

# *Annual Final Report*

## *AFR*

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# 2016

## **CV-Helios Network Annual Final Report for 2016**

In the year 2016, Solar Cycle no. 24

The Average CV was: 30,6 and the Average 6-rot. Smoothed CV was: 36,0

The Average CV-USAF was: 21,9

giving an Estimated STDEV of: 7,7

CV-Helios Network observed on 366 days

CV-Helios Network had a total of 5865 observations in 2016

CV-Helios Network have received 357 observation entries in the year 2016

CV-Helios Network's observers had an average of 15,5 observations per day

This Annual Final Report contain results from 35 CV-observers

A sincere thanks to all observers for their fine contributions in the passed year.

CV-Helios Network 01. April 2017



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Kjell Inge Malde  
Director



## CV-Helios Network Annual Final Report for 2016

Collated results CV for the year 2016												
CV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	24,60	31,88	46,17	15,05	57,22	15,00	0,00	1,12	61,06	0,11	4,29	48,09
2	18,87	44,50	44,48	17,57	53,81	10,06	0,21	1,33	60,65	2,26	0,33	41,29
3	28,58	69,02	39,91	15,81	42,44	0,00	0,35	0,75	52,50	33,51	5,43	40,60
4	24,75	80,05	48,59	23,70	47,68	0,13	0,42	6,02	46,44	45,24	5,25	32,16
5	17,96	55,29	35,65	16,57	37,10	0,00	1,65	15,72	39,60	57,63	7,25	32,27
6	20,13	38,81	35,17	11,00	28,05	0,14	1,88	40,17	44,40	74,57	2,61	28,62
7	47,83	72,56	26,96	16,74	22,57	0,90	13,16	57,32	50,82	73,29	2,77	17,75
8	69,64	71,87	28,02	41,49	17,38	6,06	21,39	65,54	50,91	62,40	0,75	12,75
9	71,63	54,00	46,54	42,16	29,43	19,47	30,28	62,31	48,44	72,45	1,82	6,64
10	62,54	53,90	36,08	46,98	44,03	38,46	27,44	59,47	66,46	60,63	15,11	0,00
11	43,13	36,04	23,76	50,61	53,16	49,38	50,83	49,47	59,71	52,45	11,87	1,37
12	44,63	30,35	33,23	50,60	67,63	55,50	37,58	55,32	32,82	43,00	6,45	6,10
13	34,75	29,40	37,94	46,70	65,52	54,98	37,35	53,24	18,32	43,70	12,18	8,13
14	27,92	33,36	33,69	40,99	84,96	51,32	28,66	51,24	5,66	47,97	10,88	10,02
15	33,44	41,04	34,64	43,39	77,52	43,43	54,38	50,37	4,32	24,60	10,67	1,71
16	24,71	31,61	27,72	50,83	60,67	38,46	61,39	44,05	3,04	19,88	15,92	0,00
17	32,81	26,93	40,16	43,59	50,75	45,68	62,28	31,91	4,89	21,05	21,10	4,75
18	16,00	23,58	35,57	43,64	49,47	41,39	76,64	30,82	18,52	20,64	20,50	15,33
19	16,84	23,68	35,75	38,01	53,24	44,62	67,67	20,94	18,16	20,50	1,72	7,92
20	33,33	42,00	36,60	15,14	51,77	34,83	70,19	5,29	23,93	11,17	0,31	6,83
21	45,41	40,67	30,42	15,97	40,02	26,29	70,80	3,75	37,62	14,67	0,09	18,00
22	43,09	30,70	25,53	11,91	38,33	23,65	66,67	20,64	28,59	10,18	2,22	6,92
23	33,85	24,75	26,31	13,58	39,06	0,38	55,43	35,33	37,09	6,43	11,96	0,86
24	52,83	19,72	33,89	23,05	42,71	0,24	19,72	32,24	38,47	8,33	11,00	0,00
25	55,16	13,14	40,08	23,95	54,94	0,00	0,00	25,06	20,28	12,87	13,40	0,00
26	47,75	16,82	36,58	28,06	59,10	0,16	0,06	30,18	19,66	16,38	12,00	0,53
27	69,50	18,31	31,27	41,20	20,52	0,00	0,00	32,92	24,98	13,52	19,33	6,38
28	59,45	22,65	33,15	65,43	16,33	0,05	3,19	41,59	22,20	14,06	31,69	1,54
29	52,43	36,19	22,25	60,55	14,75	0,00	4,08	44,59	14,90	4,18	50,40	0,43
30	38,58		27,19	61,89	14,71	0,27	3,90	41,43	0,70	1,58	61,63	1,04
31	30,10		16,71		17,94		1,78	62,96		5,87		1,80
<b>29,86</b>	<b>39,43</b>	<b>38,37</b>	<b>33,87</b>	<b>33,87</b>	<b>43,64</b>	<b>20,03</b>	<b>28,04</b>	<b>34,62</b>	<b>31,84</b>	<b>28,87</b>	<b>12,36</b>	<b>11,61</b>

## CV-Helios Network Annual Final Report for 2016

Collated results Observers for the year 2016												
Obsrvrs.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	16	8	6	20	23	14	18	19	18	18	15	11
2	13	13	11	21	23	16	22	12	17	18	16	16
3	12	10	13	19	25	13	21	12	19	14	14	16
4	11	11	19	21	24	15	19	14	18	19	11	14
5	13	7	13	20	22	21	19	17	15	16	15	13
6	10	14	10	18	25	22	16	22	15	15	15	14
7	12	18	14	18	21	20	21	25	18	14	11	11
8	17	15	18	18	22	17	20	19	22	12	12	12
9	8	15	13	18	22	21	20	20	20	15	11	11
10	14	10	12	23	21	24	19	18	22	14	12	12
11	8	14	14	21	22	19	19	15	19	13	14	14
12	14	19	12	24	19	18	16	17	20	7	10	10
13	8	15	16	21	20	18	19	18	16	10	11	8
14	9	11	17	22	19	18	17	19	18	10	8	10
15	9	14	13	17	22	23	17	22	19	14	6	7
16	18	14	19	23	22	19	16	20	14	16	13	11
17	13	15	19	21	16	19	20	18	14	11	10	8
18	12	12	14	20	15	18	22	23	15	11	8	12
19	14	15	12	21	20	21	21	18	15	7	13	9
20	12	11	13	22	18	15	18	18	12	14	16	13
21	14	9	12	23	22	17	17	18	17	9	11	9
22	17	10	12	19	15	23	18	15	17	13	9	12
23	15	15	13	20	17	21	15	20	17	15	14	14
24	6	19	9	25	18	22	23	21	20	12	11	12
25	14	14	12	19	18	18	18	21	21	9	12	10
26	15	13	19	21	24	19	18	19	17	8	5	15
27	8	21	18	15	21	19	19	22	19	13	16	17
28	15	20	21	23	20	21	22	19	16	9	16	13
29	14	14	17	20	21	21	16	17	15	13	12	14
30	12		16	20	14	22	22	19	16	17	14	19
31	10		14		18		16	22		16		15
<b>16,04</b>	<b>12,35</b>	<b>13,66</b>	<b>14,23</b>	<b>20,43</b>	<b>20,29</b>	<b>19,13</b>	<b>18,84</b>	<b>18,68</b>	<b>17,37</b>	<b>12,97</b>	<b>12,03</b>	<b>12,32</b>

## CV-Helios Network Annual Final Report for 2016

Collated results CV-USAF for the year 2016												
USAF-CV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	14,29	20,01	32,09	7,40	42,00	7,37		0,02	45,53		1,13	33,78
2	10,05	30,63	30,62	9,13	38,90	4,21		0,07	45,16	0,33		27,87
3	17,38	53,01	26,68	7,91	28,85				37,72	21,35	1,67	27,27
4	14,41	63,63	34,23	13,61	33,42			1,96	32,33	31,28	1,58	20,24
5	9,41	40,24	23,10	8,44	24,32		0,15	7,86	26,42	42,37	2,61	20,33
6	10,96	25,75	22,71	4,78	16,96		0,21	26,91	30,55	58,32	0,46	17,41
7	33,56	56,38	16,11	8,56	12,76		6,15	42,09	36,21	57,08	0,51	9,26
8	53,59	55,72	16,94	28,03	9,00	1,98	11,88	49,72	36,29	46,78		5,89
9	55,49	39,07	32,42	28,61	18,05	10,48	18,73	46,70	34,09	56,28	0,20	2,28
10	46,92	38,98	23,47	32,80	30,23	25,46	16,49	44,07	50,59	45,14	7,44	
11	29,44	23,43	13,66	36,02	38,31	34,92	36,21	35,00	44,29	37,67	5,33	0,08
12	30,75	18,78	21,12	36,02	51,69	40,43	24,71	40,27	20,78	29,33	2,18	2,00
13	22,36	18,03	25,02	32,56	49,70	39,96	24,53	38,38	9,66	29,94	5,52	3,09
14	16,86	21,22	21,50	27,61	68,46	36,66	17,45	36,59	1,78	33,68	4,71	4,19
15	21,29	27,65	22,27	29,67	61,17	29,70	39,41	35,81	1,14	14,29	4,58	0,17
16	14,37	19,80	16,70	36,22	45,18	25,46	45,85	30,24	0,61	10,78	7,99	
17	20,77	16,09	26,90	29,84	36,15	31,67	46,67	20,04	1,41	11,63	11,67	1,34
18	8,05	13,52	23,04	29,89	35,00	27,95	60,31	19,16	9,80	11,33	11,23	7,59
19	8,62	13,59	23,19	25,08	38,38	30,74	51,73	11,56	9,55	11,23	0,17	2,97
20	21,20	28,47	23,90	7,46	37,06	22,43	54,12	1,60	13,78	4,89		2,38
21	31,43	27,33	18,84	8,03	26,78	15,59	54,70	0,90	24,75	7,14		9,44
22	29,41	19,07	15,00	5,35	25,35	13,57	50,78	11,33	17,39	4,28	0,32	2,43
23	21,63	14,41	15,60	6,43	25,96		40,37	22,84	24,31	2,17	5,39	
24	38,02	10,66	21,66	13,12	29,08		10,67	20,31	25,47	3,20	4,78	
25	40,12	6,14	26,83	13,79	39,93			14,64	11,07	5,96	6,31	
26	33,48	8,61	23,88	16,97	43,72			18,65	10,62	8,30	5,41	
27	53,46	9,66	19,52	27,79	11,25			20,86	14,58	6,38	10,38	2,14
28	44,05	12,81	21,05	49,61	8,27		0,67	28,12	12,48	6,74	19,86	0,12
29	37,65	23,56	12,52	45,07	7,20		1,04	30,71	7,30	1,09	35,83	
30	25,56		16,29	46,31	7,18		0,96	27,98		0,13	46,07	0,01
31	18,59		8,54		9,40		0,19	47,30		1,88		0,19
<b>21,94</b>	<b>26,88</b>	<b>26,08</b>	<b>21,79</b>	<b>22,40</b>	<b>30,64</b>	<b>23,45</b>	<b>25,58</b>	<b>24,39</b>	<b>21,92</b>	<b>20,03</b>	<b>7,82</b>	<b>8,44</b>

## CV-Helios Network Annual Final Report for 2016

Collated results STDEV for the year 2016												
std. Dev.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	7,29	8,39	9,95	5,41	10,76	5,40		0,77	10,98		2,23	10,12
2	6,23	9,80	9,80	5,97	10,54	4,14		0,89	10,95	1,36		9,49
3	7,92	11,32	9,35	5,58	9,61				10,45	8,60	2,66	9,42
4	7,32	11,61	10,16	7,14	10,08			2,87	9,98	9,87	2,60	8,42
5	6,05	10,64	8,87	5,75	9,04		1,06	5,56	9,32	10,79	3,29	8,44
6	6,48	9,23	8,81	4,40	7,84		1,17	9,38	9,80	11,49	1,53	7,93
7	10,10	11,44	7,67	5,79	6,94		4,96	10,77	10,33	11,46	1,60	6,00
8	11,34	11,42	7,84	9,51	5,92	2,88	6,72	11,19	10,34	11,04		4,85
9	11,41	10,56	9,99	9,58	8,05	6,35	8,17	11,04	10,15	11,43	1,15	3,08
10	11,05	10,55	8,92	10,02	9,76	9,19	7,75	10,89	11,22	10,95	5,42	
11	9,68	8,91	7,15	10,32	10,50	10,22	10,33	10,23	10,90	10,45	4,63	0,91
12	9,82	8,18	8,57	10,32	11,27	10,66	9,09	10,64	8,51	9,66	3,02	2,90
13	8,76	8,04	9,14	10,00	11,19	10,62	9,07	10,51	6,12	9,73	4,71	3,56
14	7,82	8,58	8,63	9,46	11,67	10,37	7,93	10,36	2,74	10,11	4,36	4,12
15	8,59	9,47	8,74	9,70	11,56	9,70	10,58	10,30	2,24	7,29	4,30	1,09
16	7,31	8,35	7,79	10,33	10,96	9,19	10,99	9,76	1,71	6,43	5,61	
17	8,51	7,67	9,38	9,72	10,33	9,91	11,04	8,39	2,46	6,66	6,67	2,41
18	5,62	7,12	8,86	9,72	10,23	9,50	11,54	8,24	6,16	6,58	6,55	5,47
19	5,81	7,13	8,88	9,14	10,51	9,82	11,27	6,64	6,09	6,55	1,10	3,50
20	8,58	9,57	8,98	5,43	10,40	8,77	11,36	2,61	7,18	4,44		3,15
21	9,89	9,43	8,19	5,62	9,36	7,57	11,38	2,02	9,10	5,32		6,06
22	9,67	8,23	7,44	4,64	9,18	7,13	11,23	6,58	7,92	4,17	1,34	3,18
23	8,65	7,32	7,57	5,06	9,26		10,65	8,83	9,04	3,01	4,65	
24	10,48	6,40	8,65	7,02	9,63		6,40	8,44	9,19	3,63	4,40	
25	10,63	4,95	9,37	7,18	10,62			7,37	6,51	4,88	5,02	
26	10,09	5,81	8,98	7,84	10,87			8,15	6,39	5,71	4,66	
27	11,34	6,12	8,30	9,48	6,56			8,53	7,35	5,04	6,33	2,99
28	10,89	6,95	8,56	11,18	5,70		1,78	9,52	6,87	5,17	8,36	1,00
29	10,45	8,93	6,88	10,95	5,34		2,15	9,81	5,37	2,19	10,30	
30	9,21		7,71	11,02	5,33		2,08	9,51		1,02	11,00	0,73
31	8,14		5,78		6,04		1,13	11,07		2,82		1,14
<b>7,67</b>	<b>8,87</b>	<b>8,69</b>	<b>8,55</b>	<b>8,11</b>	<b>9,20</b>	<b>8,32</b>	<b>7,49</b>	<b>8,03</b>	<b>7,77</b>	<b>6,93</b>	<b>4,52</b>	<b>4,58</b>

## CV-Helios Network Annual Final Report for 2016

Collated results CV 6 rot. averages for the year 2016												
CV-6 rot.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	46,21	45,83	45,28	41,13	38,78	39,05	34,72	31,43	32,11	31,69	28,76	25,99
2	46,19	45,80	45,10	40,75	38,85	38,80	34,52	31,19	32,33	31,61	28,53	26,08
3	46,28	45,87	44,81	40,40	38,80	38,24	34,24	30,94	32,49	31,74	28,32	26,19
4	46,34	46,02	44,57	40,17	38,75	37,67	33,98	30,79	32,56	31,93	28,09	26,38
5	46,30	46,06	44,34	39,98	38,67	37,06	33,79	30,74	32,56	32,14	27,80	26,58
6	46,23	45,97	44,04	39,80	38,57	36,62	33,48	30,86	32,61	32,45	27,46	26,75
7	46,28	46,10	43,64	39,65	38,46	36,30	33,22	31,13	32,73	32,73	27,35	26,86
8	46,44	46,23	43,22	39,72	38,35	36,07	33,06	31,43	32,83	32,85	27,25	26,94
9	46,63	46,25	42,91	39,69	38,35	35,92	32,82	31,70	32,99	32,90	27,17	26,98
10	46,72	46,49	42,48	39,58	38,48	35,89	32,63	31,92	33,23	32,90	27,18	26,98
11	46,69	46,63	42,03	39,51	38,65	36,03	32,62	32,00	33,50	32,84	27,14	26,98
12	46,75	46,71	41,71	39,47	38,96	36,28	32,61	32,06	33,60	32,75	27,09	27,02
13	46,81	46,78	41,50	39,38	39,26	36,46	32,65	32,11	33,61	32,69	27,10	27,07
14	46,76	46,92	41,32	39,12	39,67	36,66	32,63	32,18	33,55	32,73	27,17	27,13
15	46,63	47,09	41,23	38,89	40,04	36,75	32,69	32,19	33,43	32,58	27,23	27,13
16	46,39	47,22	41,28	38,61	40,23	36,83	32,65	32,24	33,35	32,48	27,33	27,12
17	46,11	47,29	41,42	38,48	40,34	37,00	32,54	32,22	33,31	32,44	27,46	27,14
18	45,72	47,29	41,56	38,36	40,44	37,13	32,67	32,25	33,32	32,43	27,58	27,16
19	45,37	47,28	41,70	38,09	40,56	37,11	32,85	32,20	33,18	32,44	27,55	27,07
20	45,16	47,41	41,87	37,80	40,68	36,90	32,83	31,95	33,07	32,33	27,43	26,93
21	45,04	47,53	42,02	37,50	40,63	36,62	32,82	31,75	33,01	32,15	27,20	26,87
22	44,92	47,45	42,15	37,31	40,59	36,39	32,90	31,74	32,87	31,89	26,91	26,61
23	44,80	47,26	42,24	37,20	40,58	36,13	32,91	31,75	32,79	31,52	26,65	26,38
24	44,88	46,94	42,31	37,27	40,55	35,85	32,81	31,71	32,74	31,17	26,38	26,15
25	45,06	46,59	42,33	37,34	40,46	35,64	32,63	31,66	32,62	30,73	26,15	25,98
26	45,21	46,22	42,34	37,45	40,49	35,47	32,45	31,63	32,47	30,36	25,95	25,65
27	45,56	45,82	42,32	37,62	40,22	35,27	32,24	31,67	32,31	30,07	25,84	25,32
28	45,85	45,57	42,28	37,97	39,94	35,12	32,01	31,67	32,18	29,85	25,75	24,94
29	46,04	45,38	42,04	38,25	39,67	34,92	31,85	31,73	32,01	29,57	25,81	24,48
30	46,04		41,78	38,55	39,42	34,82	31,71	31,76	31,78	29,26	25,91	24,07
31	45,92		41,41		39,23		31,57	31,93		28,98		23,66
<b>35,99</b>	<b>45,98</b>	<b>46,55</b>	<b>42,56</b>	<b>38,83</b>	<b>39,57</b>	<b>36,50</b>	<b>32,87</b>	<b>31,70</b>	<b>32,84</b>	<b>31,75</b>	<b>27,12</b>	<b>26,34</b>



### CV-Helios Network Annual Final Report for 2016

NOAA Regions year 2016							147 regions					
Reg.	Date	Lat.	Long.	Rot.	Class		Reg.	Date	Lat.	Long.	Rot.	Class
1	2476	02.01.16	-11	200	2172	AXX	271					
2	2477	02.01.16	12	186	2172	HSX	272					
3	2478	03.01.16	07	195	2172	BXO	273					
4	2479	05.01.16	11	217	2172	BXO	274					
5	2480	07.01.16	04	121	2172	CAO	275					
6	2481	08.01.16	-18	237	2172	DAO	276					
7	2482	09.01.16	03	178	2172	BXO	277					
8	2483	09.01.16	16	125	2172	BXO	278					
9	2484	11.01.16	05	94	2172	BXO	279					
10	2485	15.01.16	13	29	2172	CRO	280					
11	2486	18.01.16	-20	343	2173	HAX	281					
12	2487	20.01.16	-13	334	2173	CRO	282					
13	2488	21.01.16	04	317	2173	CRO	283					
14	2489	26.01.16	09	251	2173	DSO	284					
15	2490	26.01.16	-18	230	2173	BXO	285					
16	2491	01.02.16	02	156	2173	BXO	286					
17	2492	03.02.16	15	140	2173	DAO	287					
18	2493	04.02.16	-06	218	2173	DAO	288					
19	2494	05.02.16	-12	164	2173	DAI	289					
20	2495	06.02.16	-07	205	2173	BXO	290					
21	2496	06.02.16	09	103	2173	AXX	291					
22	2497	07.02.16	13	88	2173	DAI	292					
23	2498	10.02.16	19	50	2173	BXO	293					
24	2499	13.02.16	11	30	2173	AXX	294					
25	2500	14.02.16	-18	83	2173	BXO	295					
26	2501	15.02.16	04	325	2174	HSX	296					
27	2502	17.02.16	08	15	2173	BXO	297					
28	2503	18.02.16	06	02	2173	CRO	298					
29	2504	20.02.16	12	338	2174	BXO	299					
30	2505	21.02.16	08	355	2174	DAI	300					
31	2506	25.02.16	-07	222	2174	BXO	301					
32	2507	27.02.16	18	303	2174	BXO	302					
33	2508	29.02.16	07	208	2174	BXO	303					
34	2509	01.03.16	09	186	2174	BXO	304					
35	2510	03.03.16	05	127	2174	CRO	305					
36	2511	03.03.16	05	121	2174	BXO	306					
37	2512	03.03.16	11	150	2174	BXO	307					
38	2513	03.03.16	11	94	2174	HSX	308					
39	2514	05.03.16	14	163	2174	CRO	309					
40	2515	05.03.16	-03	166	2174	BXO	310					
41	2516	05.03.16	-04	157	2174	BXO	311					
42	2517	07.03.16	24	163	2174	BXO	312					
43	2518	10.03.16	04	115	2174	CAO	313					
44	2519	10.03.16	06	10	2174	HSX	314					
45	2520	13.03.16	04	29	2174	BXO	315					
46	2521	13.03.16	19	28	2174	CAO	316					
47	2522	15.03.16	14	76	2174	CAO	317					
48	2523	17.03.16	-10	15	2174	BXO	318					
49	2524	17.03.16	14	284	2175	HSX	319					
50	2525	18.03.16	12	327	2175	AXX	320					
51	2526	25.03.16	-05	176	2175	HSX	321					
52	2527	04.04.16	14	132	2175	AXX	322					
53	2528	04.04.16	06	110	2175	BXO	323					
54	2529	08.04.16	10	346	2176	HKX	324					
55	2530	12.04.16	15	21	2175	CSO	325					
56	2531	14.04.16	14	285	2176	AXX	326					
57	2532	17.04.16	07	240	2176	CAO	327					
58	2533	21.04.16	-02	184	2176	HSX	328					
59	2534	25.04.16	06	149	2176	AXX	329					
60	2535	25.04.16	05	124	2176	HAX	330					
61	2536	27.04.16	15	117	2176	DAO	331					
62	2537	27.04.16	-07	208	2176	CRO	332					
63	2538	28.04.16	-04	125	2176	BXO	333					
64	2539	29.04.16	17	80	2176	HAX	334					
65	2540	01.05.16	21	68	2176	HRX	335					
66	2541	03.05.16	04	29	2176	BXO	336					
67	2542	05.05.16	09	356	2176	CKO	337					
68	2543	09.05.16	-06	02	2176	BXO	338					
69	2544	10.05.16	21	300	2177	CRO	339					
70	2545	11.05.16	-21	342	2177	HRX	340					
71	2546	15.05.16	-07	223	2177	HHX	341					
72	2547	20.05.16	-18	256	2177	BXO	342					
73	2548	25.05.16	13	170	2177	BXO	343					
74	2549	29.05.16	-14	91	2177	DRO	344					
75	2550	31.05.16	15	114	2177	CRO	345					
76	2551	31.05.16	04	127	2177	BXO	346					
77	2552	08.06.16	16	359	2177	BXO	347					
78	2553	11.06.16	-06	226	2178	HSX	348					
79	2554	12.06.16	08	317	2178	DRO	349					
80	2555	17.06.16	-09	273	2178	CAO	350					
81	2556	18.06.16	05	132	2178	HSX	351					
82	2557	19.06.16	10	184	2178	AXX	352					
83	2558	20.06.16	13	215	2178	CSO	353					
84	2559	06.07.16	10	346	2179	BXO	354					
85	2560	06.07.16	-08	270	2179	AXX	355					
86	2561	08.07.16	-16	344	2179	CRO	356					
87	2562	08.07.16	-05	225	2179	HSX	357					
88	2563	09.07.16	19	230	2179	BXO	358					
89	2564	09.07.16	10	207	2179	HSX	359					
90	2565	12.07.16	04	175	2179	HSX	360					



### CV-Helios Network Annual Final Report for 2016

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#### ZÜRICH/McINTOSH-CLASSIFICATIONS DISTRIBUTION for the year 2016

A	B	C	D	E	F	H
AXX	BXO	CRO	DRO	ERO	FRO	HRX
9,5 %	36,1 %	12,2 %	2,0 %			2,0 %
	BXI	CRI	DRI	ERI	FRI	HAX
		0,7 %				2,7 %
	CAO	DAO	EAO	FAO	HSX	
	6,8 %	4,8 %				10,9 %
	CAI	DAI	EAI	FAI	HKX	
		2,7 %				0,7 %
	CSO	DSO	ESO	FSO	HHX	
	2,7 %	2,7 %				0,7 %
	CSI	DSI	ESI	FSI		
	0,7 %	0,7 %				
	CKO	DAC	EAC	FAC		
	0,7 %	0,7 %				
	CKI	DSC	ESC	FSC		
	CHO	DKO	EKO	FKO		
	CHI	DKI	EKI	FKI		
		DHO	EHO	FHO		
		DHI	EHI	FHI		
		DKC	EKC	FKC		
		DHC	EHC	FHC		

#### SUNSPOT CLASS

1st letter

	<b>147</b>	
A	14	9,5 %
B	53	36,1 %
C	35	23,8 %
D	20	13,6 %
E	0	0,0 %
F	0	0,0 %
H	25	17,0 %

#### MAIN SUNSPOT TYPE

2nd letter

	<b>147</b>	
X	67	45,6 %
R	25	17,0 %
A	26	17,7 %
S	26	17,7 %
K	2	1,4 %
H	1	0,7 %

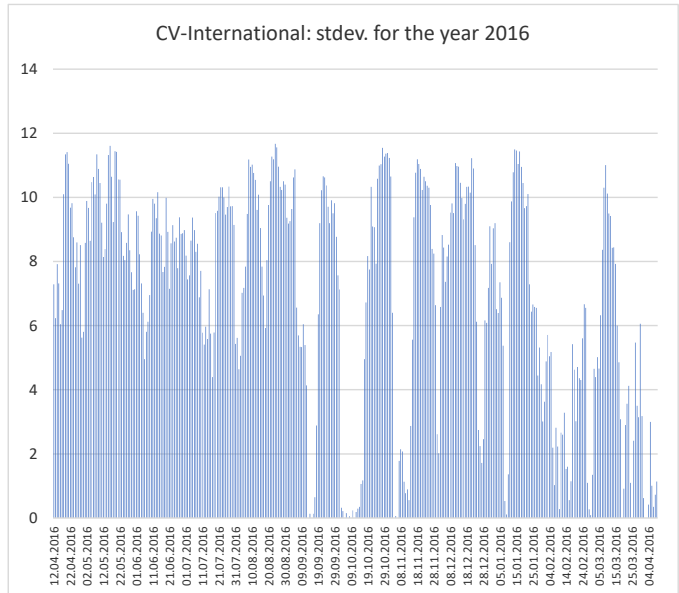
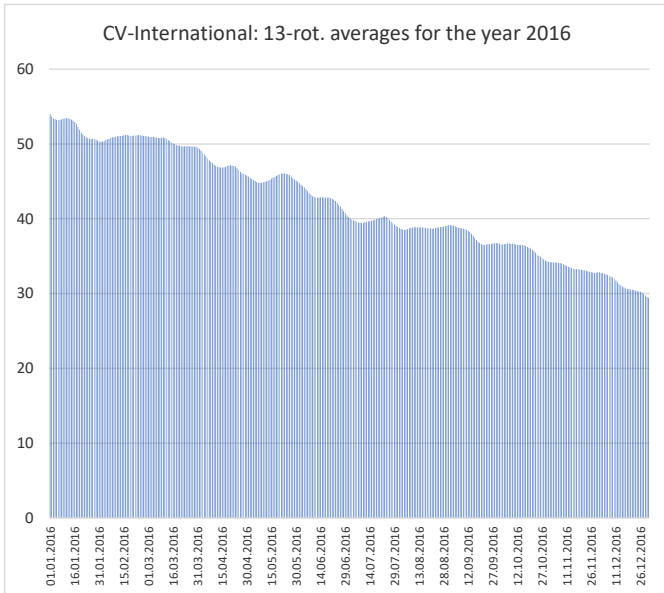
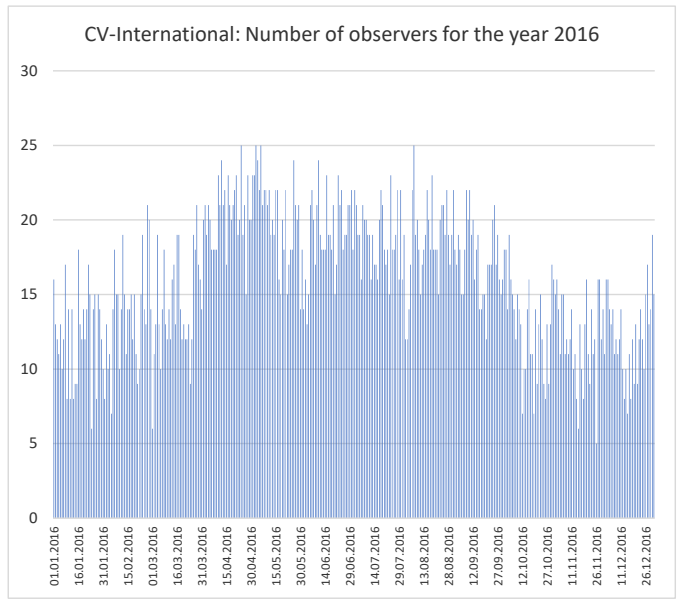
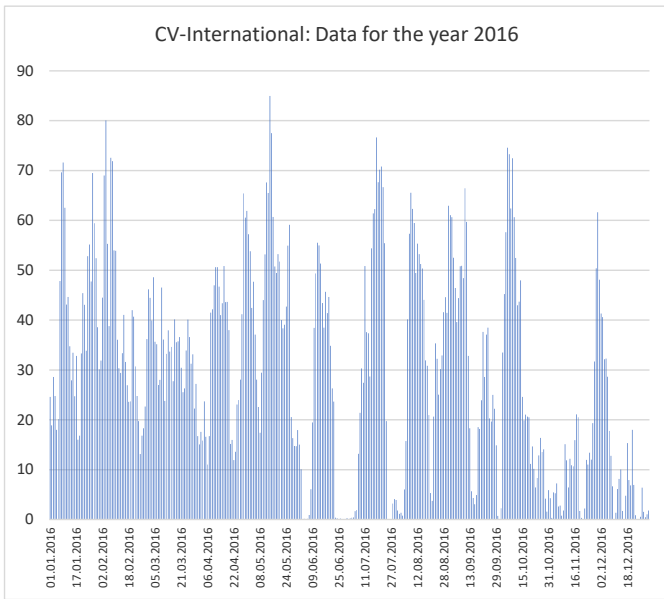
#### SUNSPOT DISTRIBUTION

3rd letter

	<b>147</b>	
X	39	26,5 %
O	100	68,0 %
I	7	4,8 %
C	1	0,7 %

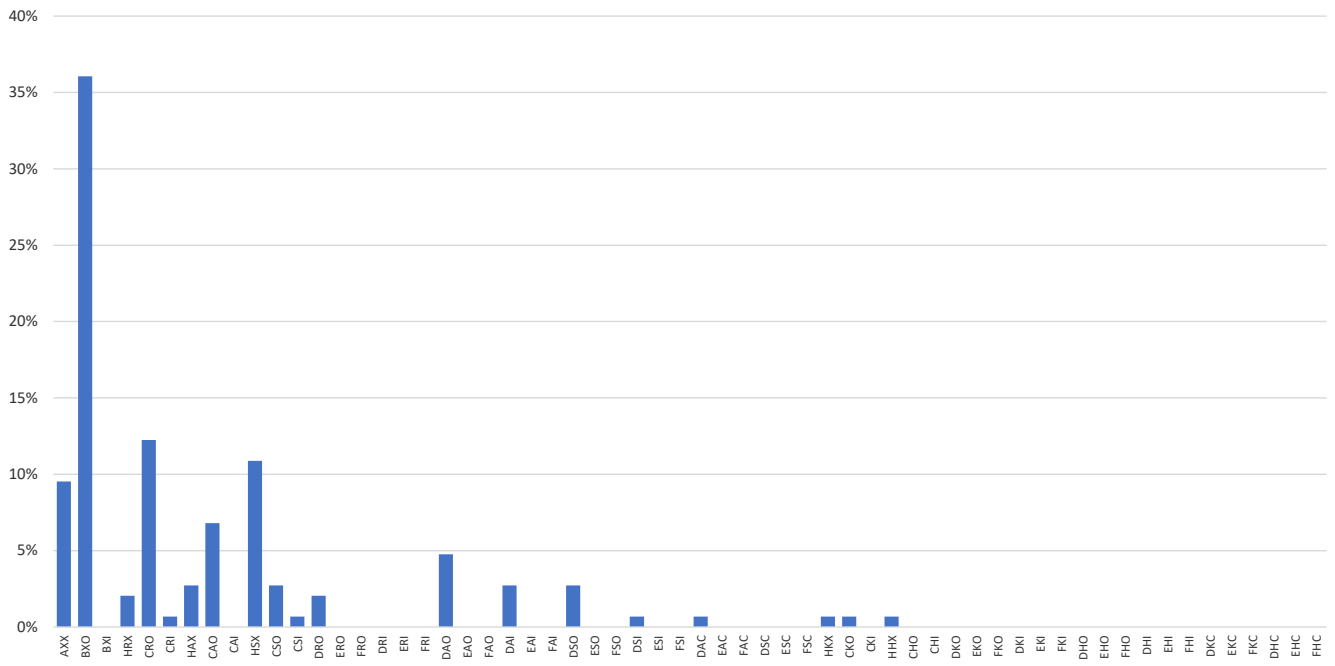
# CV-Helios Network Annual Final Report for 2016

## Graphics for the year 2016

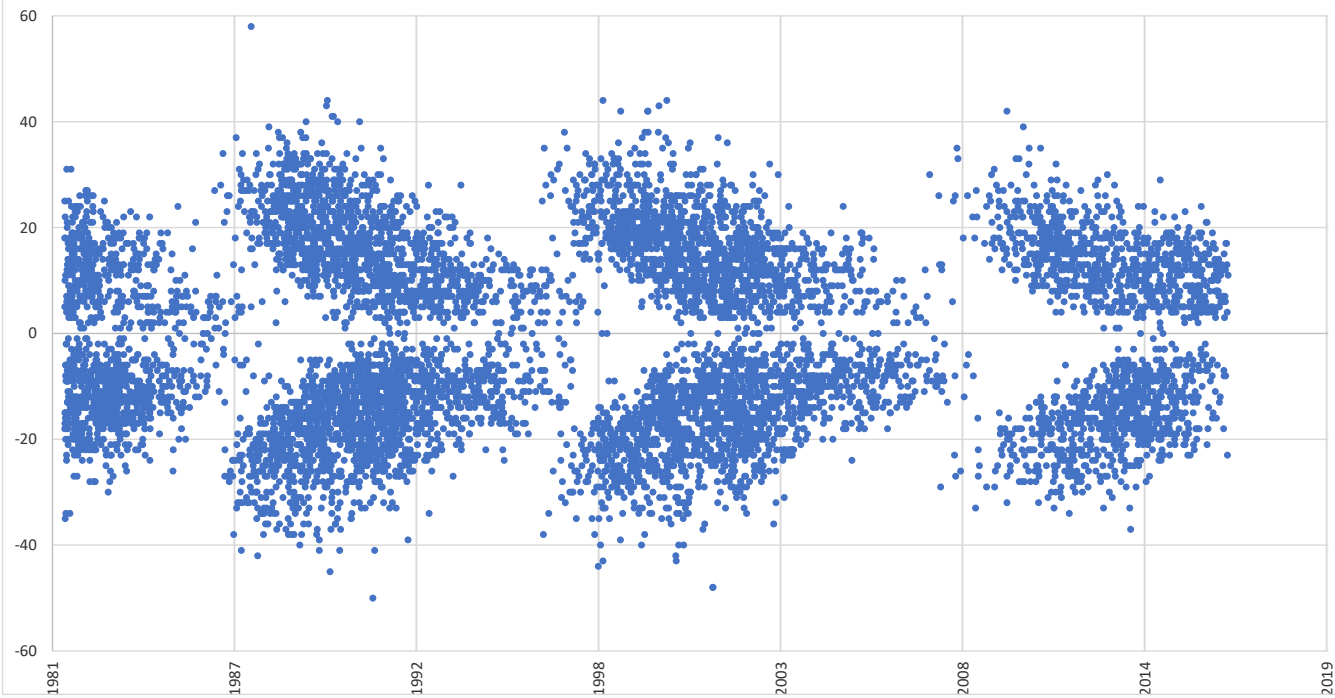


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Zürich/McIntosh-classifications denoted by NOAA/USAF for the year 2016



RGO/NOAA-USAF Sunspot Regions 1981-2016



## CV-Helios Network Annual Final Report for 2016

**CV-Helios Network - over 35 years in solar amateur astronomy service!**

There are now 9764 entries registered  
containing 154725 CV-observations!

**This AFR issued 1st April 2017**

### **CV-Helios Network**

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Worldwide Amateur Solar Observing Network  
Magnetic Sunspot Classifications Zürich/McIntosh system  
CV - Classification Values (Malde/1981) - numeric system  
Serving Amateur Solar Astronomy since 1981

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