GRIB2 Fields Produced by Unipost - Extended

GRIB2 fields produced by **unipost** (column 1), abbreviated names used in the **postcntrl.xml** file (column 2), corresponding standard grib2 pname (column 3), grib2 discipline (i.e. meteorological, hydrological, etc; column 4), grib2 category which labels the type of field (i.e. temperature, moisture, etc; column 5), grib2 parameter number for that category (column 6), grib2 table # (i.e. WMO=0, NCEP=1; column 7), corresponding grib identification number for the vertical coordinate (column 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	Grib2 table #	Vertical Level	UPP ID
Radar reflectivity on model surface*	REFD_ON_HYBRID_LVL	REFD	0	16	4	0	109	250
Pressure on model surface	PRES_ON_HYBRID_LVL	PRES	0	3	0	0	109	1
Height on model surface	HGT_ON_HYBRID_LVL	HGT	0	3	5	0	109	77
Temperature on model surface	TMP_ON_HYBRID_LVL	TMP	0	0	0	0	109	2
Potential temperature on model surface	POT_ON_HYBRID_LVL	POT	0	0	2	0	109	3
Dew point temperature on model surface	DPT_ON_HYBRID_LVL	DPT	0	0	6	0	109	4
Specific humidity on model surface	SPFH_ON_HYBRID_LVL	SPFH	0	1	0	0	109	5
Relative humidity on model surface	RH_ON_HYBRID_LVL	RH	0	1	1	0	109	6
Moisture convergence on model surface	MCONV_ON_HYBRID_LVL	MCONV	0	1	26	0	109	83
U component wind on model surface	UGRD_ON_HYBRID_LVL	UGRD	0	2	2	0	109	7
V component wind on model surface	VGRD_ON_HYBRID_LVL	VGRD	0	2	3	0	109	8
Cloud water on model surface	CLWMR_ON_HYBRID_LVL	CLWMR	0	1	22	0	109	124
Cloud ice on model surface	CICE_ON_HYBRID_LVL	CICE	0	6	0	0	109	125
Rain on model surface	RWMR_ON_HYBRID_LVL	RWMR	0	1	24	0	109	181
Snow on model surface	SNMR_ON_HYBRID_LVL	SNMR	0	1	25	0	109	182
Cloud fraction on model surface	TCDC_ON_HYBRID_LVL	TCDC	0	6	1	0	109	145
Omega on model surface	VVEL_ON_HYBRID_LVL	VVEL	0	2	8	0	109	9
Absolute vorticity on model surface	ABSV_ON_HYBRID_LVL	ABSV	0	2	10	0	109	10
Geostrophic streamfunction on model surface	STRM_ON_HYBRID_LVL	STRM	0	2	4	0	109	84
Turbulent kinetic energy on model surface	TKE_ON_HYBRID_LVL	TKE	0	19	11	0	109	11
Richardson number on model surface	RI_ON_HYBRID_LVL	RI	0	7	12	0	109	111
Master length scale on model surface	BMIXL_ON_HYBRID_LVL	BMIXL	2	0	14	0	109	146
Asymptotic length scale on model surface	AMIXL_ON_HYBRID_LVL	AMIXL	2	0	219	1	109	147
Radar reflectivity on pressure surface*	REFD_ON_ISOBARIC_SFC	REFD	0	16	4	0	100	251

Height on pressure surface	HGT_ON_ISOBARIC_SFC	HGT	0	3	5	0	100	12
Temperature on pressure surface	TMP_ON_ISOBARIC_SFC	TMP	0	0	0	0	100	13
Potential temperature on pressure surface	POT_ON_ISOBARIC_SFC	POT	0	0	2	0	100	14
Dew point temperature on pressure surface	DPT_ON_ISOBARIC_SFC	DPT	0	0	6	0	100	15
Specific humidity on pressure surface	SPFH_ON_ISOBARIC_SFC	SPFH	0	1	0	0	100	16
Relative humidity on pressure surface	RH_ON_ISOBARIC_SFC	RH	0	1	1	0	100	17
Moisture convergence on pressure surface	MCONV_ON_ISOBARIC_SFC	MCONV	0	1	26	0	100	85
U component wind on pressure surface	UGRD_ON_ISOBARIC_SFC	UGRD	0	2	2	0	100	18
V component wind on pressure surface	VGRD_ON_ISOBARIC_SFC	VGRD	0	2	3	0	100	19
Omega on pressure surface	VVEL_ON_ISOBARIC_SFC	VVEL	0	2	8	0	100	20
Absolute vorticity on pressure surface	ABSV_ON_ISOBARIC_SFC	ABSV	0	2	10	0	100	21
Geostrophic streamfunction on pressure surface	STRM_ON_ISOBARIC_SFC	STRM	0	2	4	0	100	86
Turbulent kinetic energy on pressure surface	TKE_ON_ISOBARIC_SFC	TKE	0	19	11	0	100	22
Cloud water on pressure surface	CLWMR_ON_ISOBARIC_SFC	CLWMR	0	1	22	0	100	153
Cloud ice on pressure surface	CICE_ON_ISOBARIC_SFC	CICE	0	6	0	0	100	166
Rain on pressure surface	RWMR_ON_ISOBARIC_SFC	RWMR	0	1	24	0	100	183
Snow water on pressure surface	SNMR_ON_ISOBARIC_SFC	SNMR	0	1	25	0	100	184
Total condensate on pressure surface	TCOND_ON_ISOBARIC_SFC	TCOND	0	1	21	0	100	198
Mesinger (Membrane) sea level pressure	MSLET_ON_MEAN_SEA_LVL	MSLET	0	3	192	1	102	23
Shuell sea level pressure	PRES_ON_MEAN_SEA_LVL	PRMSL	0	3	1	0	102	105
2 M pressure	PRES_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	PRES	0	3	0	0	105	138
2 M temperature	TMP_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	TMP	0	0	0	0	105	106
2 M specific humidity	SPFH_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	SPFH	0	1	0	0	105	112
2 M mixing ratio	Not currently available for grib2	NA	NA	NA	NA	NA	105	414
2 M dew point temperature	DPT_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	DPT	0	0	6	0	105	113

2 M RH	RH_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	RH	0	1	1	0	105	114
10 M u component wind	UGRD_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	UGRD	0	2	2	0	105	64
10 M v component wind	VGRD_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	VGRD	0	2	3	0	105	65
10 M potential temperature	POT_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	POT	0	0	2	0	105	158
10 M specific humidity	SPFH_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	SPFH	0	1	0	0	105	159
Surface pressure	PRES_ON_SURFACE	PRES	0	3	0	0	1	24
Terrain height	HGT_ON_SURFACE	HGT	0	3	5	0	1	25
Skin potential temperature	POT_ON_SURFACE	POT	0	0	2	0	1	27
Skin specific humidity	SPFH_ON_SURFACE	SPFH	0	1	0	0	1	28
Skin dew point temperature	DPT_ON_SURFACE	DPT	0	0	6	0	1	29
Skin Relative humidity	RH_ON_SURFACE	RH	0	1	1	0	1	76
Skin temperature	TMP_ON_SURFACE	TMP	0	0	0	0	1	26
Soil temperature at the bottom of soil layers	TSOIL_ON_DEPTH_BEL_LAND_SFC_3m	TSOIL	2	0	2	0	111	15/57.
Soil temperature in between each of soil layers	TSOIL_ON_DEPTH_BEL_LAND_SFC	TSOIL	2	0	2	0	112	116
Soil moisture in between each of soil layers	SOILW_ON_DEPTH_BEL_LAND_SFC	SOILW	2	0	192	1	112	117
Snow water equivalent	WEASD_ON_SURFACE	WEASD	0	1	13	0	1	119
Snow cover in percentage	SNOWC_ON_SURFACE	SNOWC	0	1	42	0	1	120
Heat exchange coeff at surface	SFEXC_ON_SURFACE	SFEXC	2	0	12	0	1	169
Vegetation cover	VEG_ON_SURFACE	VEG	2	0	4	0	1	170
Soil moisture availability	MSTAV_ON_DEPTH_BEL_LAND_SFC	MSTAV	0	11	1	0	112	171
Ground heat flux - instantaneous	INST_GFLUX_ON_SURFACE	GFLUX	2	0	10	0	1	152
Lifted index-surface based	LFTX_ON_ISOBARIC_SFC_500-1000hpa	LFTX	0	7	10	0	101	30
Lifted index-best	4LFTX_ON_SPEC_PRES_ABOVE_GRND	4LFTX	0	7	11	0	116	31

Lifted index-from boundary layer	PLI_ON_SPEC_PRES_ABOVE_GRND	PLI	0	7	0	0	116	75
CAPE (4 types) ***	CAPE_ON_SURFACE	CAPE	0	7	6	0	1	32
CIN (4 types) ***	CIN_ON_SURFACE	CIN	0	7	7	0	1	107
Column integrated precipitable water	PWAT_ON_ENTIRE_ATMOS_SINGLE_LYR	PWAT	0	1	3	0	200	80
Column integrated cloud water	TCOLW_ON_ENTIRE_ATMOS	TCOLW	0	6	196	1	200	200
Column integrated cloud ice	TCOLI_ON_ENTIRE_ATMOS	TCOLI	0	1	70	0	200	201
Column integrated rain	TCOLR_ON_ENTIRE_ATMOS	TCOLR	0	1	45	0	200	202
Column integrated snow	TCOLS_ON_ENTIRE_ATMOS	TCOLS	0	1	46	0	200	203
Column integrated total condensate	TCOLC_ON_ENTIRE_ATMOS	TCOLC	0	6	20	0	200	204
Column integrated cloud water	CWAT_ON_ENTIRE_ATMOS_SINGLE_LYR	CWAT	0	6	6	0	200	575
Helicity	HLCY_ON_SPEC_HGT_LVL_ABOVE_GRND	HLCY	0	7	8	0	106	162
U component storm motion	USTM_ON_SPEC_HGT_LVL_ABOVE_GRND	USTM	0	2	27	0	106	163
V component storm motion	VSTM_ON_SPEC_HGT_LVL_ABOVE_GRND	VSTM	0	2	28	0	106	164
Accumulated total precipitation	ACM_APCP_ON_SURFACE	APCP	0	1	8	0	1	87
Accumulated convective precipitation	ACM_ACPCP_ON_SURFACE	ACPCP	0	1	10	0	1	33
Accumulated grid-scale precipitation	ACM_NCPCP_ON_SURFACE	NCPCP	0	1	9	0	1	34
Accumulated snowfall	ACM_WEASD_ON_SURFACE	WEASD	0	1	13	0	1	35
Accumulated large scale snow	Not currently available for grib2	NA	NA	NA	NA	NA	1	244
Accumulated total snow melt	ACM_SNOM_ON_SURFACE	SNOM	0	1	16	0	1	121
Precipitation type (4 types) - instantaneous	INST_CRAIN_ON_SURFACE	CRAIN	0	1	33	0	1	160
Precipitation rate - instantaneous	INST_PRATE_ON_SURFACE	PRATE	0	1	7	0	1	167
Composite radar reflectivity*	REFC_ON_ENTIRE_ATMOS	REFC	0	16	5	0	200	252
Low level cloud fraction	LCDC_ON_LOW_CLOUD_LYR	LCDC	0	6	3	0	214	37
Mid level cloud fraction	MCDC_ON_MID_CLOUD_LYR	MCDC	0	6	4	0	224	38
High level cloud fraction	HCDC_ON_HIGH_CLOUD_LYR	HCDC	0	6	5	0	234	39

Total cloud fraction	INST_TCDC_ON_ENTIRE_ATMOS	TCDC	0	6	1	0	200	161
Time-averaged total cloud fraction	AVE_TCDC_ON_ENTIRE_ATMOS	TCDC	0	6	1	0	200	144
Time-averaged stratospheric cloud fraction	AVE_CDLYR_ON_ENTIRE_ATMOS	CDLYR	0	6	14	0	200	139
Time-averaged convective cloud fraction	AVE_CDCON_ON_ENTIRE_ATMOS	CDCON	0	6	2	0	200	143
Cloud bottom pressure	PRES_ON_CLOUD_BASE	PRES	0	3	0	0	2	148
Cloud top pressure	PRES_ON_CLOUD_TOP	PRES	0	3	0	0	3	149
Cloud bottom height (above MSL)	HGT_ON_CLOUD_BASE	HGT	0	3	5	0	2	178
Cloud top height (above MSL)	HGT_ON_CLOUD_TOP	HGT	0	3	5	0	3	179
Convective cloud bottom pressure	PRES_ON_CONVECTIVE_CLOUD_BOT_LVL	PRES	0	3	0	0	242	188
Convective cloud top pressure	PRES_ON_CONVECTIVE_CLOUD_TOP_LVL	PRES	0	3	0	0	243	189
Shallow convective cloud bottom pressure	PRES_ON_SHALL_CONVECTIVE_CLOUD_BOT_LVL	PRES	0	3	0	0	248	190
Shallow convective cloud top pressure	PRES_ON_SHALL_CONVECTIVE_CLOUD_TOP_LVL	PRES	0	3	0	0	249	191
Deep convective cloud bottom pressure	PRES_ON_DEEP_CONVECTIVE_CLOUD_BOT_LVL	PRES	0	3	0	0	251	192
Deep convective cloud top pressure	PRES_ON_DEEP_CONVECTIVE_CLOUD_TOP_LVL	PRES	0	3	0	0	252	193
Grid scale cloud bottom pressure	PRES_ON_GRID_SCALE_CLOUD_BOT_LVL	PRES	0	3	0	0	206	194
Grid scale cloud top pressure	PRES_ON_GRID_SCALE_CLOUD_TOP_LVL	PRES	0	3	0	0	207	195
Convective cloud fraction	CDCON_ON_ENTIRE_ATMOS	CDCON	0	6	2	0	200	196
Convective cloud efficiency	CUEFI_ON_ENTIRE_ATMOS_SINGLE_LYR	CUEFI	0	6	16	0	200	197
Above-ground height of LCL	HGT_ON_LVL_OF_ADIAB_COND_FROM_SFC	HGT	0	3	5	0	5	109

Pressure of LCL	PRES_ON_LVL_OF_ADIAB_COND_FROM_SFC	PRES	0	3	0	0	5	110
Cloud top temperature	TMP_ON_CLOUD_TOP	TMP	0	0	0	0	3	168
Temperature tendency from radiative fluxes	TTRAD_ON_HYBRID_LVL	TTRAD	0	0	193	1	109	140
Temperature tendency from shortwave radiative flux	SWHR_ON_HYBRID_LVL	SWHR	0	4	197	1	109	40
Temperature tendency from longwave radiative flux	LWHR_ON_HYBRID_LVL	LWHR	0	5	194	1	109	41
Outgoing surface shortwave radiation - instantaneous	INST_USWRF_ON_SURFACE	USWRF	0	4	8	0	1	141
Outgoing surface longwave radiation - instantaneous	INST_ULWRF_ON_SURFACE	ULWRF	0	5	4	0	1	142
Incoming surface shortwave radiation - time-averaged	AVE_DSWRF_ON_SURFACE	DSWRF	0	4	7	0	1	126
Incoming surface longwave radiation - time-averaged	AVE_DLWRF_ON_SURFACE	DLWRF	0	5	3	0	1	127
Outgoing surface shortwave radiation - time-averaged	AVE_USWRF_ON_SURFACE	USWRF	0	4	8	0	1	128
Outgoing surface longwave radiation - time-averaged	AVE_ULWRF_ON_SURFACE	ULWRF	0	5	4	0	1	129
Outgoing model top shortwave radiation - time-averaged	AVE_USWRF_ON_TOP_OF_ATMOS	USWRF	0	4	8	0	8	130
Outgoing model top longwave radiation - time-averaged	AVE_ULWRF_ON_TOP_OF_ATMOS	ULWRF	0	5	4	0	8	131
Incoming surface shortwave radiation - instantaneous	INST_DSWRF_ON_SURFACE	DSWRF	0	4	7	0	1	156
Incoming surface longwave radiation - instantaneous	INST_DLWRF_ON_SURFACE	DLWRF	0	5	3	0	1	157
Roughness length	SFCR_ON_SURFACE	SFCR	2	0	1	0	1	44
Friction velocity	FRICV_ON_SURFACE	FRICV	0	2	30	0	1	45
Surface drag coefficient	CD_ON_SURFACE	CD	0	2	29	0	1	132
Surface u wind stress	UFLX_ON_SURFACE	UFLX	0	2	17	0	1	133
Surface v wind stress	VFLX_ON_SURFACE	VFLX	0	2	18	0	1	134

Surface sensible heat flux - time-averaged	AVE_SHTFL_ON_SURFACE	SHTFL	0	0	11	0	1	43
Ground heat flux - time-averaged	AVE_GFLUX_ON_SURFACE	GFLUX	2	0	10	0	1	135
Surface latent heat flux - time-averaged	AVE_LHTFL_ON_SURFACE	LHTFL	0	0	10	0	1	42
Surface momentum flux - time-averaged	AVE_MFLX_ON_SURFACE	MFLX	0	2	26	0	1	46
Accumulated surface evaporation	ACM_EVP_ON_SURFACE	EVP	0	1	6	0	1	47
Surface sensible heat flux - instantaneous	INST_SHTFL_ON_SURFACE	SHTFL	0	0	11	0	1	154
Surface latent heat flux - instantaneous	INST_LHTFL_ON_SURFACE	LHTFL	0	0	10	0	1	155
Latitude	NLAT_ON_SURFACE	NLAT	0	191	192	1	1	48
Longitude	ELON_ON_SURFACE	ELON	0	191	193	1	1	49
Land sea mask (land=1 sea=0)	LAND_ON_SURFACE	LAND	2	0	0	0	1	50
Sea ice mask	ICEC_ON_SURFACE	ICEC	10	2	0	0	1	51
Surface midday albedo	ALBDO_ON_SURFACE	ALBDO	0	19	1	0	1	150
Sea surface temperature	WTMP_ON_SURFACE	WTMP	10	3	0	0	1	151
Press at tropopause	PRES_ON_TROPOPAUSE	PRES	0	3	0	0	7	54
Temperature at tropopause	TMP_ON_TROPOPAUSE	TMP	0	0	0	0	7	55
Potential temperature at tropopause	POT_ON_TROPOPAUSE	POT	0	0	2	0	7	108
U wind at tropopause	UGRD_ON_TROPOPAUSE	UGRD	0	2	2	0	7	56
V wind at tropopause	VGRD_ON_TROPOPAUSE	VGRD	0	2	3	0	7	57
Wind shear at tropopause	VWSH_ON_TROPOPAUSE	VWSH	0	2	25	0	7	58
Height at tropopause	HGT_ON_TROPOPAUSE	HGT	0	3	5	0	7	177
Temperature at flight levels	TMP_ON_SPEC_ALT_ABOVE_MEAN_SEA_LVL	TMP	0	0	0	0	103	59
U wind at flight levels	UGRD_ON_SPEC_ALT_ABOVE_MEAN_SEA_LVL	UGRD	0	2	2	0	103	60
V wind at flight levels	VGRD_ON_SPEC_ALT_ABOVE_MEAN_SEA_LVL	VGRD	0	2	3	0	103	61
Freezing level height (above mean sea level)	HGT_ON_0C_ISOTHERM	HGT	0	3	5	0	4	62
Freezing level RH	RH_ON_0C_ISOTHERM	RH	0	1	1	0	4	63
Highest freezing level height	HGT_ON_HGHST_TROP_FRZ_LVL	HGT	0	3	5	0	204	165
Pressure in boundary layer (30 mb mean)	PRES_ON_SPEC_PRES_ABOVE_GRND	PRES	0	3	0	0	116	67

Temperature in boundary layer (30 mb mean)	TMP_ON_SPEC_PRES_ABOVE_GRND	TMP	0	0	0	0	116	68
Potential temperature in boundary layers (30 mb mean)	POT_ON_SPEC_PRES_ABOVE_GRND	POT	0	0	2	0	116	69
Dew point temperature in boundary layer (30 mb mean)	DPT_ON_SPEC_PRES_ABOVE_GRND	DPT	0	0	6	0	116	70
Specific humidity in boundary layer (30 mb mean)	SPFH_ON_SPEC_PRES_ABOVE_GRND	SPFH	0	1	0	0	116	71
RH in boundary layer (30 mb mean)	RH_ON_SPEC_PRES_ABOVE_GRND	RH	0	1	1	0	116	72
Moisture convergence in boundary layer (30 mb mean)	MCONV_ON_SPEC_PRES_ABOVE_GRND	MCONV	0	1	26	0	116	88
Precipitable water in boundary layer (30 mb mean)	PWAT_ON_SPEC_PRES_ABOVE_GRND	PWAT	0	1	3	0	116	89
U wind in boundary layer (30 mb mean)	UGRD_ON_SPEC_PRES_ABOVE_GRND	UGRD	0	2	2	0	116	73
V wind in boundary layer (30 mb mean)	VGRD_ON_SPEC_PRES_ABOVE_GRND	VGRD	0	2	3	0	116	74
Omega in boundary layer (30 mb mean)	VVEL_ON_SPEC_PRES_ABOVE_GRND	VVEL	0	2	8	0	116	90
Visibility	VIS_ON_SURFACE	VIS	0	19	0	0	1	180
Vegetation type	VGTYP_ON_SURFACE	VGTYP	2	0	198	1	1	218
Soil type	SOTYP_ON_SURFACE	SOTYP	2	3	0	0	1	219
Canopy conductance	CCOND_ON_SURFACE	CCOND	2	0	15	0	1	220
PBL height	HPBL_ON_SURFACE	HPBL	0	3	18	0	1	221
Slope type	SLTYP_ON_SURFACE	SLTYP	2	3	194	1	1	223
Snow depth	SNOD_ON_SURFACE	SNOD	0	1	11	0	1	224
Liquid soil moisture	SOILL_ON_DEPTH_BEL_LAND_SFC	SOILL	2	3	5	0	112	225
Snow free albedo	SNFALB_ON_SURFACE	SNFALB	0	19	18	0	1	226
Maximum snow albedo	MXSALB_ON_SURFACE	MXSALB	0	19	17	0	1	227
Canopy water evaporation	EVCW_ON_SURFACE	EVCW	2	0	229	1	1	228
Direct soil evaporation	EVBS_ON_SURFACE	EVBS	2	3	198	1	1	229
Plant transpiration	TRANS_ON_SURFACE	TRANS	2	0	230	1	1	230

Snow sublimation	SBSNO_ON_SURFACE	SBSNO	0	1	212	1	1	231
Air dry soil moisture	SMDRY_ON_SURFACE	SMDRY	2	3	8	0	1	232
Soil moist porosity	POROS_ON_SURFACE	POROS	2	3	9	0	1	233
Minimum stomatal resistance	RSMIN_ON_SURFACE	RSMIN	2	0	16	0	1	234
Number of root layers	RLYRS_ON_SURFACE	RLYRS	2	3	6	0	1	235
Soil moist wilting point	WILT_ON_SURFACE	WILT	2	0	26	0	1	236
Soil moist reference	SMREF_ON_SURFACE	SMREF	2	3	7	0	1	237
Canopy conductance - solar component	RCS_ON_SURFACE	RCS	2	0	18	0	1	238
Canopy conductance - temperature component	RCT_ON_SURFACE	RCT	2	0	19	0	1	239
Canopy conductance - humidity component	RCQ_ON_SURFACE	RCQ	2	0	21	0	1	240
Canopy conductance - soil component	RCSOL_ON_SURFACE	RCSOL	2	0	20	0	1	241
Potential evaporation	PEVPR_ON_SURFACE	PEVPR	0	1	41	0	1	242
Heat diffusivity on sigma surface	VEDH_ON_SIGMA_LVLS	VEDH	0	2	204	1	107	243
Surface wind gust	GUST_ON_SURFACE	GUST	0	2	22	0	1	245
Convective precipitation rate	CPRAT_ON_SURFACE	CPRAT	0	1	37	0	1	249
Radar reflectivity at certain above ground heights*	REFD_ON_SPEC_HGT_LVL_ABOVE_GRND	REFD	0	16	4	0	105	253
MAPS Sea Level Pressure	MAPS_PRMSL_ON_MEAN_SEA_LVL	PRMSL	0	3	1	0	102	445
Total soil moisture	SOILM_ON_DEPTH_BEL_LAND_SFC	SOILM	2	0	3	0	112	36
Plant canopy surface water	CNWAT_ON_SURFACE	CNWAT	2	0	13	0	1	118
Accumulated storm surface runoff	ACM_SSRUN_ON_SURFACE	SSRUN	1	0	6	0	1	122
Accumulated baseflow runoff	ACM_BGRUN_ON_SURFACE	BGRUN	1	0	5	0	1	123
Fraction of frozen precipitation	CPOFP_ON_SURFACE	CPOFP	0	1	39	0	1	172
GSD Cloud Base pressure	Not currently available for grib2	NA	NA	NA	NA	NA	2	787
GSD Cloud Top pressure	GSD_PRES_ON_CLOUD_TOP	PRES	0	3	0	0	3	406
Averaged temperature tendency from grid scale latent heat release	AVE_LRGHR_ON_HYBRID_LVL	LRGHR	0	0	195	1	109	78
Averaged temperature tendency from convective latent heat release	AVE_CNVHR_ON_HYBRID_LVL	CNVHR	0	0	196	1	109	79
Average snow phase change heat flux	AVE_SNOHF_ON_SURFACE	SNOHF	0	0	16	0	1	136

Accumulated potential evaporation	ACM_PEVAP_ON_SURFACE	PEVAP	0	1	40	0	1	137
Highest freezing level relative humidity	RH_ON_HGHST_TROP_FRZ_LVL	RH	0	1	1	0	204	350
Maximum wind pressure level	PRES_ON_MAX_WIND	PRES	0	3	0	0	6	173
Maximum wind height	HGT_ON_MAX_WIND	HGT	0	3	5	0	6	174
U-component of maximum wind	UGRD_ON_MAX_WIND	UGRD	0	2	2	0	6	175
V-component of maximum wind	VGRD_ON_MAX_WIND	VGRD	0	2	3	0	6	176
GSD cloud base height	GSD_HGT_ON_CLOUD_BASE	HGT	0	3	5	0	2	408
GSD cloud top height	GSD_HGT_ON_CLOUD_TOP	HGT	0	3	5	0	3	409
GSD visibility	GSD_VIS_ON_CLOUD_TOP	VIS	0	19	0	0	3	410
Wind energy potential	WMIXE_ON_SPEC_HGT_LVL_ABOVE_GRND	WMIXE	0	2	19	0	105	411
U wind at 80 m above ground	UGRD_ON_SPEC_HGT_LVL_ABOVE_GRND	UGRD	0	2	2	0	105	412
V wind at 80 m above ground	VGRD_ON_SPEC_HGT_LVL_ABOVE_GRND	VGRD	0	2	3	0	105	413
Graupel on model surface	GRMR_ON_HYBRID_LVL	GRMR	NA	NA	NA	NA	109	415
Graupel on pressure surface	GRMR_ON_ISOBARIC_SFC	GRMR	NA	NA	NA	NA	100	416
Maximum updraft helicity	MAX_UPHL_ON_SPEC_HGT_LVL_ABOVE_GRND_2-5km	MXUPHL	0	7	199	1	106	420
Maximum 1km reflectivity	MAX_REF_ON_SPEC_HGT_LVL_ABOVE_GRND_1km	MAXREF	0	16	198	1	105	421
Maximum wind speed at 10m	MAX_WIND_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	WIND	0	2	1	0	105	422
Maximum updraft vertical velocity	MAX_MAXUVV_ON_ISOBARIC_SFC_40-100hpa	MAXUVV	0	2	220	1	106	423
Maximum downdraft vertical velocity	MAX_MAXDVV_ON_ISOBARIC_SFC_40-100hpa	MAXDVV	0	2	221	1	106	424
Mean vertical velocity	AVE_DZDT_ON_SIGMA_LVL_0.5-0.8	DZDT	0	2	9	0	108	425
Radar echo top in KDT	HGT_ON_SPEC_HGT_LVL_ABOVE_GRND	HGT	0	3	5	0	105	426
Updraft helicity	UPHL_ON_SPEC_HGT_LVL_ABOVE_GRND_2-5km	MXUPHL	0	7	199	1	106	427

Column integrated graupel	GRMR_ON_ENTIRE_ATMOS_SINGLE_LYR	GRMR	NA	NA	NA	NA	200	428
Column integrated maximum graupel	MAXVIG_ON_ENTIRE_ATMOS_SINGLE_LYR	TCOLG	0	1	74	0	200	429
U-component of 0-1km level wind shear	VUCSH_ON_SPEC_HGT_LVL_ABOVE_GRND_0-1km	VUCSH	0	2	15	0	106	430
V-component of 0-1km level wind shear	VVCSH_ON_SPEC_HGT_LVL_ABOVE_GRND_0-1km	VVCSH	0	2	16	0	106	431
U-component of 0-6km level wind shear	VUCSH_ON_SPEC_HGT_LVL_ABOVE_GRND_0-6km	VUCSH	0	2	15	0	106	432
V-component of 0-6km level wind shear	VVCSH_ON_SPEC_HGT_LVL_ABOVE_GRND_0-6km	VVCSH	0	2	16	0	106	433
Total precipitation accumulated over user-specified bucket	BUCKET_APCP_ON_SURFACE	APCP	0	1	8	0	1	434
Convective precipitation accumulated over user-specified bucket	BUCKET_ACPCP_ON_SURFACE	ACPCP	0	1	10	0	1	435
Grid-scale precipitation accumulated over user-specified bucket	BUCKET_NCPCP_ON_SURFACE	NCPCP	0	1	9	0	1	436
Snow accumulated over user-specified bucket	BUCKET_WEASD_ON_SURFACE	WEASD	0	1	13	0	1	437
Model level fraction of rain for Ferrier scheme	FRAIN_ON_HYBRID_LVL	FRAIN	0	1	42	0	109	185
Model level fraction of ice for Ferrier scheme	FICE_ON_HYBRID_LVL	FICE	0	6	21	0	109	186
Model level riming factor for Ferrier scheme	RIME_ON_HYBRID_LVL	RIME	0	1	44	0	109	187
Model level total condensate for Ferrier scheme	TCOND_ON_HYBRID_LVL	TCOND	0	1	21	0	109	199
Height of sigma surface	HGT_ON_SIGMA_LVLS	HGT	0	3	5	0	107	205
Temperature on sigma surface	TMP_ON_SIGMA_LVLS	TMP	0	0	0	0	107	206
Specific humidity on sigma surface	SPFH_ON_SIGMA_LVLS	SPFH	0	1	0	0	107	207
U-wind on sigma surface	UGRD_ON_SIGMA_LVLS	UGRD	0	2	2	0	107	208
V-wind on sigma surface	VGRD_ON_SIGMA_LVLS	VGRD	0	2	3	0	107	209
Omega on sigma surface	VVEL_ON_SIGMA_LVLS	VVEL	0	2	8	0	107	210

Cloud water on sigma surface	CLWMR_ON_SIGMA_LVLS	CLWMR	0	1	22	0	107	211
Cloud ice on sigma surface	CICE_ON_SIGMA_LVLS	CICE	0	6	0	0	107	212
Rain on sigma surface	RWMR_ON_SIGMA_LVLS	RWMR	0	1	24	0	107	213
Snow on sigma surface	SNMR_ON_SIGMA_LVLS	SNMR	0	1	25	0	107	214
Condensate on sigma surface	TCOND_ON_SIGMA_LVLS	TCOND	0	1	21	0	107	215
Pressure on sigma surface	PRES_ON_SIGMA_LVLS	PRES	0	3	0	0	107	216
Turbulent kinetic energy on sigma surface	TKE_ON_SIGMA_LVLS	TKE	0	19	11	0	107	217
Cloud fraction on sigma surface	TCDC_ON_SIGMA_LVLS	TCDC	0	6	1	0	107	222
Graupel on sigma surface	GRLE_ON_SIGMA_LVLS	GRLE	0	1	32	0	107	255
LCL level pressure	PLPL_ON_SPEC_PRES_ABOVE_GRND	PLPL	0	3	200	1	116	246
LOWEST WET BULB ZERO HEIGHT	HGT_ON_LWST_LVL_OF_WET_BULB_ZERO	HGT	0	3	5	0	245	247
Leaf area index	LAI_ON_SURFACE	LAI	0	7	198	1	1	254
Accumulated land surface model precipitation	ACM_LSPA_ON_SURFACE	LSPA	2	3	199	1	1	256
In-flight icing	TIPD_ON_ISOBARIC_SFC	TIPD	0	1	206	1	100	257
Clear air turbulence	TPFI_ON_ISOBARIC_SFC	TPFI	0	19	219	1	100	258
Wind shear between shelter level and 2000 FT	VWSH_ON_SPEC_HGT_LVL_ABOVE_GRND	VWSH	0	2	25	0	106	259
Ceiling	HGT_ON_CLOUD_CEILING	HGT	0	3	5	0	215	260
Flight restriction	VIS_ON_CLOUD_BASE	VIS	0	19	0	0	2	261
Instantaneous clear sky incoming surface shortwave	INST_CSDSF_ON_SURFACE	CSDSF	0	4	196	1	1	262
Pressure level riming factor for Ferrier scheme	RIME_ON_ISOBARIC_SFC	RIME	0	1	44	0	100	263
Model level vertical velocity	DZDT_ON_HYBRID_LVL	DZDT	0	2	9	0	109	264
Brightness temperature	SBT122_ON_TOP_OF_ATMOS_FROM_LWRAD	SBT122	3	192	0	0	8	265
Average albedo	AVE_ALBDO_ON_SURFACE	ALBDO	0	19	1	0	1	266
Ozone on model surface	O3MR_ON_HYBRID_LVL	O3MR	0	14	1	0	109	267
Ozone on pressure surface	O3MR_ON_ISOBARIC_SFC	O3MR	0	14	1	0	100	268
Surface zonal momentum flux	AVE_UFLX_ON_SURFACE	UFLX	0	2	17	0	1	269
Surface meridional momentum flux	AVE_VFLX_ON_SURFACE	VFLX	0	2	18	0	1	270

Average precipitation rate	AVE_PRATE_ON_SURFACE	PRATE	0	1	7	0	1	271
Average convective precipitation rate	AVE_CPRAT_ON_SURFACE	CPRAT	0	1	37	0	1	272
Instantaneous outgoing longwave at top of atmosphere	INST_ULWRF_ON_TOP_OF_ATMOS	ULWRF	0	5	4	0	8	274
Total spectrum brightness temperature	BRTMP_ON_TOP_OF_ATMOS	BRTMP	0	4	4	0	8	275
Model top pressure	PRES_ON_TOP_OF_ATMOS	PRES	0	3	0	0	8	282
Composite rain radar reflectivity	REFZR_ON_ENTIRE_ATMOS	REFZR	0	16	0	0	200	276
Composite ice radar reflectivity	REFZI_ON_ENTIRE_ATMOS	REFZI	0	16	1	0	200	277
Composite radar reflectivity from convection	REFZC_ON_ENTIRE_ATMOS	REFZC	0	16	2	0	200	278
Rain radar reflecting angle	REFZR_ON_SPEC_HGT_LVL_ABOVE_GRND	REFZR	0	16	0	0	105	279
Ice radar reflecting angle	REFZI_ON_SPEC_HGT_LVL_ABOVE_GRND	REFZI	0	16	1	0	105	280
Convection radar reflecting angle	REFZC_ON_SPEC_HGT_LVL_ABOVE_GRND	REFZC	0	16	2	0	105	281
Model level vertical velocity	DZDT_ON_ISOBARIC_SFC	DZDT	0	2	9	0	100	284
Column integrated super cool liquid water	TCLSW_ON_ENTIRE_ATMOS	TCLSW	0	1	209	1	200	285
Column integrated melting ice	TCOLM_ON_ENTIRE_ATMOS	TCOLM	0	1	210	1	200	286
Height of lowest level super cool liquid water	HGT_ON_LWST_BOT_LVL_OF_SUPERCOOLED_LIQ_WATER_LYR	HGT	0	3	5	0	253	287
Height of highest level super cool liquid water	HGT_ON_HGHST_TOP_LVL_OF_SUPERCOOLED_LIQ_WATER_LYR	HGT	0	3	5	0	254	288
Richardson number planetary boundary layer height	HGT_ON_PLANETARY_BOUND_LYR	HGT	0	3	5	0	220	289
Total column shortwave temperature tendency	SWHR_ON_ENTIRE_ATMOS	SWHR	0	4	197	1	200	290
Total column longwave temperature tendency	LWHR_ON_ENTIRE_ATMOS	LWHR	0	5	194	1	200	291
Total column gridded temperature tendency	AVE_LRGHR_ON_ENTIRE_ATMOS	LRGHR	0	0	195	1	200	292

Total column convective temperature tendency	AVE_CNVHR_ON_ENTIRE_ATMOS	CNVHR	0	0	196	1	200	293
Radiative flux temperature tendency on pressure level	TTRAD_ON_ISOBARIC_SFC	TTRAD	0	0	193	1	100	294
Column integrated moisture convergence	MCONV_ON_ENTIRE_ATMOS	MCONV	0	1	26	0	200	295
Time averaged clear sky incoming UV-B shortwave	AVE_CDUVB_ON_SURFACE	CDUVB	0	4	195	1	1	297
Time averaged incoming UV-B shortwave	AVE_DUVB_ON_SURFACE	DUVB	0	4	194	1	1	298
Total column ozone	TOZNE_ON_ENTIRE_ATMOS_SINGLE_LYR	TOZNE	0	14	0	0	200	299
Average low cloud fraction	AVE_TCDC_ON_LOW_CLOUD_LYR	TCDC	0	6	1	0	214	300
Average mid cloud fraction	AVE_TCDC_ON_MID_CLOUD_LYR	TCDC	0	6	1	0	224	301
Average high cloud fraction	AVE_TCDC_ON_HIGH_CLOUD_LYR	TCDC	0	6	1	0	234	302
Average low cloud bottom pressure	AVE_PRES_ON_LOW_CLOUD_BOT_LVL	PRES	0	3	0	0	212	303
Average low cloud top pressure	AVE_PRES_ON_LOW_CLOUD_TOP_LVL	PRES	0	3	0	0	213	304
Average low cloud top temperature	AVE_TMP_ON_LOW_CLOUD_TOP_LVL	TMP	0	0	0	0	213	305
Average mid cloud bottom pressure	AVE_PRES_ON_MID_CLOUD_BOT_LVL	PRES	0	3	0	0	222	306
Average mid cloud top pressure	AVE_PRES_ON_MID_CLOUD_TOP_LVL	PRES	0	3	0	0	223	307
Average mid cloud top temperature	AVE_TMP_ON_MID_CLOUD_TOP_LVL	TMP	0	0	0	0	223	308
Average high cloud bottom pressure	AVE_PRES_ON_HIGH_CLOUD_BOT_LVL	PRES	0	3	0	0	232	309
Average high cloud top pressure	AVE_PRES_ON_HIGH_CLOUD_TOP_LVL	PRES	0	3	0	0	233	310

Average high cloud top temperature	AVE_TMP_ON_HIGH_CLOUD_TOP_LVL	TMP	0	0	0	0	233	311
Total column relative humidity	RH_ON_ENTIRE_ATMOS_SINGLE_LYR	RH	0	1	1	0	200	312
Cloud work function	AVE_CWORK_ON_ENTIRE_ATMOS_SINGLE_LYR	CWORK	0	6	15	0	200	313
Temperature at maximum wind level	TMP_ON_MAX_WIND	TMP	0	0	0	0	6	314
Time averaged zonal gravity wave stress	AVE_U-GWD_ON_SURFACE	U-GWD	0	3	16	0	1	315
Time averaged meridional gravity wave stress	AVE_V-GWD_ON_SURFACE	V-GWD	0	3	17	0	1	316
Average precipitation type	AVE_CRAIN_ON_SURFACE	CRAIN	0	1	33	0	1	317
Simulated GOES 12 channel 2 brightness temperature	SBT122_ON_TOP_OF_ATMOS	SBT122	3	192	0	0	8	327
Simulated GOES 12 channel 3 brightness temperature	SBT123_ON_TOP_OF_ATMOS	SBT123	3	192	1	0	8	328
Simulated GOES 12 channel 4 brightness temperature	SBT124_ON_TOP_OF_ATMOS	SBT124	3	192	2	0	8	329
Simulated GOES 12 channel 5 brightness temperature	SBT126_ON_TOP_OF_ATMOS	SBT126	3	192	3	0	8	330
Cloud fraction on pressure surface	TCDC_ON_ISOBARIC_SFC	TCDC	0	6	1	0	100	331
U-wind on theta surface	UGRD_ON_ISENTROPIC_LVL	UGRD	0	2	2	0	113	332
V-wind on theta surface	VGRD_ON_ISENTROPIC_LVL	VGRD	0	2	3	0	113	333
Temperature on theta surface	TMP_ON_ISENTROPIC_LVL	TMP	0	0	0	0	113	334
Potential vorticity on theta surface	PVORT_ON_ISENTROPIC_LVL	PVORT	0	2	14	0	113	335
Montgomery streamfunction on theta surface	MNTSF_ON_ISENTROPIC_LVL	MNTSF	0	2	6	0	113	353
Relative humidity on theta surface	RH_ON_ISENTROPIC_LVL	RH	0	1	1	0	113	352
U wind on constant PV surface	UGRD_ON_POT_VORT_SFC	UGRD	0	2	2	0	117	336
V wind on constant PV surface	VGRD_ON_POT_VORT_SFC	VGRD	0	2	3	0	117	337
Temperature on constant PV surface	TMP_ON_POT_VORT_SFC	TMP	0	0	0	0	117	338
Height on constant PV surface	HGT_ON_POT_VORT_SFC	HGT	0	3	5	0	117	339
Pressure on constant PV surface	PRES_ON_POT_VORT_SFC	PRES	0	3	0	0	117	340
Wind shear on constant PV surface	VWSH_ON_POT_VORT_SFC	VWSH	0	2	25	0	117	341

Planetary boundary layer cloud fraction	AVE_TCDC_ON_BOUND_LYR_CLOUD_LYR	TCDC	0	6	1	0	211	342
Average water runoff	ACM_WATR_ON_SURFACE	WATR	2	0	5	0	1	343
Planetary boundary layer regime	PBLREG_ON_SURFACE	PBLREG	0	19	12	0	1	344
Maximum 2m temperature	MAX_TMAX_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	TMAX	0	0	4	0	105	345
Minimum 2m temperature	MIN_TMIN_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	TMIN	0	0	5	0	105	346
Maximum 2m RH	MAX_MAXRH_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	MAXRH	0	1	27	0	105	347
Minimum 2m RH	MIN_MINRH_ON_SPEC_HGT_LVL_ABOVE_GRND_2m	MINRH	0	1	198	1	105	348
Ice thickness	ICETK_ON_SURFACE	ICETK	10	2	1	0	1	349
Shortwave tendency on pressure surface	SWHR_ON_ISOBARIC_SFC	SWHR	0	4	197	1	100	354
Longwave tendency on pressure surface	LWHR_ON_ISOBARIC_SFC	LWHR	0	5	194	1	100	355
Deep convective tendency on pressure surface	CNVHR_ON_ISOBARIC_SFC	CNVHR	0	0	196	1	100	357
Shallow convective tendency on pressure surface	SHAHR_ON_ISOBARIC_SFC	SHAHR	0	0	201	1	100	358
Grid scale tendency on pressure surface	LRGHR_ON_ISOBARIC_SFC	LRGHR	0	0	195	1	100	359
Deep convective moisture on pressure surface	CNVMR_ON_ISOBARIC_SFC	CNVMR	0	1	213	1	100	361
Shallow convective moisture on pressure surface	SHAMR_ON_ISOBARIC_SFC	SHAMR	0	1	214	1	100	362
Ozone tendency on pressure surface	TOZ_ON_ISOBARIC_SFC	TOZ	0	14	197	1	100	366
Mass weighted potential vorticity	PVMW_ON_ISOBARIC_SFC	PVMW	0	2	219	1	100	367
Simulated GOES 12 channel 3 brightness count	SBC123_ON_TOP_OF_ATMOS	SBC123	3	192	4	0	8	376
Simulated GOES 12 channel 4 brightness count	SBC124_ON_TOP_OF_ATMOS	SBC124	3	192	5	0	8	377
Omega on theta surface	VVEL_ON_ISENTROPIC_LVL	VVEL	0	2	8	0	113	378
Mixing height	MIXHT_ON_SURFACE	MIXHT	0	19	3	0	1	381
Average clear-sky incoming longwave at surface	AVE_CSDLF_ON_SURFACE	CSDLF	0	5	196	1	1	382

Average clear-sky incoming shortwave at surface	AVE_CSDSF_ON_SURFACE	CSDSF	0	4	196	1	1	383
Average clear-sky outgoing longwave at surface	AVE_CSULF_ON_SURFACE	CSULF	0	5	195	1	1	384
Average clear-sky outgoing longwave at top of atmosphere	AVE_CSULF_ON_TOP_OF_ATMOS	CSULF	0	5	195	1	8	385
Average clear-sky outgoing shortwave at surface	AVE_CSUSF_ON_SURFACE	CSUSF	0	4	198	1	1	386
Average clear-sky outgoing shortwave at top of atmosphere	AVE_CSUSF_ON_TOP_OF_ATMOS	CSUSF	0	4	198	1	8	387
Average incoming shortwave at top of atmosphere	AVE_DSWRF_ON_TOP_OF_ATMOS	DSWRF	0	4	7	0	8	388
Transport wind u component	UGRD_ON_PLANETARY_BOUND_LYR	UGRD	0	2	2	0	220	389
Transport wind v component	VGRD_ON_PLANETARY_BOUND_LYR	VGRD	0	2	3	0	220	390
Sunshine duration	SUNSD_ON_SURFACE	SUNSD	0	6	33	0	1	396
Field capacity	FLDCP_ON_SURFACE	FLDCP	2	2	203	1	1	397
ICAO height at maximum wind level	ICAHT_ON_MAX_WIND	ICAHT	0	3	3	0	6	398
ICAO height at tropopause	ICAHT_ON_TROPOPAUSE	ICAHT	0	3	3	0	7	399
Radar echo top	RETOP_ON_ENTIRE_ATMOS_SINGLE_LYR	RETOP	0	16	3	0	200	400
Time averaged surface Visible beam downward solar flux	AVE_VBDSF_ON_SURFACE	VBDSF	0	4	200	1	1	401
Time averaged surface Visible diffuse downward solar flux	AVE_VDDSF_ON_SURFACE	VDDSF	0	4	201	1	1	402
Time averaged surface Near IR beam downward solar flux	AVE_NBDSF_ON_SURFACE	NBDSF	0	4	202	1	1	403
Time averaged surface Near IR diffuse downward solar flux	AVE_NDDSF_ON_SURFACE	NDDSF	0	4	203	1	1	404
Average snowfall rate	AVE_SRWEQ_ON_SURFACE	SRWEQ	0	1	12	0	1	405
Dust 1 on pressure surface	DUST1_ON_ISOBARIC_LVL	MASSMR	0	20	2	0	100	438
Dust 2 on pressure surface	DUST2_ON_ISOBARIC_LVL	MASSMR	0	20	2	0	100	439
Dust 3 on pressure surface	DUST3_ON_ISOBARIC_LVL	MASSMR	0	20	2	0	100	440

Dust 4 on pressure surface	DUST4_ON_ISOBARIC_LVL	MASSMR	0	20	2	0	100	441
Dust 5 on pressure surface	DUST5_ON_ISOBARIC_LVL	MASSMR	0	20	2	0	100	442
Equilibrium level height	HGT_ON_EQUIL_LVL	HGT	0	3	5	0	247	443
Lightning	LTNG_ON_SURFACE	LTNG	0	17	192	1	1	444
Goes west channel 2 brightness temperature	SBT112_ON_TOP_OF_ATMOS	SBT112	3	192	6	0	8	446
Goes west channel 3 brightness temperature	SBT113_ON_TOP_OF_ATMOS	SBT113	3	192	7	0	8	447
Goes west channel 4 brightness temperature	SBT114_ON_TOP_OF_ATMOS	SBT114	3	192	8	0	8	448
Goes west channel 5 brightness temperature	SBT115_ON_TOP_OF_ATMOS	SBT115	3	192	9	0	8	449
In flight icing from NCAR algorithm	ICIP_ON_ISOBARIC_SFC	ICIP	0	19	20	0	100	450
Specific humidity at flight levels	SPFH_ON_SPEC_ALT_ABOVE_MEAN_SEA_LVL	SPFH	0	1	0	0	103	451
Virtual temperature based convective available potential energy	VTCAPE_ON_SURFACE	CAPE	0	7	6	0	1	452
Virtual temperature based convective inhibition	VTCIN_ON_SURFACE	CIN	0	7	7	0	1	453
Virtual temperature on model surfaces	Not currently available for grib2	NA	NA	NA	NA	NA	109	909
Virtual temperature on pressure surfaces	Not currently available for grib2	NA	NA	NA	NA	NA	100	910
Virtual temperature on flight levels	Not currently available for grib2	NA	NA	NA	NA	NA	103	911
Ventilation rate	VRATE_ON_PLANETARY_BOUND_LYR	VRATE	0	2	224	1	220	454
Haines index	HINDEX_ON_SURFACE	HINDEX	2	4	2	0	1	455
Pressure at flight levels	PRES_ON_SPEC_ALT_ABOVE_MEAN_SEA_LVL	PRES	0	3	0	0	103	482
Time-averaged percentage snow cover	AVE_SNOWC_ON_SURFACE	SNOWC	0	1	42	0	1	500
Time-averaged surface pressure	AVE_PRES_ON_SURFACE	PRES	0	3	0	0	1	501
Time-averaged 10m temperature	AVE_TMP_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	TMP	0	0	0	0	105	502

Time-averaged mass exchange coefficient	AVE_AKHS_ON_SURFACE	AKHS	2	0	208	1	1	503
Time-averaged wind exchange coefficient	AVE_AKMS_ON_SURFACE	AKMS	2	0	209	1	1	504
Temperature at 10m	TMP_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	TMP	0	0	0	0	105	505
Maximum U-component wind at 10m	MAX_MAXUW_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	MAXUW	0	2	222	1	105	506
Maximum V-component wind at 10m	MAX_MAXVW_ON_SPEC_HGT_LVL_ABOVE_GRND_10m	MAXVW	0	2	223	1	105	507
Simulated GOES 12 channel 2 brightness temperature with satellite angle correction	NON_NADIR_SBT122_ON_TOP_OF_ATMOS	SBT122	3	192	0	0	8	456
Simulated GOES 12 channel 3 brightness temperature with satellite angle correction	NON_NADIR_SBT123_ON_TOP_OF_ATMOS	SBT123	3	192	1	0	8	457
Simulated GOES 12 channel 4 brightness temperature with satellite angle correction	NON_NADIR_SBT124_ON_TOP_OF_ATMOS	SBT124	3	192	2	0	8	458
Simulated GOES 12 channel 5 brightness temperature with satellite angle correction	NON_NADIR_SBT126_ON_TOP_OF_ATMOS	SBT126	3	192	3	0	8	459
Simulated GOES 11 channel 2 brightness temperature with satellite angle correction	SBT112_ON_TOP_OF_ATMOS	SBT112	3	192	6	0	8	460
Simulated GOES 11 channel 3 brightness temperature with satellite angle correction	SBT113_ON_TOP_OF_ATMOS	SBT113	3	192	7	0	8	461
Simulated GOES 11 channel 4 brightness temperature with satellite angle correction	SBT114_ON_TOP_OF_ATMOS	SBT114	3	192	8	0	8	462
Simulated GOES 11 channel 5 brightness temperature with satellite angle correction	SBT115_ON_TOP_OF_ATMOS	SBT115	3	192	9	0	8	463
Simulated GOES 15 channel 5 brightness temperature with satellite angle correction	Not currently available for grib2	NA	NA	NA	NA	NA	109	872
Simulated GOES 13 channel 2 brightness temperature with satellite angle correction	Not currently available for grib2	NA	NA	NA	NA	NA	109	868
Simulated AMSR-E channel 9 brightness temperature	AMSRE9_ON_TOP_OF_ATMOS	AMSRE9	3	192	10	0	8	483
Simulated AMSR-E channel 10 brightness temperature	AMSRE10_ON_TOP_OF_ATMOS	AMSRE10	3	192	11	0	8	484
Simulated AMSR-E channel 11 brightness temperature	AMSRE11_ON_TOP_OF_ATMOS	AMSRE11	3	192	12	0	8	485

Simulated AMSR-E channel 12 brightness temperature	AMSRE12_ON_TOP_OF_ATMOS	AMSRE12	3	192	13	0	8	486
SSMI F13 (19H 19V 37H 37V 85H 85V)	Not currently available for grib2	NA	NA	NA	NA	NA	109	800
SSMI F14 (19H 19V 37H 37V 85H 85V)	Not currently available for grib2	NA	NA	NA	NA	NA	109	806
SSMI F15 (19H 19V 37H 37V 85H 85V)	Not currently available for grib2	NA	NA	NA	NA	NA	109	812
SSMIS F16 (183H 19H 19V 37H 37V 85H 85V)	Not currently available for grib2	NA	NA	NA	NA	NA	109	818
SSMIS F17 (183H 19H 19V 37H 37V 85H 85V)	Not currently available for grib2	NA	NA	NA	NA	NA	109	825
SSMIS F18 (183H 19H 19V 37H 37V 85H 85V)	Not currently available for grib2	NA	NA	NA	NA	NA	109	832
SSMIS F19 (183H 19H 19V 37H 37V 85H 85V)	Not currently available for grib2	NA	NA	NA	NA	NA	109	839
SSMIS F20 (183H 19H 19V 37H 37V 85H 85V)	Not currently available for grib2	NA	NA	NA	NA	NA	109	846
MTSAT-1r imager channels 1-4 (backup for mtsat2)	Not currently available for grib2	NA	NA	NA	NA	NA	109	864
MTSAT2 imager channels 1-4	Not currently available for grib2	NA	NA	NA	NA	NA	109	860
Seviri brightness temperature channels 5-11	Not currently available for grib2	NA	NA	NA	NA	NA	109	876
Insat 3d brightness temperature IR channels 1-4	Not currently available for grib2	NA	NA	NA	NA	NA	109	865

*See Appendix A of the UPP Users Guide

***4 types of CAPE and CIN can be output with use of the Levels control line in the wrf_cntrl.parm (nmb_cntrl.parm file).

Surface based CAPE/CIN is output at one grib record, while the remaining three types are output within one grib record in 3 levels.

Level 1: Surface Based CAPE/CIN

Level 2: Best Boundary Layer CAPE/CIN
Level 3: Mixed Layer CAPE/CIN
Level 4: Most Unstable CAPE/CIN

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