

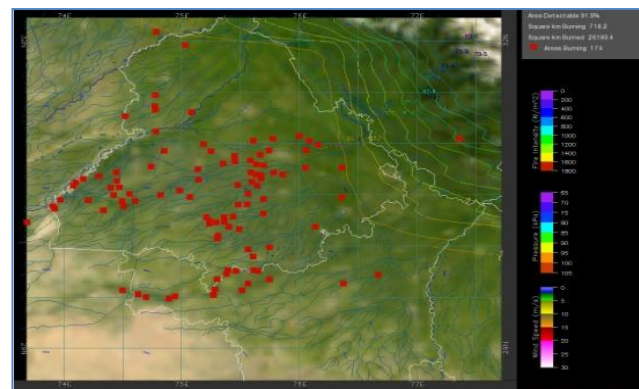
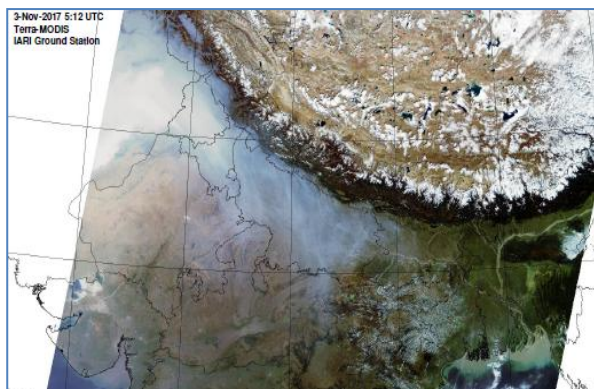


# MONITORING PADDY RESIDUE BURNING IN NORTH INDIA USING SATELLITE REMOTE SENSING DURING 2018

**Bulletin  
No. 10**

**Events Date:  
10-Oct-2018**

**Issued on:  
11-Oct-2018**



**Prepared by:**

**Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,  
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012**

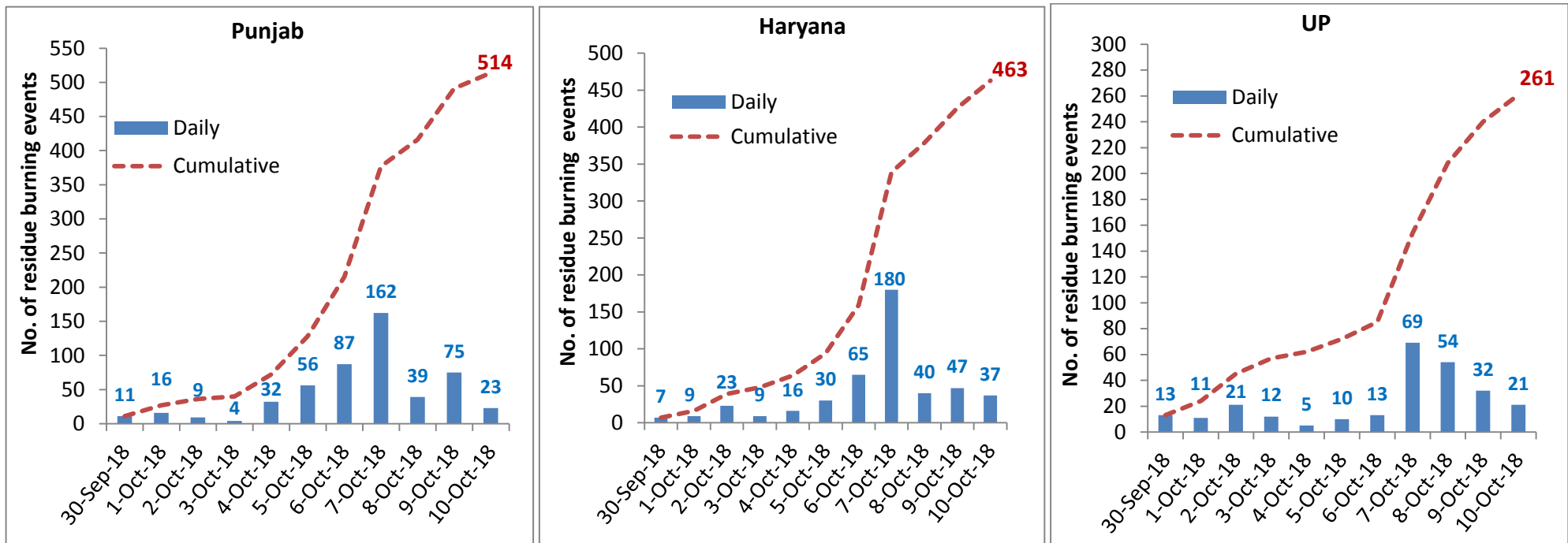
<http://creams.iari.res.in>



## Highlights for 10-October-2018

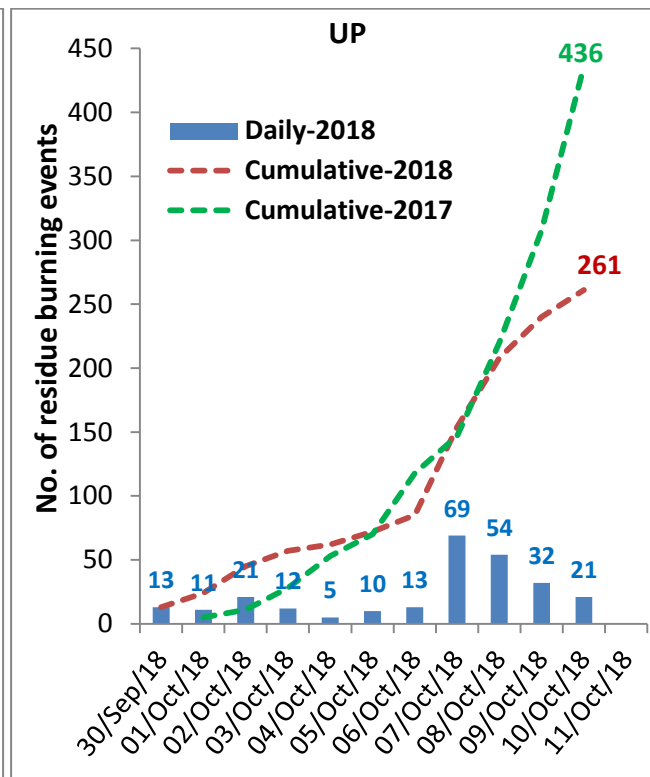
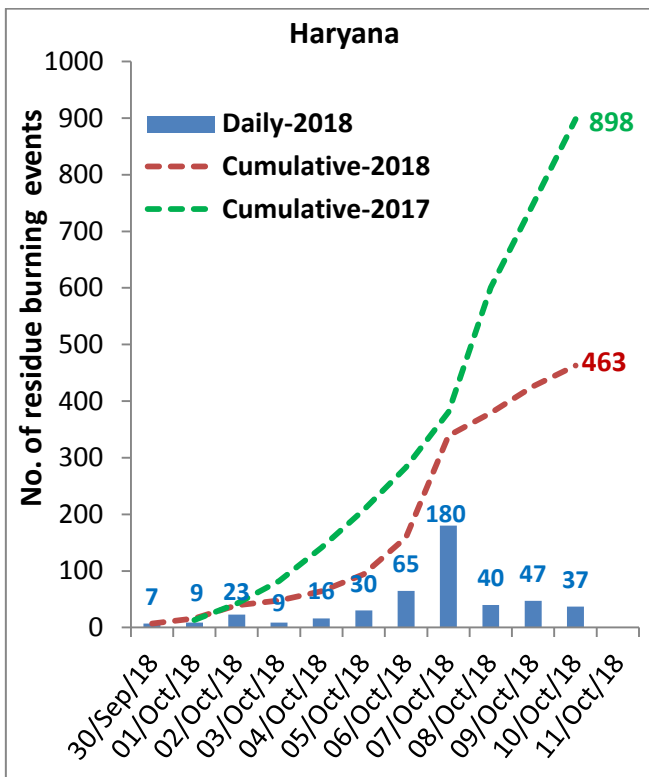
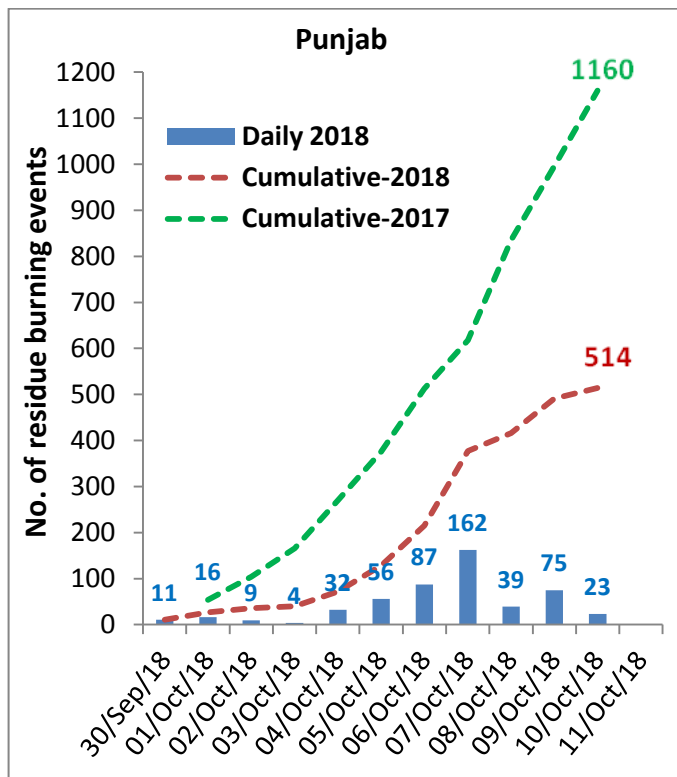
- Satellites detected 81 residue burning events in the three States (Punjab, Haryana & UP) on 10-Oct-2018.
- The burning events detected on 10-Oct-2018 are 23, 37 and 21 in Punjab, Haryana, and UP, respectively.
- The number of events decreased from 154 on 09-Oct-2018 to 81 on 10-Oct-2018 in the three States.
- Total 1238 burning events were detected in three States between 30-Sep-2018 and 10-Oct-2018, which were distributed as 514, 463 and 261 in Punjab, Haryana and UP, respectively.
- Till 10-Oct-2018, the burning events in current year were about 49.7% of the events detected in 2017.

### Temporal distribution of residue burning events for the three study States



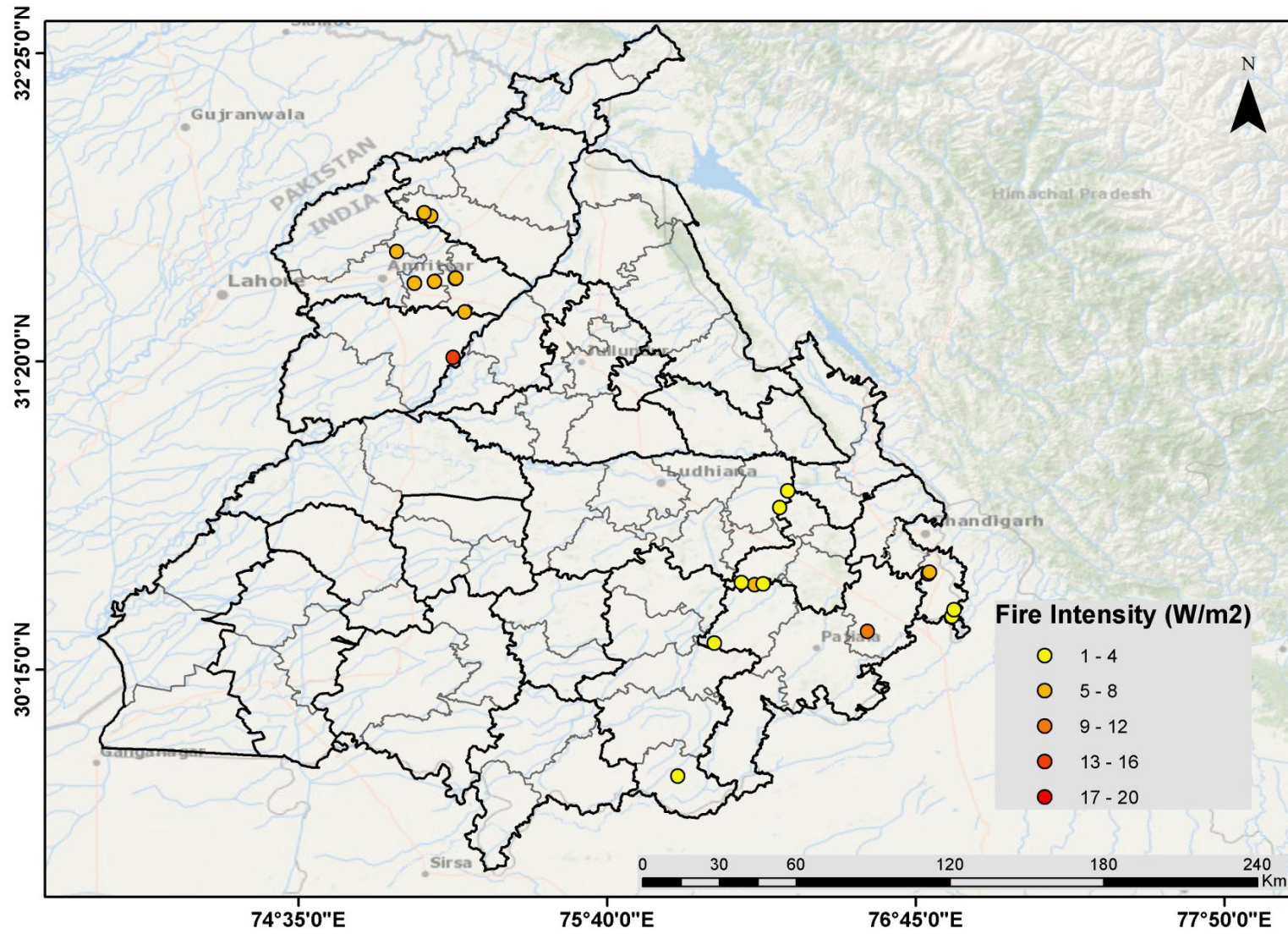
**Comparison of residue burning events in current year (2018) with previous year (2017) for the three study States**

**(30-Sep-2018 to 10-Oct-2018)**



**(a) Punjab**

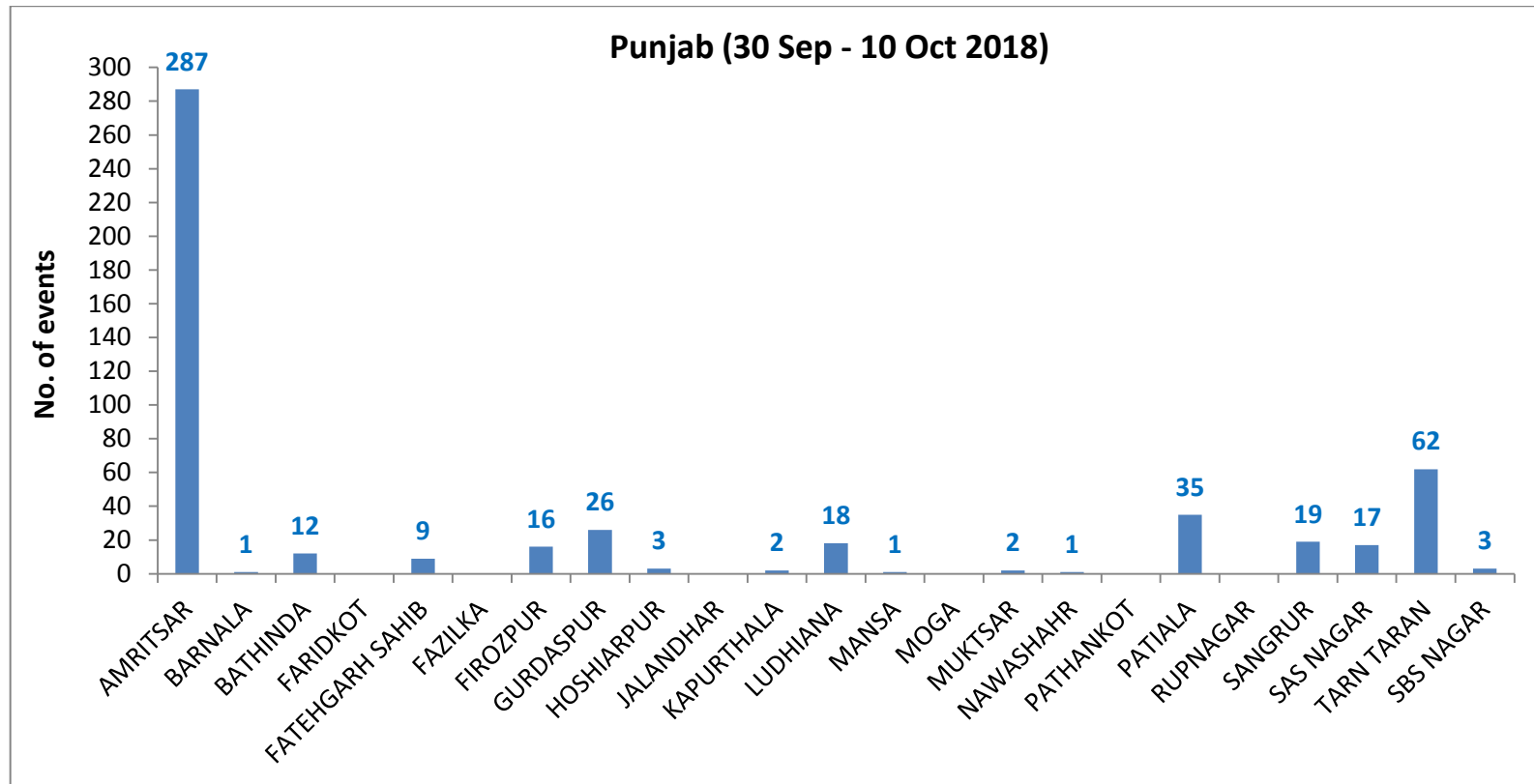
Paddy Residue Burning in Punjab on 10th Oct 2018



**Details of residue burning events in Punjab on 10-Oct-2018**

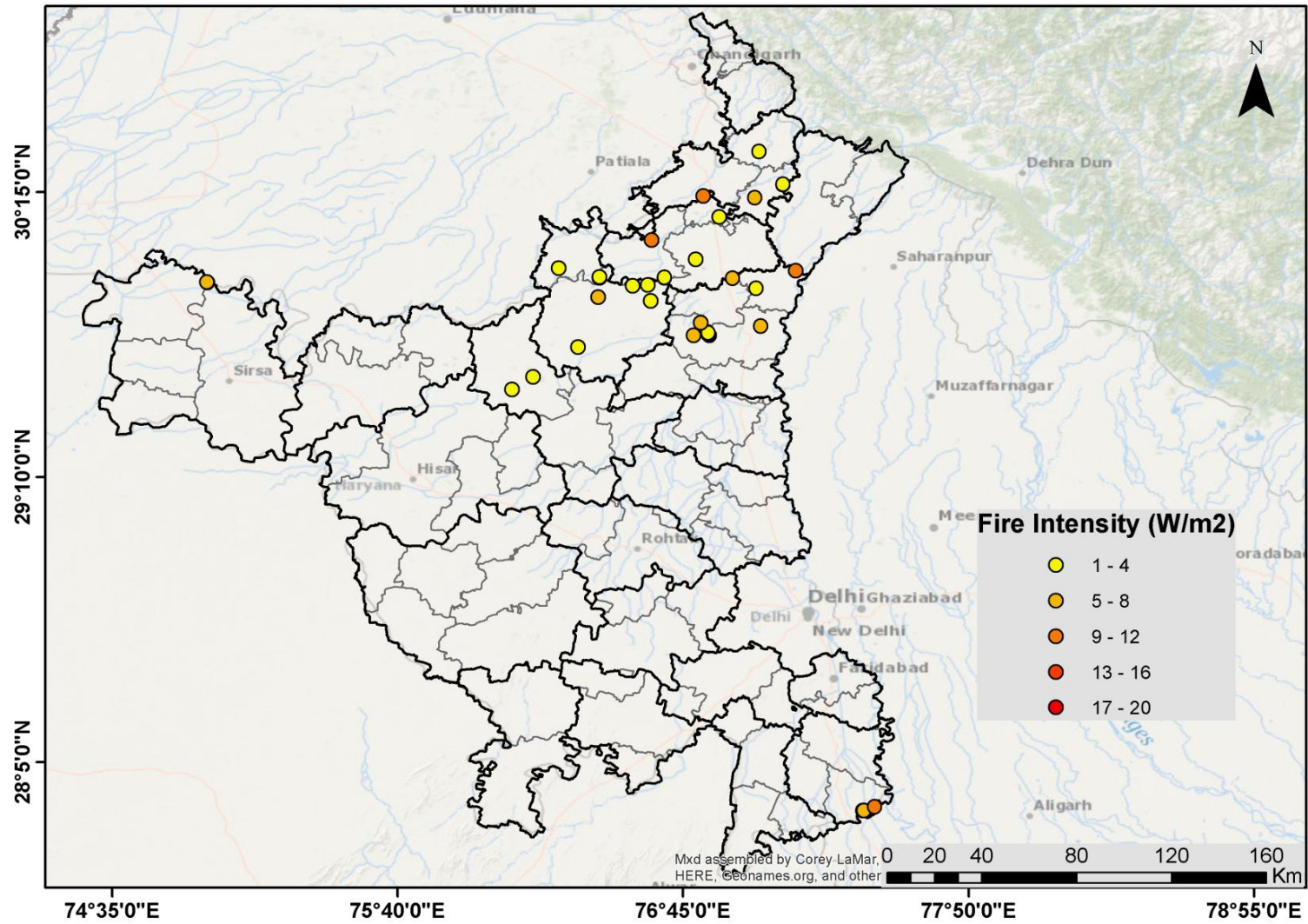
<b>Event S. No.</b>	<b>District</b>	<b>Tehsil /Block</b>	<b>Satellite</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Time (IST)</b>	<b>Day/Night</b>	<b>Fire Power (W/m2)</b>
1	AMRITSAR	AMRITSAR I	S-NPP	74.98935	31.60813	14:06:00	D	4.60
2	AMRITSAR	AMRITSAR I	S-NPP	75.05991	31.61374	14:06:00	D	4.80
3	AMRITSAR	AMRITSAR I	S-NPP	74.92802	31.71932	14:06:00	D	4.10
4	AMRITSAR	BABA BAKALA	S-NPP	75.13274	31.62442	14:06:00	D	7.50
5	AMRITSAR	BABA BAKALA	S-NPP	75.13459	31.62542	14:06:00	D	7.20
6	FATEHGARH SAHIB	ALMOH	S-NPP	76.18325	30.54892	14:06:00	D	5.30
7	FATEHGARH SAHIB	ALMOH	S-NPP	76.13749	30.55617	14:06:00	D	3.00
8	GURDASPUR	BATALA	S-NPP	75.04581	31.84398	14:06:00	D	7.60
9	GURDASPUR	BATALA	S-NPP	75.02325	31.85476	12:30:00	D	5.80
10	GURDASPUR	BATALA	S-NPP	75.02480	31.85599	12:30:00	D	5.30
11	LUDHIANA	SAMRALA	S-NPP	76.27203	30.81959	14:06:00	D	1.50
12	LUDHIANA	SAMRALA	S-NPP	76.30020	30.87831	14:06:00	D	3.50
13	PATIALA	NABHA	S-NPP	76.04176	30.34350	14:06:00	D	2.60
14	PATIALA	NABHA	S-NPP	76.21323	30.55112	14:06:00	D	3.00
15	PATIALA	RAJPURA	TERRA-1	76.57928	30.38465	11:01:00	D	9.69
16	SANGRUR	MOONAK	S-NPP	75.91432	29.87536	14:06:00	D	2.00
17	SAS NAGAR	DERABASSI	S-NPP	76.87615	30.43759	14:06:00	D	2.70
18	SAS NAGAR	DERABASSI	S-NPP	76.88242	30.46019	14:06:00	D	3.00
19	SAS NAGAR	DERABASSI	S-NPP	76.79239	30.58607	14:06:00	D	2.40
20	SAS NAGAR	DERABASSI	S-NPP	76.79237	30.58666	14:06:00	D	4.10
21	SAS NAGAR	DERABASSI	S-NPP	76.79595	30.59242	14:06:00	D	6.80
22	TARN TARAN	KHADOOR SAHIB	S-NPP	75.12482	31.34751	14:06:00	D	14.70
23	TARN TARAN	KHADOOR SAHIB	S-NPP	75.16661	31.50692	14:06:00	D	4.40

**District-wise cumulative number of residue burning events in Punjab (30-Sep-2018 to 10-Oct-2018)**



## (b) Haryana

Paddy Residue Burning in Haryana on 10th Oct 2018



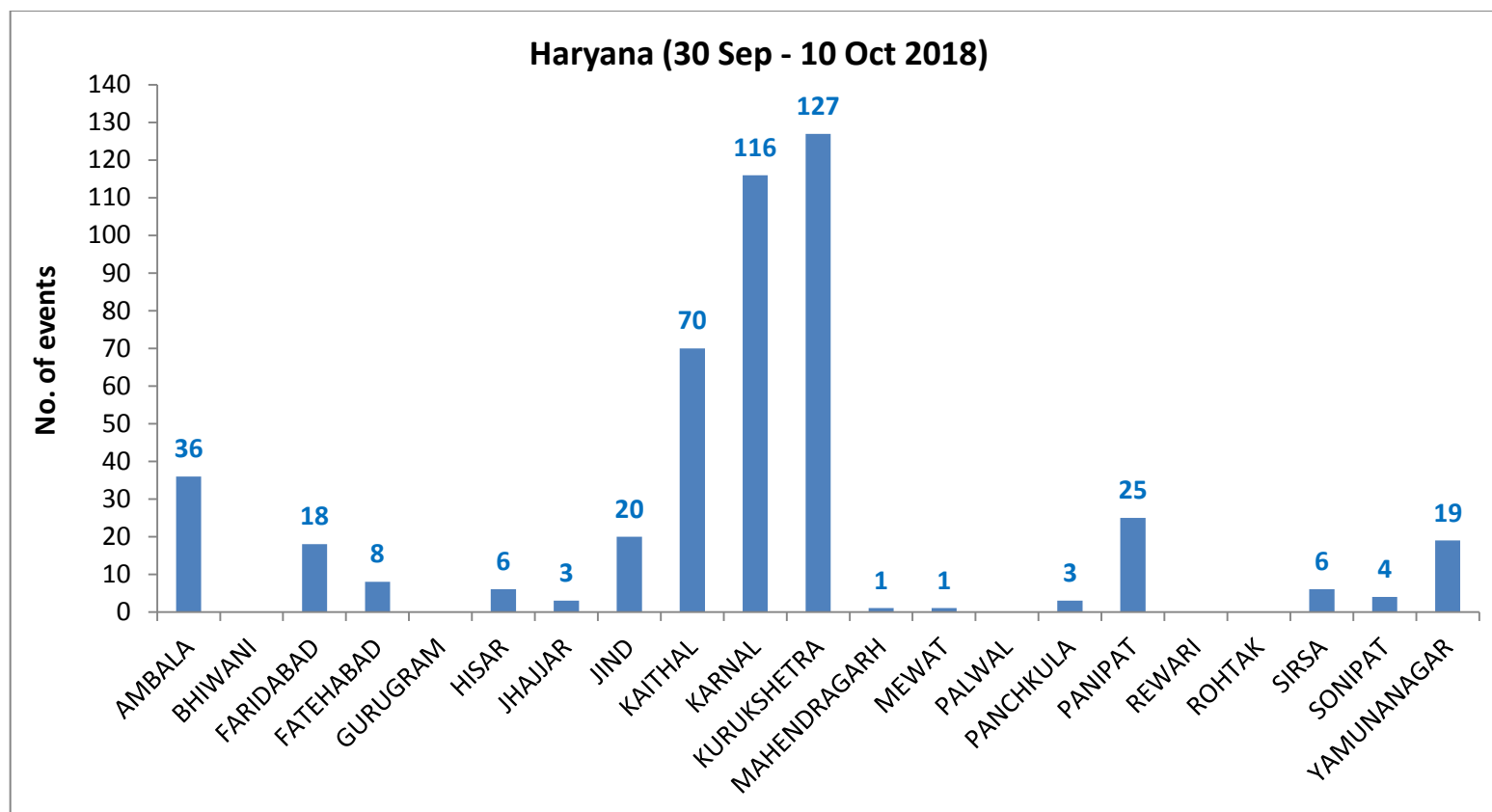
**Details of residue burning events in Haryana on 10-Oct-2018**

<b>Event S. No.</b>	<b>District</b>	<b>Tehsil /Block</b>	<b>Satellite</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Time (IST)</b>	<b>Day/Night</b>	<b>Fire Power (W/m2)</b>
1	AMBALA	BARARA	TERRA-1	77.02265	30.22895	11:01:00	D	6.45
2	AMBALA	BARARA	S-NPP	77.12868	30.27726	14:06:00	D	2.60
3	AMBALA	BARARA	S-NPP	77.12910	30.27908	14:06:00	D	2.40
4	AMBALA	NARAYANGARH	S-NPP	77.03748	30.40437	14:06:00	D	3.10
5	FARIDABAD	HODAL	S-NPP	77.43723	27.89955	14:06:00	D	5.00
6	FARIDABAD	HODAL	S-NPP	77.43143	27.89964	12:24:00	D	10.70
7	FARIDABAD	HODAL	S-NPP	77.43490	27.89998	14:06:00	D	6.10
8	FARIDABAD	HODAL	S-NPP	77.47722	27.91368	14:06:00	D	10.20
9	JIND	NARWANA	S-NPP	76.10095	29.49921	14:06:00	D	2.20
10	JIND	NARWANA	S-NPP	76.17921	29.54745	14:06:00	D	2.50
11	KAITHAL	GUHLA	S-NPP	76.43137	29.92459	14:06:00	D	2.10
12	KAITHAL	GUHLA	S-NPP	76.43158	29.92632	14:06:00	D	2.10
13	KAITHAL	GUHLA	S-NPP	76.27693	29.96107	14:06:00	D	2.60
14	KAITHAL	KAITHAL	S-NPP	76.35083	29.66101	14:06:00	D	2.90
15	KAITHAL	KAITHAL	S-NPP	76.62625	29.83667	14:06:00	D	3.40
16	KAITHAL	KAITHAL	S-NPP	76.42723	29.85088	14:06:00	D	6.90
17	KAITHAL	KAITHAL	S-NPP	76.55764	29.89308	14:06:00	D	3.30
18	KAITHAL	KAITHAL	S-NPP	76.61563	29.89750	14:06:00	D	2.40
19	KARNAL	INDRI	S-NPP	76.99717	29.80996	14:06:00	D	22.30
20	KARNAL	INDRI	S-NPP	77.02715	29.88365	14:06:00	D	2.00
21	KARNAL	INDRI	TERRA-1	77.17613	29.95047	11:01:00	D	11.02
22	KARNAL	KARNAL	S-NPP	76.85004	29.70468	14:06:00	D	9.80
23	KARNAL	KARNAL	S-NPP	76.78946	29.70563	12:24:00	D	4.70
24	KARNAL	KARNAL	S-NPP	76.84557	29.70983	14:06:00	D	2.70
25	KARNAL	KARNAL	S-NPP	76.84508	29.71528	14:06:00	D	2.70
26	KARNAL	KARNAL	S-NPP	77.04465	29.74120	14:06:00	D	4.20
27	KARNAL	KARNAL	S-NPP	76.81573	29.75278	14:06:00	D	4.30
28	KARNAL	KARNAL	S-NPP	76.99310	29.80967	14:06:00	D	33.90
29	KARNAL	NILOKHERI	S-NPP	76.93737	29.92154	14:06:00	D	5.60
30	KURUKSHETRA	PEHOWA	S-NPP	76.67995	29.92414	14:06:00	D	2.40



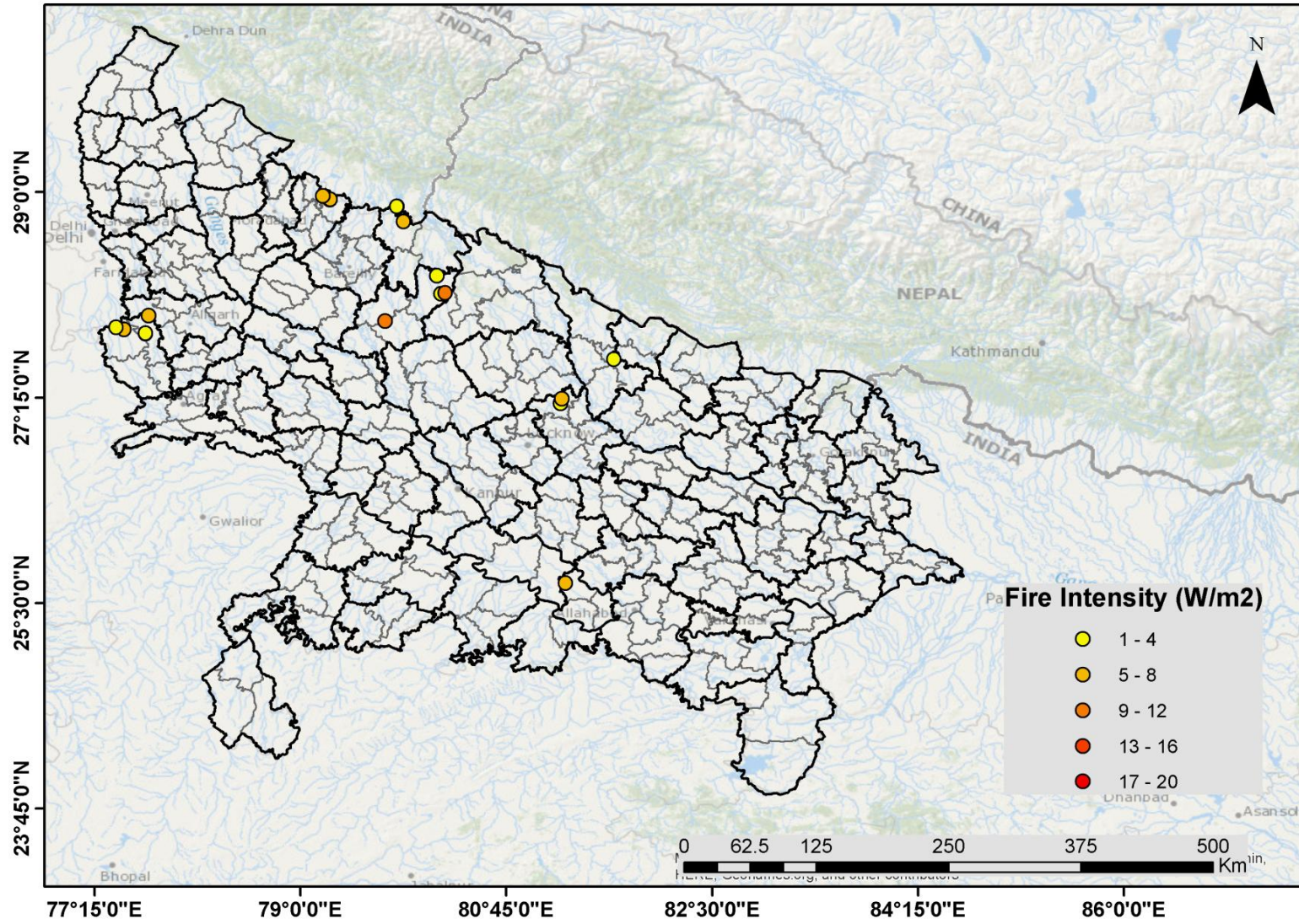
31	KURUKSHETRA	PEHOWA	S-NPP	76.67970	29.92617	14:06:00	D	2.80
32	KURUKSHETRA	PEHOWA	TERRA-1	76.63044	30.06725	11:01:00	D	9.08
33	KURUKSHETRA	SHAHABAD	S-NPP	76.88719	30.15586	14:06:00	D	1.50
34	KURUKSHETRA	SHAHABAD	TERRA-1	76.82655	30.23493	11:01:00	D	11.24
35	KURUKSHETRA	THANESAR	S-NPP	76.79707	29.99469	14:06:00	D	3.60
36	SIRSA	DABWALI	S-NPP	74.94437	29.90616	01:12:00	N	4.80
37	SIRSA	DABWALI	S-NPP	74.94209	29.90755	01:12:00	N	5.00

**District-wise cumulative number of residue burning events in Haryana (30-Sep-2018 to 10-Oct-2018)**



### (c) Uttar Pradesh

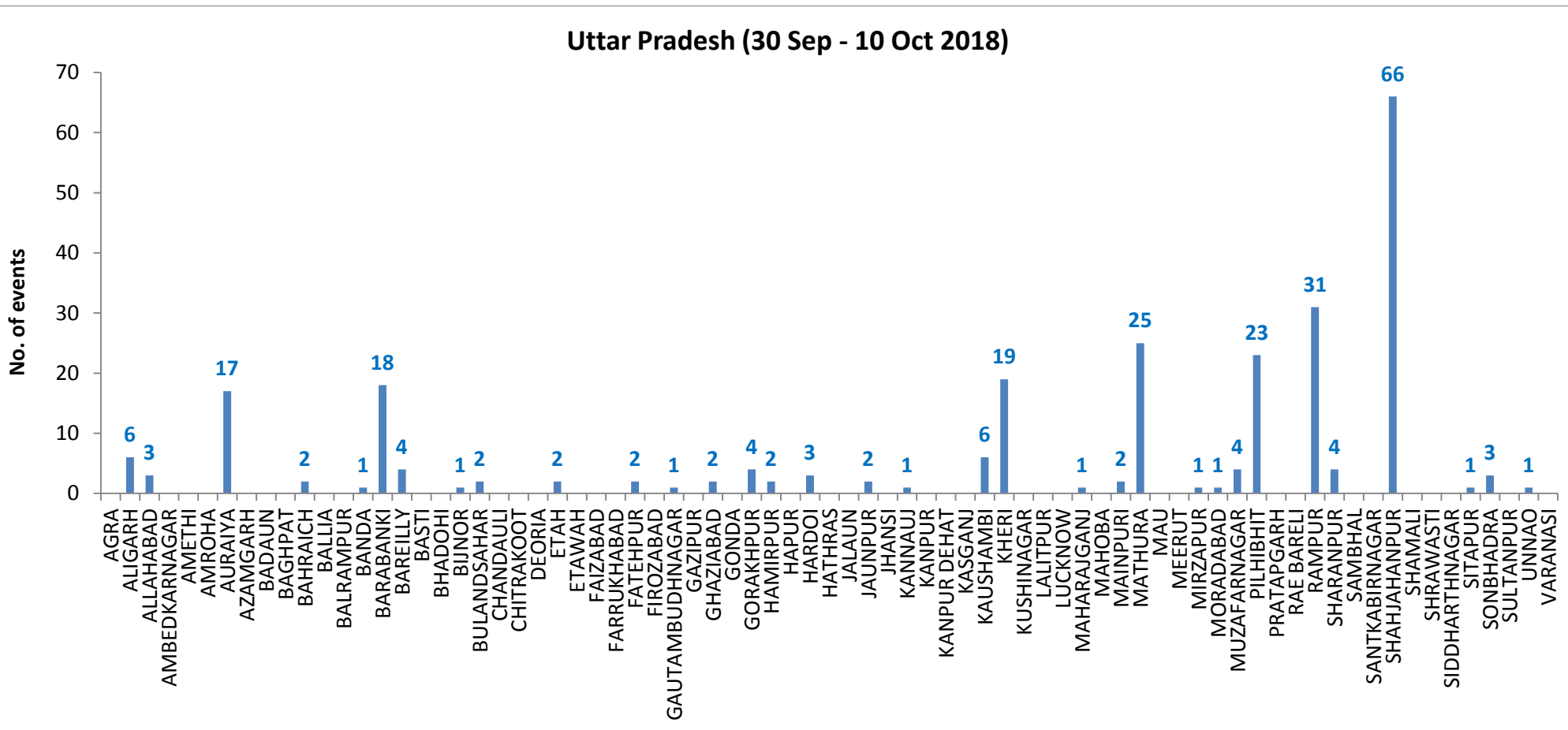
Paddy Residue Burning in Uttar Pradesh on 10th Oct 2018



**Details of residue burning events in Uttar Pradesh on 10-Oct-2018**

<b>Event S. No.</b>	<b>District</b>	<b>Tehsil /Block</b>	<b>Satellite</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Time (IST)</b>	<b>Day/Night</b>	<b>Fire Power (W/m2)</b>
1	ALIGARH	KHAIR	TERRA-1	77.70817	27.95022	11:01:00	D	6.47
2	AURAIYA	BIDHUNA	S-NPP	79.48145	26.64126	02:48:00	N	1.10
3	BAHRAICH	BAHRAICH	S-NPP	81.66263	27.57646	12:24:00	D	3.90
4	BARABANKI	FATEHPUR	S-NPP	81.20847	27.20299	12:24:00	D	3.00
5	BARABANKI	FATEHPUR	S-NPP	81.21947	27.23979	12:24:00	D	4.80
6	BARABANKI	FATEHPUR	S-NPP	81.21909	27.24042	12:24:00	D	5.60
7	KAUSHAMBI	SIRATHU	S-NPP	81.25333	25.66982	12:24:00	D	5.40
8	MATHURA	CHHATA	S-NPP	77.68240	27.79510	14:06:00	D	3.30
9	MATHURA	CHHATA	S-NPP	77.68287	27.79780	14:06:00	D	3.60
10	MATHURA	CHHATA	S-NPP	77.50278	27.83258	14:06:00	D	5.30
11	MATHURA	CHHATA	S-NPP	77.43531	27.84978	14:06:00	D	2.90
12	PILHIBHIT	PILHIBHIT	S-NPP	79.87549	28.75216	12:24:00	D	4.70
13	PILHIBHIT	PILHIBHIT	S-NPP	79.82143	28.87929	14:06:00	D	3.60
14	PILHIBHIT	PILHIBHIT	S-NPP	79.81886	28.88039	14:06:00	D	3.10
15	RAMPUR	BILASPUR	S-NPP	79.25084	28.93502	12:24:00	D	3.20
16	RAMPUR	BILASPUR	S-NPP	79.25319	28.93860	12:24:00	D	4.30
17	RAMPUR	SUAR	TERRA-1	79.19004	28.96831	11:01:00	D	6.72
18	SHAHJAHANPUR	PUWANYA	S-NPP	80.19596	28.13575	12:24:00	D	2.50
19	SHAHJAHANPUR	PUWANYA	S-NPP	80.23082	28.14212	14:06:00	D	8.90
20	SHAHJAHANPUR	PUWANYA	S-NPP	80.15819	28.29045	12:24:00	D	3.40
21	SHAHJAHANPUR	SHAHJAHANPUR	TERRA-1	79.72038	27.90231	11:01:00	D	11.76

**District-wise cumulative number of residue burning events in Uttar Pradesh (30-Sep-2018 to 10-Oct-2018)**



## The study used images received from following Satellites at IARI Satellite Ground Station

S. No.	Satellite Name	Sensor	Resolution (meter)	Day / Night Passes
1.	Suomi NPP	VIIRS	375 / 1000	Both
2.	Terra	MODIS	1000	Both
3.	Aqua	MODIS	1000	Both
4.	NOAA – 18	AVHRR	1000	Night
5.	NOAA – 19	AVHRR	1000	Night
6.	Metop - 1	AVHRR	1000	Night
7.	Metop - 2	AVHRR	1000	Night

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GIS Maps of fire events can be visualized online on ICAR KRISHI Geoportal websites:

<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

<http://creams.iari.res.in:8080/geoexplorer/composer/>

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