GRIB2 Fields Produced by Unipost - Extended

GRIB2 fields produced by **unipost** (column 1), abbreviated names used in the **postcntrl.xml** file (column 2), corresponding standar...
discipline (i.e. meteorological, hydrological, etc; column 4), grib2 category which labels the type of field (i.e. temperature, moisture...
number for that category (column 6), grib2 table # (i.e. WMO=0, NCEP=1; column 7), corresponding grib identification number fo...
8), and corresponding array location UPP uses to store the variable in parallel arrays (column 9).

Field Description	Name in Grib2 Control File	Grib2 pname	Grib2 Discipline	Grib2 Category	Grib2 Parameter
Radar reflectivity on model surface*	REFD_ON_HYBRID_LVL	REFD	0	16	4
Pressure on model surface	PRES_ON_HYBRID_LVL	PRES	0	3	0
Height on model surface	HGT_ON_HYBRID_LVL	HGT	0	3	5
Temperature on model surface	TMP_ON_HYBRID_LVL	TMP	0	0	0
Potential temperature on model surface	POT_ON_HYBRID_LVL	POT	0	0	2
Dew point temperature on model surface	DPT_ON_HYBRID_LVL	DPT	0	0	6
Specific humidity on model surface	SPFH_ON_HYBRID_LVL	SPFH	0	1	0
Relative humidity on model surface	RH_ON_HYBRID_LVL	RH	0	1	1
Moisture convergence on model surface	MCONV_ON_HYBRID_LVL	MCONV	0	1	26
U component wind on model surface	UGRD_ON_HYBRID_LVL	UGRD	0	2	2
V component wind on model surface	VGRD_ON_HYBRID_LVL	VGRD	0	2	3
Cloud water on model surface	CLWMR_ON_HYBRID_LVL	CLWMR	0	1	22
Cloud ice on model surface	CICE_ON_HYBRID_LVL	CICE	0	6	0
Rain on model surface	RWMR_ON_HYBRID_LVL	RWMR	0	1	24
Snow on model surface	SNMR_ON_HYBRID_LVL	SNMR	0	1	25
Cloud fraction on model surface	TCDC_ON_HYBRID_LVL	TCDC	0	6	1
Omega on model surface	VVEL_ON_HYBRID_LVL	VVEL	0	2	8
Absolute vorticity on model surface	ABSV_ON_HYBRID_LVL	ABSV	0	2	10
Geostrophic streamfunction on model surface	STRM_ON_HYBRID_LVL	STRM	0	2	4
Turbulent kinetic energy on model surface	TKE_ON_HYBRID_LVL	TKE	0	19	11
Richardson number on model surface	RI_ON_HYBRID_LVL	RI	0	7	12
Master length scale on model surface	BMIXL_ON_HYBRID_LVL	BMIXL	2	0	14
Asymptotic length scale on model surface	AMIXL_ON_HYBRID_LVL	AMIXL	2	0	219

Radar reflectivity on pressure surface*	REFD_ON_ISOBARIC_SFC	REFD	0	16	4
Height on pressure surface	HGT_ON_ISOBARIC_SFC	HGT	0	3	5
Temperature on pressure surface	TMP_ON_ISOBARIC_SFC	TMP	0	0	0
Potential temperature on pressure surface	POT_ON_ISOBARIC_SFC	POT	0	0	2
Dew point temperature on pressure surface	DPT_ON_ISOBARIC_SFC	DPT	0	0	6
Specific humidity on pressure surface	SPFH_ON_ISOBARIC_SFC	SPFH	0	1	0
Relative humidity on pressure surface	RH_ON_ISOBARIC_SFC	RH	0	1	1
Moisture convergence on pressure surface	MCONV_ON_ISOBARIC_SFC	MCONV	0	1	26
U component wind on pressure surface	UGRD_ON_ISOBARIC_SFC	UGRD	0	2	2
V component wind on pressure surface	VGRD_ON_ISOBARIC_SFC	VGRD	0	2	3
Omega on pressure surface	VVEL_ON_ISOBARIC_SFC	VVEL	0	2	8
Absolute vorticity on pressure surface	ABSV_ON_ISOBARIC_SFC	ABSV	0	2	10
Geostrophic streamfunction on pressure surface	STRM_ON_ISOBARIC_SFC	STRM	0	2	4
Turbulent kinetic energy on pressure surface	TKE_ON_ISOBARIC_SFC	TKE	0	19	11
Cloud water on pressure surface	CLWMR_ON_ISOBARIC_SFC	CLWMR	0	1	22
Cloud ice on pressure surface	CICE_ON_ISOBARIC_SFC	CICE	0	6	0
Rain on pressure surface	RWMR_ON_ISOBARIC_SFC	RWMR	0	1	24
Snow water on pressure surface	SNMR_ON_ISOBARIC_SFC	SNMR	0	1	25
Total condensate on pressure surface	TCOND_ON_ISOBARIC_SFC	TCOND	0	1	21
Mesinger (Membrane) sea level pressure	MSLET_ON_MEAN_SEA_LVL	MSLET	0	3	192
Shuell sea level pressure	PRES_ON_MEAN_SEA_LVL	PRMSL	0	3	1
2 M pressure	PRES_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	PRES	0	3	0
2 M temperature	TMP_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	TMP	0	0	0
2 M specific humidity	SPFH_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	SPFH	0	1	0
2 M mixing ratio	Not currently available for grib2	NA	NA	NA	NA
2 M dew point temperature	DPT_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	DPT	0	0	6

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2 M RH	RH_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	RH	0	1	1
10 M u component wind	UGRD_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	UGRD	0	2	2
10 M v component wind	VGRD_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	VGRD	0	2	3
10 M potential temperature	POT_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	POT	0	0	2
10 M specific humidity	SPFH_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	SPFH	0	1	0
Surface pressure	PRES_ON_SURFACE	PRES	0	3	0
Terrain height	HGT_ON_SURFACE	HGT	0	3	5
Skin potential temperature	POT_ON_SURFACE	POT	0	0	2
Skin specific humidity	SPFH_ON_SURFACE	SPFH	0	1	0
Skin dew point temperature	DPT_ON_SURFACE	DPT	0	0	6
Skin Relative humidity	RH_ON_SURFACE	RH	0	1	1
Skin temperature	TMP_ON_SURFACE	TMP	0	0	0
Soil temperature at the bottom of soil layers	TSOIL_ON_DEPTH_BEL_LAND_SFC_3m	TSOIL	2	0	2
Soil temperature in between each of soil layers	TSOIL_ON_DEPTH_BEL_LAND_SFC	TSOIL	2	0	2
Soil moisture in between each of soil layers	SOILW_ON_DEPTH_BEL_LAND_SFC	SOILW	2	0	192
Snow water equivalent	WEASD_ON_SURFACE	WEASD	0	1	13
Snow cover in percentage	SNOWC_ON_SURFACE	SNOWC	0	1	42
Heat exchange coeff at surface	SFEXC_ON_SURFACE	SFEXC	2	0	12
Vegetation cover	VEG_ON_SURFACE	VEG	2	0	4
Soil moisture availability	MSTAV_ON_DEPTH_BEL_LAND_SFC	MSTAV	0	11	1
Ground heat flux - instantaneous	INST_GFLUX_ON_SURFACE	GFLUX	2	0	10
Lifted index—surface based	LFTX_ON_ISOBARIC_SFC_500-1000hpa	LFTX	0	7	10
Lifted index—best	4LFTX_ON_SPEC_PRES_ABOVE_GRND	4LFTX	0	7	11
Lifted index—from boundary layer	PLI_ON_SPEC_PRES_ABOVE_GRND	PLI	0	7	0
CAPE (4 types) ***	CAPE_ON_SURFACE	CAPE	0	7	6
CIN (4 types) ***	CIN_ON_SURFACE	CIN	0	7	7
Column integrated precipitable water	PWAT_ON_ENTIRE_ATMOS_SINGLE_LYR	PWAT	0	1	3
Column integrated cloud water	TCOLW_ON_ENTIRE_ATMOS	TCOLW	0	6	196
Column integrated cloud ice	TCOLI_ON_ENTIRE_ATMOS	TCOLI	0	1	70
Column integrated rain	TCOLR_ON_ENTIRE_ATMOS	TCOLR	0	1	45
Column integrated snow	TCOLS_ON_ENTIRE_ATMOS	TCOLS	0	1	46
Column integrated total condensate	TCOLC_ON_ENTIRE_ATMOS	TCOLC	0	6	20

Column integrated cloud water	CWAT_ON_ENTIRE_ATMOS_SINGLE_LYR	CWAT	0	6	6
Helicity	HLCY_ON_SPEC_HGT_LVL_ABOVE_GRND	HLCY	0	7	8
U component storm motion	USTM_ON_SPEC_HGT_LVL_ABOVE_GRND	USTM	0	2	27
V component storm motion	VSTM_ON_SPEC_HGT_LVL_ABOVE_GRND	VSTM	0	2	28
Accumulated total precipitation	ACM_APCP_ON_SURFACE	APCP	0	1	8
Accumulated convective precipitation	ACM_ACPCP_ON_SURFACE	ACPCP	0	1	10
Accumulated grid-scale precipitation	ACM_NCPCP_ON_SURFACE	NCPCP	0	1	9
Accumulated snowfall	ACM_WEASD_ON_SURFACE	WEASD	0	1	13
Accumulated large scale snow	Not currently available for grib2	NA	NA	NA	NA
Accumulated total snow melt	ACM_SNOM_ON_SURFACE	SNOM	0	1	16
Precipitation type (4 types) – instantaneous	INST_CRAIN_ON_SURFACE	CRAIN	0	1	33
Precipitation rate - instantaneous	INST_PRATE_ON_SURFACE	PRATE	0	1	7
Composite radar reflectivity*	REFC_ON_ENTIRE_ATMOS	REFC	0	16	5
Low level cloud fraction	LCDC_ON_LOW_CLOUD_LYR	LCDC	0	6	3
Mid level cloud fraction	MCDC_ON_MID_CLOUD_LYR	MCDC	0	6	4
High level cloud fraction	HCDC_ON_HIGH_CLOUD_LYR	HCDC	0	6	5
Total cloud fraction	INST_TCDC_ON_ENTIRE_ATMOS	TCDC	0	6	1
Time-averaged total cloud fraction	AVE_TCDC_ON_ENTIRE_ATMOS	TCDC	0	6	1
Time-averaged stratospheric cloud fraction	AVE_CDLYR_ON_ENTIRE_ATMOS	CDLYR	0	6	14
Time-averaged convective cloud fraction	AVE_CDCON_ON_ENTIRE_ATMOS	CDCON	0	6	2
Cloud bottom pressure	PRES_ON_CLOUD_BASE	PRES	0	3	0
Cloud top pressure	PRES_ON_CLOUD_TOP	PRES	0	3	0
Cloud bottom height (above MSL)	HGT_ON_CLOUD_BASE	HGT	0	3	5
Cloud top height (above MSL)	HGT_ON_CLOUD_TOP	HGT	0	3	5
Convective cloud bottom pressure	PRES_ON_CONVECTIVE_CLOUD_BOT_LVL	PRES	0	3	0
Convective cloud top pressure	PRES_ON_CONVECTIVE_CLOUD_TOP_LVL	PRES	0	3	0
Shallow convective cloud bottom pressure	PRES_ON_SHALL_CONVECTIVE_CLOUD_BOT_LVL	PRES	0	3	0
Shallow convective cloud top pressure	PRES_ON_SHALL_CONVECTIVE_CLOUD_TOP_LVL	PRES	0	3	0
Deep convective cloud bottom pressure	PRES_ON_DEEP_CONVECTIVE_CLOUD_BOT_LVL	PRES	0	3	0

Deep convective cloud top pressure	PRES_ON_DEEP_CONVECTIVE _CLOUD_TOP_LVL	PRES	0	3	0
Grid scale cloud bottom pressure	PRES_ON_GRID_SCALE_CLOUD _BOT_LVL	PRES	0	3	0
Grid scale cloud top pressure	PRES_ON_GRID_SCALE_CLOUD_TOP _LVL	PRES	0	3	0
Convective cloud fraction	CDCON_ON_ENTIRE_ATMOS	CDCON	0	6	2
Convective cloud efficiency	CUEFI_ON_ENTIRE_ATMOS_SINGLE _LYR	CUEFI	0	6	16
Above-ground height of LCL	HGT_ON_LVL_OF_ADIAB_COND _FROM_SFC	HGT	0	3	5
Pressure of LCL	PRES_ON_LVL_OF_ADIAB_COND _FROM_SFC	PRES	0	3	0
Cloud top temperature	TMP_ON_CLOUD_TOP	TMP	0	0	0
Temperature tendency from radiative fluxes	TTRAD_ON_HYBRID_LVL	TTRAD	0	0	193
Temperature tendency from shortwave radiative flux	SWHR_ON_HYBRID_LVL	SWHR	0	4	197
Temperature tendency from longwave radiative flux	LWHR_ON_HYBRID_LVL	LWHR	0	5	194
Outgoing surface shortwave radiation - instantaneous	INST_USWRF_ON_SURFACE	USWRF	0	4	8
Outgoing surface longwave radiation - instantaneous	INST_ULWRF_ON_SURFACE	ULWRF	0	5	4
Incoming surface shortwave radiation - time-averaged	AVE_DSWRF_ON_SURFACE	DSWRF	0	4	7
Incoming surface longwave radiation - time-averaged	AVE_DLWRF_ON_SURFACE	DLWRF	0	5	3
Outgoing surface shortwave radiation - time-averaged	AVE_USWRF_ON_SURFACE	USWRF	0	4	8
Outgoing surface longwave radiation - time-averaged	AVE_ULWRF_ON_SURFACE	ULWRF	0	5	4
Outgoing model top shortwave radiation - time-averaged	AVE_USWRF_ON_TOP_OF_ATMOS	USWRF	0	4	8
Outgoing model top longwave radiation - time-averaged	AVE_ULWRF_ON_TOP_OF_ATMOS	ULWRF	0	5	4
Incoming surface shortwave radiation - instantaneous	INST_DSWRF_ON_SURFACE	DSWRF	0	4	7
Incoming surface longwave radiation - instantaneous	INST_DLWRF_ON_SURFACE	DLWRF	0	5	3
Roughness length	SFCR_ON_SURFACE	SFCR	2	0	1
Friction velocity	FRICV_ON_SURFACE	FRICV	0	2	30
Surface drag coefficient	CD_ON_SURFACE	CD	0	2	29

Surface u wind stress	UFLX_ON_SURFACE	UFLX	0	2	17
Surface v wind stress	VFLX_ON_SURFACE	VFLX	0	2	18
Surface sensible heat flux - time-averaged	AVE_SHTFL_ON_SURFACE	SHTFL	0	0	11
Ground heat flux - time-averaged	AVE_GFLUX_ON_SURFACE	GFLUX	2	0	10
Surface latent heat flux - time-averaged	AVE_LHTFL_ON_SURFACE	LHTFL	0	0	10
Surface momentum flux - time-averaged	AVE_MFLX_ON_SURFACE	MFLX	0	2	26
Accumulated surface evaporation	ACM_EVP_ON_SURFACE	EVP	0	1	6
Surface sensible heat flux – instantaneous	INST_SHTFL_ON_SURFACE	SHTFL	0	0	11
Surface latent heat flux - instantaneous	INST_LHTFL_ON_SURFACE	LHTFL	0	0	10
Latitude	NLAT_ON_SURFACE	NLAT	0	191	192
Longitude	ELON_ON_SURFACE	ELON	0	191	193
Land sea mask (land=1 sea=0)	LAND_ON_SURFACE	LAND	2	0	0
Sea ice mask	ICEC_ON_SURFACE	ICEC	10	2	0
Surface midday albedo	ALBDO_ON_SURFACE	ALBDO	0	19	1
Sea surface temperature	WTMP_ON_SURFACE	WTMP	10	3	0
Press at tropopause	PRES_ON_TROPOPAUSE	PRES	0	3	0
Temperature at tropopause	TMP_ON_TROPOPAUSE	TMP	0	0	0
Potential temperature at tropopause	POT_ON_TROPOPAUSE	POT	0	0	2
U wind at tropopause	UGRD_ON_TROPOPAUSE	UGRD	0	2	2
V wind at tropopause	VGRD_ON_TROPOPAUSE	VGRD	0	2	3
Wind shear at tropopause	VWSH_ON_TROPOPAUSE	VWSH	0	2	25
Height at tropopause	HGT_ON_TROPOPAUSE	HGT	0	3	5
Temperature at flight levels	TMP_ON_SPEC_ALT_ABOVE_MEAN_SEA_LVL	TMP	0	0	0
U wind at flight levels	UGRD_ON_SPEC_ALT_ABOVE_MEAN_SEA_LVL	UGRD	0	2	2
V wind at flight levels	VGRD_ON_SPEC_ALT_ABOVE_MEAN_SEA_LVL	VGRD	0	2	3
Freezing level height (above mean sea level)	HGT_ON_0C_ISOTHERM	HGT	0	3	5
Freezing level RH	RH_ON_0C_ISOTHERM	RH	0	1	1
Highest freezing level height	HGT_ON_HGHST_TROP_FRZ_LVL	HGT	0	3	5
Pressure in boundary layer (30 mb mean)	PRES_ON_SPEC_PRES_ABOVE_GRND	PRES	0	3	0
Temperature in boundary layer (30 mb mean)	TMP_ON_SPEC_PRES_ABOVE_GRND	TMP	0	0	0

Potential temperature in boundary layers (30 mb mean)	POT_ON_SPEC_PRES_ABOVE_GRND	POT	0	0	2
Dew point temperature in boundary layer (30 mb mean)	DPT_ON_SPEC_PRES_ABOVE_GRND	DPT	0	0	6
Specific humidity in boundary layer (30 mb mean)	SPFH_ON_SPEC_PRES_ABOVE_GRND	SPFH	0	1	0
RH in boundary layer (30 mb mean)	RH_ON_SPEC_PRES_ABOVE_GRND	RH	0	1	1
Moisture convergence in boundary layer (30 mb mean)	MCONV_ON_SPEC_PRES_ABOVE_GRND	MCONV	0	1	26
Precipitable water in boundary layer (30 mb mean)	PWAT_ON_SPEC_PRES_ABOVE_GRND	PWAT	0	1	3
U wind in boundary layer (30 mb mean)	UGRD_ON_SPEC_PRES_ABOVE_GRND	UGRD	0	2	2
V wind in boundary layer (30 mb mean)	VGRD_ON_SPEC_PRES_ABOVE_GRND	VGRD	0	2	3
Omega in boundary layer (30 mb mean)	VVEL_ON_SPEC_PRES_ABOVE_GRND	VVEL	0	2	8
Visibility	VIS_ON_SURFACE	VIS	0	19	0
Vegetation type	VGTYP_ON_SURFACE	VGTYP	2	0	198
Soil type	SOTYP_ON_SURFACE	SOTYP	2	3	0
Canopy conductance	CCOND_ON_SURFACE	CCOND	2	0	15
PBL height	HPBL_ON_SURFACE	HPBL	0	3	18
Slope type	SLTYP_ON_SURFACE	SLTYP	2	3	194
Snow depth	SNOD_ON_SURFACE	SNOD	0	1	11
Liquid soil moisture	SOILL_ON_DEPTH_BEL_LAND_SFC	SOILL	2	3	5
Snow free albedo	SNFALB_ON_SURFACE	SNFALB	0	19	18
Maximum snow albedo	MXSALB_ON_SURFACE	MXSALB	0	19	17
Canopy water evaporation	EVCW_ON_SURFACE	EVCW	2	0	229
Direct soil evaporation	EVBS_ON_SURFACE	EVBS	2	3	198
Plant transpiration	TRANS_ON_SURFACE	TRANS	2	0	230
Snow sublimation	SBSNO_ON_SURFACE	SBSNO	0	1	212
Air dry soil moisture	SMDRY_ON_SURFACE	SMDRY	2	3	8
Soil moist porosity	POROS_ON_SURFACE	POROS	2	3	9
Minimum stomatal resistance	RSMIN_ON_SURFACE	RSMIN	2	0	16
Number of root layers	RLYRS_ON_SURFACE	RLYRS	2	3	6
Soil moist wilting point	WILT_ON_SURFACE	WILT	2	0	26
Soil moist reference	SMREF_ON_SURFACE	SMREF	2	3	7
Canopy conductance - solar component	RCS_ON_SURFACE	RCS	2	0	18
Canopy conductance - temperature component	RCT_ON_SURFACE	RCT	2	0	19

Canopy conductance - humidity component	RCQ_ON_SURFACE	RCQ	2	0	21
Canopy conductance - soil component	RCSOL_ON_SURFACE	RCSOL	2	0	20
Potential evaporation	PEVPR_ON_SURFACE	PEVPR	0	1	41
Heat diffusivity on sigma surface	VEDH_ON_SIGMA_LVLS	VEDH	0	2	204
Surface wind gust	GUST_ON_SURFACE	GUST	0	2	22
Convective precipitation rate	CPRAT_ON_SURFACE	CPRAT	0	1	37
Radar reflectivity at certain above ground heights*	REFD_ON_SPEC_HGT_LVL_ABOVE _GRND	REFD	0	16	4
MAPS Sea Level Pressure	MAPS_PRMSL_ON_MEAN_SEA_LVL	PRMSL	0	3	1
Total soil moisture	SOILM_ON_DEPTH_BEL_LAND_SFC	SOILM	2	0	3
Plant canopy surface water	CNWAT_ON_SURFACE	CNWAT	2	0	13
Accumulated storm surface runoff	ACM_SSRUN_ON_SURFACE	SSRUN	1	0	6
Accumulated baseflow runoff	ACM_BGRUN_ON_SURFACE	BGRUN	1	0	5
Fraction of frozen precipitation	CPOFP_ON_SURFACE	CPOFP	0	1	39
GSD Cloud Base pressure	Not currently available for grib2	NA	NA	NA	NA
GSD Cloud Top pressure	GSD_PRES_ON_CLOUD_TOP	PRES	0	3	0
Averaged temperature tendency from grid scale latent heat release	AVE_LRGHR_ON_HYBRID_LVL	LRGHR	0	0	195
Averaged temperature tendency from convective latent heat release	AVE_CNVHR_ON_HYBRID_LVL	CNVHR	0	0	196
Average snow phase change heat flux	AVE_SNOHF_ON_SURFACE	SNOHF	0	0	16
Accumulated potential evaporation	ACM_PEVAP_ON_SURFACE	PEVAP	0	1	40
Highest freezing level relative humidity	RH_ON_HGHST_TROP_FRZ_LVL	RH	0	1	1
Maximum wind pressure level	PRES_ON_MAX_WIND	PRES	0	3	0
Maximum wind height	HGT_ON_MAX_WIND	HGT	0	3	5
U-component of maximum wind	UGRD_ON_MAX_WIND	UGRD	0	2	2
V-component of maximum wind	VGRD_ON_MAX_WIND	VGRD	0	2	3
GSD cloud base height	GSD_HGT_ON_CLOUD_BASE	HGT	0	3	5
GSD cloud top height	GSD_HGT_ON_CLOUD_TOP	HGT	0	3	5
GSD visibility	GSD_VIS_ON_CLOUD_TOP	VIS	0	19	0
Wind energy potential	WMIXE_ON_SPEC_HGT_LVL_ABOVE _GRND	WMIXE	0	2	19
U wind at 80 m above ground	UGRD_ON_SPEC_HGT_LVL_ABOVE _GRND	UGRD	0	2	2
V wind at 80 m above ground	VGRD_ON_SPEC_HGT_LVL_ABOVE _GRND	VGRD	0	2	3
Graupel on model surface	GRMR_ON_HYBRID_LVL	GRMR	NA	NA	NA
Graupel on pressure surface	GRMR_ON_ISOBARIC_SFC	GRMR	NA	NA	NA

Maximum updraft helicity	MAX_UPHL_ON_SPEC_HGT_LVL_ABOVE_GRND_2-5km	MXUPHL	0	7	199
Maximum 1km reflectivity	MAX_REF_ON_SPEC_HGT_LVL_ABOVE_GRND_1km	MAXREF	0	16	198
Maximum wind speed at 10m	MAX_WIND_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	WIND	0	2	1
Maximum updraft vertical velocity	MAX_MAXUVV_ON_ISOBARIC_SFC_40-100hpa	MAXUVV	0	2	220
Maximum downdraft vertical velocity	MAX_MAXDVV_ON_ISOBARIC_SFC_40-100hpa	MAXDVV	0	2	221
Mean vertical velocity	AVE_DZDT_ON_SIGMA_LVL_0.5-0.8	DZDT	0	2	9
Radar echo top in KDT	HGT_ON_SPEC_HGT_LVL_ABOVE_GRND	HGT	0	3	5
Updraft helicity	UPHL_ON_SPEC_HGT_LVL_ABOVE_GRND_2-5km	MXUPHL	0	7	199
Column integrated graupel	GRMR_ON_ENTIRE_ATMOS_SINGLE_LYR	GRMR	NA	NA	NA
Column integrated maximum graupel	MAXVIG_ON_ENTIRE_ATMOS_SINGLE_LYR	TCOLG	0	1	74
U-component of 0-1km level wind shear	VUCSH_ON_SPEC_HGT_LVL_ABOVE_GRND_0-1km	VUCSH	0	2	15
V-component of 0-1km level wind shear	VVCSH_ON_SPEC_HGT_LVL_ABOVE_GRND_0-1km	VVCSH	0	2	16
U-component of 0-6km level wind shear	VUCSH_ON_SPEC_HGT_LVL_ABOVE_GRND_0-6km	VUCSH	0	2	15
V-component of 0-6km level wind shear	VVCSH_ON_SPEC_HGT_LVL_ABOVE_GRND_0-6km	VVCSH	0	2	16
Total precipitation accumulated over user-specified bucket	BUCKET_APCP_ON_SURFACE	APCP	0	1	8
Convective precipitation accumulated over user-specified bucket	BUCKET_ACPCP_ON_SURFACE	ACPCP	0	1	10
Grid-scale precipitation accumulated over user-specified bucket	BUCKET_NCPCP_ON_SURFACE	NCPCP	0	1	9
Snow accumulated over user-specified bucket	BUCKET_WEASD_ON_SURFACE	WEASD	0	1	13
Model level fraction of rain for Ferrier scheme	FRAIN_ON_HYBRID_LVL	FRAIN	0	1	42
Model level fraction of ice for Ferrier scheme	FICE_ON_HYBRID_LVL	FICE	0	6	21

Model level riming factor for Ferrier scheme	RIME_ON_HYBRID_LVL	RIME	0	1	44
Model level total condensate for Ferrier scheme	TCOND_ON_HYBRID_LVL	TCOND	0	1	21
Height of sigma surface	HGT_ON_SIGMA_LVLS	HGT	0	3	5
Temperature on sigma surface	TMP_ON_SIGMA_LVLS	TMP	0	0	0
Specific humidity on sigma surface	SPFH_ON_SIGMA_LVLS	SPFH	0	1	0
U-wind on sigma surface	UGRD_ON_SIGMA_LVLS	UGRD	0	2	2
V-wind on sigma surface	VGRD_ON_SIGMA_LVLS	VGRD	0	2	3
Omega on sigma surface	VVEL_ON_SIGMA_LVLS	VVEL	0	2	8
Cloud water on sigma surface	CLWMR_ON_SIGMA_LVLS	CLWMR	0	1	22
Cloud ice on sigma surface	CICE_ON_SIGMA_LVLS	CICE	0	6	0
Rain on sigma surface	RWMR_ON_SIGMA_LVLS	RWMR	0	1	24
Snow on sigma surface	SNMR_ON_SIGMA_LVLS	SNMR	0	1	25
Condensate on sigma surface	TCOND_ON_SIGMA_LVLS	TCOND	0	1	21
Pressure on sigma surface	PRES_ON_SIGMA_LVLS	PRES	0	3	0
Turbulent kinetic energy on sigma surface	TKE_ON_SIGMA_LVLS	TKE	0	19	11
Cloud fraction on sigma surface	TCDC_ON_SIGMA_LVLS	TCDC	0	6	1
Graupel on sigma surface	GRLE_ON_SIGMA_LVLS	GRLE	0	1	32
LCL level pressure	PLPL_ON_SPEC_PRES_ABOVE_GRND	PLPL	0	3	200
LOWEST WET BULB ZERO HEIGHT	HGT_ON_LWST_LVL_OF_WET_BULB_ZERO	HGT	0	3	5
Leaf area index	LAI_ON_SURFACE	LAI	0	7	198
Accumulated land surface model precipitation	ACM_LSPA_ON_SURFACE	LSPA	2	3	199
In-flight icing	TIPD_ON_ISOBARIC_SFC	TIPD	0	1	206
Clear air turbulence	TPFI_ON_ISOBARIC_SFC	TPFI	0	19	219
Wind shear between shelter level and 2000 FT	VWSH_ON_SPEC_HGT_LVL_ABOVE_GRND	VWSH	0	2	25
Ceiling	HGT_ON_CLOUD_CEILING	HGT	0	3	5
Flight restriction	VIS_ON_CLOUD_BASE	VIS	0	19	0
Instantaneous clear sky incoming surface shortwave	INST_CSDSF_ON_SURFACE	CSDSF	0	4	196
Pressure level riming factor for Ferrier scheme	RIME_ON_ISOBARIC_SFC	RIME	0	1	44
Model level vertical velocity	DZDT_ON_HYBRID_LVL	DZDT	0	2	9
Brightness temperature	SBT122_ON_TOP_OF_ATMOS_FROM_LWRAD	SBT122	3	192	0
Average albedo	AVE_ALBDO_ON_SURFACE	ALBDO	0	19	1
Ozone on model surface	O3MR_ON_HYBRID_LVL	O3MR	0	14	1
Ozone on pressure surface	O3MR_ON_ISOBARIC_SFC	O3MR	0	14	1

Surface zonal momentum flux	AVE_UFLX_ON_SURFACE	UFLX	0	2	17
Surface meridional momentum flux	AVE_VFLX_ON_SURFACE	VFLX	0	2	18
Average precipitation rate	AVE_PRATE_ON_SURFACE	PRATE	0	1	7
Average convective precipitation rate	AVE_CPRAT_ON_SURFACE	CPRAT	0	1	37
Instantaneous outgoing longwave at top of atmosphere	INST_ULWRF_ON_TOP_OF_ATMOS	ULWRF	0	5	4
Total spectrum brightness temperature	BRTMP_ON_TOP_OF_ATMOS	BRTMP	0	4	4
Model top pressure	PRES_ON_TOP_OF_ATMOS	PRES	0	3	0
Composite rain radar reflectivity	REFZR_ON_ENTIRE_ATMOS	REFZR	0	16	0
Composite ice radar reflectivity	REFZI_ON_ENTIRE_ATMOS	REFZI	0	16	1
Composite radar reflectivity from convection	REFZC_ON_ENTIRE_ATMOS	REFZC	0	16	2
Rain radar reflecting angle	REFZR_ON_SPEC_HGT_LVL_ABOVE_GRND	REFZR	0	16	0
Ice radar reflecting angle	REFZI_ON_SPEC_HGT_LVL_ABOVE_GRND	REFZI	0	16	1
Convection radar reflecting angle	REFZC_ON_SPEC_HGT_LVL_ABOVE_GRND	REFZC	0	16	2
Model level vertical velocity	DZDT_ON_ISOBARIC_SFC	DZDT	0	2	9
Column integrated super cool liquid water	TCLSW_ON_ENTIRE_ATMOS	TCLSW	0	1	209
Column integrated melting ice	TCOLM_ON_ENTIRE_ATMOS	TCOLM	0	1	210
Height of lowest level super cool liquid water	HGT_ON_LWST_BOT_LVL_OF_SUPERCOOLED_LIQ_WATER_LYR	HGT	0	3	5
Height of highest level super cool liquid water	HGT_ON_HGHST_TOP_LVL_OF_SUPERCOOLED_LIQ_WATER_LYR	HGT	0	3	5
Richardson number planetary boundary layer height	HGT_ON_PLANETARY_BOUND_LYR	HGT	0	3	5
Total column shortwave temperature tendency	SWHR_ON_ENTIRE_ATMOS	SWHR	0	4	197
Total column longwave temperature tendency	LWHR_ON_ENTIRE_ATMOS	LWHR	0	5	194
Total column gridded temperature tendency	AVE_LRGHR_ON_ENTIRE_ATMOS	LRGHR	0	0	195
Total column convective temperature tendency	AVE_CNVHR_ON_ENTIRE_ATMOS	CNVHR	0	0	196
Radiative flux temperature tendency on pressure level	TTRAD_ON_ISOBARIC_SFC	TTRAD	0	0	193
Column integrated moisture convergence	MCONV_ON_ENTIRE_ATMOS	MCONV	0	1	26

Time averaged clear sky incoming UV-B shortwave	AVE_CDUVB_ON_SURFACE	CDUVB	0	4	195
Time averaged incoming UV-B shortwave	AVE_DUVB_ON_SURFACE	DUVB	0	4	194
Total column ozone	TOZNE_ON_ENTIRE_ATMOS_SINGLE_LYR	TOZNE	0	14	0
Average low cloud fraction	AVE_TCDC_ON_LOW_CLOUD_LYR	TCDC	0	6	1
Average mid cloud fraction	AVE_TCDC_ON_MID_CLOUD_LYR	TCDC	0	6	1
Average high cloud fraction	AVE_TCDC_ON_HIGH_CLOUD_LYR	TCDC	0	6	1
Average low cloud bottom pressure	AVE_PRES_ON_LOW_CLOUD_BOT_LVL	PRES	0	3	0
Average low cloud top pressure	AVE_PRES_ON_LOW_CLOUD_TOP_LVL	PRES	0	3	0
Average low cloud top temperature	AVE_TMP_ON_LOW_CLOUD_TOP_LVL	TMP	0	0	0
Average mid cloud bottom pressure	AVE_PRES_ON_MID_CLOUD_BOT_LVL	PRES	0	3	0
Average mid cloud top pressure	AVE_PRES_ON_MID_CLOUD_TOP_LVL	PRES	0	3	0
Average mid cloud top temperature	AVE_TMP_ON_MID_CLOUD_TOP_LVL	TMP	0	0	0
Average high cloud bottom pressure	AVE_PRES_ON_HIGH_CLOUD_BOT_LVL	PRES	0	3	0
Average high cloud top pressure	AVE_PRES_ON_HIGH_CLOUD_TOP_LVL	PRES	0	3	0
Average high cloud top temperature	AVE_TMP_ON_HIGH_CLOUD_TOP_LVL	TMP	0	0	0
Total column relative humidity	RH_ON_ENTIRE_ATMOS_SINGLE_LYR	RH	0	1	1
Cloud work function	AVE_CWORK_ON_ENTIRE_ATMOS_SINGLE_LYR	CWORK	0	6	15
Temperature at maximum wind level	TMP_ON_MAX_WIND	TMP	0	0	0
Time averaged zonal gravity wave stress	AVE_U-GWD_ON_SURFACE	U-GWD	0	3	16
Time averaged meridional gravity wave stress	AVE_V-GWD_ON_SURFACE	V-GWD	0	3	17
Average precipitation type	AVE_CRAIN_ON_SURFACE	CRAIN	0	1	33
Simulated GOES 12 channel 2 brightness temperature	SBT122_ON_TOP_OF_ATMOS	SBT122	3	192	0
Simulated GOES 12 channel 3 brightness temperature	SBT123_ON_TOP_OF_ATMOS	SBT123	3	192	1

Simulated GOES 12 channel 4 brightness temperature	SBT124_ON_TOP_OF_ATMOS	SBT124	3	192	2
Simulated GOES 12 channel 5 brightness temperature	SBT126_ON_TOP_OF_ATMOS	SBT126	3	192	3
Cloud fraction on pressure surface	TCDC_ON_ISOBARIC_SFC	TCDC	0	6	1
U-wind on theta surface	UGRD_ON_ISENTROPIC_LVL	UGRD	0	2	2
V-wind on theta surface	VGRD_ON_ISENTROPIC_LVL	VGRD	0	2	3
Temperature on theta surface	TMP_ON_ISENTROPIC_LVL	TMP	0	0	0
Potential vorticity on theta surface	PVORT_ON_ISENTROPIC_LVL	PVORT	0	2	14
Montgomery streamfunction on theta surface	MNTSF_ON_ISENTROPIC_LVL	MNTSF	0	2	6
Relative humidity on theta surface	RH_ON_ISENTROPIC_LVL	RH	0	1	1
U wind on constant PV surface	UGRD_ON_POT_VORT_SFC	UGRD	0	2	2
V wind on constant PV surface	VGRD_ON_POT_VORT_SFC	VGRD	0	2	3
Temperature on constant PV surface	TMP_ON_POT_VORT_SFC	TMP	0	0	0
Height on constant PV surface	HGT_ON_POT_VORT_SFC	HGT	0	3	5
Pressure on constant PV surface	PRES_ON_POT_VORT_SFC	PRES	0	3	0
Wind shear on constant PV surface	VWSH_ON_POT_VORT_SFC	VWSH	0	2	25
Planetary boundary layer cloud fraction	AVE_TCDC_ON_BOUND_LYR_CLOUD_LYR	TCDC	0	6	1
Average water runoff	ACM_WATR_ON_SURFACE	WATR	2	0	5
Planetary boundary layer regime	PBLREG_ON_SURFACE	PBLREG	0	19	12
Maximum 2m temperature	MAX_TMAX_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	TMAX	0	0	4
Minimum 2m temperature	MIN_TMIN_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	TMIN	0	0	5
Maximum 2m RH	MAX_MAXRH_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	MAXRH	0	1	27
Minimum 2m RH	MIN_MINRH_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	MINRH	0	1	198
Ice thickness	ICETK_ON_SURFACE	ICETK	10	2	1
Shortwave tendency on pressure surface	SWHR_ON_ISOBARIC_SFC	SWHR	0	4	197
Longwave tendency on pressure surface	LWHR_ON_ISOBARIC_SFC	LWHR	0	5	194
Deep convective tendency on pressure surface	CNVHR_ON_ISOBARIC_SFC	CNVHR	0	0	196
Shallow convective tendency on pressure surface	SHAHR_ON_ISOBARIC_SFC	SHAHR	0	0	201
Grid scale tendency on pressure surface	LRGHR_ON_ISOBARIC_SFC	LRGHR	0	0	195

Deep convective moisture on pressure surface	CNVMR_ON_ISOBARIC_SFC	CNVMR	0	1	213
Shallow convective moisture on pressure surface	SHAMR_ON_ISOBARIC_SFC	SHAMR	0	1	214
Ozone tendency on pressure surface	TOZ_ON_ISOBARIC_SFC	TOZ	0	14	197
Mass weighted potential vorticity	PVMW_ON_ISOBARIC_SFC	PVMW	0	2	219
Simulated GOES 12 channel 3 brightness count	SBC123_ON_TOP_OF_ATMOS	SBC123	3	192	4
Simulated GOES 12 channel 4 brightness count	SBC124_ON_TOP_OF_ATMOS	SBC124	3	192	5
Omega on theta surface	VVEL_ON_ISENTROPIC_LVL	VVEL	0	2	8
Mixing height	MIXHT_ON_SURFACE	MIXHT	0	19	3
Average clear-sky incoming longwave at surface	AVE_CSDLF_ON_SURFACE	CSDLF	0	5	196
Average clear-sky incoming shortwave at surface	AVE_CSDSF_ON_SURFACE	CSDSF	0	4	196
Average clear-sky outgoing longwave at surface	AVE_CSULF_ON_SURFACE	CSULF	0	5	195
Average clear-sky outgoing longwave at top of atmosphere	AVE_CSULF_ON_TOP_OF_ATMOS	CSULF	0	5	195
Average clear-sky outgoing shortwave at surface	AVE_CSUSF_ON_SURFACE	CSUSF	0	4	198
Average clear-sky outgoing shortwave at top of atmosphere	AVE_CSUSF_ON_TOP_OF_ATMOS	CSUSF	0	4	198
Average incoming shortwave at top of atmosphere	AVE_DSWRF_ON_TOP_OF_ATMOS	DSWRF	0	4	7
Transport wind u component	UGRD_ON_PLANETARY_BOUND_LYR	UGRD	0	2	2
Transport wind v component	VGRD_ON_PLANETARY_BOUND_LYR	VGRD	0	2	3
Sunshine duration	SUNSD_ON_SURFACE	SUNSD	0	6	33
Field capacity	FLDCP_ON_SURFACE	FLDCP	2	2	203
ICAO height at maximum wind level	ICAHT_ON_MAX_WIND	ICAHT	0	3	3
ICAO height at tropopause	ICAHT_ON_TROPOPAUSE	ICAHT	0	3	3
Radar echo top	RETOP_ON_ENTIRE_ATMOS_SINGLE_LYR	RETOP	0	16	3
Time averaged surface Visible beam downward solar flux	AVE_VBDSF_ON_SURFACE	VBDSF	0	4	200
Time averaged surface Visible diffuse downward solar flux	AVE_VDDSF_ON_SURFACE	VDDSF	0	4	201
Time averaged surface Near IR beam downward solar flux	AVE_NBDSF_ON_SURFACE	NBDSF	0	4	202
Time averaged surface Near IR diffuse downward solar flux	AVE_NDDSF_ON_SURFACE	NDDSF	0	4	203

Average snowfall rate	AVE_SRWEQ_ON_SURFACE	SRWEQ	0	1	12
Dust 1 on pressure surface	DUST1_ON_ISOBARIC_LVL	MASSMR	0	20	2
Dust 2 on pressure surface	DUST2_ON_ISOBARIC_LVL	MASSMR	0	20	2
Dust 3 on pressure surface	DUST3_ON_ISOBARIC_LVL	MASSMR	0	20	2
Dust 4 on pressure surface	DUST4_ON_ISOBARIC_LVL	MASSMR	0	20	2
Dust 5 on pressure surface	DUST5_ON_ISOBARIC_LVL	MASSMR	0	20	2
Equilibrium level height	HGT_ON_EQUIL_LVL	HGT	0	3	5
Lightning	LTNG_ON_SURFACE	LTNG	0	17	192
Goes west channel 2 brightness temperature	SBT112_ON_TOP_OF_ATMOS	SBT112	3	192	6
Goes west channel 3 brightness temperature	SBT113_ON_TOP_OF_ATMOS	SBT113	3	192	7
Goes west channel 4 brightness temperature	SBT114_ON_TOP_OF_ATMOS	SBT114	3	192	8
Goes west channel 5 brightness temperature	SBT115_ON_TOP_OF_ATMOS	SBT115	3	192	9
In flight icing from NCAR algorithm	ICIP_ON_ISOBARIC_SFC	ICIP	0	19	20
Specific humidity at flight levels	SPFH_ON_SPEC_ALT_ABOVE_MEAN_SEA_LVL	SPFH	0	1	0
Virtual temperature based convective available potential energy	VTCAPE_ON_SURFACE	CAPE	0	7	6
Virtual temperature based convective inhibition	VTCIN_ON_SURFACE	CIN	0	7	7
Virtual temperature on model surfaces	Not currently available for grib2	NA	NA	NA	NA
Virtual temperature on pressure surfaces	Not currently available for grib2	NA	NA	NA	NA
Virtual temperature on flight levels	Not currently available for grib2	NA	NA	NA	NA
Ventilation rate	VRATE_ON_PLANETARY_BOUND_LYR	VRATE	0	2	224
Haines index	HINDEX_ON_SURFACE	HINDEX	2	4	2
Pressure at flight levels	PRES_ON_SPEC_ALT_ABOVE_MEAN_SEA_LVL	PRES	0	3	0
Time-averaged percentage snow cover	AVE_SNOWC_ON_SURFACE	SNOWC	0	1	42
Time-averaged surface pressure	AVE_PRES_ON_SURFACE	PRES	0	3	0
Time-averaged 10m temperature	AVE_TMP_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	TMP	0	0	0
Time-averaged mass exchange coefficient	AVE_AKHS_ON_SURFACE	AKHS	2	0	208
Time-averaged wind exchange coefficient	AVE_AKMS_ON_SURFACE	AKMS	2	0	209

Temperature at 10m	TMP_ON_SPEC_HGT_LVL_ABOVE _GRND_10m	TMP	0	0	0
Maximum U-component wind at 10m	MAX_MAXUW_ON_SPEC_HGT_LVL _ABOVE_GRND_10m	MAXUW	0	2	222
Maximum V-component wind at 10m	MAX_MAXVW_ON_SPEC_HGT_LVL _ABOVE_GRND_10m	MAXVW	0	2	223
Simulated GOES 12 channel 2 brightness temperature with satellite angle correction	NON_NADIR_SBT122_ON_TOP_OF _ATMOS	SBT122	3	192	0
Simulated GOES 12 channel 3 brightness temperature with satellite angle correction	NON_NADIR_SBT123_ON_TOP_OF _ATMOS	SBT123	3	192	1
Simulated GOES 12 channel 4 brightness temperature with satellite angle correction	NON_NADIR_SBT124_ON_TOP_OF _ATMOS	SBT124	3	192	2
Simulated GOES 12 channel 5 brightness temperature with satellite angle correction	NON_NADIR_SBT126_ON_TOP_OF _ATMOS	SBT126	3	192	3
Simulated GOES 11 channel 2 brightness temperature with satellite angle correction	SBT112_ON_TOP_OF_ATMOS	SBT112	3	192	6
Simulated GOES 11 channel 3 brightness temperature with satellite angle correction	SBT113_ON_TOP_OF_ATMOS	SBT113	3	192	7
Simulated GOES 11 channel 4 brightness temperature with satellite angle correction	SBT114_ON_TOP_OF_ATMOS	SBT114	3	192	8
Simulated GOES 11 channel 5 brightness temperature with satellite angle correction	SBT115_ON_TOP_OF_ATMOS	SBT115	3	192	9
Simulated GOES 15 channel 5 brightness temperature with satellite angle correction	Not currently available for grib2	NA	NA	NA	NA
Simulated GOES 13 channel 2 brightness temperature with satellite angle correction	Not currently available for grib2	NA	NA	NA	NA
Simulated AMSR-E channel 9 brightness temperature	AMSRE9_ON_TOP_OF_ATMOS	AMSRE9	3	192	10
Simulated AMSR-E channel 10 brightness temperature	AMSRE10_ON_TOP_OF_ATMOS	AMSRE10	3	192	11
Simulated AMSR-E channel 11 brightness temperature	AMSRE11_ON_TOP_OF_ATMOS	AMSRE11	3	192	12

Simulated AMSR-E channel 12 brightness temperature	AMSRE12_ON_TOP_OF_ATMOS	AMSRE12	3	192	13
SSMI F13 (19H 19V 37H 37V 85H 85V)	Not currently available for grib2	NA	NA	NA	NA
SSMI F14 (19H 19V 37H 37V 85H 85V)	Not currently available for grib2	NA	NA	NA	NA
SSMI F15 (19H 19V 37H 37V 85H 85V)	Not currently available for grib2	NA	NA	NA	NA
SSMIS F16 (183H 19H 19V 37H 37V 91H 91V)	Not currently available for grib2	NA	NA	NA	NA
SSMIS F17 (183H 19H 19V 37H 37V 91H 91V)	Not currently available for grib2	NA	NA	NA	NA
SSMIS F18 (183H 19H 19V 37H 37V 91H 91V)	Not currently available for grib2	NA	NA	NA	NA
SSMIS F19 (183H 19H 19V 37H 37V 91H 91V)	Not currently available for grib2	NA	NA	NA	NA
SSMIS F20 (183H 19H 19V 37H 37V 91H 91V)	Not currently available for grib2	NA	NA	NA	NA
MTSAT-1r imager channels 1-4 (backup for mtsat2)	Not currently available for grib2	NA	NA	NA	NA
MTSAT2 imager channels 1-4	Not currently available for grib2	NA	NA	NA	NA
Seviri brightness temperature channels 5-11	Not currently available for grib2	NA	NA	NA	NA
Insat 3d brightness temperature IR channels 1-4	Not currently available for grib2	NA	NA	NA	NA