**TMI and PR Combined 3B-31 Planetary Grid [L3B_31_GRID]**

The following parameters are used in describing the formats:

· nlat: the number of 5° grid intervals of latitude from 40° N to 40° S (16).

· nlon: the number of 5° grid intervals of longitude 180°W to 180°E (72).

· nlayer: the number of profiling layers (14).

**Surface Rainfall** (SDS, array size nlat x nlon, 4-byte float):

| Name | Name in the TOOLKIT | Format | Description |
|---|---|---|---|
| Surface Rainfall | surfRainfall(16,72) | 4-byte float | The Surface Rainfall is the surface rain accumulation in 5° x 5° boxes. It ranges from 0.0 to 3000.0 mm. |

**Surface Adjustment Ratio** (SDS, array size nlat x nlon, 4-byte float):

| Name | Name in the TOOLKIT | Format | Description |
|---|---|---|---|
| Surface Adjustment Ratio | surfAdjRatio(16,72) | 4-byte float | The ratio of 2B31 to 2A12 surface rainfall, calculated from the swath overlap region for each 5° x 5°box. |

**Cloud Water** (SDS, array size nlat x nlon x nlayer, 4-byte float):

| Name | Name in the TOOLKIT | Format | Description |
|---|---|---|---|
| Cloud Water | cloudWater(16,72,14) | 4-byte float | The cloud water is that at each vertical layer in each 5° x 5°box for one month. It ranges from 0.0 to 1000.0 g $m^{-3}$. |

**Rain Water** (SDS, array size nlat x nlon x nlayer, 4-byte float):

| Name | Name in the TOOLKIT | Format | Description |
|---|---|---|---|
| Rain Water | rainWater(16,72,14) | 4-byte float | The rain water is that at each vertical layer in each 5° x 5°box for one month. It ranges from 0.0 to 1000.0 g $m^{-3}$. |

**Cloud Ice** (SDS, array size nlat x nlon x nlayer, 4-byte float):

| Name | Name in the TOOLKIT | Format | Description |
|---|---|---|---|
| Cloud Ice | cloudIce(16,72,14) | 4-byte float | The cloud ice is that at each vertical layer in each 5° x 5°box for one month. It ranges from 0.0 to 1000.0 g $m^{-3}$. |

**Graupel** (SDS, array size nlat x nlon x nlayer, 4-byte float):

| Name | Name in the TOOLKIT | Format | Description |
|---|---|---|---|
| Graupel | graupel(16,72,14) | 4-byte float | The graupel is that at each vertical layer in each 5° x 5°box for one month. It ranges from 0.0 to 1000.0 g $m^{-3}$. |

**Profile Adjustment Ratio** (SDS, array size nlat x nlon x nlayer, 4-byte float):

| Name | Name in the TOOLKIT | Format | Description |
|---|---|---|---|
| Profile Adjustment Ratio | profAdjRatio(16,72,14) | 4-byte float | The ratio of 2B31 to 2A12 rainfall for each vertical layer. The ratio is calculated from the swath overlap region for each 5° x 5°box. |