# **Daily Summary Statistics for the GLM Gridded Products**

**1** 

Overall fraction with lightning is the number grid cells in this FOV that detected lightning divided by the total grid cells in this FOV (~3.7 million)

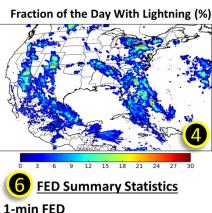
- Missing/outage only describes the LDM feeds at UMD, this may vary by NWS region until the SBN feed is established
- Maps illustrate stats at each
  2x2 km grid cell over the
  entire day (1440 min)
- Fraction of the day with lightning indicates the number of minutes at each grid cell with lightning divided by 1440 min
- Time series plots depict 1-min values that characterize all grid cells that observed lightning during that minute
  - For both plots, the max value is red, 95<sup>th</sup> percentile is blue, and mean is green
  - Missing minutes are indicated by grey bars



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/26/2018

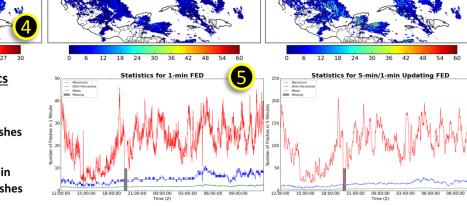
24.8% of grid cells detected lightning – 98.7% of the day had GLM coverage – Duration of GLM outage(s): 19 minute(s)

Mean 5-min FED



Max 1-min FED: **46 flashes/min** Max min-to-min increase: **20 flashes** 

5-min/1-min Updating FED Max 5-min FED: 207 flashes/5min Max min-to-min increase: 34 flashes



#### Total Optical Energy and Average Flash Area Summary Statistics

5-min/1-min Updating TOE Max 5-min TOE: 196.6 fJ Max min-to-min increase: 189.1 fJ



5-min/1-min Updating AFA Max 5-min AFA: 9988.0 km^2 Max min-to-min increase: 6922.0 km^2

- 6 FED Summary Statistics
  - Max FED reveals the greatest value at any 2x2 km grid cell during any of the 1440 mins
  - Max min-to-min increase represents the greatest change within a common grid cell from one minute to the next
- **7** TOE/AFA Summary Statistics
  - More descriptive stats likely will be needed for these gridded products

Composed by Dr. Scott Rudlosky (NOAA/NESDIS/STAR) on 8/4/2018

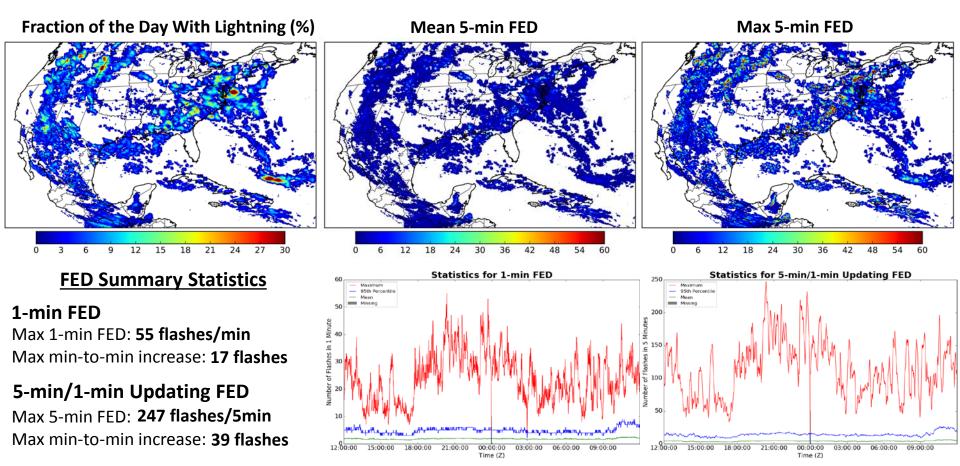


Max 5-min FED



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/11/2018

34.0% of grid cells detected lightning – 99.9% of the day had GLM coverage – Duration of GLM outage(s): 2 minute(s)



#### **Total Optical Energy and Average Flash Area Summary Statistics**

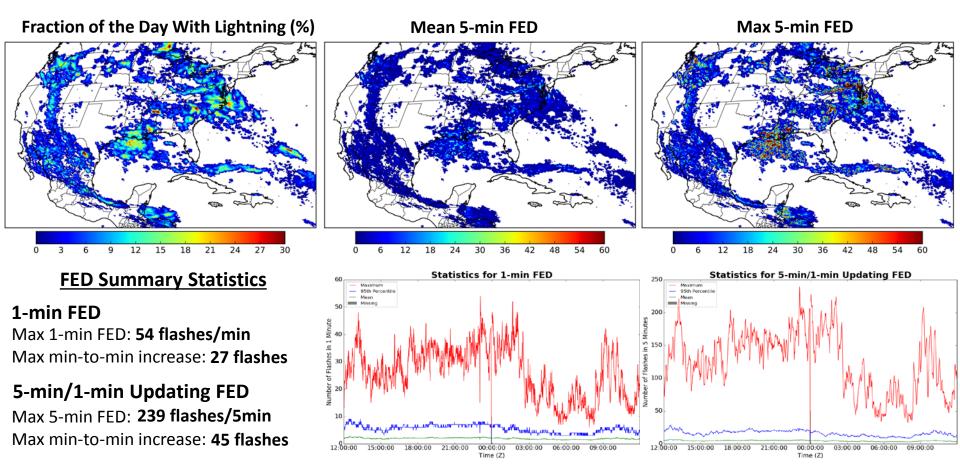
#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **195.5 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9038.0 km^2 Max min-to-min increase: 8064.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/12/2018

28.9% of grid cells detected lightning – 99.9% of the day had GLM coverage – Duration of GLM outage(s): 2 minute(s)



#### **Total Optical Energy and Average Flash Area Summary Statistics**

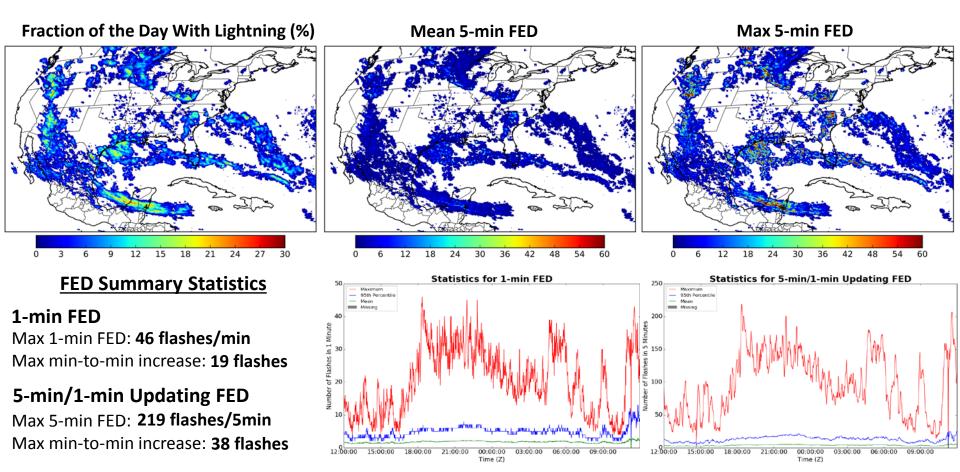
#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.1 fJ** Max min-to-min increase: **191.5 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 7626.0 km^2 Max min-to-min increase: 6054.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/13/2018

27.0% of grid cells detected lightning – 99.9% of the day had GLM coverage – Duration of GLM outage(s): 1 minute(s)



#### **Total Optical Energy and Average Flash Area Summary Statistics**

#### 5-min/1-min Updating TOE

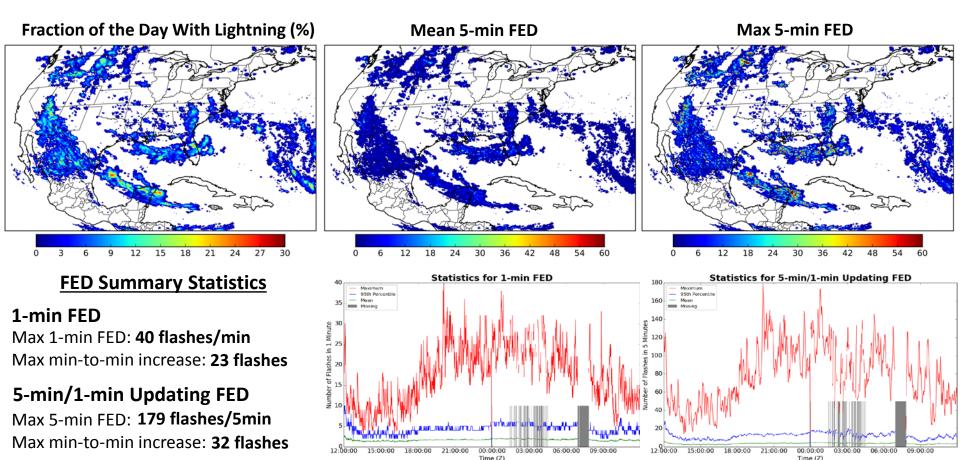
Max 5-min TOE: **194.2 fJ** Max min-to-min increase: **181.1 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 8542.0 km^2 Max min-to-min increase: 6406.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/14/2018



23.1% of grid cells detected lightning – 92.8% of the day had GLM coverage – Duration of GLM outage(s): 103 minute(s)



## **Total Optical Energy and Average Flash Area Summary Statistics**

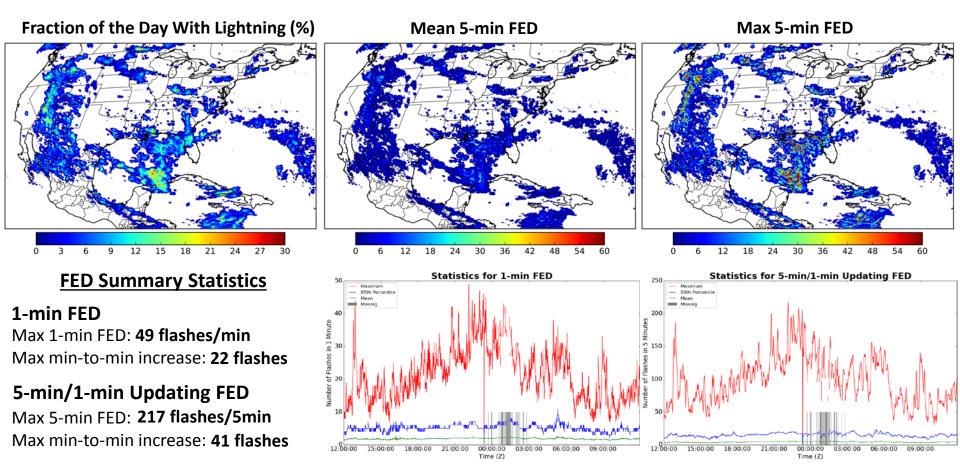
## 5-min/1-min Updating TOE

Max 5-min TOE: **196.5 fJ** Max min-to-min increase: **194.9 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 8146.0 km^2 Max min-to-min increase: 6638.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/15/2018

25.7% of grid cells detected lightning – 97.1% of the day had GLM coverage – Duration of GLM outage(s): 42 minute(s)



#### **Total Optical Energy and Average Flash Area Summary Statistics**

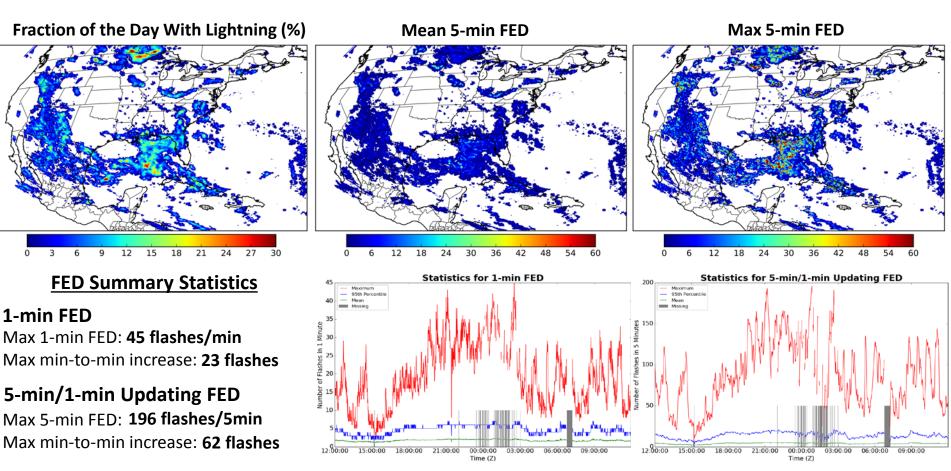
## 5-min/1-min Updating TOE

Max 5-min TOE: **196.5 fJ** Max min-to-min increase: **181.7 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9690.0 km^2 Max min-to-min increase: 6982.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/16/2018

25.1% of grid cells detected lightning – 94.1% of the day had GLM coverage – Duration of GLM outage(s): 85 minute(s)



#### **Total Optical Energy and Average Flash Area Summary Statistics**

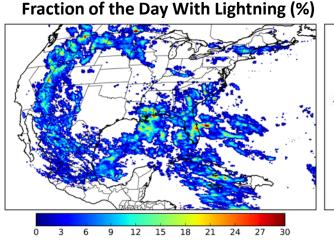
#### 5-min/1-min Updating TOE

Max 5-min TOE: **151.9 fJ** Max min-to-min increase: **80.4 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9314.0 km^2 Max min-to-min increase: 7602.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/17/2018

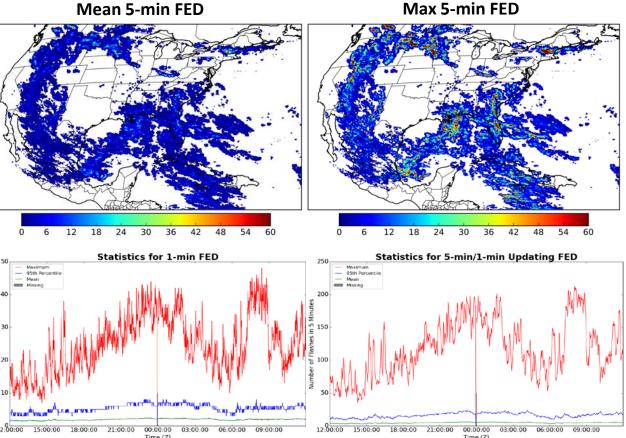
**31.1%** of grid cells detected lightning – **99.8%** of the day had GLM coverage – Duration of GLM outage(s): **3 minute(s)** 



## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **48 flashes/min** Max min-to-min increase: **23 flashes** 

5-min/1-min Updating FED Max 5-min FED: 212 flashes/5min Max min-to-min increase: 83 flashes



## Total Optical Energy and Average Flash Area Summary Statistics

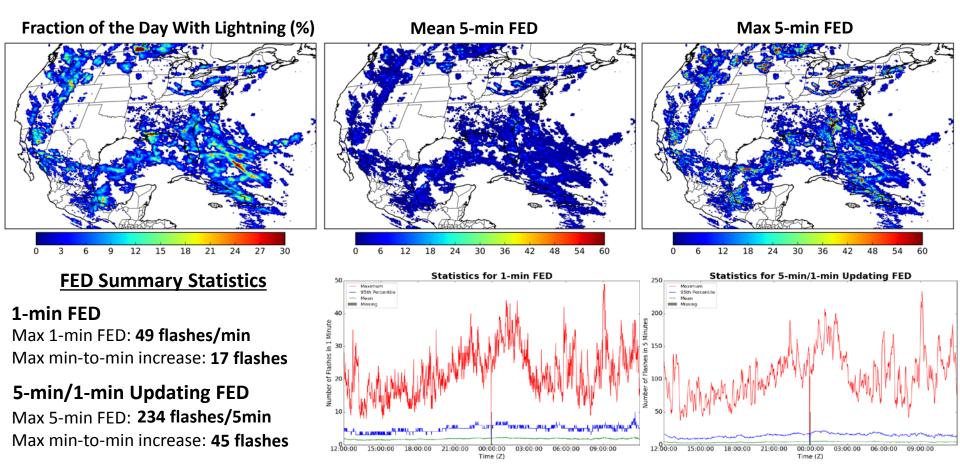
#### 5-min/1-min Updating TOE

Max 5-min TOE: **195.3 fJ** Max min-to-min increase: **188.9 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 8862.0 km^2 Max min-to-min increase: 6514.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/18/2018

28.6% of grid cells detected lightning – 99.8% of the day had GLM coverage – Duration of GLM outage(s): 3 minute(s)



## **Total Optical Energy and Average Flash Area Summary Statistics**

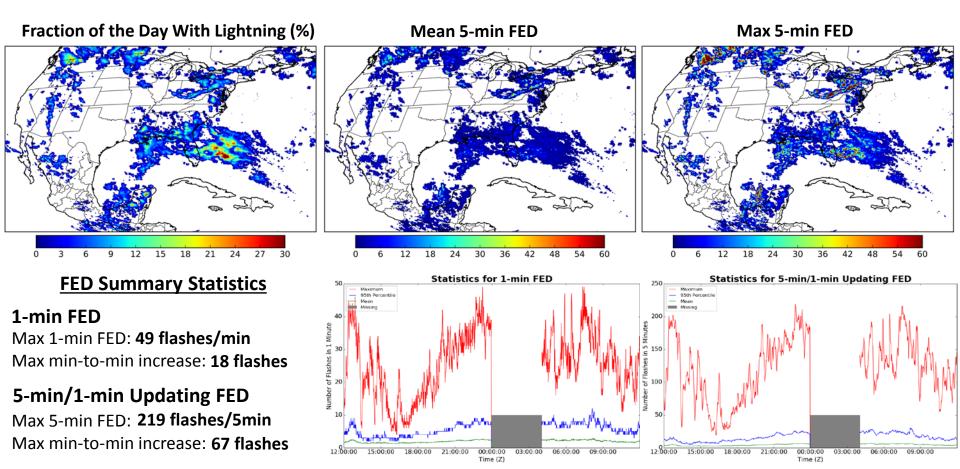
#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.0 fJ** Max min-to-min increase: **186.9 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9620.0 km^2 Max min-to-min increase: 6722.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/19/2018

20.9% of grid cells detected lightning - 83.1% of the day had GLM coverage - Duration of GLM outage(s): 244 minute(s)



#### **Total Optical Energy and Average Flash Area Summary Statistics**

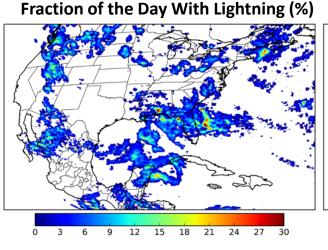
#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **194.7 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9240.0 km^2 Max min-to-min increase: 7488.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/20/2018

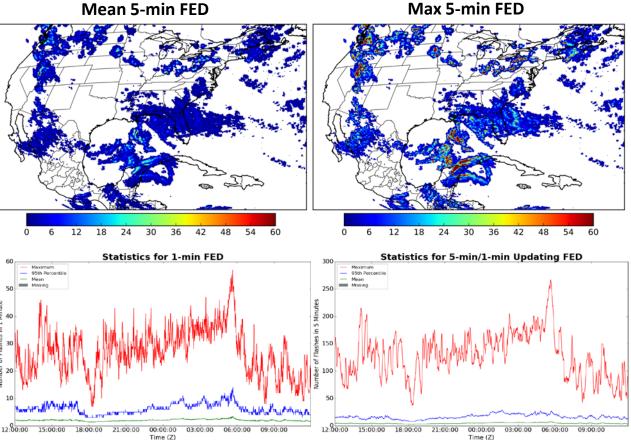
24.0% of grid cells detected lightning – 100.0% of the day had GLM coverage – Duration of GLM outage(s): 0 minute(s)



## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **57 flashes/min** Max min-to-min increase: **22 flashes** 

5-min/1-min Updating FED Max 5-min FED: 267 flashes/5min Max min-to-min increase: 33 flashes



## Total Optical Energy and Average Flash Area Summary Statistics

#### 5-min/1-min Updating TOE

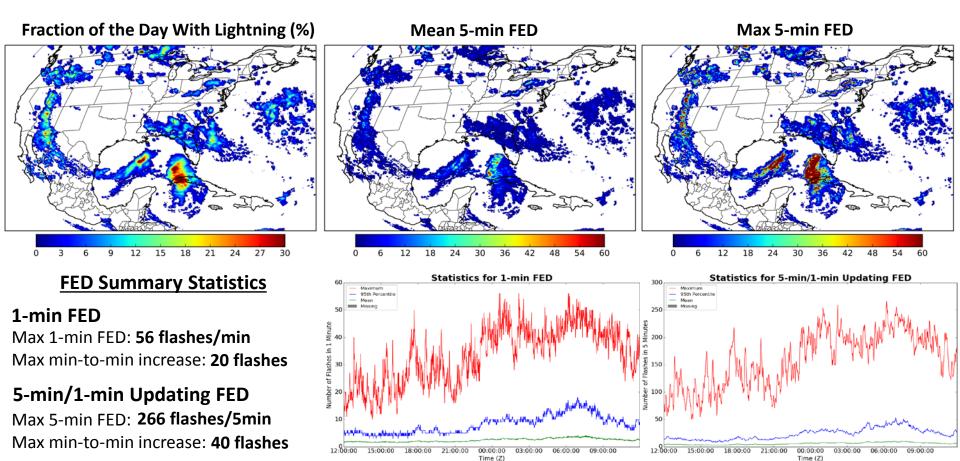
Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **189.9 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9902.0 km^2 Max min-to-min increase: 7138.0 km^2





Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/21/2018

21.2% of grid cells detected lightning – 100.0% of the day had GLM coverage – Duration of GLM outage(s): 0 minute(s)



#### **Total Optical Energy and Average Flash Area Summary Statistics**

#### 5-min/1-min Updating TOE

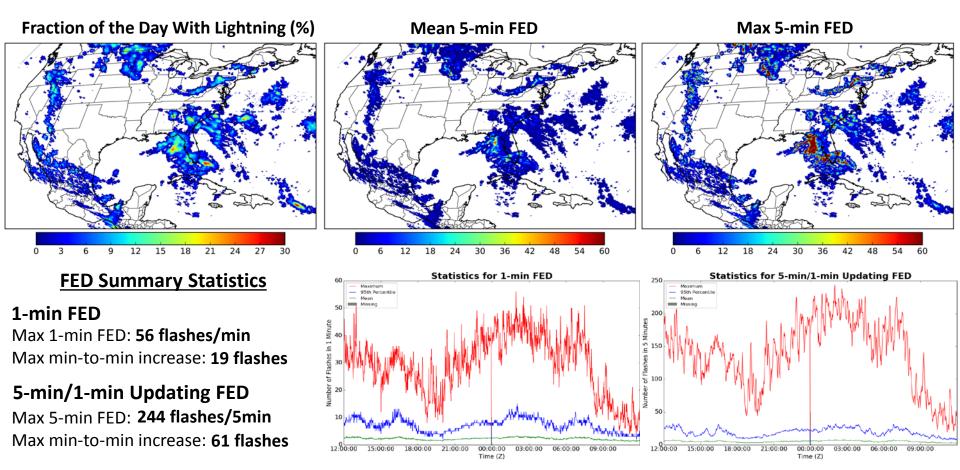
Max 5-min TOE: **196.4 fJ** Max min-to-min increase: **188.2 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9258.0 km^2

Max min-to-min increase: 8792.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/22/2018

20.5% of grid cells detected lightning – 99.9% of the day had GLM coverage – Duration of GLM outage(s): 2 minute(s)



#### **Total Optical Energy and Average Flash Area Summary Statistics**

#### 5-min/1-min Updating TOE

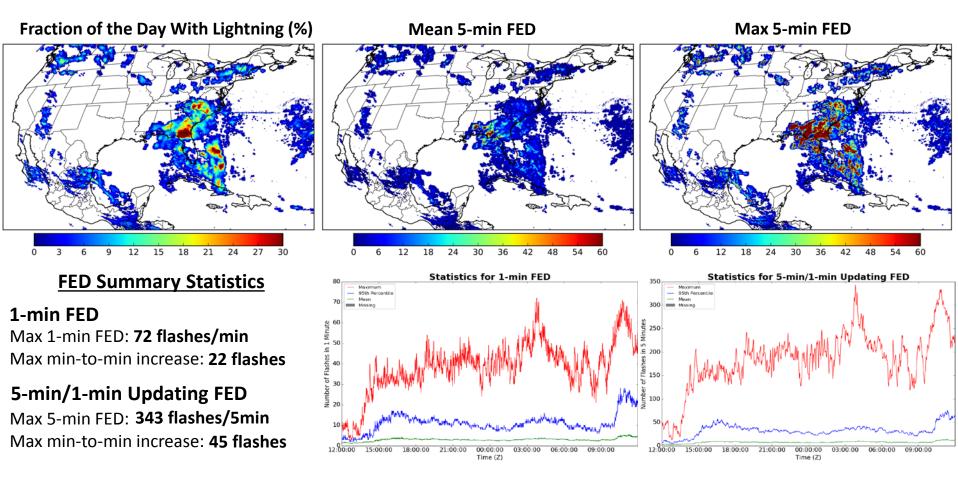
Max 5-min TOE: **194.5 fJ** Max min-to-min increase: **186.4 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9064.0 km^2 Max min-to-min increase: 6888.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/23/2018



**20.1%** of grid cells detected lightning – **100.0%** of the day had GLM coverage – Duration of GLM outage(s): **0 minute(s)** 



## **Total Optical Energy and Average Flash Area Summary Statistics**

## 5-min/1-min Updating TOE

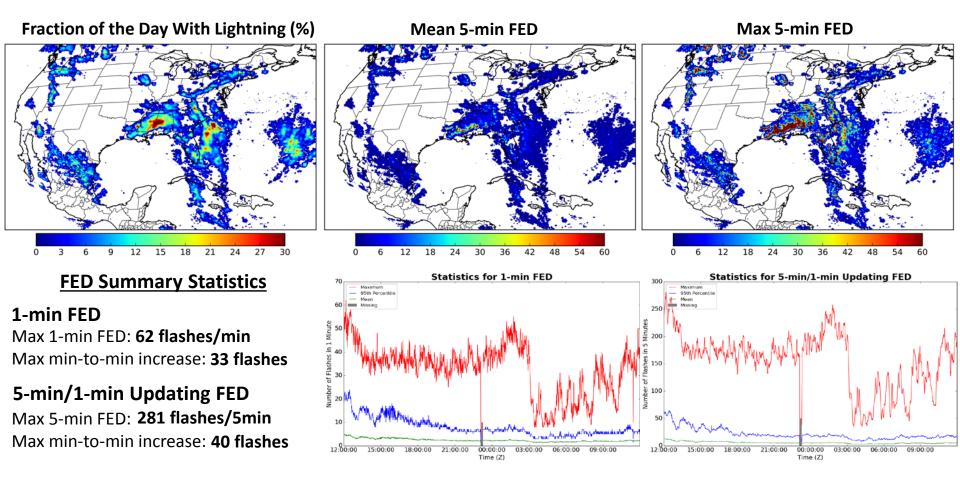
Max 5-min TOE: 196.6 fJ Max min-to-min increase: 196.3 fJ

#### 5-min/1-min Updating AFA Max 5-min AFA: 9946.0 km^2 Max min-to-min increase: 8182.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/24/2018

22.3% of grid cells detected lightning – 99.4% of the day had GLM coverage – Duration of GLM outage(s): 9 minute(s)



## **Total Optical Energy and Average Flash Area Summary Statistics**

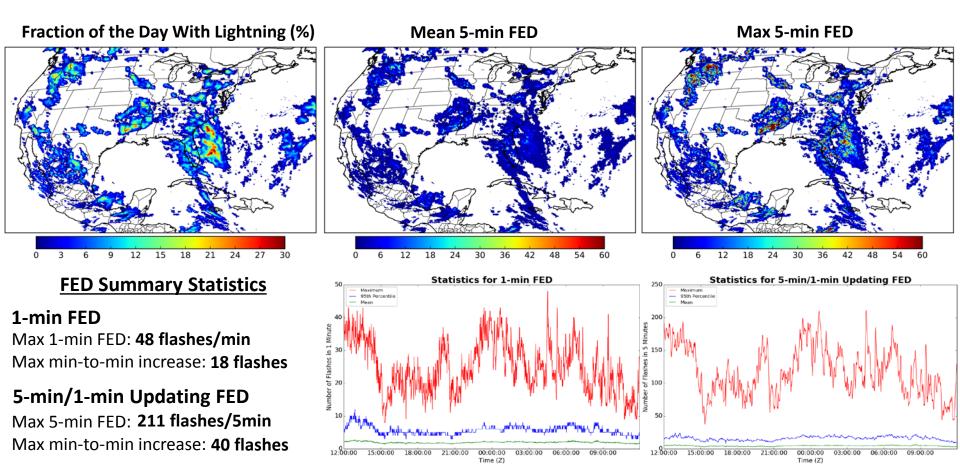
#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **187.8 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 8748.0 km^2 Max min-to-min increase: 7200.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/25/2018

24.2% of grid cells detected lightning – 100.0% of the day had GLM coverage – Duration of GLM outage(s): 0 minute(s)



#### **Total Optical Energy and Average Flash Area Summary Statistics**

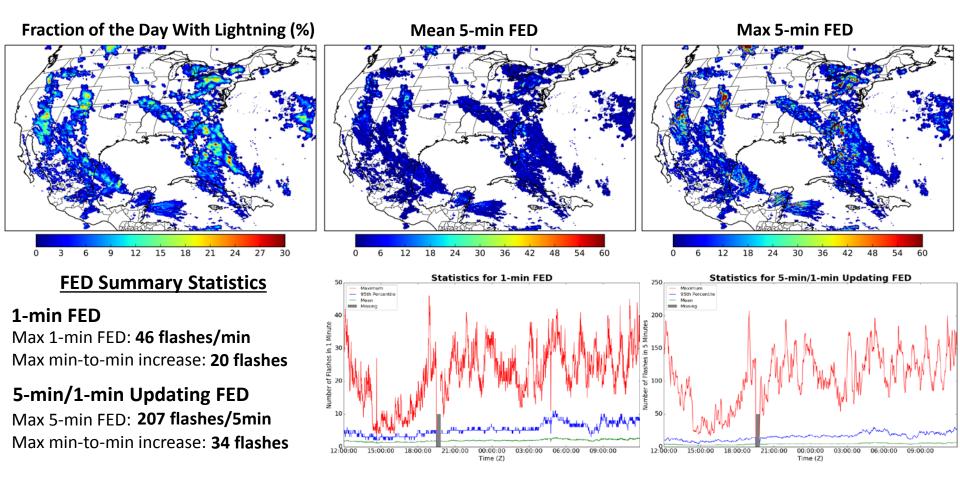
#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **195.5 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 8824.0 km^2 Max min-to-min increase: 6544.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/26/2018

24.8% of grid cells detected lightning – 98.7% of the day had GLM coverage – Duration of GLM outage(s): 19 minute(s)



#### **Total Optical Energy and Average Flash Area Summary Statistics**

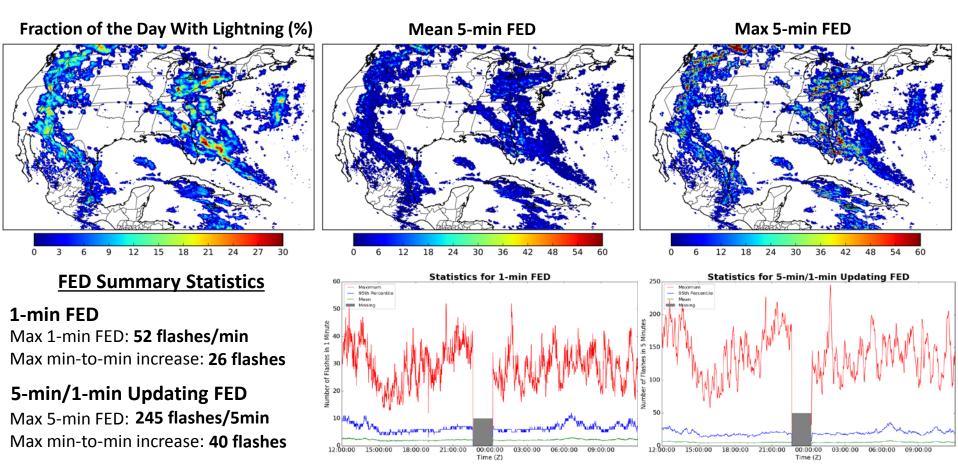
#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **189.1 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9988.0 km^2 Max min-to-min increase: 6922.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/27/2018

27.6% of grid cells detected lightning – 93.4% of the day had GLM coverage – Duration of GLM outage(s): 95 minute(s)



#### **Total Optical Energy and Average Flash Area Summary Statistics**

#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **195.4 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9018.0 km^2 Max min-to-min increase: 6954.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/28/2018



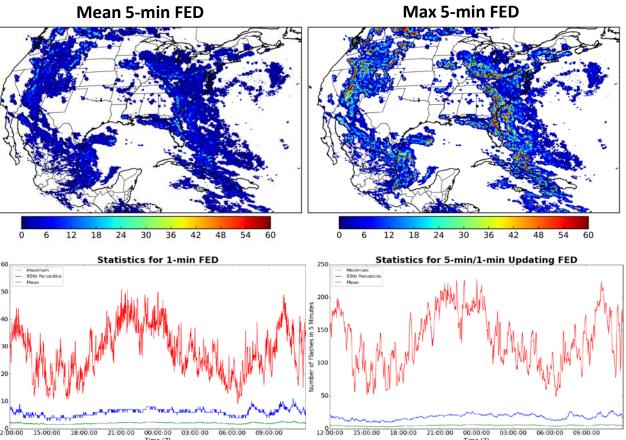
31.2% of grid cells detected lightning – 100.0% of the day had GLM coverage – Duration of GLM outage(s): 0 minute(s)

Fraction of the Day With Lightning (%)

## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **51 flashes/min** Max min-to-min increase: **27 flashes** 

5-min/1-min Updating FED Max 5-min FED: 228 flashes/5min Max min-to-min increase: 38 flashes



## **Total Optical Energy and Average Flash Area Summary Statistics**

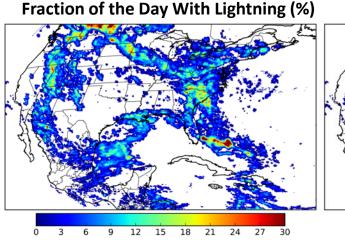
## 5-min/1-min Updating TOE

Max 5-min TOE: **196.4 fJ** Max min-to-min increase: **190.1 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9396.0 km^2 Max min-to-min increase: 7870.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/29/2018

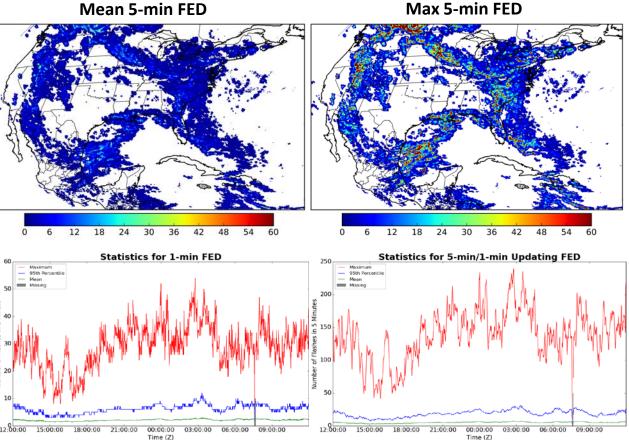
33.5% of grid cells detected lightning – 99.7% of the day had GLM coverage – Duration of GLM outage(s): 4 minute(s)



## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **54 flashes/min** Max min-to-min increase: **22 flashes** 

5-min/1-min Updating FED Max 5-min FED: 239 flashes/5min Max min-to-min increase: 44 flashes



## Total Optical Energy and Average Flash Area Summary Statistics

## 5-min/1-min Updating TOE

Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **195.9 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9980.0 km^2 Max min-to-min increase: 7502.0 km^2





Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/30/2018

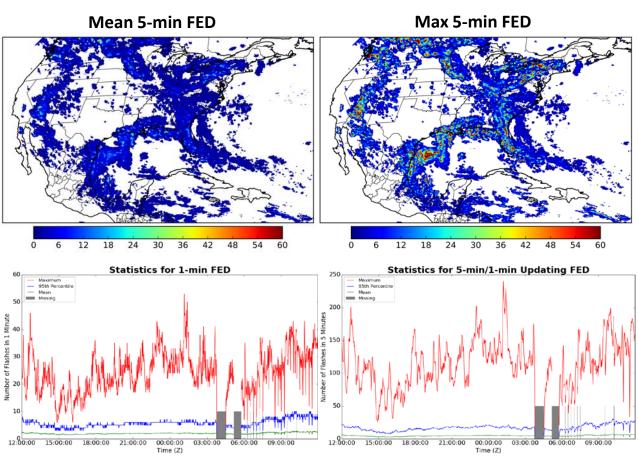
**31.8%** of grid cells detected lightning – **94.0%** of the day had GLM coverage – Duration of GLM outage(s): **87 minute(s)** 

Fraction of the Day With Lightning (%)

## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **53 flashes/min** Max min-to-min increase: **25 flashes** 

5-min/1-min Updating FED Max 5-min FED: 240 flashes/5min Max min-to-min increase: 73 flashes



## Total Optical Energy and Average Flash Area Summary Statistics

#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.3 fJ** Max min-to-min increase: **194.8 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9794.0 km^2 Max min-to-min increase: 8118.0 km^2





Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 07/31/2018

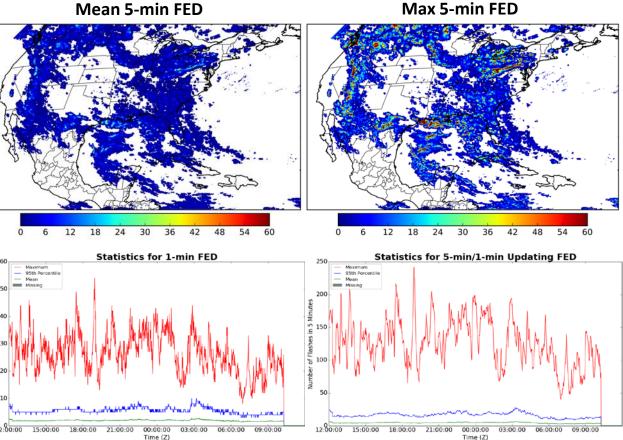
**33.1%** of grid cells detected lightning – **92.8%** of the day had GLM coverage – Duration of GLM outage(s): **103 minute(s)** 

Fraction of the Day With Lightning (%)

## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **54 flashes/min** Max min-to-min increase: **33 flashes** 

5-min/1-min Updating FED Max 5-min FED: 242 flashes/5min Max min-to-min increase: 37 flashes



## **Total Optical Energy and Average Flash Area Summary Statistics**

## 5-min/1-min Updating TOE

Max 5-min TOE: **196.4 fJ** Max min-to-min increase: **184.2 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9844.0 km^2 Max min-to-min increase: 8748.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 08/01/2018



31.8% of grid cells detected lightning – 96.8% of the day had GLM coverage – Duration of GLM outage(s): 46 minute(s)

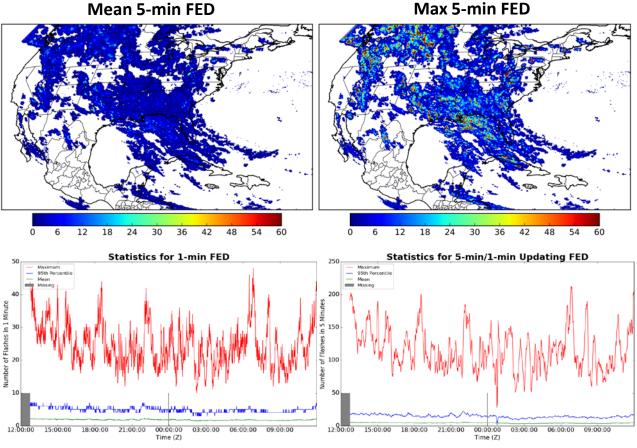
Fraction of the Day With Lightning (%)

## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **48 flashes/min** Max min-to-min increase: **21 flashes** 

## 5-min/1-min Updating FED

Max 5-min FED: **212 flashes/5min** Max min-to-min increase: **38 flashes** 



## Total Optical Energy and Average Flash Area Summary Statistics

#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.5 fJ** Max min-to-min increase: **195.1 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9978.0 km^2 Max min-to-min increase: 8380.0 km^2

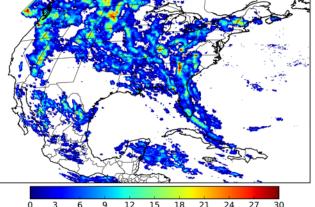


Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 08/02/2018

29.9% of grid cells detected lightning – 100.0% of the day had GLM coverage – Duration of GLM outage(s): 0 minute(s)

Mean 5-min FED

Fraction of the Day With Lightning (%)

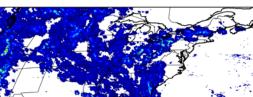


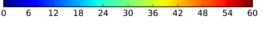
## **FED Summary Statistics**

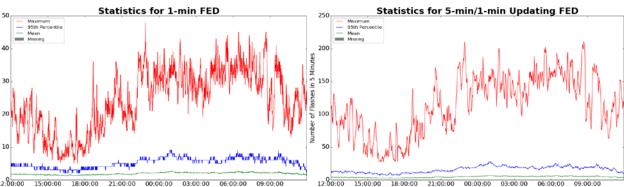
**1-min FED** Max 1-min FED: **48 flashes/min** Max min-to-min increase: **16 flashes** 

## 5-min/1-min Updating FED

Max 5-min FED: **211 flashes/5min** Max min-to-min increase: **36 flashes** 







## **Total Optical Energy and Average Flash Area Summary Statistics**

#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **190.8 fJ**  5-min/1-min Updating AFA

Max 5-min AFA: **9804.0 km^2** Max min-to-min increase: **8098.0 km^2** 

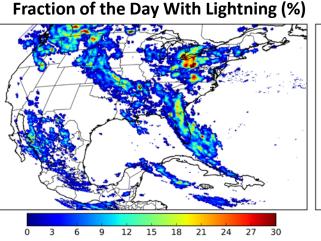


**Max 5-min FED** 



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 08/03/2018

24.8% of grid cells detected lightning – 100.0% of the day had GLM coverage – Duration of GLM outage(s): 0 minute(s)

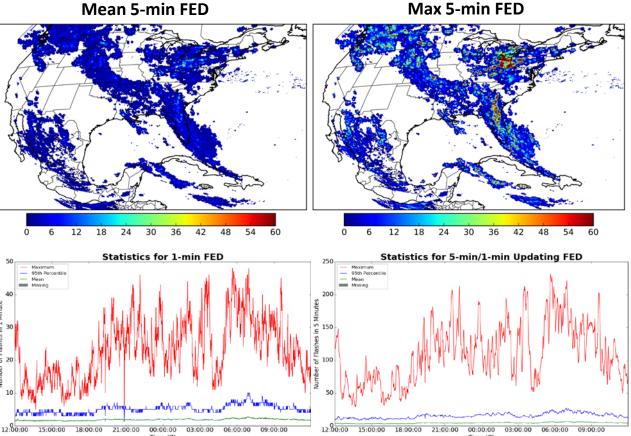


## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **48 flashes/min** Max min-to-min increase: **18 flashes** 

5-min/1-min Updating FED

Max 5-min FED: **231 flashes/5min** Max min-to-min increase: **48 flashes** 



## **Total Optical Energy and Average Flash Area Summary Statistics**

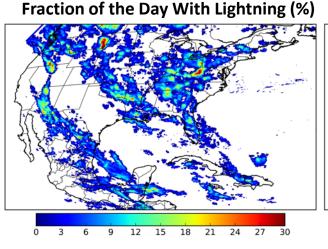
## 5-min/1-min Updating TOE

Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **193.2 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9888.0 km^2 Max min-to-min increase: 8152.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 08/04/2018

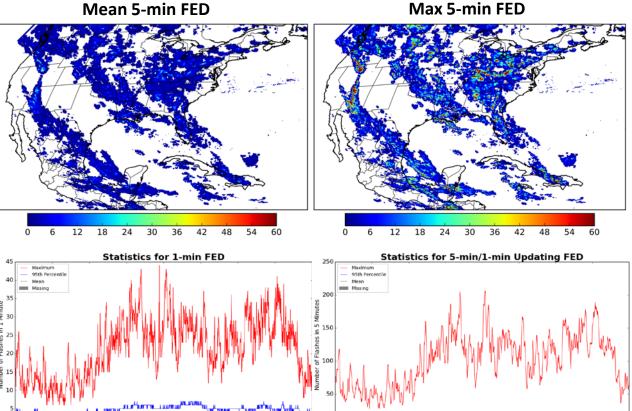
27.9% of grid cells detected lightning – 100.0% of the day had GLM coverage – Duration of GLM outage(s): 0 minute(s)



## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **44 flashes/min** Max min-to-min increase: **37 flashes** 

5-min/1-min Updating FED Max 5-min FED: 206 flashes/5min Max min-to-min increase: 44 flashes



#### **Total Optical Energy and Average Flash Area Summary Statistics**

#### 5-min/1-min Updating TOE

Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **190.7 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9864.0 km^2 Max min-to-min increase: 7114.0 km^2



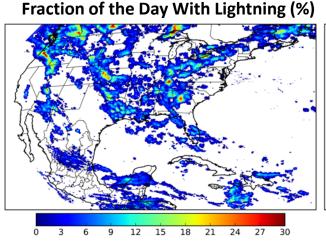


Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 08/05/2018



**Max 5-min FED** 

28.1% of grid cells detected lightning – 100.0% of the day had GLM coverage – Duration of GLM outage(s): 0 minute(s)



## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **46 flashes/min** Max min-to-min increase: **23 flashes** 

5-min/1-min Updating FED

Max 5-min FED: **203 flashes/5min** Max min-to-min increase: **31 flashes**  Mean 5-min FED

36 42 48 54 54 Statistics for 1-min FED Statistics for 5-min/1-min Updating FED

#### **Total Optical Energy and Average Flash Area Summary Statistics**

## 5-min/1-min Updating TOE

Max 5-min TOE: **195.6 fJ** Max min-to-min increase: **190.1 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9494.0 km^2 Max min-to-min increase: 8206.0 km^2



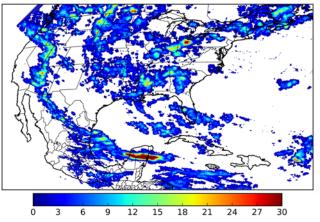
Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 08/06/2018



**Max 5-min FED** 

32.9% of grid cells detected lightning – 100.0% of the day had GLM coverage – Duration of GLM outage(s): 0 minute(s)

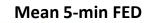
Fraction of the Day With Lightning (%)

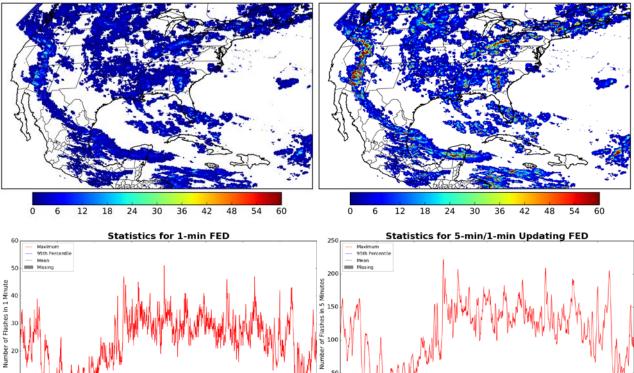


## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **51 flashes/min** Max min-to-min increase: **31 flashes** 

5-min/1-min Updating FED Max 5-min FED: 222 flashes/5min Max min-to-min increase: 51 flashes





#### **Total Optical Energy and Average Flash Area Summary Statistics**

## 5-min/1-min Updating TOE

Max 5-min TOE: **196.5 fJ** Max min-to-min increase: **195.5 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9950.0 km^2 Max min-to-min increase: 7610.0 km^2



Geostationary Lightning Mapper Gridded Products Daily Summary Overall Summary Statistics for 1200Z-1200Z ending on 08/07/2018

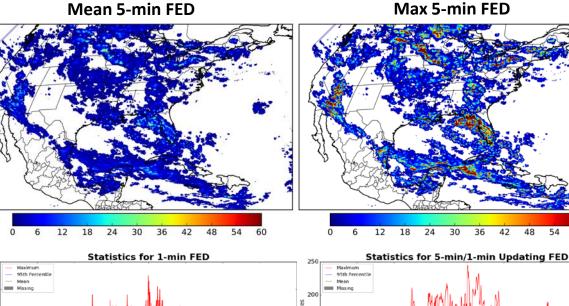
32.2% of grid cells detected lightning – 100.0% of the day had GLM coverage – Duration of GLM outage(s): 0 minute(s)

Fraction of the Day With Lightning (%)

## **FED Summary Statistics**

**1-min FED** Max 1-min FED: **55 flashes/min** Max min-to-min increase: **23 flashes** 

5-min/1-min Updating FED Max 5-min FED: 245 flashes/5min Max min-to-min increase: 36 flashes



200 Missing

#### **Total Optical Energy and Average Flash Area Summary Statistics**

## 5-min/1-min Updating TOE

Max 5-min TOE: **196.6 fJ** Max min-to-min increase: **193.5 fJ**  5-min/1-min Updating AFA Max 5-min AFA: 9726.0 km^2 Max min-to-min increase: 6844.0 km^2

