

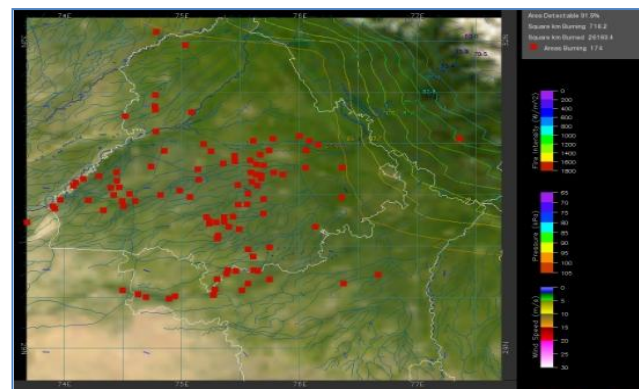
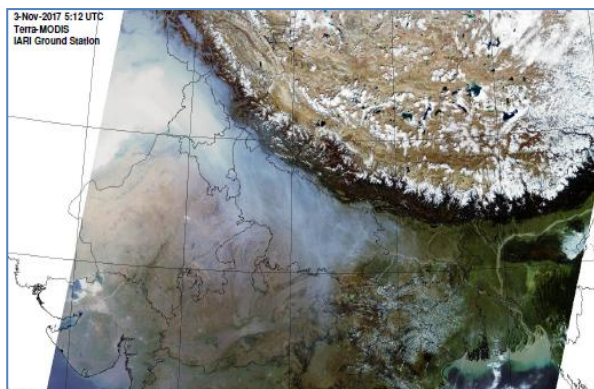


# MONITORING PADDY RESIDUE BURNING IN NORTH INDIA USING SATELLITE REMOTE SENSING DURING 2018

**Bulletin  
No. 14**

**Events Date:  
14-Oct-2018**

**Issued on:  
15-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**

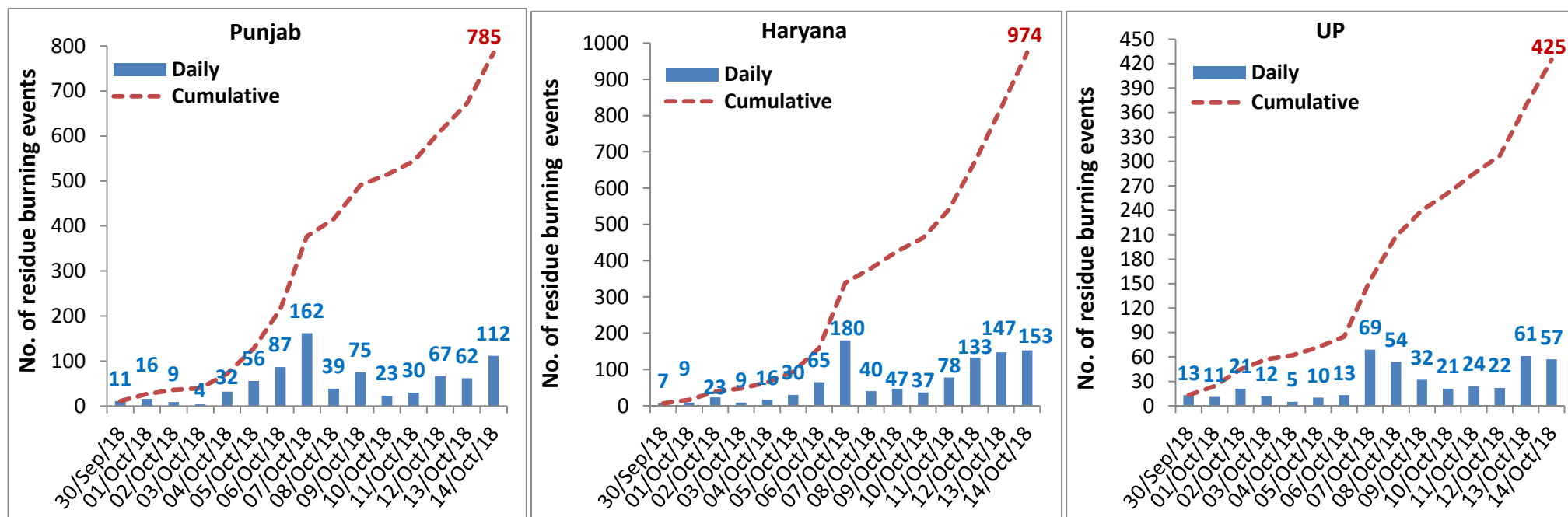
<http://creams.iari.res.in>



## Highlights for 14-October-2018

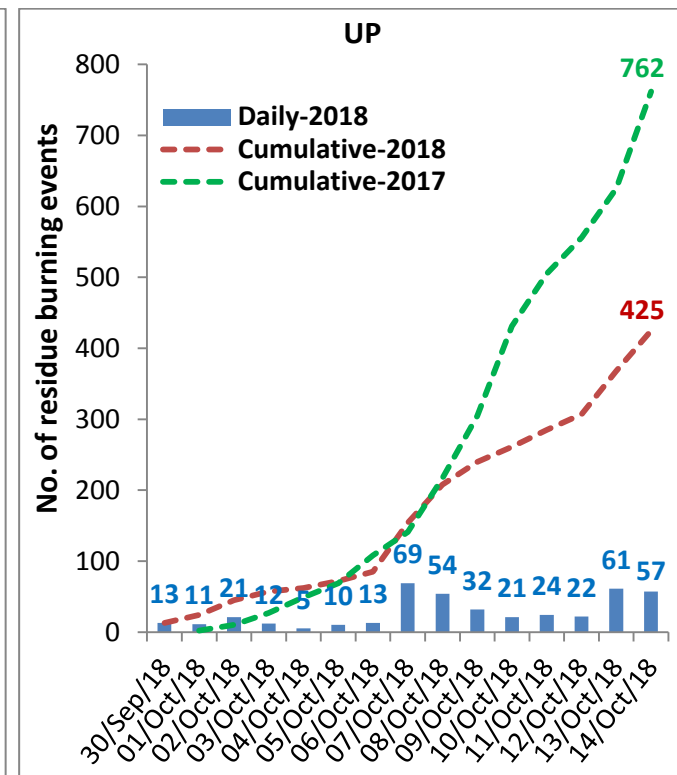
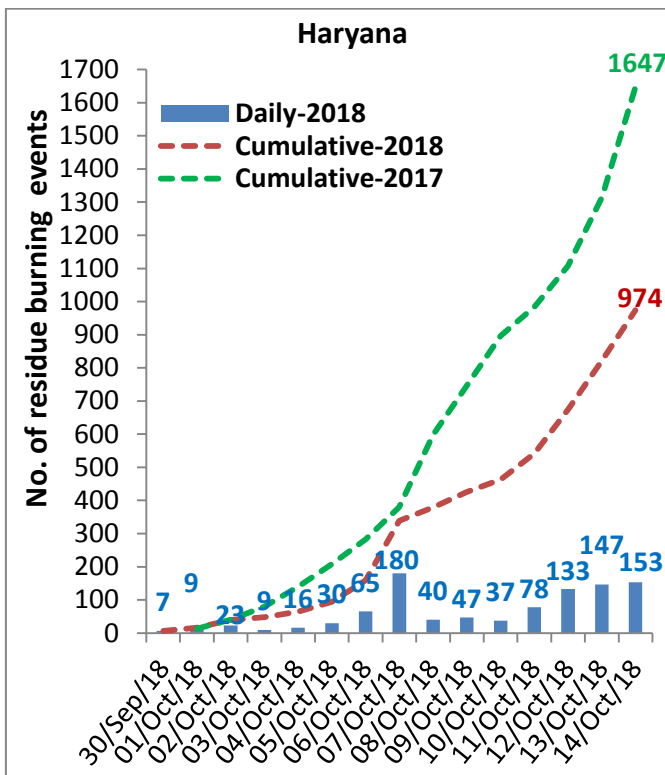
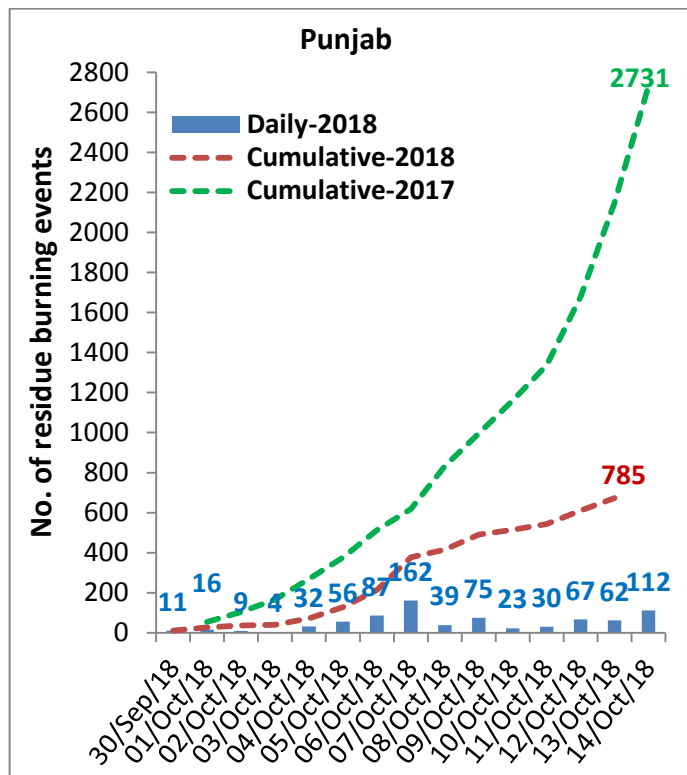
- Satellites detected 322 residue burning events in the three States (Punjab, Haryana & UP) on 14-Oct-2018.
- The burning events detected on 14-Oct-2018 are 112, 153 and 57 in Punjab, Haryana, and UP, respectively.
- The number of events increased from 270 on 13-Oct-2018 to 322 on 14-Oct-2018 in the three States.
- Total 2184 burning events were detected in three States between 30-Sept-2018 and 14-Oct-2018, which were distributed as 785, 974 and 425 in Punjab, Haryana and UP, respectively.
- Till 14-Oct-2018, the burning events in the current year are about 42.4% 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**

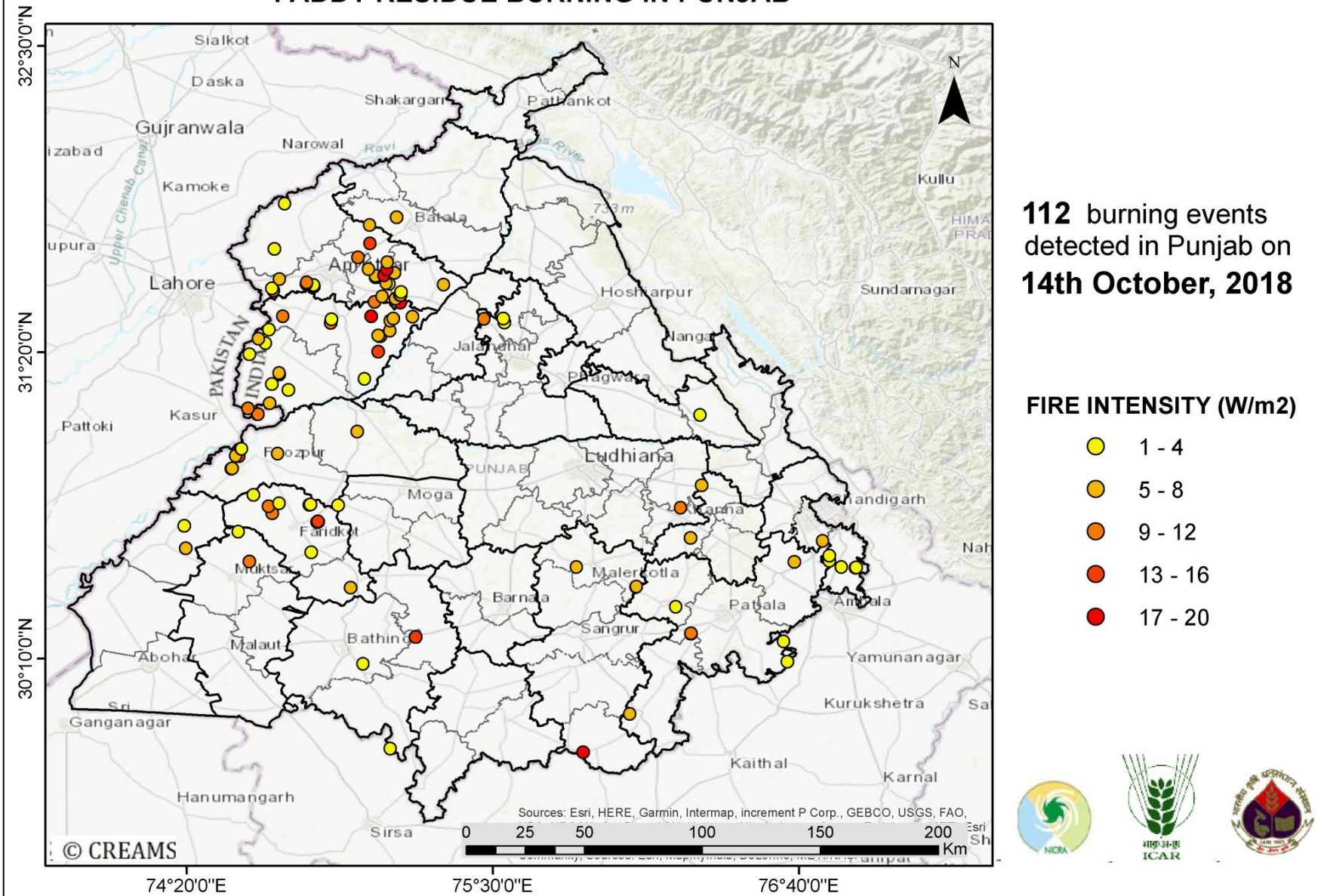
**(30-Sep-2018 to 14-Oct-2018)**





(a) Punjab

**PADDY RESIDUE BURNING IN PUNJAB**



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

**Details of residue burning events in Punjab on 14-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/m<sup>2</sup>)</b>
1	AMRITSAR	AJNALA	S-NPP	74.66646	31.72768	12:54:00	D	1.80
2	AMRITSAR	AJNALA	S-NPP	74.70571	31.89882	12:54:00	D	1.40
3	AMRITSAR	AMRITSAR I	AQUA	75.04796	31.52551	13:47:00	D	10.46
4	AMRITSAR	AMRITSAR I	S-NPP	75.07728	31.54585	12:54:00	D	6.90
5	AMRITSAR	AMRITSAR I	S-NPP	75.10415	31.59401	12:54:00	D	3.10
6	AMRITSAR	AMRITSAR I	AQUA	75.09230	31.59588	13:47:00	D	7.12
7	AMRITSAR	AMRITSAR I	AQUA	75.01044	31.61834	13:47:00	D	20.32
8	AMRITSAR	AMRITSAR I	S-NPP	75.05427	31.61905	12:54:00	D	6.80
9	AMRITSAR	AMRITSAR I	S-NPP	75.05284	31.61923	12:54:00	D	9.90
10	AMRITSAR	AMRITSAR I	S-NPP	75.05272	31.62392	12:54:00	D	6.80
11	AMRITSAR	AMRITSAR I	AQUA	75.02579	31.64978	13:47:00	D	7.04
12	AMRITSAR	AMRITSAR I	S-NPP	75.09761	31.67688	12:54:00	D	5.80
13	AMRITSAR	AMRITSAR I	AQUA	75.03091	31.74860	13:47:00	D	13.21
14	AMRITSAR	AMRITSAR II	AQUA	74.66257	31.56893	13:47:00	D	10.18
15	AMRITSAR	AMRITSAR II	S-NPP	74.65675	31.57734	14:36:00	D	4.00
16	AMRITSAR	AMRITSAR II	S-NPP	74.81610	31.58395	12:54:00	D	2.80
17	AMRITSAR	AMRITSAR II	S-NPP	74.81452	31.58889	12:54:00	D	1.70
18	AMRITSAR	AMRITSAR II	AQUA	74.78791	31.59364	13:47:00	D	7.65
19	AMRITSAR	AMRITSAR II	S-NPP	74.78954	31.59892	12:54:00	D	9.00
20	AMRITSAR	AMRITSAR II	S-NPP	74.68646	31.61188	12:54:00	D	5.10
21	AMRITSAR	AMRITSAR II	AQUA	74.98486	31.69470	13:47:00	D	8.63
22	AMRITSAR	BABA BAKALA	AQUA	75.14601	31.52177	13:47:00	D	17.13
23	AMRITSAR	BABA BAKALA	S-NPP	75.12741	31.53808	14:36:00	D	4.30
24	AMRITSAR	BABA BAKALA	S-NPP	75.14536	31.55144	12:54:00	D	4.40
25	AMRITSAR	BABA BAKALA	S-NPP	75.14709	31.55159	12:54:00	D	6.30
26	AMRITSAR	BABA BAKALA	S-NPP	75.14878	31.56268	12:54:00	D	3.40
27	AMRITSAR	BABA BAKALA	S-NPP	75.31165	31.59052	12:54:00	D	7.60
28	AMRITSAR	BABA BAKALA	AQUA	75.08499	31.62604	13:47:00	D	18.63

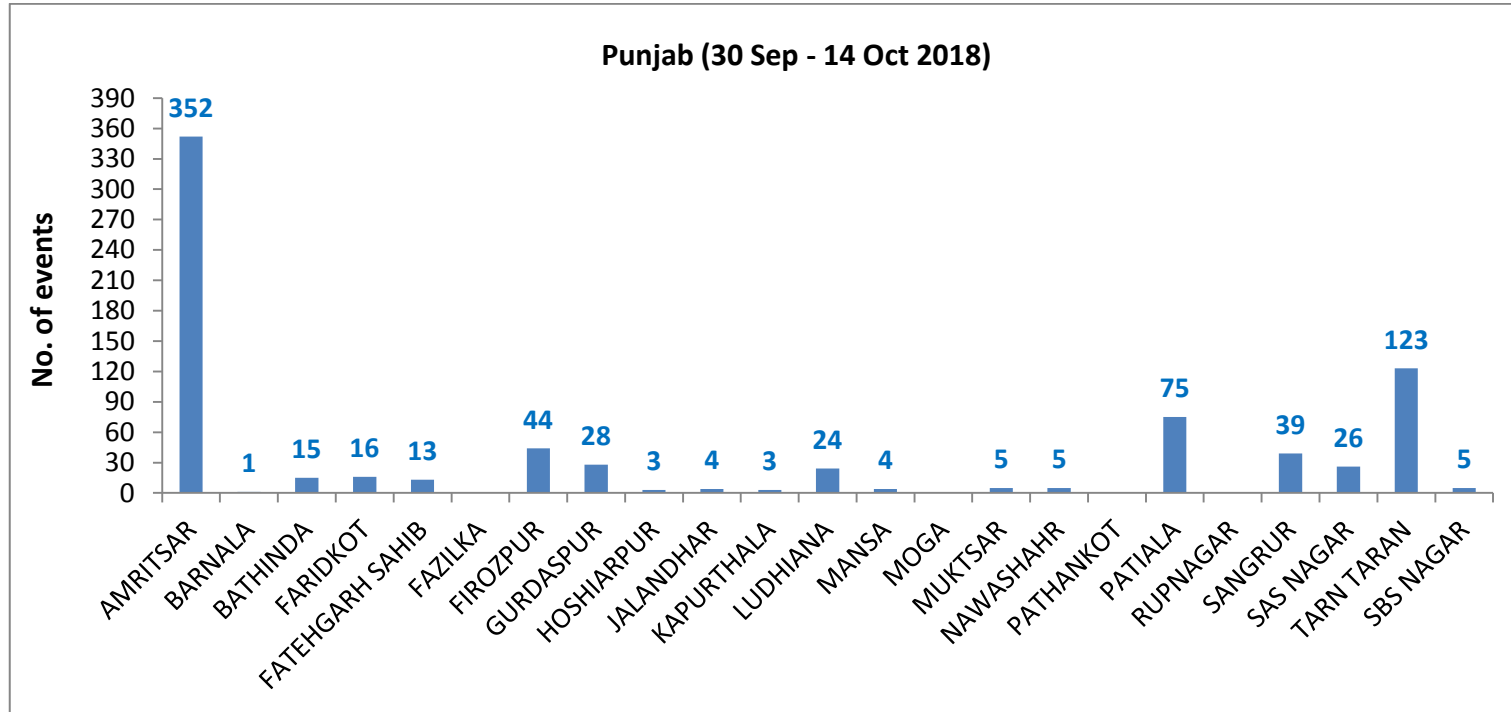
29	AMRITSAR	BABA BAKALA	S-NPP	75.12429	31.63620	12:54:00	D	5.50
30	AMRITSAR	BABA BAKALA	AQUA	75.09571	31.64828	13:47:00	D	16.81
31	BATHINDA	BATHINDA	S-NPP	75.00486	30.14620	12:54:00	D	2.00
32	BATHINDA	BATHINDA	S-NPP	75.20473	30.24897	12:54:00	D	13.50
33	BATHINDA	TALWANDI SABO	S-NPP	75.10878	29.82409	12:54:00	D	3.20
34	FARIDKOT	FARIDKOT	S-NPP	74.80618	30.57194	12:54:00	D	4.00
35	FARIDKOT	FARIDKOT	S-NPP	74.82951	30.68696	12:54:00	D	7.80
36	FARIDKOT	FARIDKOT	S-NPP	74.83302	30.68777	12:54:00	D	7.80
37	FARIDKOT	FARIDKOT	S-NPP	74.83152	30.68950	12:54:00	D	14.80
38	FARIDKOT	FARIDKOT	AQUA	74.65745	30.72002	13:47:00	D	8.08
39	FARIDKOT	FARIDKOT	AQUA	74.64415	30.74697	13:47:00	D	9.87
40	FARIDKOT	FARIDKOT	S-NPP	74.80044	30.75257	12:54:00	D	3.40
41	FARIDKOT	FARIDKOT	S-NPP	74.80395	30.75340	12:54:00	D	3.40
42	FARIDKOT	FARIDKOT	S-NPP	74.68487	30.75796	12:54:00	D	2.70
43	FARIDKOT	FARIDKOT	S-NPP	74.58692	30.78966	12:54:00	D	2.80
44	FARIDKOT	JAITO	S-NPP	74.95683	30.43731	14:30:00	D	4.10
45	FATEHGARH SAHIB	ALMOH	S-NPP	76.25242	30.62666	12:54:00	D	4.40
46	FATEHGARH SAHIB	KHAMANOH	S-NPP	76.29498	30.82635	12:54:00	D	7.40
47	FIROZPUR	FIROZPUR	S-NPP	74.90927	30.75130	12:54:00	D	2.90
48	FIROZPUR	FIROZPUR	S-NPP	74.50253	30.88998	14:30:00	D	7.30
49	FIROZPUR	FIROZPUR	S-NPP	74.50526	30.89049	14:30:00	D	5.90
50	FIROZPUR	FIROZPUR	AQUA	74.53212	30.93787	13:47:00	D	13.88
51	FIROZPUR	FIROZPUR	S-NPP	74.51945	30.93893	12:54:00	D	4.80
52	FIROZPUR	FIROZPUR	AQUA	74.67962	30.94760	13:47:00	D	6.94
53	FIROZPUR	FIROZPUR	S-NPP	74.54066	30.96603	12:54:00	D	2.90
54	FIROZPUR	FIROZPUR	S-NPP	74.54178	30.96610	12:54:00	D	3.10
55	FIROZPUR	JALALABAD	S-NPP	74.32919	30.58682	14:30:00	D	5.10
56	FIROZPUR	JALALABAD	S-NPP	74.32317	30.67235	12:54:00	D	3.50
57	FIROZPUR	ZIRA	S-NPP	74.98212	31.03201	14:30:00	D	4.50
58	GURDASPUR	BATALA	S-NPP	75.03034	31.81799	12:54:00	D	4.60
59	GURDASPUR	BATALA	S-NPP	75.13171	31.84757	14:36:00	D	4.10

60	JALANDHAR	JALANDHAR II	S-NPP	75.54310	31.44645	14:36:00	D	3.40
61	JALANDHAR	JALANDHAR II	AQUA	75.46575	31.46113	13:47:00	D	9.44
62	JALANDHAR	JALANDHAR II	S-NPP	75.53828	31.46209	14:36:00	D	3.00
63	KAPURTHALA	BHOLATH	AQUA	75.50412	31.46787	13:47:00	D	25.30
64	LUDHIANA	SAMRALA	AQUA	76.21436	30.74099	13:47:00	D	10.59
65	MUKTSAR	MUKTSAR	AQUA	74.57048	30.53587	13:47:00	D	8.31
66	MUKTSAR	MUKTSAR	S-NPP	74.52929	30.64956	12:54:00	D	2.20
67	NAWASHAHR	BALACHAUR	S-NPP	76.28989	31.09442	12:54:00	D	4.00
68	PATIALA	NABHA	S-NPP	76.19667	30.36418	12:54:00	D	2.60
69	PATIALA	PATIALA	S-NPP	76.62099	30.15449	12:54:00	D	3.40
70	PATIALA	PATIALA	S-NPP	76.60812	30.23232	12:54:00	D	1.90
71	PATIALA	PATIALA	S-NPP	76.25405	30.26190	12:54:00	D	11.00
72	PATIALA	PATIALA	S-NPP	76.25462	30.26291	12:54:00	D	9.20
73	PATIALA	PATIALA	AQUA	76.27097	30.27626	13:47:00	D	21.21
74	PATIALA	RAJPURA	S-NPP	76.64793	30.53424	12:54:00	D	6.40
75	PATIALA	SAMANA	S-NPP	76.02101	29.95594	12:54:00	D	4.50
76	SANGRUR	MALERKOTLA	S-NPP	76.04461	30.43908	12:54:00	D	6.20
77	SANGRUR	MALERKOTLA	S-NPP	76.04617	30.44130	12:54:00	D	5.10
78	SANGRUR	MALERKOTLA	S-NPP	75.81758	30.51518	14:30:00	D	5.40
79	SANGRUR	MOONAK	AQUA	75.84261	29.80973	13:47:00	D	16.84
80	SANGRUR	MOONAK	S-NPP	75.83849	29.80981	12:54:00	D	30.30
81	SAS NAGAR	DERABASSI	S-NPP	76.88109	30.51307	12:54:00	D	2.70
82	SAS NAGAR	DERABASSI	S-NPP	76.88338	30.51396	12:54:00	D	3.40
83	SAS NAGAR	DERABASSI	S-NPP	76.82845	30.51585	12:54:00	D	2.60
84	SAS NAGAR	DERABASSI	S-NPP	76.78117	30.53921	12:54:00	D	4.00
85	SAS NAGAR	DERABASSI	S-NPP	76.78138	30.55858	12:54:00	D	3.10
86	SBS NAGAR	MOHALI	S-NPP	76.75668	30.61432	12:54:00	D	6.10
87	TARN TARAN	KHADOOR SAHIB	S-NPP	75.01052	31.23158	12:54:00	D	2.40
88	TARN TARAN	KHADOOR SAHIB	AQUA	75.06160	31.33537	13:47:00	D	14.77
89	TARN TARAN	KHADOOR SAHIB	S-NPP	75.06668	31.39400	14:36:00	D	6.80
90	TARN TARAN	KHADOOR SAHIB	AQUA	75.07183	31.39526	13:47:00	D	12.95

91	TARN TARAN	KHADOOR SAHIB	S-NPP	75.06212	31.39763	14:36:00	D	4.50
92	TARN TARAN	KHADOOR SAHIB	AQUA	75.10764	31.41622	13:47:00	D	7.94
93	TARN TARAN	KHADOOR SAHIB	AQUA	74.88084	31.44467	13:47:00	D	8.96
94	TARN TARAN	KHADOOR SAHIB	S-NPP	75.10799	31.45368	12:54:00	D	4.80
95	TARN TARAN	KHADOOR SAHIB	S-NPP	74.88369	31.45921	12:54:00	D	2.20
96	TARN TARAN	KHADOOR SAHIB	S-NPP	75.11951	31.46162	12:54:00	D	4.20
97	TARN TARAN	KHADOOR SAHIB	AQUA	75.19256	31.46922	13:47:00	D	7.90
98	TARN TARAN	KHADOOR SAHIB	AQUA	74.69838	31.47012	13:47:00	D	8.60
99	TARN TARAN	KHADOOR SAHIB	AQUA	75.03602	31.47012	13:47:00	D	17.79
100	TARN TARAN	PATTI	S-NPP	74.60194	31.09687	12:54:00	D	8.60
101	TARN TARAN	PATTI	S-NPP	74.60548	31.09772	12:54:00	D	8.60
102	TARN TARAN	PATTI	AQUA	74.56537	31.11977	13:47:00	D	10.67
103	TARN TARAN	PATTI	AQUA	74.64893	31.13924	13:47:00	D	7.33
104	TARN TARAN	PATTI	S-NPP	74.71966	31.18993	12:54:00	D	2.90
105	TARN TARAN	PATTI	S-NPP	74.65617	31.21284	12:54:00	D	1.60
106	TARN TARAN	PATTI	AQUA	74.65745	31.21410	13:47:00	D	30.04
107	TARN TARAN	PATTI	S-NPP	74.68689	31.24898	14:36:00	D	7.20
108	TARN TARAN	PATTI	S-NPP	74.68425	31.25418	14:36:00	D	5.60
109	TARN TARAN	PATTI	S-NPP	74.57060	31.32615	12:54:00	D	1.90
110	TARN TARAN	PATTI	S-NPP	74.63267	31.36803	12:54:00	D	3.10
111	TARN TARAN	PATTI	AQUA	74.60630	31.38478	13:47:00	D	7.81
112	TARN TARAN	PATTI	S-NPP	74.64613	31.41974	12:54:00	D	1.90

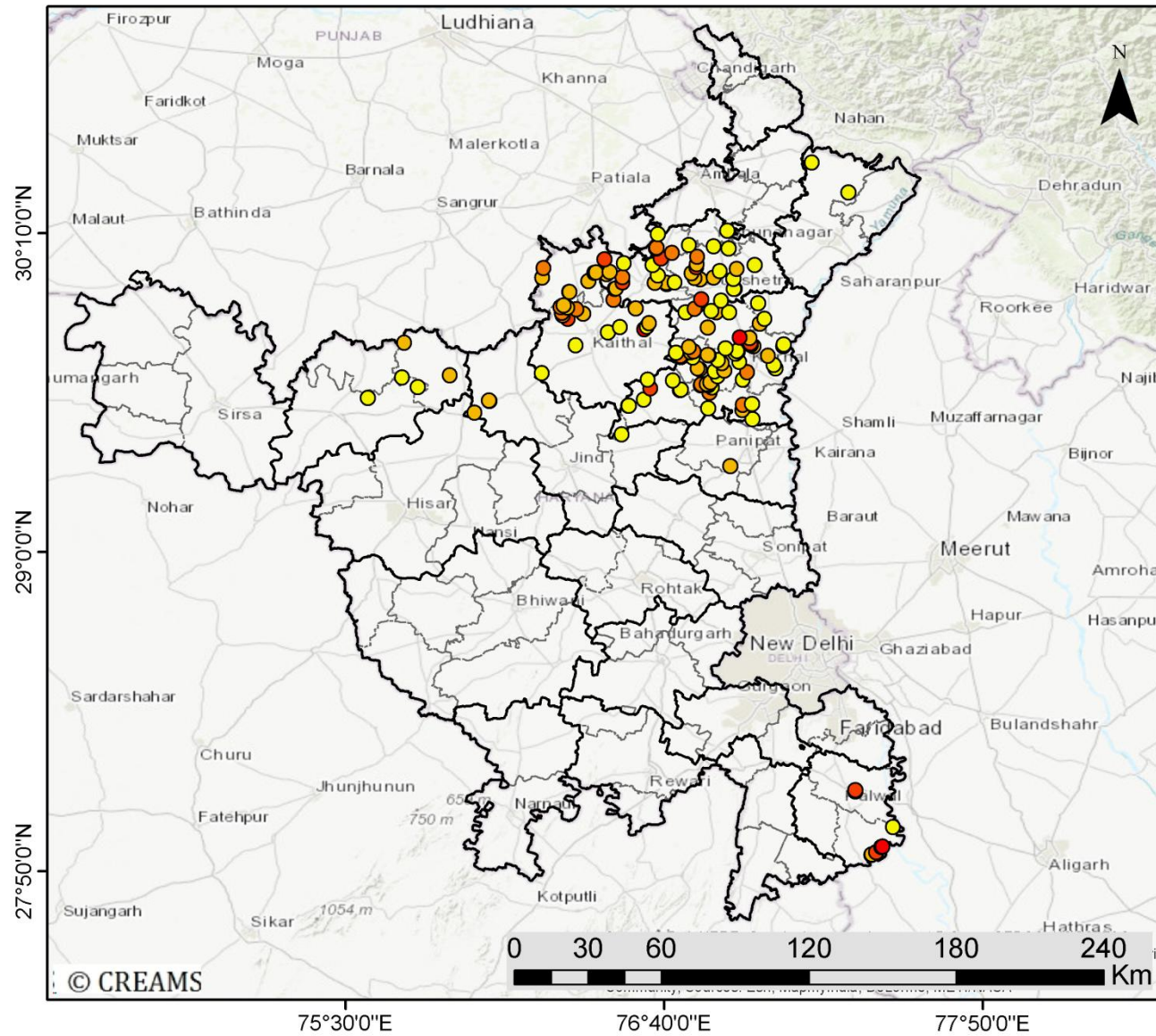


**District-wise cumulative number of residue burning events in Punjab (30-Sep-2018 to 14-Oct-2018)**



(b) Haryana

PADDY RESIDUE BURNING IN HARYANA



153 burning events detected in Haryana on 14th October, 2018

FIRE INTENSITY (W/m<sup>2</sup>)

- 1 - 4
- 5 - 8
- 9 - 12
- 13 - 16
- 17 - 20



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

**Details of residue burning events in Haryana on 14-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	AMBALA	S-NPP	76.64222	30.16413	12:54:00	D	3.80
2	FARIDABAD	HODAL	S-NPP	77.42438	27.89235	12:54:00	D	2.10
3	FARIDABAD	HODAL	S-NPP	77.42696	27.89415	12:54:00	D	4.50
4	FARIDABAD	HODAL	S-NPP	77.44233	27.90242	12:54:00	D	13.40
5	FARIDABAD	HODAL	S-NPP	77.46066	27.92112	12:54:00	D	18.40
6	FARIDABAD	HODAL	S-NPP	77.46617	27.92232	12:54:00	D	18.40
7	FARIDABAD	PALWAL	S-NPP	77.50478	27.99412	12:54:00	D	3.00
8	FARIDABAD	PALWAL	S-NPP	77.36655	28.12463	12:54:00	D	13.10
9	FARIDABAD	PALWAL	S-NPP	77.36528	28.12926	12:54:00	D	13.10
10	FATEHABAD	FATEHABAD	S-NPP	75.58075	29.56514	00:36:00	N	0.90
11	FATEHABAD	FATEHABAD	S-NPP	75.76414	29.60494	12:54:00	D	3.00
12	FATEHABAD	TOHANA	S-NPP	75.70717	29.63907	12:54:00	D	2.40
13	FATEHABAD	TOHANA	S-NPP	75.88168	29.64778	12:54:00	D	5.60
14	FATEHABAD	TOHANA	S-NPP	75.71445	29.76597	12:54:00	D	6.20
15	JIND	JIND	S-NPP	76.51068	29.43076	12:54:00	D	3.70
16	JIND	NARWANA	S-NPP	75.97143	29.51092	12:54:00	D	6.10
17	JIND	NARWANA	S-NPP	76.02588	29.55416	12:54:00	D	5.50
18	JIND	NARWANA	S-NPP	76.02361	29.55457	12:54:00	D	6.30
19	KAITHAL	GUHLA	S-NPP	76.31874	29.95213	12:54:00	D	5.90
20	KAITHAL	GUHLA	S-NPP	76.32043	29.95307	12:54:00	D	6.90
21	KAITHAL	GUHLA	S-NPP	76.38857	29.99301	12:54:00	D	7.40
22	KAITHAL	GUHLA	S-NPP	76.22041	30.00568	12:54:00	D	5.50
23	KAITHAL	GUHLA	S-NPP	76.41095	30.02302	12:54:00	D	7.90
24	KAITHAL	GUHLA	S-NPP	76.41681	30.02432	12:54:00	D	7.90
25	KAITHAL	GUHLA	AQUA	76.22459	30.04030	13:47:00	D	8.97
26	KAITHAL	GUHLA	AQUA	76.44696	30.07144	13:47:00	D	13.81
27	KAITHAL	KAITHAL	S-NPP	76.60611	29.63231	12:54:00	D	3.00
28	KAITHAL	KAITHAL	S-NPP	76.21800	29.65520	12:54:00	D	3.60

29	KAITHAL	KAITHAL	AQUA	76.70206	29.68097	13:47:00	D	41.60
30	KAITHAL	KAITHAL	S-NPP	76.34177	29.75773	12:54:00	D	3.80
31	KAITHAL	KAITHAL	S-NPP	76.46033	29.80446	12:54:00	D	3.10
32	KAITHAL	KAITHAL	AQUA	76.59341	29.81658	13:47:00	D	17.31
33	KAITHAL	KAITHAL	S-NPP	76.50431	29.82424	12:54:00	D	3.60
34	KAITHAL	KAITHAL	S-NPP	76.60223	29.82614	12:54:00	D	3.60
35	KAITHAL	KAITHAL	S-NPP	76.61101	29.83800	12:54:00	D	6.20
36	KAITHAL	KAITHAL	AQUA	76.31326	29.85465	13:47:00	D	13.05
37	KAITHAL	KAITHAL	AQUA	76.34566	29.85764	13:47:00	D	26.79
38	KAITHAL	KAITHAL	S-NPP	76.37170	29.86396	12:54:00	D	67.60
39	KAITHAL	KAITHAL	S-NPP	76.38351	29.86663	12:54:00	D	21.30
40	KAITHAL	KAITHAL	S-NPP	76.29493	29.86679	12:54:00	D	11.80
41	KAITHAL	KAITHAL	S-NPP	76.36898	29.87339	12:54:00	D	4.30
42	KAITHAL	KAITHAL	S-NPP	76.29214	29.87626	12:54:00	D	10.00
43	KAITHAL	KAITHAL	S-NPP	76.34572	29.88828	12:54:00	D	10.30
44	KAITHAL	KAITHAL	S-NPP	76.56226	29.89196	12:54:00	D	4.20
45	KAITHAL	KAITHAL	S-NPP	76.31187	29.89581	12:54:00	D	6.50
46	KAITHAL	KAITHAL	AQUA	76.28598	29.89657	13:47:00	D	11.41
47	KAITHAL	KAITHAL	AQUA	76.38659	29.89807	13:47:00	D	27.84
48	KAITHAL	KAITHAL	S-NPP	76.29720	29.90262	12:54:00	D	5.10
49	KARNAL	ASSANDH	S-NPP	76.53456	29.53633	12:54:00	D	5.20
50	KARNAL	ASSANDH	S-NPP	76.53648	29.53691	12:54:00	D	3.30
51	KARNAL	ASSANDH	S-NPP	76.59220	29.55913	12:54:00	D	3.30
52	KARNAL	ASSANDH	S-NPP	76.72349	29.59273	12:54:00	D	3.80
53	KARNAL	ASSANDH	S-NPP	76.72677	29.59468	12:54:00	D	2.90
54	KARNAL	ASSANDH	S-NPP	76.61549	29.59954	12:54:00	D	14.20
55	KARNAL	ASSANDH	S-NPP	76.69904	29.62808	12:54:00	D	2.70
56	KARNAL	GHARAUNDA	S-NPP	76.98888	29.48729	12:54:00	D	3.80
57	KARNAL	GHARAUNDA	S-NPP	76.95319	29.52048	12:54:00	D	5.90
58	KARNAL	GHARAUNDA	S-NPP	76.82680	29.52665	12:54:00	D	2.70
59	KARNAL	GHARAUNDA	AQUA	76.95444	29.53874	13:47:00	D	9.80
60	KARNAL	GHARAUNDA	S-NPP	76.98801	29.54288	12:54:00	D	3.90

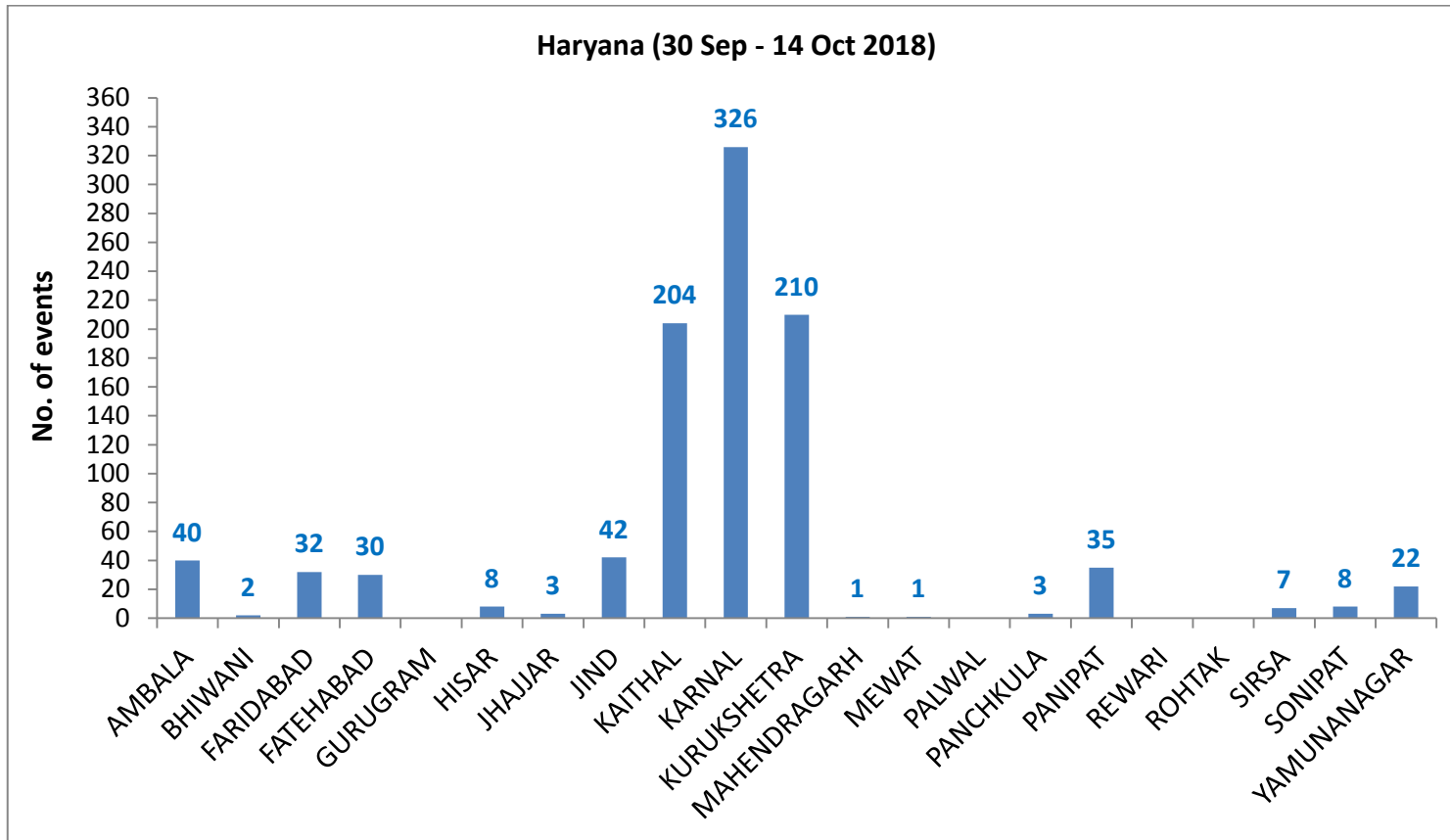
61	KARNAL	GHARAUNDA	AQUA	77.03834	29.57647	13:47:00	D	35.42
62	KARNAL	INDRI	S-NPP	77.01583	29.83641	12:54:00	D	6.30
63	KARNAL	INDRI	S-NPP	77.03365	29.85475	12:54:00	D	3.80
64	KARNAL	INDRI	S-NPP	77.01067	29.91154	12:54:00	D	3.50
65	KARNAL	KARNAL	AQUA	76.83166	29.58366	13:47:00	D	9.82
66	KARNAL	KARNAL	S-NPP	76.84081	29.60346	12:54:00	D	2.50
67	KARNAL	KARNAL	AQUA	76.82655	29.61061	13:47:00	D	12.51
68	KARNAL	KARNAL	S-NPP	76.80039	29.61118	12:54:00	D	5.20
69	KARNAL	KARNAL	S-NPP	76.81995	29.61366	12:54:00	D	3.30
70	KARNAL	KARNAL	S-NPP	76.80170	29.61462	12:54:00	D	8.20
71	KARNAL	KARNAL	S-NPP	76.82288	29.61621	12:54:00	D	6.20
72	KARNAL	KARNAL	S-NPP	76.83551	29.62194	12:54:00	D	4.70
73	KARNAL	KARNAL	S-NPP	76.95480	29.63100	12:54:00	D	3.10
74	KARNAL	KARNAL	S-NPP	76.86244	29.64466	12:54:00	D	2.00
75	KARNAL	KARNAL	S-NPP	76.97031	29.65881	12:54:00	D	8.20
76	KARNAL	KARNAL	S-NPP	76.85162	29.66187	12:54:00	D	3.70
77	KARNAL	KARNAL	S-NPP	76.88639	29.66465	12:54:00	D	5.80
78	KARNAL	KARNAL	S-NPP	76.79583	29.66921	12:54:00	D	5.30
79	KARNAL	KARNAL	S-NPP	76.78889	29.67260	12:54:00	D	4.50
80	KARNAL	KARNAL	S-NPP	77.07316	29.67307	12:54:00	D	3.60
81	KARNAL	KARNAL	S-NPP	77.06731	29.68510	12:54:00	D	2.80
82	KARNAL	KARNAL	S-NPP	76.87852	29.69225	12:54:00	D	5.20
83	KARNAL	KARNAL	S-NPP	76.94214	29.69643	12:54:00	D	4.00
84	KARNAL	KARNAL	S-NPP	76.86344	29.70363	12:54:00	D	3.30
85	KARNAL	KARNAL	S-NPP	76.77129	29.71301	12:54:00	D	3.40
86	KARNAL	KARNAL	S-NPP	76.72623	29.71394	12:54:00	D	4.80
87	KARNAL	KARNAL	S-NPP	76.72491	29.71858	12:54:00	D	9.60
88	KARNAL	KARNAL	S-NPP	77.04616	29.71916	12:54:00	D	6.10
89	KARNAL	KARNAL	S-NPP	76.82890	29.72059	12:54:00	D	6.00
90	KARNAL	KARNAL	S-NPP	76.82589	29.72148	12:54:00	D	7.30
91	KARNAL	KARNAL	S-NPP	76.92747	29.72731	12:54:00	D	3.50
92	KARNAL	KARNAL	S-NPP	76.70959	29.72997	12:54:00	D	2.20



93	KARNAL	KARNAL	S-NPP	76.76314	29.73204	12:54:00	D	4.30
94	KARNAL	KARNAL	S-NPP	76.93723	29.73429	12:54:00	D	2.60
95	KARNAL	KARNAL	S-NPP	76.77441	29.73455	12:54:00	D	10.20
96	KARNAL	KARNAL	S-NPP	76.93393	29.73586	12:54:00	D	1.40
97	KARNAL	KARNAL	AQUA	76.90767	29.74343	13:47:00	D	22.83
98	KARNAL	KARNAL	S-NPP	76.89004	29.74559	12:54:00	D	2.80
99	KARNAL	KARNAL	S-NPP	76.75787	29.75055	12:54:00	D	4.60
100	KARNAL	KARNAL	S-NPP	76.99294	29.75389	12:54:00	D	5.20
101	KARNAL	KARNAL	AQUA	77.10280	29.75434	13:47:00	D	14.72
102	KARNAL	KARNAL	S-NPP	76.98282	29.75870	12:54:00	D	2.90
103	KARNAL	KARNAL	S-NPP	77.10340	29.76052	12:54:00	D	2.80
104	KARNAL	KARNAL	AQUA	76.98173	29.76482	13:47:00	D	15.59
105	KARNAL	KARNAL	S-NPP	76.97840	29.78463	12:54:00	D	4.30
106	KARNAL	NILOKHERI	S-NPP	76.94292	29.78653	12:54:00	D	18.80
107	KARNAL	NILOKHERI	S-NPP	76.82596	29.82194	12:54:00	D	4.10
108	KARNAL	NILOKHERI	S-NPP	76.85725	29.87777	12:54:00	D	6.50
109	KARNAL	NILOKHERI	S-NPP	76.90406	29.87836	12:54:00	D	2.70
110	KARNAL	NILOKHERI	S-NPP	76.83800	29.88328	12:54:00	D	2.40
111	KURUKSHETRA	PEHOWA	AQUA	76.48038	29.92352	13:47:00	D	11.07
112	KURUKSHETRA	PEHOWA	S-NPP	76.48590	29.96445	12:54:00	D	7.70
113	KURUKSHETRA	PEHOWA	S-NPP	76.48951	29.96586	12:54:00	D	6.00
114	KURUKSHETRA	PEHOWA	S-NPP	76.67596	29.98153	12:54:00	D	8.90
115	KURUKSHETRA	PEHOWA	S-NPP	76.67462	29.98616	12:54:00	D	4.10
116	KURUKSHETRA	PEHOWA	S-NPP	76.63225	29.98671	12:54:00	D	6.00
117	KURUKSHETRA	PEHOWA	S-NPP	76.70417	29.98774	12:54:00	D	2.70
118	KURUKSHETRA	PEHOWA	AQUA	76.51448	29.98790	13:47:00	D	12.22
119	KURUKSHETRA	PEHOWA	S-NPP	76.51468	30.00637	12:54:00	D	9.30
120	KURUKSHETRA	PEHOWA	S-NPP	76.64259	30.01360	12:54:00	D	3.00
121	KURUKSHETRA	PEHOWA	S-NPP	76.45586	30.01807	12:54:00	D	4.20
122	KURUKSHETRA	PEHOWA	S-NPP	76.46609	30.02534	12:54:00	D	7.00
123	KURUKSHETRA	PEHOWA	S-NPP	76.62363	30.05051	12:54:00	D	2.70
124	KURUKSHETRA	PEHOWA	S-NPP	76.51800	30.05757	00:36:00	N	0.70

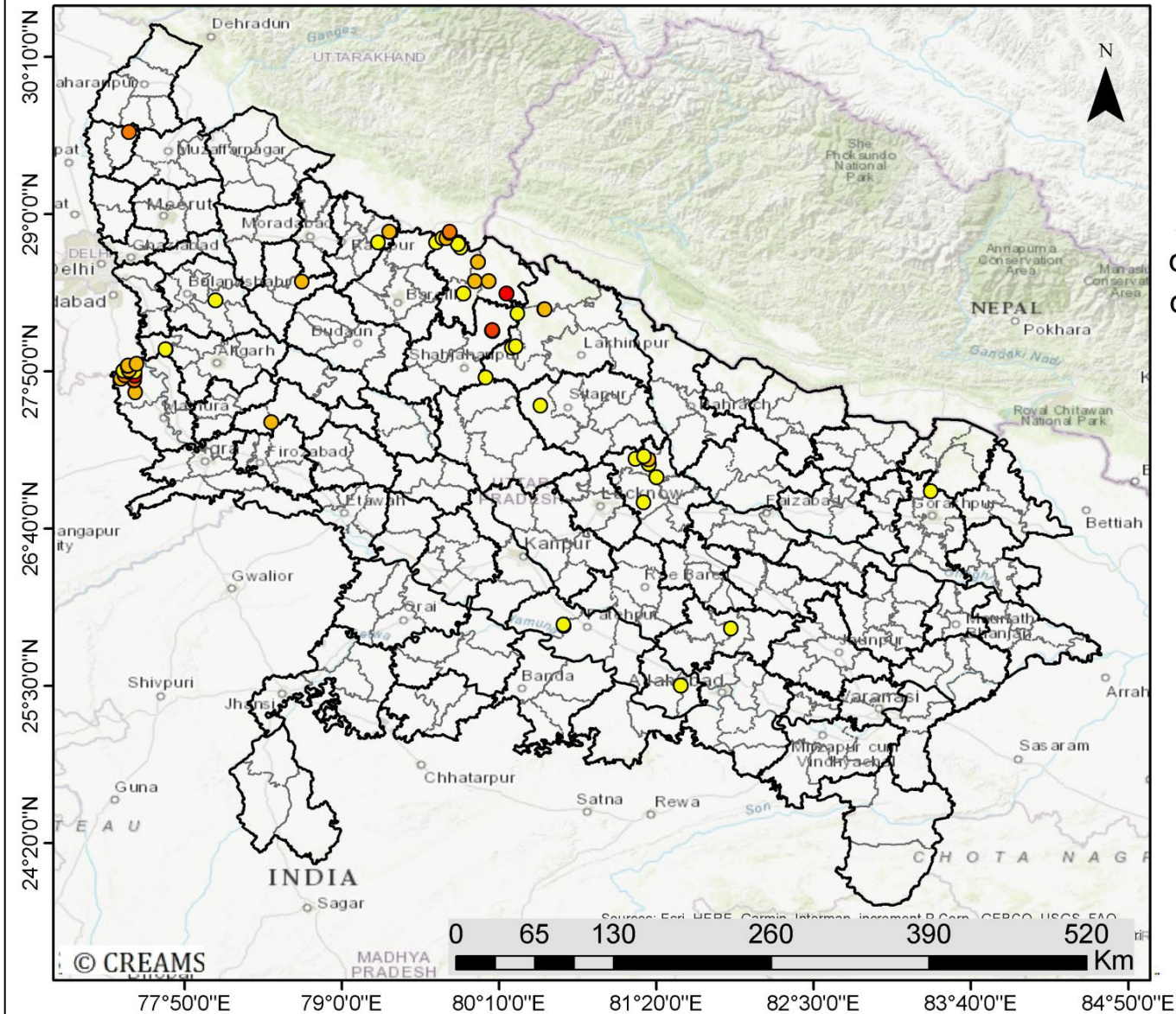
125	KURUKSHETRA	PEHOWA	AQUA	76.65363	30.07503	13:47:00	D	13.30
126	KURUKSHETRA	PEHOWA	S-NPP	76.69469	30.09571	12:54:00	D	8.90
127	KURUKSHETRA	PEHOWA	S-NPP	76.63589	30.11229	12:54:00	D	5.00
128	KURUKSHETRA	PEHOWA	S-NPP	76.63867	30.11416	12:54:00	D	9.40
129	KURUKSHETRA	PEHOWA	S-NPP	76.75780	30.12420	12:54:00	D	3.80
130	KURUKSHETRA	SHAHABAD	S-NPP	76.89771	30.17707	12:54:00	D	2.90
131	KURUKSHETRA	SHAHABAD	AQUA	76.81632	30.18104	13:47:00	D	26.34
132	KURUKSHETRA	THANESAR	S-NPP	76.74464	29.87741	12:54:00	D	3.60
133	KURUKSHETRA	THANESAR	AQUA	76.77710	29.89058	13:47:00	D	10.29
134	KURUKSHETRA	THANESAR	S-NPP	76.87444	29.92052	12:54:00	D	3.80
135	KURUKSHETRA	THANESAR	AQUA	76.80097	29.92502	13:47:00	D	13.72
136	KURUKSHETRA	THANESAR	S-NPP	76.92368	29.96310	12:54:00	D	3.60
137	KURUKSHETRA	THANESAR	S-NPP	76.92030	29.96444	12:54:00	D	2.00
138	KURUKSHETRA	THANESAR	S-NPP	76.79637	29.99821	12:54:00	D	4.20
139	KURUKSHETRA	THANESAR	S-NPP	76.91871	30.00079	12:54:00	D	3.80
140	KURUKSHETRA	THANESAR	S-NPP	76.77704	30.00373	12:54:00	D	5.00
141	KURUKSHETRA	THANESAR	S-NPP	76.84756	30.00458	12:54:00	D	6.00
142	KURUKSHETRA	THANESAR	S-NPP	76.76616	30.02090	12:54:00	D	4.80
143	KURUKSHETRA	THANESAR	S-NPP	76.86987	30.02890	12:54:00	D	3.40
144	KURUKSHETRA	THANESAR	S-NPP	76.93145	30.03748	12:54:00	D	4.50
145	KURUKSHETRA	THANESAR	AQUA	76.78392	30.04329	13:47:00	D	15.54
146	KURUKSHETRA	THANESAR	S-NPP	76.99660	30.05165	12:54:00	D	3.90
147	KURUKSHETRA	THANESAR	S-NPP	76.78606	30.05451	12:54:00	D	4.40
148	KURUKSHETRA	THANESAR	S-NPP	76.78765	30.08198	12:54:00	D	9.60
149	KURUKSHETRA	THANESAR	S-NPP	76.90185	30.11203	12:54:00	D	2.40
150	KURUKSHETRA	THANESAR	S-NPP	76.84735	30.11945	12:54:00	D	3.30
151	PANIPAT	PANIPAT	S-NPP	76.90815	29.31531	12:54:00	D	5.40
152	YAMUNANAGAR	JAGADHRI	S-NPP	77.33995	30.31693	12:54:00	D	2.50
153	YAMUNANAGAR	JAGADHRI	S-NPP	77.20762	30.42669	12:54:00	D	2.20

**District-wise cumulative number of residue burning events in Haryana (30-Sep-2018 to 14-Oct-2018)**



(c) Uttar Pradesh

PADDY RESIDUE BURNING IN UTTAR PRADESH



**57** burning events detected in Uttar Pradesh on **14th October, 2018**

**FIRE INTENSITY (W/m<sup>2</sup>)**

- 1 - 4
- 5 - 8
- 9 - 12
- 13 - 16
- 17 - 20



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

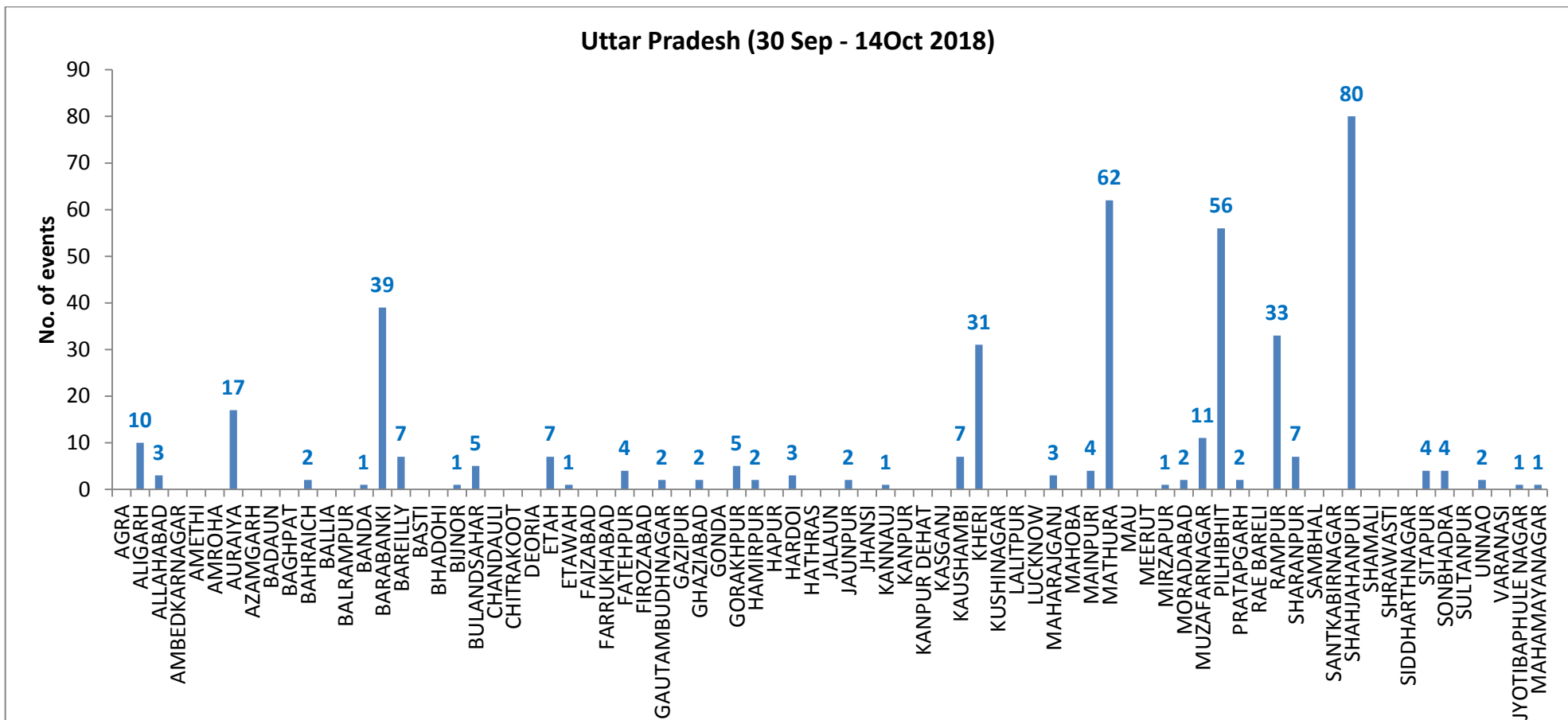
**Details of residue burning events in Uttar Pradesh on 14-Oct-2018**

<b>Event S.No.</b>	<b>District</b>	<b>Tehsil / Block</b>	<b>Satellite</b>	<b>Longitude</b>	<b>Time (UTC)</b>	<b>Time (IST)</b>	<b>Day/Night</b>	<b>Fire Power (W/m<sup>2</sup>)</b>
1	ALIGARH	KHAIR	S-NPP	77.69383	2006	00:36:00	N	0.70
2	ALIGARH	KHAIR	S-NPP	77.69298	2006	00:36:00	N	0.70
3	BARABANKI	FATEHPUR	S-NPP	81.27533	718	13:48:00	D	2.80
4	BARABANKI	FATEHPUR	S-NPP	81.27265	718	13:48:00	D	4.90
5	BARABANKI	FATEHPUR	S-NPP	81.17913	718	13:48:00	D	2.70
6	BARABANKI	FATEHPUR	S-NPP	81.24039	718	13:48:00	D	2.90
7	BARABANKI	NAWABGANJ	S-NPP	81.23930	718	13:48:00	D	3.60
8	BARABANKI	RAMNAGAR	S-NPP	81.33338	718	13:48:00	D	2.50
9	BULANDSAHAR	SHIKARPUR	S-NPP	78.06272	724	12:54:00	D	2.50
10	ETAH	JALESAR	S-NPP	78.47552	724	12:54:00	D	4.80
11	FATEHPUR	BINKI	S-NPP	80.64520	718	13:48:00	D	2.60
12	FATEHPUR	FATEHPUR	S-NPP	80.64799	718	13:48:00	D	1.20
13	GORAKHPUR	GORAKHPUR	S-NPP	83.37046	718	13:48:00	D	3.20
14	KAUSHAMBI	CHAIL	S-NPP	81.51408	718	13:48:00	D	3.50
15	KHERI	MOHMADI	S-NPP	80.06720	724	12:54:00	D	2.30
16	KHERI	MOHMADI	S-NPP	80.26202	724	12:54:00	D	3.50
17	KHERI	MOHMADI	S-NPP	80.28970	724	12:54:00	D	3.80
18	KHERI	PALIA KALAN	S-NPP	80.50169	724	12:54:00	D	3.10
19	KHERI	PALIA KALAN	S-NPP	80.50490	724	12:54:00	D	4.70
20	MATHURA	CHHATA	S-NPP	77.46685	724	12:54:00	D	6.20
21	MATHURA	CHHATA	AQUA	77.45238	817	13:47:00	D	22.60
22	MATHURA	CHHATA	S-NPP	77.45827	724	12:54:00	D	3.80
23	MATHURA	CHHATA	S-NPP	77.45974	724	12:54:00	D	9.10
24	MATHURA	CHHATA	S-NPP	77.36020	724	12:54:00	D	6.00
25	MATHURA	CHHATA	AQUA	77.46310	817	13:47:00	D	19.90
26	MATHURA	CHHATA	AQUA	77.38758	817	13:47:00	D	10.73
27	MATHURA	CHHATA	S-NPP	77.42406	724	12:54:00	D	8.40



28	MATHURA	CHHATA	S-NPP	77.46416	724	12:54:00	D	1.40
29	MATHURA	CHHATA	S-NPP	77.37996	724	12:54:00	D	2.70
30	MATHURA	CHHATA	S-NPP	77.42030	724	12:54:00	D	5.30
31	MATHURA	CHHATA	S-NPP	77.41147	724	12:54:00	D	8.20
32	MATHURA	CHHATA	S-NPP	77.41406	724	12:54:00	D	6.70
33	MATHURA	CHHATA	S-NPP	77.47801	724	12:54:00	D	7.40
34	MORADABAD	CHANDAUSI	S-NPP	78.70187	724	12:54:00	D	4.20
35	MUZAFARNAGAR	SHAMLI	S-NPP	77.42094	724	12:54:00	D	9.20
36	PILHIBHIT	BISALPUR	S-NPP	79.90238	724	12:54:00	D	3.60
37	PILHIBHIT	PILHIBHIT	S-NPP	79.88054	724	12:54:00	D	2.30
38	PILHIBHIT	PILHIBHIT	S-NPP	79.86186	724	12:54:00	D	1.40
39	PILHIBHIT	PILHIBHIT	S-NPP	79.70042	724	12:54:00	D	1.50
40	PILHIBHIT	PILHIBHIT	S-NPP	79.74713	724	12:54:00	D	2.80
41	PILHIBHIT	PILHIBHIT	S-NPP	79.77583	724	12:54:00	D	5.50
42	PILHIBHIT	PILHIBHIT	S-NPP	79.79941	724	12:54:00	D	3.70
43	PILHIBHIT	PILHIBHIT	S-NPP	79.80334	724	12:54:00	D	8.10
44	PILHIBHIT	PILHIBHIT	S-NPP	79.80135	724	12:54:00	D	9.40
45	PILHIBHIT	PURANPUR	S-NPP	80.22217	724	12:54:00	D	17.00
46	PILHIBHIT	PURANPUR	S-NPP	80.08920	724	12:54:00	D	6.50
47	PILHIBHIT	PURANPUR	S-NPP	79.98656	724	12:54:00	D	4.10
48	PILHIBHIT	PURANPUR	S-NPP	80.00762	724	12:54:00	D	6.50
49	PRATAPGARH	LALGANJ	S-NPP	81.88538	718	13:48:00	D	3.10
50	PRATAPGARH	LALGANJ	S-NPP	81.88760	718	13:48:00	D	1.80
51	RAMPUR	BILASPUR	S-NPP	79.26965	724	12:54:00	D	1.70
52	RAMPUR	BILASPUR	S-NPP	79.35152	724	12:54:00	D	7.30
53	SHAHJAHANPUR	PUWANYA	S-NPP	80.11844	724	12:54:00	D	7.90
54	SHAHJAHANPUR	PUWANYA	S-NPP	80.11359	724	12:54:00	D	12.50
55	SHAHJAHANPUR	PUWANYA	S-NPP	80.11748	724	12:54:00	D	12.50
56	SHAHJAHANPUR	PUWANYA	S-NPP	80.30195	724	12:54:00	D	2.50
57	SITAPUR	MISRIK	S-NPP	80.47501	724	12:54:00	D	2.60

**District-wise cumulative number of residue burning events in Uttar Pradesh (30-Sep-2018 to 14-Oct-2018)**



**State wise, date wise and district-wise number of residue burning events detected in 2017 and 2018**  
**(Period: 30-Sep-2018 to 14-Oct-2018)**

Date	Punjab		Haryana		UP		Total	
	2017	2018	2017	2018	2017	2018	2017	2018
<b>30-Sep-18</b>	--	11	---	7	---	13	---	31
<b>1-Oct-18</b>	54	16	13	9	2	11	69	36
<b>2-Oct-18</b>	50	9	27	23	8	21	85	53
<b>3-Oct-18</b>	62	4	40	9	17	12	119	25
<b>4-Oct-18</b>	103	32	60	16	22	5	185	53
<b>5-Oct-18</b>	106	56	68	30	20	10	194	96
<b>6-Oct-18</b>	138	87	75	65	39	13	252	165
<b>7-Oct-18</b>	105	162	97	180	31	69	233	411
<b>8-Oct-18</b>	215	39	218	40	75	54	508	133
<b>9-Oct-18</b>	163	75	148	47	87	32	398	154
<b>10-Oct-18</b>	164	23	151	37	126	21	441	81
<b>11-Oct-18</b>	177	30	87	78	74	24	338	132
<b>12-Oct-18</b>	342	67	123	133	51	22	516	222
<b>13-Oct-18</b>	470	62	207	147	69	61	746	270
<b>14-Oct-18</b>	582	112	333	153	137	57	1052	322
<b>Total</b>	<b>2731</b>	<b>785</b>	<b>1647</b>	<b>974</b>	<b>762</b>	<b>425</b>	<b>5140</b>	<b>2184</b>

**(a) Punjab**

Districts	01 - 14 Oct	
	2017	2018
AMRITSAR	442	352
BARNALA	8	1
BATHINDA	127	15
FARIDKOT	393	16
FATEHGARH SAHIB	88	13
FAZILKA	0	0
FIROZPUR	326	44
GURDASPUR	70	28
HOSHIARPUR	6	3
JALANDHAR	96	4
KAPURTHALA	34	3
LUDHIANA	165	24
MANSA	46	4
MOGA	39	0
MUKTSAR	59	5
NAWASHAHR	14	5
PATHANKOT	0	0
PATIALA	327	75
RUPNAGAR	5	0
SANGRUR	110	39
SAS NAGAR	35	26
TARN TARAN	328	123
SBS NAGAR	13	5
<b>Total</b>	<b>2731</b>	<b>785</b>

**(b) Haryana**

Districts	01 -14 Oct	
	2017	2018
AMBALA	118	40
BHIWANI	2	2
FARIDABAD	20	32
FATEHABAD	68	30
GURUGRAM	0	0
HISAR	14	8
JHAJJAR	0	3
JIND	81	42
KAITHAL	368	204
KARNAL	536	326
KURUKSHETRA	347	210
MAHENDRAGARH	0	1
MEWAT	0	1
PALWAL	0	0
PANCHKULA	0	3
PANIPAT	22	35
REWARI	0	0
ROHTAK	1	0
SIRSA	15	7
SONIPAT	8	8
YAMUNANAGAR	47	22
<b>Total</b>	<b>1647</b>	<b>974</b>

**(c) Uttar Pradesh**

Districts	01 - 14 Oct		FIROZABAD	0	0	PRATAPGARH	0	2
	2017	2018						
AGRA	0	0	GAZIPUR	0	0	RAMPUR	100	33
ALIGARH	10	10	GHAZIABAD	1	2	SHARANPUR	13	7
ALLAHABAD	0	3	GONDA	0	0	SAMBHAL	0	0
AMBEDKAR NAGAR	1	0	GORAKHPUR	2	5	SANTKABIR NAGAR	0	0
AMETHI	0	0	HAMIRPUR	0	2	SHAHJAHANPUR	249	80
AMROHA	0	0	HAPUR	0	0	SHAMALI	0	0
AURAIYA	33	17	HARDOI	2	3	SHRAWASTI	0	0
AZAMGARH	0	0	HATHRAS	0	0	SIDDHARTH NAGAR	0	0
BADAUN	1	0	JALAUN	0	0	SITAPUR	4	4
BAGHPAT	0	0	JAUNPUR	0	2	SONBHADRA	1	4
BAHRAICH	0	2	JHANSI	0	0	SULTANPUR	0	0
BALLIA	0	0	KANNAUJ	0	1	UNNAO	0	2
BALRAMPUR	0	0	KANPUR	0	0	VARANASI	0	0
BANDA	0	1	KANPUR DEHAT	1	0	JYOTIBAPHULE NAGAR	0	1
BARABANKI	17	39	KASGANJ	0	0	MAHAMAYA NAGAR	0	1
BAREILLY	21	7	KAUSHAMBI	2	7	Total	762	425
BASTI	0	0	KHERI	74	31			
BHADOHI	0	0	KUSHINAGAR	1	0			
BIJNOR	0	1	LALITPUR	0	0			
BULANDSAHAR	4	5	LUCKNOW	4	0			
CHANDAULI	0	0	MAHARAJGANJ	5	3			
CHITRAKOOT	0	0	MAHOBA	0	0			
DEORIA	0	0	MAINPURI	2	4			
ETAH	2	7	MATHURA	20	62			
ETAWAH	3	1	MAU	0	0			
FAIZABAD	1	0	MEERUT	5	0			
FARRUKHABAD	0	0	MIRZAPUR	1	1			
FATEHPUR	4	4	MORADABAD	6	2			
			MUZAFARNAGAR	34	11			
			PILHIBHIT	137	56			



## 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

### Study Team

ICAR – HQ	Dr K. Alagusundaram	DDG (Agril. Engg.)	<a href="mailto:ddgengg@icar.org.in">ddgengg@icar.org.in</a>
	Dr S. Bhaskar	ADG (NRM)	<a href="mailto:adgagroandaf@gmail.com">adgagroandaf@gmail.com</a>
ICAR - IARI	Dr V.K. Sehgal	Professor & Nodal Scientist	<a href="mailto:iaricreams@gmail.com">iaricreams@gmail.com</a> <a href="mailto:vk.sehgal@icar.gov.in">vk.sehgal@icar.gov.in</a>
	Dr Rajkumar Dhakar	Scientist	<a href="mailto:rajdhakar.iari@gmail.com">rajdhakar.iari@gmail.com</a>
	Shri Rakeshwar Verma	Chief Technical Officer	<a href="mailto:rakeshwar.verma@icar.gov.in">rakeshwar.verma@icar.gov.in</a>
	Mr Aakash Chhabra	SRF (NICRA)	<a href="mailto:aakash.chhabra7489@gmail.com">aakash.chhabra7489@gmail.com</a>
ICAR - ATARI	Dr Rajbir Singh	Director ATARI (Zone-1)	<a href="mailto:rajbirsingh.zpd@gmail.com">rajbirsingh.zpd@gmail.com</a>
	Dr U.S. Gautam	Director ATARI (Zone-IV)	<a href="mailto:zpdicarkanpur@gmail.com">zpdicarkanpur@gmail.com</a>
ICAR - IASRI	Dr Rajender Parsad	Principal Scientist	<a href="mailto:rajender.parsad@icar.gov.in">rajender.parsad@icar.gov.in</a>

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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