NWS/STI/MDL/DSD/LAMP JEG/PS: 06/18/2019 PS: 03/28/2023 PS: 07/17/2024

WMO Headers for GFS-LAMP products OSIP LAMP 05-059

Note: This document has been updated (07/2024) for LMP v2.6 to remove obsolete headers and products. There are no changes to LMP headers for the v2.6 upgrade.

WMO headers have the format of $T_1T_2A_1A_2ii$ CCCC

The CCCC for all GFS-LAMP products is KWNO.

A. WMO Headers for LAMP station guidance in ASCII text format

- The T₁ designates the data type. For the GFS-LAMP ASCII text product T₁ is F for Forecast.
- The T₂ further designates the data type. For the GFS-LAMP ASCII text product T₂ is O for Guidance. For the Extended GFS-LAMP ASCII text product T₂ is E for Extended Guidance.
- 3. The A_1A_2 designates the geographical area. For the GFS-LAMP ASCII text product the A_1A_2 is **US** for the United States of America.
- 4. The ii for the GFS-LAMP ASCII text product is **11** for global distribution. Data from stations in all regions of the United States of America will be contained in this ASCII text bulletin.
- 5. GFS-LAMP ASCII text product header = FOUS11 KWNO
- 6. Extended GFS-LAMP ASCII text product header = FEUS11 KWNO
- 7. The GFS-LAMP ASCII text product AWIPS identifier will be LAVUSA.
- 8. The Extended GFS-LAMP ASCII text product AWIPS identifier will be LEVUSA.

B. WMO Headers for LAMP station guidance in BUFR format

- 1. The T₁ designates the data type. For the GFS-LAMP BUFR product T₁ is **J** for Forecast Information BUFR.
- 2. The T_2 further designates the data type. For the GFS-LAMP BUFR product T_2 is **S** for surface/sea level.
- 3. The A₁ further designates the data type. For the GFS-LAMP BUFR product the A₁ is **M** for Land based main synoptic reports.
- The A₂ further designates the reference time. For the GFS-LAMP BUFR product the A₂ is F for 30 hours forecast.
- 5. The ii designates the geographical region of the data. For the GFS-LAMP BUFR product the ii is as follows:

- i. **10** Pacific Region
- ii. **11** Northeast Region
- iii. **12** Southeast Region
- iv. 13 North Central Region
- v. 14 South Central Region
- vi. 15 Rocky Mountains Region
- vii. 16 West Coast Region
- viii. 17 Alaska

6. GFS-LAMP BUFR product headers:

- i. JSMF10 KWNO
- ii. JSMF11 KWNO
- iii. JSMF12 KWNO
- iv. JSMF13 KWNO
- v. JSMF14 KWNO
- vi. JSMF15 KWNO
- vii. JSMF16 KWNO
- viii. JSMF17 KWNO

C. WMO Headers for LAMP gridded guidance in GRIB2 format

- 1. The T_1 for GFS-LAMP 1-h convection and lightning products is **Y**.
- 2. The T₂ designates the weather element type. The following values are used for the GFS-LAMP GRIB2 product:
 - i. **G** = 1-hr probability of lightning on a 2.5-km grid
 - ii. **H** = 1-hr categorical forecast potential (none/low/medium/high) of lightning occurring on a 2.5-km grid
 - iii. I = 1-hr probability of convection on a 2.5-km grid
 - iv. **J** = 1-hr categorical forecast potential (none/low/medium/high) of convection occurring on a 2.5-km grid
- 3. The A₁ designates the geographical area. For the GFS-LAMP product in GRIB2 format, the A₁ is **U** for CONUS.
- 4. The A₂ and the ii follow the convention established in the NDFD. These three characters together represent the day and hour (UTC) for which the product is valid. Specifically, for LAMP, the gridded guidance is for thunderstorms or convection in a 1-hr period, and the valid time represents the <u>end</u> of the period. For example, a GFS-LAMP 1-hr thunderstorm probability valid from 11-12 UTC is said to be valid at 12 UTC.

The LAMP convection and lightning guidance in a 1-h period is valid for every 1-h period ending 1-25 hours after the cycle time.

- i. The following convention for the A₂ and the ii is used for the GFS-LAMP gridded <u>1-h</u> convection and lightning products:
 - 1. **A** = Day 0; ii = UTC hour (**23-24**)
 - 2. **B** = Day 1; ii = UTC hour (**01-24**)
 - 3. **C** = Day 2; ii = UTC hour (**01-22**)
- ii. Listed below are representations of the WMO headers for the LAMP GRIB2 <u>1-h</u> convection and lightning products. All headers have CCCC of **KWNO**, and T_2 is as indicated above:
 - 1. Projections from the 00 UTC GFS-LAMP cycle:

1-h period ending at 01 UTC: YT₂UB01 а. 1-h period ending at 02 UTC: YT₂UB02 b. 1-h period ending at 03 UTC: YT₂UB03 C. 1-h period ending at 04 UTC: YT₂UB04 d. 1-h period ending at 05 UTC: YT₂UB05 e. 1-h period ending at 06 UTC: YT₂UB06 f. 1-h period ending at 07 UTC: YT₂UB07 g. 1-h period ending at 08 UTC: YT₂UB08 h. i. 1-h period ending at 09 UTC: YT₂UB09 1-h period ending at 10 UTC: YT₂UB10 j. 1-h period ending at 11 UTC: YT₂UB11 k. 1-h period ending at 12 UTC: YT₂UB12 Ι. 1-h period ending at 13 UTC: YT₂UB13 m. n. 1-h period ending at 14 UTC: YT₂UB14 1-h period ending at 15 UTC: YT₂UB15 0. 1-h period ending at 16 UTC: YT₂UB16 р. 1-h period ending at 17 UTC: YT₂UB17 q. 1-h period ending at 18 UTC: YT₂UB18 r. 1-h period ending at 19 UTC: YT₂UB19 s. 1-h period ending at 20 UTC: YT₂UB20 t. 1-h period ending at 21 UTC: YT₂UB21 u. 1-h period ending at 22 UTC: YT₂UB22 V. 1-h period ending at 23 UTC: YT₂UB23 W. 1-h period ending at 00 UTC: YT₂UB24 х. 1-h period ending at 01 UTC: YT₂UC01 y. Projections from the 01 UTC GFS-LAMP cycle: a. 1-h period ending at 02 UTC: YT₂UB02 b. 1-h period ending at 03 UTC: YT₂UB03 C. 1-h period ending at 04 UTC: YT₂UB04 1-h period ending at 05 UTC: YT₂UB05 d. 1-h period ending at 06 UTC: YT₂UB06 e. f. 1-h period ending at 07 UTC: YT₂UB07 1-h period ending at 08 UTC: YT₂UB08 g. h. 1-h period ending at 09 UTC: YT₂UB09 1-h period ending at 10 UTC: YT₂UB10 i. 1-h period ending at 11 UTC: YT₂UB11 j. 1-h period ending at 12 UTC: YT₂UB12 k. Ι. 1-h period ending at 13 UTC: YT₂UB13 1-h period ending at 14 UTC: YT₂UB14 m. 1-h period ending at 15 UTC: YT₂UB15 n. 1-h period ending at 16 UTC: YT₂UB16 0. 1-h period ending at 17 UTC: YT₂UB17 р. q. 1-h period ending at 18 UTC: YT₂UB18 r. 1-h period ending at 19 UTC: YT₂UB19 S. 1-h period ending at 20 UTC: YT₂UB20 1-h period ending at 21 UTC: YT₂UB21 t. 1-h period ending at 22 UTC: YT₂UB22 u. 1-h period ending at 23 UTC: YT₂UB23 V. 1-h period ending at 00 UTC: YT₂UB24 W. х. 1-h period ending at 01 UTC: YT₂UC01 1-h period ending at 02 UTC: YT₂UC02 у. Projections from the 02 UTC GFS-LAMP cycle: 1-h period ending at 03 UTC: YT₂UB03 a. b. 1-h period ending at 04 UTC: YT₂UB04 1-h period ending at 05 UTC: YT₂UB05 C.

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d. 1-h period ending at 06 UTC: **Y**T₂**UB06**

1-h period ending at 07 UTC: YT₂UB07 e. f. 1-h period ending at 08 UTC: YT₂UB08 1-h period ending at 09 UTC: YT₂UB09 g. 1-h period ending at 10 UTC: YT₂UB10 h. 1-h period ending at 11 UTC: YT₂UB11 i. 1-h period ending at 12 UTC: YT₂UB12 j. 1-h period ending at 13 UTC: YT₂UB13 k. 1-h period ending at 14 UTC: YT2UB14 Ι. 1-h period ending at 15 UTC: YT₂UB15 m. 1-h period ending at 16 UTC: YT₂UB16 n. 1-h period ending at 17 UTC: YT₂UB17 0. 1-h period ending at 18 UTC: YT₂UB18 р. 1-h period ending at 19 UTC: YT₂UB19 q. r. 1-h period ending at 20 UTC: YT₂UB20 1-h period ending at 21 UTC: YT₂UB21 S. 1-h period ending at 22 UTC: YT₂UB22 t. 1-h period ending at 23 UTC: YT₂UB23 u. 1-h period ending at 00 UTC: YT₂UB24 V. 1-h period ending at 01 UTC: YT₂UC01 W. 1-h period ending at 02 UTC: YT₂UC02 Χ. 1-h period ending at 03 UTC: YT₂UC03 у. Projections from the 03 UTC GFS-LAMP cycle: 1-h period ending at 04 UTC: YT₂UB04 а. 1-h period ending at 05 UTC: YT₂UB05 b. 1-h period ending at 06 UTC: YT₂UB06 C. 1-h period ending at 07 UTC: YT₂UB07 d. e. 1-h period ending at 08 UTC: YT₂UB08 f. 1-h period ending at 09 UTC: YT₂UB09 g. 1-h period ending at 10 UTC: YT₂UB10 h. 1-h period ending at 11 UTC: YT₂UB11 1-h period ending at 12 UTC: YT₂UB12 i. 1-h period ending at 13 UTC: YT₂UB13 j. 1-h period ending at 14 UTC: YT₂UB14 k. 1-h period ending at 15 UTC: YT₂UB15 Ι. 1-h period ending at 16 UTC: YT₂UB16 m. 1-h period ending at 17 UTC: YT₂UB17 n. 1-h period ending at 18 UTC: YT₂UB18 Ο. p. 1-h period ending at 19 UTC: YT₂UB19 1-h period ending at 20 UTC: YT₂UB20 q. 1-h period ending at 21 UTC: YT₂UB21 r. 1-h period ending at 22 UTC: YT₂UB22 S. 1-h period ending at 23 UTC: YT₂UB23 t. u. 1-h period ending at 00 UTC: YT₂UB24 V. 1-h period ending at 01 UTC: YT₂UC01 W. 1-h period ending at 02 UTC: YT₂UC02 1-h period ending at 03 UTC: YT₂UC03 Х. 1-h period ending at 04 UTC: YT₂UC04 V. Projections from the 04 UTC GFS-LAMP cycle: 1-h period ending at 05 UTC: YT₂UB05 а. b. 1-h period ending at 06 UTC: YT₂UB06 1-h period ending at 07 UTC: YT₂UB07 C. 1-h period ending at 08 UTC: YT₂UB08 d. 1-h period ending at 09 UTC: YT₂UB09 e. f. 1-h period ending at 10 UTC: YT₂UB10 1-h period ending at 11 UTC: YT₂UB11 g.

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- - h. 1-h period ending at 12 UTC: YT₂UB12

i. 1-h period ending at 13 UTC: YT₂UB13 1-h period ending at 14 UTC: YT₂UB14 i. k. 1-h period ending at 15 UTC: YT₂UB15 1-h period ending at 16 UTC: YT₂UB16 Ι. 1-h period ending at 17 UTC: YT₂UB17 m. 1-h period ending at 18 UTC: YT₂UB18 n. 1-h period ending at 19 UTC: YT₂UB19 Ο. 1-h period ending at 20 UTC: YT₂UB20 р. 1-h period ending at 21 UTC: YT₂UB21 q. 1-h period ending at 22 UTC: YT₂UB22 r. 1-h period ending at 23 UTC: YT₂UB23 S. 1-h period ending at 00 UTC: YT₂UB24 t. 1-h period ending at 01 UTC: YT₂UC01 u. 1-h period ending at 02 UTC: YT₂UC02 V. 1-h period ending at 03 UTC: YT₂UC03 W. 1-h period ending at 04 UTC: YT₂UC04 Х. 1-h period ending at 05 UTC: YT₂UC05 у. Projections from the 05 UTC GFS-LAMP cycle: 1-h period ending at 06 UTC: YT₂UB06 а. 1-h period ending at 07 UTC: YT₂UB07 b. 1-h period ending at 08 UTC: YT₂UB08 C. 1-h period ending at 09 UTC: YT₂UB09 d. 1-h period ending at 10 UTC: YT₂UB10 e. 1-h period ending at 11 UTC: YT₂UB11 f. 1-h period ending at 12 UTC: YT₂UB12 g. 1-h period ending at 13 UTC: YT₂UB13 h. i. 1-h period ending at 14 UTC: YT₂UB14 j. 1-h period ending at 15 UTC: YT₂UB15 k. 1-h period ending at 16 UTC: YT₂UB16 1-h period ending at 17 UTC: YT₂UB17 Ι. 1-h period ending at 18 UTC: YT₂UB18 m 1-h period ending at 19 UTC: YT₂UB19 n. 1-h period ending at 20 UTC: YT₂UB20 0. 1-h period ending at 21 UTC: YT₂UB21 р. 1-h period ending at 22 UTC: YT₂UB22 q. 1-h period ending at 23 UTC: YT₂UB23 r. 1-h period ending at 00 UTC: YT₂UB24 S. 1-h period ending at 01 UTC: YT₂UC01 t. 1-h period ending at 02 UTC: YT₂UC02 U. 1-h period ending at 03 UTC: YT₂UC03 V. 1-h period ending at 04 UTC: YT2UC04 W. 1-h period ending at 05 UTC: YT₂UC05 Χ. 1-h period ending at 06 UTC: YT₂UC06 y. Projections from the 06 UTC GFS-LAMP cycle: a. 1-h period ending at 07 UTC: YT₂UB07 1-h period ending at 08 UTC: YT₂UB08 b. 1-h period ending at 09 UTC: YT₂UB09 C. 1-h period ending at 10 UTC: YT₂UB10 d. 1-h period ending at 11 UTC: **Y**T₂**UB11** e. f. 1-h period ending at 12 UTC: YT₂UB12 1-h period ending at 13 UTC: YT₂UB13 g. 1-h period ending at 14 UTC: YT₂UB14 h. 1-h period ending at 15 UTC: YT₂UB15 i. 1-h period ending at 16 UTC: YT₂UB16 j. 1-h period ending at 17 UTC: YT₂UB17 k. Ι. 1-h period ending at 18 UTC: YT₂UB18

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1-h period ending at 19 UTC: YT₂UB19 m. 1-h period ending at 20 UTC: YT₂UB20 n. 1-h period ending at 21 UTC: YT₂UB21 0. 1-h period ending at 22 UTC: YT₂UB22 р. 1-h period ending at 23 UTC: YT₂UB23 q. 1-h period ending at 00 UTC: YT₂UB24 r. 1-h period ending at 01 UTC: YT₂UC01 s. 1-h period ending at 02 UTC: YT2UC02 t. 1-h period ending at 03 UTC: YT₂UC03 u. 1-h period ending at 04 UTC: YT₂UC04 V. 1-h period ending at 05 UTC: YT₂UC05 W. 1-h period ending at 06 UTC: YT₂UC06 х. 1-h period ending at 07 UTC: YT₂UC07 V. Projections from the 07 UTC GFS-LAMP cycle: 1-h period ending at 08 UTC: YT₂UB08 а. 1-h period ending at 09 UTC: YT₂UB09 h 1-h period ending at 10 UTC: YT₂UB10 C. 1-h period ending at 11 UTC: YT₂UB11 d. 1-h period ending at 12 UTC: YT₂UB12 е 1-h period ending at 13 UTC: YT₂UB13 f. 1-h period ending at 14 UTC: YT₂UB14 g. 1-h period ending at 15 UTC: YT₂UB15 h. 1-h period ending at 16 UTC: YT₂UB16 i. 1-h period ending at 17 UTC: YT₂UB17 j. k. 1-h period ending at 18 UTC: YT₂UB18 1-h period ending at 19 UTC: YT₂UB19 Ι. m. 1-h period ending at 20 UTC: YT₂UB20 n. 1-h period ending at 21 UTC: YT₂UB21 0. 1-h period ending at 22 UTC: YT₂UB22 1-h period ending at 23 UTC: YT₂UB23 р. 1-h period ending at 00 UTC: YT₂UB24 q. 1-h period ending at 01 UTC: YT₂UC01 r. 1-h period ending at 02 UTC: YT₂UC02 s. 1-h period ending at 03 UTC: YT₂UC03 t. 1-h period ending at 04 UTC: YT₂UC04 u. 1-h period ending at 05 UTC: YT₂UC05 V. 1-h period ending at 06 UTC: YT₂UC06 W. X. 1-h period ending at 07 UTC: YT₂UC07 1-h period ending at 08 UTC: YT₂UC08 у. Projections from the 08 UTC GFS-LAMP cycle: 1-h period ending at 09 UTC: YT₂UB09 a. b. 1-h period ending at 10 UTC: YT₂UB10 C. 1-h period ending at 11 UTC: YT₂UB11 d. 1-h period ending at 12 UTC: YT₂UB12 e. 1-h period ending at 13 UTC: YT₂UB13 f. 1-h period ending at 14 UTC: YT₂UB14 1-h period ending at 15 UTC: YT₂UB15 g. h. 1-h period ending at 16 UTC: YT₂UB16 1-h period ending at 17 UTC: YT₂UB17 i. 1-h period ending at 18 UTC: YT₂UB18 j. 1-h period ending at 19 UTC: YT₂UB19 k. 1-h period ending at 20 UTC: YT₂UB20 Ι. m. 1-h period ending at 21 UTC: YT₂UB21 1-h period ending at 22 UTC: YT₂UB22 n. 1-h period ending at 23 UTC: YT₂UB23 0. 1-h period ending at 00 UTC: YT₂UB24 р.

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1-h period ending at 01 UTC: YT₂UC01 q. 1-h period ending at 02 UTC: YT₂UC02 r. 1-h period ending at 03 UTC: YT₂UC03 S. 1-h period ending at 04 UTC: YT₂UC04 t. 1-h period ending at 05 UTC: YT₂UC05 U. 1-h period ending at 06 UTC: YT₂UC06 V. 1-h period ending at 07 UTC: YT₂UC07 W. 1-h period ending at 08 UTC: YT₂UC08 Χ. 1-h period ending at 09 UTC: YT₂UC09 у. 10. Projections from the 09 UTC GFS-LAMP cycle: 1-h period ending at 10 UTC: YT₂UB10 a. 1-h period ending at 11 UTC: YT₂UB11 b. C. 1-h period ending at 12 UTC: YT₂UB12 d. 1-h period ending at 13 UTC: YT₂UB13 1-h period ending at 14 UTC: YT₂UB14 e. 1-h period ending at 15 UTC: YT₂UB15 f. 1-h period ending at 16 UTC: YT₂UB16 g. 1-h period ending at 17 UTC: YT₂UB17 h. 1-h period ending at 18 UTC: YT₂UB18 i. 1-h period ending at 19 UTC: YT₂UB19 j. 1-h period ending at 20 UTC: YT₂UB20 k. 1-h period ending at 21 UTC: YT₂UB21 Ι. 1-h period ending at 22 UTC: YT2UB22 m. 1-h period ending at 23 UTC: YT₂UB23 n. Ο. 1-h period ending at 00 UTC: YT₂UB24 1-h period ending at 01 UTC: YT₂UC01 р. q. 1-h period ending at 02 UTC: YT₂UC02 r. 1-h period ending at 03 UTC: YT₂UC03 s. 1-h period ending at 04 UTC: YT₂UC04 1-h period ending at 05 UTC: YT₂UC05 t. 1-h period ending at 06 UTC: YT₂UC06 u. 1-h period ending at 07 UTC: YT₂UC07 V. 1-h period ending at 08 UTC: YT₂UC08 W. 1-h period ending at 09 UTC: YT₂UC09 Х. 1-h period ending at 10 UTC: YT₂UC10 V. 11. Projections from the 10 UTC GFS-LAMP cycle: 1-h period ending at 11 UTC: YT₂UB11 а. b. 1-h period ending at 12 UTC: YT₂UB12 1-h period ending at 13 UTC: YT₂UB13 C. 1-h period ending at 14 UTC: YT₂UB14 d. 1-h period ending at 15 UTC: YT₂UB15 e. f. 1-h period ending at 16 UTC: YT₂UB16 g. 1-h period ending at 17 UTC: YT₂UB17 h. 1-h period ending at 18 UTC: YT₂UB18 i. 1-h period ending at 19 UTC: YT₂UB19 1-h period ending at 20 UTC: YT₂UB20 j. 1-h period ending at 21 UTC: YT₂UB21 k. 1-h period ending at 22 UTC: YT₂UB22 Ι. 1-h period ending at 23 UTC: YT₂UB23 m 1-h period ending at 00 UTC: YT₂UB24 n. 1-h period ending at 01 UTC: YT₂UC01 Ο. 1-h period ending at 02 UTC: YT₂UC02 р. 1-h period ending at 03 UTC: YT₂UC03 q. 1-h period ending at 04 UTC: YT₂UC04 r. 1-h period ending at 05 UTC: YT₂UC05 S. 1-h period ending at 06 UTC: YT₂UC06 t.

1-h period ending at 07 UTC: YT₂UC07 u. 1-h period ending at 08 UTC: YT₂UC08 V. 1-h period ending at 09 UTC: YT₂UC09 W. 1-h period ending at 10 UTC: YT₂UC10 Х. 1-h period ending at 11 UTC: YT₂UC11 V. 12. Projections from the 11 UTC GFS-LAMP cycle: 1-h period ending at 12 UTC: YT₂UB12 а. 1-h period ending at 13 UTC: YT₂UB13 b. 1-h period ending at 14 UTC: YT₂UB14 C. d. 1-h period ending at 15 UTC: YT₂UB15 1-h period ending at 16 UTC: YT₂UB16 e. 1-h period ending at 17 UTC: YT₂UB17 f. 1-h period ending at 18 UTC: YT₂UB18 g. h. 1-h period ending at 19 UTC: YT₂UB19 1-h period ending at 20 UTC: YT₂UB20 i. 1-h period ending at 21 UTC: YT₂UB21 j. k 1-h period ending at 22 UTC: YT₂UB22 1-h period ending at 23 UTC: YT₂UB23 Ι. 1-h period ending at 00 UTC: YT₂UB24 m. 1-h period ending at 01 UTC: YT₂UC01 n. 1-h period ending at 02 UTC: YT₂UC02 0. 1-h period ending at 03 UTC: YT₂UC03 р. 1-h period ending at 04 UTC: YT2UC04 q. 1-h period ending at 05 UTC: YT₂UC05 r. S. 1-h period ending at 06 UTC: YT₂UC06 1-h period ending at 07 UTC: YT₂UC07 t. U. 1-h period ending at 08 UTC: YT₂UC08 v 1-h period ending at 09 UTC: YT₂UC09 W. 1-h period ending at 10 UTC: YT₂UC10 Χ. 1-h period ending at 11 UTC: YT₂UC11 1-h period ending at 12 UTC: YT₂UC12 у. 13. Projections from the 12 UTC GFS-LAMP cycle: 1-h period ending at 13 UTC: YT₂UB13 а. 1-h period ending at 14 UTC: YT₂UB14 b. 1-h period ending at 15 UTC: YT₂UB15 C. 1-h period ending at 16 UTC: YT₂UB16 d. 1-h period ending at 17 UTC: YT₂UB17 e. f. 1-h period ending at 18 UTC: YT₂UB18 1-h period ending at 19 UTC: YT₂UB19 g. h. 1-h period ending at 20 UTC: YT₂UB20 1-h period ending at 21 UTC: YT₂UB21 i. 1-h period ending at 22 UTC: YT₂UB22 j. k. 1-h period ending at 23 UTC: YT₂UB23 Ι. 1-h period ending at 00 UTC: YT₂UB24 m. 1-h period ending at 01 UTC: YT₂UC01 1-h period ending at 02 UTC: YT₂UC02 n. 1-h period ending at 03 UTC: YT₂UC03 ο. 1-h period ending at 04 UTC: YT₂UC04 р. 1-h period ending at 05 UTC: YT₂UC05 q. 1-h period ending at 06 UTC: YT₂UC06 r. 1-h period ending at 07 UTC: YT₂UC07 S. 1-h period ending at 08 UTC: YT₂UC08 t. 1-h period ending at 09 UTC: YT₂UC09 u. 1-h period ending at 10 UTC: YT₂UC10 V. 1-h period ending at 11 UTC: YT₂UC11 W. 1-h period ending at 12 UTC: YT₂UC12 х.

1-h period ending at 13 UTC: YT₂UC13 ٧. 14. Projections from the 13 UTC GFS-LAMP cycle: 1-h period ending at 14 UTC: YT₂UB14 a. 1-h period ending at 15 UTC: YT₂UB15 b. 1-h period ending at 16 UTC: YT₂UB16 C. 1-h period ending at 17 UTC: YT₂UB17 d. 1-h period ending at 18 UTC: YT₂UB18 e. 1-h period ending at 19 UTC: YT₂UB19 f. 1-h period ending at 20 UTC: YT₂UB20 g. 1-h period ending at 21 UTC: YT₂UB21 h. 1-h period ending at 22 UTC: YT2UB22 i. 1-h period ending at 23 UTC: YT₂UB23 İ. 1-h period ending at 00 UTC: YT₂UB24 k. 1-h period ending at 01 UTC: YT2UC01 Ι. 1-h period ending at 02 UTC: YT₂UC02 m. 1-h period ending at 03 UTC: YT₂UC03 n 1-h period ending at 04 UTC: YT₂UC04 0. 1-h period ending at 05 UTC: YT₂UC05 p. 1-h period ending at 06 UTC: YT₂UC06 q. 1-h period ending at 07 UTC: YT₂UC07 r. 1-h period ending at 08 UTC: YT₂UC08 s. 1-h period ending at 09 UTC: YT₂UC09 t. 1-h period ending at 10 UTC: YT₂UC10 u. 1-h period ending at 11 UTC: YT₂UC11 V. 1-h period ending at 12 UTC: YT₂UC12 W. 1-h period ending at 13 UTC: YT₂UC13 Χ. V. 1-h period ending at 14 UTC: YT₂UC14 15. Projections from the 14 UTC GFS-LAMP cycle: а. 1-h period ending at 15 UTC: YT₂UB15 1-h period ending at 16 UTC: YT₂UB16 b. C. 1-h period ending at 17 UTC: YT₂UB17 1-h period ending at 18 UTC: YT₂UB18 d. 1-h period ending at 19 UTC: YT₂UB19 e. 1-h period ending at 20 UTC: YT₂UB20 f. 1-h period ending at 21 UTC: YT₂UB21 g. h. 1-h period ending at 22 UTC: YT₂UB22 1-h period ending at 23 UTC: YT₂UB23 i. 1-h period ending at 00 UTC: YT₂UB24 j. 1-h period ending at 01 UTC: YT₂UC01 k. 1-h period ending at 02 UTC: YT2UC02 Ι. 1-h period ending at 03 UTC: YT₂UC03 m. 1-h period ending at 04 UTC: YT₂UC04 n. 1-h period ending at 05 UTC: YT₂UC05 Ο. р. 1-h period ending at 06 UTC: YT₂UC06 1-h period ending at 07 UTC: YT₂UC07 q. 1-h period ending at 08 UTC: YT₂UC08 r. 1-h period ending at 09 UTC: YT₂UC09 s. 1-h period ending at 10 UTC: YT₂UC10 t. 1-h period ending at 11 UTC: **Y**T₂**UC11** u. 1-h period ending at 12 UTC: YT₂UC12 V. 1-h period ending at 13 UTC: YT₂UC13 W. 1-h period ending at 14 UTC: YT₂UC14 Х. 1-h period ending at 15 UTC: YT₂UC15 у. 16. Projections from the 15 UTC GFS-LAMP cycle: 1-h period ending at 16 UTC: YT₂UB16 а.

b. 1-h period ending at 17 UTC: YT_2UB17

1-h period ending at 18 UTC: YT₂UB18 C. d. 1-h period ending at 19 UTC: YT₂UB19 1-h period ending at 20 UTC: YT₂UB20 e. 1-h period ending at 21 UTC: YT₂UB21 f. 1-h period ending at 22 UTC: YT₂UB22 g. h. 1-h period ending at 23 UTC: YT₂UB23 1-h period ending at 00 UTC: YT₂UB24 i. 1-h period ending at 01 UTC: YT₂UC01 j. 1-h period ending at 02 UTC: YT₂UC02 k. 1-h period ending at 03 UTC: YT₂UC03 Ι. 1-h period ending at 04 UTC: YT2UC04 m. 1-h period ending at 05 UTC: YT₂UC05 n. 1-h period ending at 06 UTC: YT₂UC06 Ο. 1-h period ending at 07 UTC: YT2UC07 р. 1-h period ending at 08 UTC: YT₂UC08 q. 1-h period ending at 09 UTC: YT₂UC09 r. 1-h period ending at 10 UTC: YT₂UC10 S. 1-h period ending at 11 UTC: YT₂UC11 t. 1-h period ending at 12 UTC: YT₂UC12 u. 1-h period ending at 13 UTC: YT₂UC13 V. 1-h period ending at 14 UTC: YT₂UC14 W. 1-h period ending at 15 UTC: YT₂UC15 Х. 1-h period ending at 16 UTC: YT₂UC16 ٧. 17. Projections from the 16 UTC GFS-LAMP cycle: 1-h period ending at 17 UTC: YT₂UB17 а. 1-h period ending at 18 UTC: YT₂UB18 b. C. 1-h period ending at 19 UTC: YT₂UB19 d 1-h period ending at 20 UTC: YT₂UB20 1-h period ending at 21 UTC: YT₂UB21 e. 1-h period ending at 22 UTC: YT₂UB22 f. 1-h period ending at 23 UTC: YT₂UB23 g. 1-h period ending at 00 UTC: YT₂UB24 h. i. 1-h period ending at 01 UTC: YT₂UC01 1-h period ending at 02 UTC: YT2UC02 j. 1-h period ending at 03 UTC: YT2UC03 k. 1-h period ending at 04 UTC: YT₂UC04 Ι. 1-h period ending at 05 UTC: YT₂UC05 m. 1-h period ending at 06 UTC: YT₂UC06 n. 1-h period ending at 07 UTC: YT₂UC07 0. 1-h period ending at 08 UTC: YT₂UC08 р. 1-h period ending at 09 UTC: YT₂UC09 q. 1-h period ending at 10 UTC: YT₂UC10 r. 1-h period ending at 11 UTC: YT₂UC11 s. t. 1-h period ending at 12 UTC: YT₂UC12 1-h period ending at 13 UTC: YT₂UC13 u. 1-h period ending at 14 UTC: YT₂UC14 V. 1-h period ending at 15 UTC: YT₂UC15 W. 1-h period ending at 16 UTC: YT₂UC16 Χ. 1-h period ending at 17 UTC: YT₂UC17 y. 18. Projections from the 17 UTC GFS-LAMP cycle: 1-h period ending at 18 UTC: YT₂UB18 а. 1-h period ending at 19 UTC: YT₂UB19 b. 1-h period ending at 20 UTC: YT₂UB20 C. 1-h period ending at 21 UTC: YT₂UB21 d. 1-h period ending at 22 UTC: YT₂UB22 e. 1-h period ending at 23 UTC: YT₂UB23 f.

1-h period ending at 00 UTC: YT₂UB24 g. h. 1-h period ending at 01 UTC: YT₂UC01 i. 1-h period ending at 02 UTC: YT₂UC02 1-h period ending at 03 UTC: YT₂UC03 j. 1-h period ending at 04 UTC: YT₂UC04 k. 1-h period ending at 05 UTC: YT₂UC05 Ι. 1-h period ending at 06 UTC: YT₂UC06 m. 1-h period ending at 07 UTC: YT₂UC07 n. 1-h period ending at 08 UTC: YT₂UC08 0. 1-h period ending at 09 UTC: YT₂UC09 р. 1-h period ending at 10 UTC: YT₂UC10 q. 1-h period ending at 11 UTC: YT₂UC11 r. 1-h period ending at 12 UTC: YT₂UC12 S. 1-h period ending at 13 UTC: YT₂UC13 t. 1-h period ending at 14 UTC: YT₂UC14 U. 1-h period ending at 15 UTC: YT₂UC15 v 1-h period ending at 16 UTC: YT₂UC16 W. 1-h period ending at 17 UTC: YT₂UC17 Х. 1-h period ending at 18 UTC: YT₂UC18 y. 19. Projections from the 18 UTC GFS-LAMP cycle: 1-h period ending at 19 UTC: YT₂UB19 а. 1-h period ending at 20 UTC: YT₂UB20 b. 1-h period ending at 21 UTC: YT₂UB21 C. 1-h period ending at 22 UTC: YT₂UB22 d. 1-h period ending at 23 UTC: YT₂UB23 e. 1-h period ending at 00 UTC: YT2UB24 f. 1-h period ending at 01 UTC: YT₂UC01 g. 1-h period ending at 02 UTC: YT₂UC02 h. 1-h period ending at 03 UTC: YT2UC03 i. 1-h period ending at 04 UTC: YT₂UC04 j. k 1-h period ending at 05 UTC: YT₂UC05 1-h period ending at 06 UTC: YT₂UC06 Ι. 1-h period ending at 07 UTC: YT₂UC07 m. 1-h period ending at 08 UTC: YT₂UC08 n. 1-h period ending at 09 UTC: YT₂UC09 Ο. 1-h period ending at 10 UTC: YT₂UC10 р. 1-h period ending at 11 UTC: YT₂UC11 q. 1-h period ending at 12 UTC: YT₂UC12 r. 1-h period ending at 13 UTC: YT₂UC13 s. 1-h period ending at 14 UTC: YT2UC14 t. 1-h period ending at 15 UTC: YT₂UC15 U. 1-h period ending at 16 UTC: YT₂UC16 V. 1-h period ending at 17 UTC: YT₂UC17 W. Х. 1-h period ending at 18 UTC: YT₂UC18 1-h period ending at 19 UTC: YT₂UC19 у. 20. Projections from the 19 UTC GFS-LAMP cycle: 1-h period ending at 20 UTC: YT₂UB20 a. 1-h period ending at 21 UTC: YT₂UB21 b. 1-h period ending at 22 UTC: YT₂UB22 C. d. 1-h period ending at 23 UTC: YT₂UB23 1-h period ending at 00 UTC: YT₂UB24 e. 1-h period ending at 01 UTC: YT₂UC01 f. 1-h period ending at 02 UTC: YT2UC02 g. 1-h period ending at 03 UTC: YT₂UC03 h. 1-h period ending at 04 UTC: YT₂UC04 i. 1-h period ending at 05 UTC: YT2UC05 j.

k. 1-h period ending at 06 UTC: YT₂UC06 1-h period ending at 07 UTC: YT₂UC07 Ι. m. 1-h period ending at 08 UTC: YT₂UC08 1-h period ending at 09 UTC: YT₂UC09 n. 1-h period ending at 10 UTC: YT₂UC10 Ο. 1-h period ending at 11 UTC: **Y**T₂**UC11** р. 1-h period ending at 12 UTC: YT₂UC12 q. 1-h period ending at 13 UTC: YT2UC13 r. 1-h period ending at 14 UTC: YT₂UC14 S. 1-h period ending at 15 UTC: YT₂UC15 t. 1-h period ending at 16 UTC: YT₂UC16 U. 1-h period ending at 17 UTC: YT₂UC17 V. 1-h period ending at 18 UTC: YT₂UC18 W. 1-h period ending at 19 UTC: YT₂UC19 Χ. 1-h period ending at 20 UTC: YT₂UC20 у. 21. Projections from the 20 UTC GFS-LAMP cycle: 1-h period ending at 21 UTC: YT₂UB21 a. 1-h period ending at 22 UTC: YT₂UB22 b. 1-h period ending at 23 UTC: YT₂UB23 C. 1-h period ending at 00 UTC: YT₂UB24 d. 1-h period ending at 01 UTC: YT₂UC01 e. 1-h period ending at 02 UTC: YT2UC02 f. 1-h period ending at 03 UTC: YT2UC03 g. 1-h period ending at 04 UTC: YT₂UC04 h. 1-h period ending at 05 UTC: YT₂UC05 i. 1-h period ending at 06 UTC: YT2UC06 j. 1-h period ending at 07 UTC: YT₂UC07 k. 1-h period ending at 08 UTC: YT₂UC08 T 1-h period ending at 09 UTC: YT₂UC09 m. 1-h period ending at 10 UTC: YT₂UC10 n. ο. 1-h period ending at 11 UTC: YT₂UC11 1-h period ending at 12 UTC: YT₂UC12 р. 1-h period ending at 13 UTC: YT₂UC13 q. 1-h period ending at 14 UTC: YT₂UC14 r. 1-h period ending at 15 UTC: YT₂UC15 s. 1-h period ending at 16 UTC: YT₂UC16 t. 1-h period ending at 17 UTC: YT₂UC17 u. 1-h period ending at 18 UTC: YT₂UC18 V. 1-h period ending at 19 UTC: YT₂UC19 W. 1-h period ending at 20 UTC: YT₂UC20 Х. 1-h period ending at 21 UTC: YT₂UC21 V. 22. Projections from the 21 UTC GFS-LAMP cycle: 1-h period ending at 22 UTC: YT₂UB22 а. b. 1-h period ending at 23 UTC: YT₂UB23 1-h period ending at 00 UTC: YT₂UB24 C. d. 1-h period ending at 01 UTC: YT₂UC01 1-h period ending at 02 UTC: YT₂UC02 e. f. 1-h period ending at 03 UTC: YT₂UC03 1-h period ending at 04 UTC: YT₂UC04 g. h. 1-h period ending at 05 UTC: YT₂UC05 i. 1-h period ending at 06 UTC: YT₂UC06 1-h period ending at 07 UTC: YT₂UC07 j. 1-h period ending at 08 UTC: YT₂UC08 k. 1-h period ending at 09 UTC: YT₂UC09 Ι. 1-h period ending at 10 UTC: YT₂UC10 m. 1-h period ending at 11 UTC: YT₂UC11 n.

1-h period ending at 12 UTC: YT₂UC12 Ο. 1-h period ending at 13 UTC: YT₂UC13 р. 1-h period ending at 14 UTC: YT₂UC14 α. 1-h period ending at 15 UTC: YT₂UC15 r. 1-h period ending at 16 UTC: YT₂UC16 s. 1-h period ending at 17 UTC: YT₂UC17 t. 1-h period ending at 18 UTC: YT₂UC18 u. 1-h period ending at 19 UTC: YT₂UC19 V. 1-h period ending at 20 UTC: YT₂UC20 W. 1-h period ending at 21 UTC: YT₂UC21 Х. 1-h period ending at 22 UTC: YT2UC22 у. 23. Projections from the 22 UTC GFS-LAMP cycle: а. 1-h period ending at 23 UTC: YT₂UA23 b. 1-h period ending at 00 UTC: YT₂UA24 1-h period ending at 01 UTC: YT₂UB01 C. 1-h period ending at 02 UTC: YT₂UB02 d e. 1-h period ending at 03 UTC: YT₂UB03 1-h period ending at 04 UTC: YT₂UB04 f. 1-h period ending at 05 UTC: YT₂UB05 g. 1-h period ending at 06 UTC: YT₂UB06 h i. 1-h period ending at 07 UTC: YT₂UB07 1-h period ending at 08 UTC: YT₂UB08 j. 1-h period ending at 09 UTC: YT₂UB09 k. 1-h period ending at 10 UTC: YT₂UB10 Ι. 1-h period ending at 11 UTC: YT₂UB11 m. 1-h period ending at 12 UTC: YT₂UB12 n. 0. 1-h period ending at 13 UTC: YT₂UB13 p. 1-h period ending at 14 UTC: YT₂UB14 q. 1-h period ending at 15 UTC: YT₂UB15 1-h period ending at 16 UTC: YT₂UB16 r. s 1-h period ending at 17 UTC: YT₂UB17 1-h period ending at 18 UTC: YT₂UB18 t. 1-h period ending at 19 UTC: YT₂UB19 u. 1-h period ending at 20 UTC: YT₂UB20 V. 1-h period ending at 21 UTC: YT₂UB21 W. 1-h period ending at 22 UTC: YT₂UB22 х. 1-h period ending at 23 UTC: YT₂UB23 y. 24. Projections from the 23 UTC GFS-LAMP cycle: 1-h period ending at 00 UTC: YT₂UA24 a. 1-h period ending at 01 UTC: YT₂UB01 b. 1-h period ending at 02 UTC: YT2UB02 C. d. 1-h period ending at 03 UTC: YT₂UB03 1-h period ending at 04 UTC: YT₂UB04 e. f. 1-h period ending at 05 UTC: YT₂UB05 1-h period ending at 06 UTC: YT₂UB06 g. h. 1-h period ending at 07 UTC: YT₂UB07 1-h period ending at 08 UTC: YT₂UB08 i. 1-h period ending at 09 UTC: YT₂UB09 j. 1-h period ending at 10 UTC: YT₂UB10 k. Ι. 1-h period ending at 11 UTC: YT₂UB11 1-h period ending at 12 UTC: YT₂UB12 m. 1-h period ending at 13 UTC: YT₂UB13 n. 1-h period ending at 14 UTC: YT₂UB14 0. 1-h period ending at 15 UTC: YT₂UB15 р. 1-h period ending at 16 UTC: YT₂UB16 q. 1-h period ending at 17 UTC: YT₂UB17 r.

- s. 1-h period ending at 18 UTC: YT₂UB18
- t. 1-h period ending at 19 UTC: YT₂UB19
 u. 1-h period ending at 20 UTC: YT₂UB20
- v. 1-h period ending at 21 UTC: YT₂UB21
- w. 1-h period ending at 22 UTC: $\mathbf{YT}_2\mathbf{UB22}$ x. 1-h period ending at 23 UTC: YT₂UB23
- y. 1-h period ending at 00 UTC: YT₂UB24

Table 1: WMO header information for LAMP products

Element	Header	Geograph ical Area	Data Type	No. of Products per cycle	Projections (hr)	Bytes per header/ cycle
All elements	JSMF10 KWNO	Pacific Region	BUFR	1	1-25 (in increments of 1 hour)	20K/20K
All elements	JSMF11 KWNO	Northeast CONUS	BUFR	1	1-25 (in increments of 1 hour)	400K/400K
All elements	JSMF12 KWNO	Southeast CONUS, PR, VI	BUFR	1	1-25 (in increments of 1 hour)	300K/300K
All elements	JSMF13 KWNO	North Central CONUS	BUFR	1	1-25 (in increments of 1 hour)	700K/700K
All elements	JSMF14 KWNO	South Central CONUS	BUFR	1	1-25 (in increments of 1 hour)	400K/400K
All elements	JSMF15 KWNO	Rocky Mountains CONUS	BUFR	1	1-25 (in increments of 1 hour)	275K/275K
All elements	JSMF16 KWNO	West Coast CONUS	BUFR	1	1-25 (in increments of 1 hour)	275K/275K
All elements	JSMF17 KWNO	Alaksa	BUFR	1	1-25 (in increments of 1 hour)	200K/200K
All elements	FOUS11 KWNO	CONUS, HI, AK, PR, VI	ASCII	1	1-25 (in increments of 1 hour)	3.2M/3.2M
Ceiling Height, Visibility, Obstruction to Vision	FEUS11 KWNO	CONUS, HI, AK, PR, VI	ASCII	1	26-38 (in increments of 1 hour)	800K/800K
2.5-km Gridded Lightning Probabilities in a 1-hr period	YGUA2ii KWNO	CONUS	GRIB2	25 grids (1 per proj.)	1-hr periods ending 1-25 hours after cycle time.	358K/9M
2.5-km Gridded Categorical Forecast Potential (non/low/medium/high) of Lightning occurring in a 1-hr period	YHUA2ii KWNO	CONUS	GRIB2	25 grids (1 per proj.)	1-hr periods ending 1-25 hours after cycle time.	283K/7.1M

2.5-km Gridded Convection Probabilities in a 1-hr period	YIUA2ii KWNO	CONUS	GRIB2	25 grids (1 per proj.)	1-hr periods ending 1-25 hours after cycle time.	383K/9.6M
2.5-km Gridded Categorical Forecast Potential (non/low/medium/high) of Convection occurring in a 1-hr period	YJUA2ii KWNO	CONUS	GRIB2	25 grids (1 per proj.)	1-hr periods ending 1-25 hours after cycle time.	297K/7.4M