOES R Baseline	T	62° LZA	Total	10 km	tbd	Light/ Mod/ Heavy	tbd	60 min	tbd	tbd
			O	H	tbd	2 km	tbd	tbd	tbd	tbd	tbd	tbd
3.4.4.7	Suspended Matter: CONUS	GOES R Baseline	T	C	Total Column	2 km	1.0 km	tbd	tbd	5 min	1 min	tbd
			O	C	Total Column	0.5 km	0.2km	tbd	tbd	1 min	1 min	tbd
3.4.4.8	Suspended Matter:	GOES R	T	FD	Total Column	2 km	1.0	tbd	tbd	15 min	3 min	tbd

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	Hemispheric	Baseline	O	H	Total Column	0.5 km	0.2km	tbd	tbd	5 min	1 min	tbd
3.4.4.9	Suspended Matter: Hemispheric	GOES R Baseline	T	FD	Total Column	2 km	1.0 km	tbd	tbd	15 min	3 min	tbd
			O	H	Total Column	0.5 km	0.2km	tbd	tbd	5 min	1 min	tbd
3.4.4.10	Volcanic Ash: Detection and Height	GOES R Baseline	T	FD	2 km (top height)	2 km	1.0 km	0-50 tons/km <sup>2</sup>	2 ton/km <sup>2</sup>	15 min	1 min	tbd
			O	H	0.5 km	0.5 km	0.1 km	0-50 tons/km <sup>2</sup> (1 ton = 1000 kg)	0.3 ton/km <sup>2</sup>	5 min	30 sec	tbd
3.4.5	CLOUDS											
3.4.5.1	Aircraft Icing Threat	GOES R Baseline	T	62° LZA	1 km (top height)	10 km	5 km	None - Hvy	2 categories	60 min	15 min	tbd
			O	H	0.5 km	2 km	<0.5 km	None - Hvy	1 category	30 min	5 min	tbd
3.4.5.2	Cloud Base Height: CONUS	GOES R Baseline	T	C	2.0 km	10 km	5 km	0 - tbd km	2 km	60 min	1 min	tbd
			O	C	0.1 km	1 km	0.2 km	0 - tbd km	0.1 km	5 min	1 min	tbd
3.4.5.3	Cloud Base Height: Hemispheric	GOES R Baseline	T	62° LZA	2 km	10 km	5 km	0 - tbd km	2 km	60 min	1 min	tbd
			O	H	0.5 km	1 km	0.2 km	0 - 30 km	0.1 km	5 min	1 min	tbd
3.4.5.4	Cloud Base Height: Mesoscale	GOES R Baseline	T	M	2 km	4 km	2 km	0 - tbd km	2 km	5 min	1 min	tbd
			O	M	0.5 km	0.2 km	0.2 km	0 - 1 km	0.1 km	1 min	1 min	tbd
3.4.5.5	Cloud Ice Water Path: CONUS	GOES R Baseline	T	C-for limited cloudiness	SFC - 20 km	2 km	1.0 km	0-1 mm (Day) 0-0.2 mm (Nite)	Greater of 0.1 mm or 25%; only thinnest clouds at night.	5 min	1 min	tbd
			O	C	SFC - 20 km	0.5 km	0.2 km	0-1 mm (Day) 0-0.2 mm (Nite)	Greater of 0.05 mm or 10%	1 min	1 min	tbd
3.4.5.6	Cloud Ice Water Path: Hemispheric	GOES R Baseline	T	FD-for limited cloudiness	SFC - 20 km	2 km	1.0 km	0-1 mm (Day) 0-0.2 mm	Greater of 0.1 mm or 25%; only	15 min	1 min	tbd

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								(Nite)	thinnest clouds at night.			
			O	H	SFC - 20 km	0.5 km	0.2 km	0-1 mm (Day) 0-0.2 mm (Nite)	Greater of 0.05 mm or 10%	15 min	1 min	tbd
3.4.5.7	Cloud Ice Water Path: Mesoscale	GOES R Baseline	T	M-for limited cloudiness	SFC - 20 km	2 km	1.0 km	0 - 2 mm (Day) 0 - 0.2 mm (Nite)	Day: Greater of 0.1 mm or 25%, Night: only thinnest clouds	5 min	1 min	tbd
			O	M	SFC - 20 km	0.5 km	0.2 km	0 - 2 mm (Day) 0 - 0.2 mm (Nite)	Greater of 0.05 mm or 10%	1 min	1 min	tbd
3.4.5.8	Cloud Imagery: Coastal	GOES R Baseline	T	US navigable waters thru EEZ	tbd	Day: 1 km Nite: 2 km	< or = 1 km	tbd	n/a	180 min	15 min	tbd
			O	US navigable waters thru EEZ	tbd	1 km	< or = 1 km	tbd	n/a	60 min	15 min	tbd
3.4.5.9	Cloud Layers/ Heights and Thickness: CONUS	GOES R Baseline	T	C	tbd	10 km	5 km	Thickness: only by general cloud type. Heights of up to 5 layers	Thickness: tbd Height: tbd	60 min	15 min	tbd
			O	C	Sfc-1 km:30 km 1-3 km:150m >3km: 300 m	0.25 km	0.5 km	Thickness: only by general cloud type. Heights of up to 5 layers	Thickness: tbd Height: tbd	15 min	1 min	tbd
3.4.5.10	Cloud Layers/ Heights and Thickness: Hemispheric	GOES R Baseline	T	62 deg LZA	tbd	10 km	5 km	Thickness: only by general cloud type.	Thickness: tbd Height: tbd	60 min	15 min	tbd

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								Heights of up to 5 layers				
			O	H	Sfc-2 km: 30 m 2-20 km: 150 m >3 km: 300 m	2 km	tbd	0 - 20 km	Sfc-2km: ±30 m 2-20 km: ±150m	15 min	10 min	tbd
3.4.5.11	Cloud Layers/ Heights and Thickness: Mesoscale	GOES R Baseline	T	M	tbd	4 km	2 km	Thickness: only by general cloud type. Heights of up to 5 layers	Thickness: tbd Height: tbd	5 min	10 min	tbd
			O	M	Sfc-2 km: 30 m 2-20 km: 150 m >3 km: 300 m	tbd	tbd	0 - 20 km	Thickness: tbd Height: tbd	tbd	10 min	tbd
3.4.5.12	Cloud Liquid Water: CONUS	GOES R Baseline	T	C	Total Column	2 km	1.0 km	0 - 2 mm	Day: Greater of 0.1 mm or 25% Night: only thinnest clouds	30 min	15 min	tbd
			O	C	sfc-20 km	1 km	0.2 km	0 - 2 mm	Day: Greater of 0.1 mm or 25% Night: only thinnest clouds	15 min	1 min	tbd
3.4.5.13	Cloud Liquid Water: Hemispheric	GOES R Baseline	T	FD	Total Column	2 km	1.0 km	0 - 1 mm	Day: Greater of 0.1 mm or 25% Night: only thinnest clouds	30 min	1 min	tbd
			O	H	tbd	1 km	0.2 km	0 - 2 mm	Day: Greater of 0.01 mm	5 min	1 min	tbd

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									or 25% Night: only thinnest clouds			
3.4.5.14	Cloud Liquid Water: Mesoscale	GOES R Baseline	T	M	Total Column	2 km	1.0 km	0 - 1 mm	Greater of 0.1 mm or 25% in day and at night only thinnest clouds	5 min	15 min	tbd
			O	M	SFC - 20 km	0.5 km	0.2 km	0 - 2 mm	Greater of 0.1 mm or 10% in day and at night only thinnest clouds	1 min	15 min	tbd
3.4.5.15	Cloud & Moisture Imagery: CONUS	GOES R Baseline	T	C	n/a	2 km	1.0 km	n/a	tbd	5 min	1 min	tbd
			O	C	n/a	0.2 km	0.2 km	n/a	tbd	1 min	1 min	tbd
3.4.5.16	Cloud & Moisture Imagery: Hemispheric	GOES R Baseline	T	FD	n/a	2 km	1.0 km	n/a	n/a	15 min	1 min	tbd
			O	H	n/a	0.1 km	0.2 km	n/a	n/a	5 min	1 min	tbd
3.4.5.17	Cloud & Moisture Imagery: Mesoscale	GOES R Baseline	T	M	n/a	2 km	1.0 km	n/a	n/a	30 sec	30 sec	tbd
			O	M	n/a	0.2 km	0.2 km	n/a	n/a	tbd	tbd	tbd
3.4.5.18	Cloud Optical Depth: CONUS	GOES R Baseline	T	C -- optical depth > 1	total column	2 km	1 km	0.5 - 50	10%	30 min	15 min	tbd
			O	C	tbd	1 km	tbd	0 - 100	tbd	15 min	1 min	tbd
3.4.5.19	Cloud Optical Depth: Hemispheric	GOES R Baseline	T	FD - optical depth > 1	total column	4 km	2 km	0.5 - 50	10%	15 min	1 min	2%
			O	H	1 km	1 km	0.2 km	0.01 - 100	2%	5 min	1 min	1 %
3.4.5.20	Cloud Particle Size Distribution: CONUS	GOES R Baseline	T	C	Cloud Top	2 km	1.0 km	0 - 50 $\mu$ m	4 $\mu$ m	5 min	1 min	tbd
			O	C	1 km	0.5 km	0.2 km	0 - 1000 $\mu$ m	0.5 $\mu$ m	1 min	1 min	tbd
3.4.5.21	Cloud Particle Size	GOES R	T	FD	Cloud Top	2 km	1.0	0 - 50 $\mu$ m	4 $\mu$ m	15 min	1 min	tbd

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	Distribution: Hemispheric	Baseline					km					
			O	H	tbd	0.5 km	0.2 km	0 - 1000 µm	0.5 µm	15 min	1 min	tbd
3.4.5.22	Cloud Particle Size Distribution: Mesoscale	GOES R Baseline	T	M	Cloud Top	2 km	1.0 km	0 - 50 µm	4 µm	5 min	1 min	tbd
			O	M	tbd	0.5 km	0.2 km	0 - 1000 µm	0.5 µm	1 min	1 min	tbd
3.4.5.23	Cloud Top Phase: CONUS	GOES R Baseline	T	C	Cloud Top	2 km	1.0 km	liquid/solid/ supercooled/ mixed	tbd	5 min	1 min	tbd
			O	C	tbd	0.5 km	0.2 km	tbd	tbd	1 min	1 min	tbd
3.4.5.24	Cloud Top Phase: Hemispheric	GOES R Baseline	T	FD	Cloud Top	2 km	1.0 km	liquid/solid/ supercooled/ mixed	tbd	15 min	1 min	tbd
			O	H	tbd	0.5 km	0.2 km	tbd	tbd	15 min	1 min	tbd
3.4.5.25	Cloud Top Phase: Mesoscale	GOES R Baseline	T	M	Cloud Top	2 km	1.0 km	liquid/solid/ supercooled/ mixed	tbd	5 min	1 min	tbd
			O	M	tbd	0.5 km	0.2 km	tbd	tbd	1 min	1 min	tbd
3.4.5.26	Cloud Top Height: CONUS	GOES R Baseline	T	C	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km	10 km	5 km	100m - 300hPa	Sfc-500 mb: 300- 500 m 500-300 mb: 1-2 km	60 min	3 min	tbd
			O	C	100 m	0.5 km	0.2 km	100m - 100hPa	50 m	1 min	1 min	tbd
3.4.5.27	Cloud Top Height: Hemispheric	GOES R Baseline	T	62° LZA	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km	10 km	5 km	0-15 km	Sfc-500 mb: 300- 500 m 500-300 mb: 1-2 km	60 min	3 min	tbd
			O	H	0.1 km	0.5 km	0.2 km	0-25 km	0.25 km	5 min	1 min	tbd
3.4.5.28	Cloud Top Height: Mesoscale	GOES R Baseline	T	M	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km	4 km	2 km	0-20 km	Sfc-500 mb: 300- 500 m 500-300	5 min	15 min	tbd

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			O	M	tbd	0.5 km	0.2 km	0-20 km	mb: 1-2 km			
3.4.5.29	Cloud Top Pressure: CONUS	GOES R Baseline	T	C	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km	10 km	5 km	100m-300hPa	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km	60 min	10 min	tbd
			O	C	100 m	tbd	tbd	100m-100hPa	50 m	10 min	1 min	tbd
3.4.5.30	Cloud Top Pressure: Hemispheric	GOES R Baseline	T	62° LZA	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km	10 km	5 km	tbd	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km	60 min	3 min	tbd
			O	H	1 mb	1 km	0.2 km	tbd	tbd	5 min	1 min	tbd
3.4.5.31	Cloud Top Temperature: Hemispheric	GOES R Baseline	T	FD	At Cloud Tops	2 km	1.0 km	180-300 K	1 K	15 min	1 min	tbd
			O	H	4 layers, at Cloud Tops	0.2 km	0.2 km	170-310 K	0.3 K	5 min	1 min	tbd
3.4.5.32	Cloud Top Temperature: Mesoscale	GOES R Baseline	T	M	At Cloud Tops	2 km	1.0 km	180-300 K	0.5 K	5 min	5 min	tbd
			O	M	tbd	0.5 km	0.2 km	190-300 K	0.5 K	1 min	5 min	tbd
3.4.5.33	Cloud Type: CONUS	GOES R Baseline	T	C	tbd	10 km	5 km	7 types	tbd	30 min	10 min	tbd
			O	C	tbd	1 km	tbd	20 types	tbd	15 min	1 min	tbd
3.4.5.34	Cloud Type: Hemispheric	GOES R Baseline	T	FD	tbd	2 km	1 km	7 types	tbd	15 min	1 min	tbd
			O	H	tbd	0.1 km	0.5 km	20 types	tbd	5 min	1 min	tbd
3.4.5.35	Cloud Type: Mesoscale	GOES R Baseline	T	M	tbd	tbd	tbd	7 types	tbd	tbd	tbd	tbd
			O	M	tbd	tbd	1 km	20 types	15 min	15 min	1 min	tbd
3.4.5.36	Convective Initiation	GOES R Baseline	T	C	tbd	2 km	1.0 km	tbd	tbd	15 min	3 min	tbd
			O	C	tbd	0.5 km	0.2 km	tbd	tbd	5 min	1 min	tbd

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3.4.5.37	Enhanced "V"/Overshooting Top Detection: CONUS	GOES R Baseline	T	C	tbd	2 km	1.0 km	0 - 1 Binary (160 - 270 K)	10 % Detection (1 K Top)	1 min	5 min	tbd
			O	C	tbd	0.5 km	0.2 km	0 - 1 Binary (160 - 270 K Top)	5 % Detection (0.5 K Top)	1 min	30 sec	tbd
3.4.5.38	Enhanced "V"/Overshooting Top Detection: Mesoscale	GOES R Baseline	T	M	tbd	2 km	1.0 km	0 - 1 Binary detection (160-270 K)	10%	5 min	5 min	tbd
			O	M	tbd	0.5 km	0.2 km	0-1	5%	1 min	5 min	tbd
3.4.5.39	Hurricane Intensity	GOES R Baseline	T	FD	tbd	2 km	1.0 km	tbd	5 m/s	30 min	1 min	tbd
			O	H	tbd	1 km	0.2 km	tbd	tbd	15 min	1 min	tbd
3.4.5.40	Imagery: All-Wx/Day-Nite: Global	GOES R Baseline	T	FD* - Clear and Above Cloud Regions Only *	n/a	2 km	1.0 km	tbd	tbd	tbd	tbd	tbd
			O	H	n/a	0.1 km	0.5 km	tbd	tbd	60 min	15 min	tbd
3.4.5.41	Lightning Detection: CONUS	GOES R Baseline	T	C	Surface to cloud top	10 km	5 km	Real time	70-90% total strikes detection	continuous	1 min	tbd
			O	C	Surface to cloud top	0.5 km	100 m	Real time	99% total strikes detection	continuous	<10 sec	tbd
3.4.5.42	Lightning Detection: Hemispheric	GOES R Baseline	T	FD	Surface to cloud top	10 km	5 km	Real time	70-90% total strikes detection	continuous	1 min	tbd
			O	H	Surface to cloud top	0.5 km	100 m	Real time	99% total strikes detection	continuous	<10 sec	tbd
3.4.5.43	Lightning Detection: Mesoscale	GOES R Baseline	T	M	Surface to cloud top	10 km	5 km	Real time	70-90% total strikes detection	continuous	1 min	tbd
			O	M	Surface to cloud top	0.5 km	100 m	Real time	99% total strikes	continuous	<10 sec	tbd



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									detection			
3.4.5.44	Low Cloud and Fog	GOES R Baseline	T	FD	0.5 km (depth)	2 km	1.0 km	Fog/No Fog	70% Detection	15 min	1 min	tbd
			O	H	0.1 km	1 km	0.2 km	Fog/No Fog	90% Detection	15 min	1 min	tbd
3.4.5.45	Turbulence: Hemispheric	GOES R Baseline	T	FD	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	2 km	1.0 km	Binary moderate or greater (over 100 m - 4 km)	tbd	15 min	1 min	tbd
			O	G	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	0.5 km	0.2 km	None thru Severe (none, light, moderate, severe)	tbd	5 min	1 min	tbd
3.4.5.46	Turbulence: Mesoscale	GOES R Baseline	T	M	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	2 km	1.0 km	Binary moderate or greater (over 100 m - 4 km)	tbd	5 min	5 min	tbd
			O	M	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	0.5 km	0.2 km	tbd	tbd	1 min	5 min	tbd
3.4.5.47	Visibility: Coastal	GOES R Baseline	T	US navigable waters thru EEZ	tbd	3 km	< 3 km	0 - 3.2 km	tbd	180 min	15 min	tbd
			O	US navigable waters thru	0 - 150 ft	0.8 km	< 0.8 km	0 - 16 km	400 m	60 min	15 min	tbd

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3.4.5.48	Visibility: Hemispheric	GOES R Baseline	T	FD	tbd	10 km	tbd	0-30 km	tbd	60 min	15 min	tbd
			O	G*	0-4.5 km: 150 m > 4.5 km: 300 m	10 km	2 km	0-30 km	± 1 km	60 min	15 min	tbd
3.4.6	PRECIPITATION											tbd
3.4.6.1	Probability of Rainfall	GOES R Baseline	T	FD	tbd	2 km	1.0 km	0 to 100%	25%	15 min	5 min	tbd
			O	H	tbd	0.5 km	0.2 km	0 to 100%	10%	1 min	3 min	tbd
3.4.6.2	Rainfall Potential	GOES R Baseline	T	FD	tbd	2 km	1.0 km	0-100 mm/hr	5 mm/hr	15 min	5 min	tbd
			O	H	tbd	0.5 km	0.2 km	0-100 mm/hr	2 mm/hr	1 min	3 min	tbd
3.4.6.3	Rainfall Rate/QPE	GOES R Baseline	T	FD	tbd	2 km	1.0 km	0-100 mm/hr	2 mm/hr	15 min	1 min	tbd
			O	H	tbd	0.5 km	0.2 km	0-100 mm/hr	1 mm/hr	1 min	1 min	tbd
3.4.7	PROFILES											
3.4.7.1	Atmospheric Vertical Moisture Profile: CONUS	GOES R Baseline	T	C- Clear and Above Cloud Regions Only *	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km	10 km	5 km	0 - 100 %	Sfc-500 mb: 10 % 500-300 mb: 10% 300-100 mb: 20%	60 min	3 min	tbd
			O	C- All Wx	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km	1 km	0.2 km	0 - 100 %	Sfc-500 mb: 5% 500-300 mb: 5% 300-100 mb: 10%	5 min	1 min	tbd
3.4.7.2	Atmospheric Vertical Moisture Profile: Hemispheric	GOES R Baseline	T	62° LZA: Clear and Above Cloud Regions Only *	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km	10 km	5 km	0 - 100 %	Sfc-500 mb: 10 % 500-300 mb: 10% 300-100 mb: 20%	60 min	3 min	tbd
			O	H - All Wx	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb:	2 km	0.5 km	0 - 100 %	Sfc-500 mb: 5% 500-300 mb: 5% 300-100	15 min	1 min	tbd

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					1-2 km					mb: 10%			
3.4.7.3	Atmospheric Vertical Moisture Profile: Mesoscale	GOES R Baseline	T	M - Clear and Above Cloud Regions Only *	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km	4 km	2 km	0 - 100 %		Sfc-500 mb: 10 % 500-300 mb: 10% 300-100 mb: 20%	15 min	3 min	tbd
			O	M - All Wx	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km	2 km	0.5 km	0 - 100 %		Sfc-500 mb: 5% 500-300 mb: 5% 300-100 mb: 10%	15 min	1 min	tbd
3.4.7.4	Atmospheric Vertical Temperature Profile: CONUS	GOES R Baseline	T	C - Clear and Above Cloud Regions Only *	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	10 km	5 km	180-320 K		1 K	60 min	3 min	tbd
			O	C- All Wx	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	1 km	0.2 km	180-320 K		0.5 K	5 min	1 min	tbd
3.4.7.5	Atmospheric Vertical Temperature Profile: Hemispheric	GOES R Baseline	T	62° LZA / Clear and Above Cloud Regions Only *	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	10 km	5 km	180-320 K		1 K	60 min	3 min	tbd
			O	H - All Wx	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	2 km	0.5 km	175-325 K		0.5 K	15 min	1 min	tbd

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					km							
3.4.7.6	Atmospheric Vertical Temperature Profile: Mesoscale	GOES R Baseline	T	M / Clear and Above Cloud Regions Only*	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	4 km	2 km	180-320 K	1 K	15 min	3 min	tbd
			O	M / All Wx	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	2 km	0.5 km	180-320 K	0.5 K	15 min	1 min	tbd
3.4.7.7	Capping Inversion Information: CONUS	GOES R Baseline	T	C - Clear and Above Cloud Regions Only *	Sfc-500 mb: 300-500 m	10 km	4 km	T: 210-300K Td: 210-300K Hgt: Sfc-650 mb	T: 10K Td: 10K Hgt: 150-250 mb	60 min	3 min	tbd
			O	C- All Wx	Sfc-500 mb: 300-500 m	2 km	0.5 km	T: 210-300K Td: 210-300K Hgt: Sfc-650 mb	T: 10K Td: 10K Hgt: 150-250 mb	5 min	1 min	tbd
3.4.7.8	Capping Inversion Information: Mesoscale	GOES R Baseline	T	M / Clear and Above Cloud Regions Only *	Sfc-500 mb: 300-500 m	4 km	2 km	0-20 k (delta T & Td)	0.5 K (TBS)	15 min	3 min	tbd
			O	M - All Wx	Sfc-500 mb: 300-500 m	2 km	0.5 km	0-20 k (delta T & Td)	0.5 K	5 min	3 min	tbd
3.4.7.9	Derived Stability Indices: CONUS	GOES R Baseline	T	C	tbd	4 km	1 km	tbd	tbd	30 min	3 min	tbd
			O	C	tbd	2 km	0.5 km	tbd	tbd	15 min	1 min	tbd
3.4.7.10	Derived Stability Indices: Mesoscale	GOES R Baseline	T	M	tbd	2 km	1.0 km	0-5000 J/kg	10%	15 min	15 min	tbd
			O	M	tbd	2 km	0.5 km	0-5000 J/kg	5%	5 min	15 min	tbd
3.4.7.11	Moisture Flux:	GOES R	T	C - Clear	Sfc-500 mb:	10 km	5 km	0 - 20 g/kg/h	10%	60 min	3 min	tbd

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	CONUS	Baseline		and Above Cloud Regions Only *	0.3 – 0.5 km 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km							
			O	C- All Wx	1 km	2 km	0.5 km	0 - 20 g/kg/h	5%	15 min	1 min	tbd
3.4.7.12	Moisture Flux: Hemispheric	GOES R Baseline	T	62° LZA / Clear and Above Cloud Regions Only *	Sfc-500 mb: 0.3 – 0.5 km 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	10 km	5 km	0 - 20 g/kg/h	10%	60 min	3 min	tbd
			O	H - All Wx	1 km	2 km	0.5 km	0 - 20 g/kg/h	5%	15 min	1 min	tbd
3.4.7.13	Moisture Flux: Mesoscale	GOES R Baseline	T	M / Clear and Above Cloud Regions Only *	Sfc-500 mb: 0.3 – 0.5 km 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	4 km	2 km	0 - 20 g/kg/h	10%	15 min	3 min	tbd
			O	M - All Wx	1 km	2 km	0.5 km	0 - 20 g/kg/h	5%	5 min	1 min	tbd
3.4.7.14	Pressure Profile: Mesoscale	GOES R Baseline	T	M - Clear and Above Cloud Regions Only	Sfc-500 mb: 300m - 500m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	tbd	tbd	tbd	tbd	tbd	tbd	tbd
			O	M	< / = 3 km: 30m > 3 km: 30m	25 km	10 km	10-1030 mb	± 2.5%	15 min	10 min	tbd
3.4.7.15	Total Precipitable Water: Hemispheric	GOES R Baseline	T	62° LZA - Clear and Above Cloud	tbd	100 km	tbd	tbd	tbd	60 min	tbd	tbd

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			O	Regions Only								
			H		tbd	25 km	tbd	tbd	tbd	15 min	tbd	tbd
3.4.7.16	Total Water Content: CONUS	GOES R Baseline	T	C - Clear and Above Cloud Regions Only	Sfc - TOA	10 km	5 km	0 - 100 mm	tbd	60 min	3 min	tbd
			O	C - All Wx	Sfc - TOA	0.5 km	0.2 km	0 - 100 mm	1 mm	1 min	1 min	tbd
3.4.7.17	Total Water Content: Hemispheric	GOES R Baseline	T	62° LZA - Clear and Above Cloud Regions Only*	Sfc - TOA	10 km	5 km	0 - 100 mm	tbd	60 min	3 min	tbd
			O	H - All Wx	Sfc - TOA	0.5 km	0.2 km	0 - 100 mm	1 mm	15 min	1 min	tbd
3.4.7.18	Total Water Content: Mesoscale	GOES R Baseline ?	T	M / Clear and Above Cloud Regions Only*	Sfc - TOA	4 km	2 km	0-100 mm	tbd	5 min	5 min	tbd
			O	M - All Wx	Sfc - TOA	0.5 km	0.2 km	0-100 mm	1 mm	1 min	5 min	tbd
3.4.8	RADIANCES											
3.4.8.1	Clear Sky Masks: CONUS	GOES R Baseline	T	C	tbd	2 km	1 km	0 - 1 Binary	10%	15 min	15 min	tbd
			O	C	tbd	tbd	tbd	0 - 1 Binary	5%	tbd	tbd	tbd
3.4.8.2	Clear Sky Masks: Hemispheric	GOES R Baseline	T	FD	tbd	2 km	1 km	0 - 1 Binary	10%	15 min	15 min	tbd
			O	H	tbd	tbd	tbd	0 - 1 Binary	5%	tbd	tbd	tbd
3.4.8.3	Clear Sky Masks: Mesoscale	GOES R Baseline	T	M	tbd	2 km	1.0 km	0 - 1 Binary	10%	5 min	5 min	tbd
			O	M	tbd	0.5 km	0.2 km	0 - 1 Binary	5%	1 min	5 min	tbd
3.4.8.4	Radiances: CONUS	GOES R Baseline	T	62° LZA - Clear and Above Cloud Regions only	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	10 km	5 km	180K-320K	tbd	60 min	10 min	tbd

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			O	C	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	1 km	0.5 km	180K-330K	tbd	10 min	1 min	tbd
3.4.8.5	Radiances: Hemispheric	GOES R Baseline	T	<u>62° LZA</u> - Clear and Above Cloud Regions only	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	10 km	5 km	180K-320K	tbd	60 min	60 min	tbd
			O	H	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	4 km	1 km	180K-330K	tbd	30 min	15 min	tbd
3.4.8.6	Radiances: Mesoscale	GOES R Baseline	T	M - Clear and Above Cloud Regions only	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	4 km	2 km	180K-320K	tbd	60 min	30 min	tbd
			O	M	Sfc-500 mb: 300-500 m 500-300 mb: 1-2 km 300-100 mb: 1-2 km 100 mb + : 2-3 km	0.5 km	0.2 km	180K-330K	tbd	10 min	5 min	tbd
3.4.9	RADIATION											
3.4.9.1	Absorbed Shortwave Radiation: Surface/ Mesoscale	GOES R Baseline	T	M	n/a	5 km	tbd	0 - 700 W/m <sup>2</sup>	7 W/m <sup>2</sup>	60 min	60 min	tbd

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			O	M	n/a	300 m	tbd	0 - 700 W/m <sup>2</sup>	5 W/m <sup>2</sup>	15 min	5 min	tbd
3.4.9.2	Downward Longwave Radiation: Surface/CONUS	GOES R Baseline	T	C	n/a	25 km	5 km	0 - 700 W/m <sup>2</sup>	tbd	60 min	60 min	tbd
			O	H	n/a	2 km	1 km	0 - 700 W/m <sup>2</sup>	5 W/m <sup>2</sup>	15 min	15 min	tbd
3.4.9.3	Downward Longwave Radiation: Surface/Hemispheric	GOES R Baseline	T	FD	n/a	100 km	tbd	tbd	tbd	60 min	tbd	tbd
			O	H	n/a	25 km	tbd	tbd	5 W/m <sup>2</sup>	15 min	tbd	0.2 W/m <sup>2</sup>
3.4.9.4	Downward Solar Insolation: Surface/ CONUS	GOES R Baseline	T	C	n/a	25 km	2 km	0-1500 W/m <sup>2</sup>	+/- 60 W/m <sup>2</sup> at high end of range (1500 W/m <sup>2</sup> ) +/- 40 W/m <sup>2</sup> at typical value/mid-point ( 350 W/m <sup>2</sup> )	60 min	60 min	tbd
			O	H	n/a	2 km	1 km	0-1500 W/m <sup>2</sup>	+/- 60 W/m <sup>2</sup> at high end of range (1500 W/m <sup>2</sup> ) +/- 40 W/m <sup>2</sup> at typical value/mid-point ( 350 W/m <sup>2</sup> )	15 min	15 min	tbd
3.4.9.5	Downward Solar Insolation: Surface/ Hemispheric	GOES R Baseline	T	FD	n/a	50 km	tbd	0-1500 W/m <sup>2</sup>	+/- 60 W/m <sup>2</sup> at high end of range (1500 W/m <sup>2</sup> ) +/- 40 W/m <sup>2</sup> at	60 min	60 min	tbd



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									typical value/mid-point ( 350 W/m <sup>2</sup> )			
			O	H	n/a	10 km	tbd	0-1500 W/m <sup>2</sup>	+/- 60 W/m <sup>2</sup> at high end of range (1500 W/m <sup>2</sup> ) +/- 40 W/m <sup>2</sup> at typical value/mid-point ( 350 W/m <sup>2</sup> )	15 min	5 min	tbd
3.4.9.6	Downward Solar Insolation: Surface/ Mesoscale	GOES R Baseline	T	M	n/a	5 km	tbd	0-1500 W/m <sup>2</sup>	+/- 60 W/m <sup>2</sup> at high end of range (1500 W/m <sup>2</sup> ) +/- 40 W/m <sup>2</sup> at typical value/mid-point ( 350 W/m <sup>2</sup> )	60 min	60 min	tbd
			O	M	n/a	300 m	tbd	0-1500 W/m <sup>2</sup>	+/- 60 W/m <sup>2</sup> at high end of range (1500 W/m <sup>2</sup> ) +/- 40 W/m <sup>2</sup> at typical value/mid-point ( 350 W/m <sup>2</sup> )	15 min	5 min	tbd
3.4.9.7	Reflected Solar Insolation: TOA / CONUS	GOES R Baseline	T	C	n/a	25 km	2 km	0-1500 W/m <sup>2</sup>	+/- 60 W/m <sup>2</sup> at high end of range	60 min	60 min	tbd



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			O	H	total	50 km	tbd	tbd	+/- 5%	60 min	tbd	tbd
3.4.10.2	Removed											
3.4.10.3	Removed											
3.4.10.4	Ozone Total: CONUS	GOES R Baseline	T	C	tbd	10 km	5 km	100-650 DU	6%	60 min	5 min	tbd
			O	H	tbd	2 km	0.5 km	100-650 DU	2%	30 min	3 min	tbd
3.4.10.5	Ozone Total: Hemispheric	GOES R Baseline	T	FD	tbd	10 km	5 km	100-650 DU	tbd	60 min	5 min	tbd
			O	H	tbd	2 km	0.5 km	100-650 DU	tbd	30 min	3 min	tbd
3.4.10.6	SO <sub>2</sub> Detection	GOES R Baseline	T	FD	Total Column	5 km	1 km	Binary Yes/No Above tbd Dobson Units (DU)	1%	60 min	15 min	tbd
			O	G	Total Column	1 km	0.5 km	0-700 DU	tbd	15 min	5 min	tbd
3.4.11	WINDS											
3.4.11.1	Derived Motion Winds: CONUS	GOES R Baseline	T	C	4 levels: Low, Mid, Mid-High, High	2 km	1.0 km	0-300 kts (0-155 m/s)	High level: 6 m/s, Mid level 4 m/s, Low level: 2.5 m/s	5 min	3 min	tbd
			O	C	tbd	0.2 km	0.2 km	0-300 kts (0-155 m/s)	0.5 m/s	5 min	1 min	tbd
3.4.11.2	Derived Motion Winds: Hemispheric	GOES R Baseline	T	FD	4 levels: Low, Mid, Mid-High, High	2 km	1.0 km	0-300 kts (0-155 m/s)	High level: 6 m/s, Mid level 4 m/s, Low level: 2.5 m/s	5 min	3 min	tbd
			O	H	tbd	0.2 km	0.2 km	0-300 kts (0-155 m/s)	0.5 m/s	5 min	1 min	tbd
3.4.11.3	Derived Motion Winds: Mesoscale	GOES R Baseline	T	M	4 levels: Low, Mid, Mid-High, High	2 km	1.0 km	0-300 kts (0-155 m/s)	High level: 6 m/s, Mid level 4 m/s,	5 min	3 min	tbd

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									Low level: 2.5 m/s			
			O	M	tbd	0.2 km	0.2 km	0-300 kts (0-155 m/s)	0.5 m/s	5 min	1 min	tbd
3.4.11.4	Microburst Windspeed Potential	GOES R Baseline	T	C	tbd	10 km	5.0 km	tbd	tbd	60 min	3 min	tbd
			O	C	tbd	0.2 km	0.2 km	tbd	tbd	1 min	1 min	tbd