

FORGESOLAR GLARE ANALYSIS

Project: **Beacon Fen DCO**

Site configuration: **Beacon Fen DCO Roads Railway and Aviation**

Created 18 Jul, 2023

Updated 30 Aug, 2023

Time-step 1 minute

Timezone offset UTC0

Minimum sun altitude 0.0 deg

DNI peaks at 1,000.0 W/m²

Category 10 MW to 100 MW

Site ID 95535.16549

Ocular transmission coefficient 0.5

Pupil diameter 0.002 m

Eye focal length 0.017 m

Sun subtended angle 9.3 mrad

PV analysis methodology V2

Summary of Results Glare with potential for temporary after-image predicted

PV Array	Tilt °	Orient °	Annual Green Glare		Annual Yellow Glare		Energy kWh	Peak Luminance
			min	hr	min	hr		cd/m ²
PV array 1	17.5	180.0	16,616	276.9	7,383	123.0	-	2,783,106
PV array 2	17.5	180.0	12,095	201.6	11,426	190.4	-	2,514,596
PV array 3	17.5	180.0	11,763	196.1	14,999	250.0	-	3,481,984
PV array 4	17.5	180.0	16,558	276.0	3,849	64.2	-	676,143

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Route 10 - Star Fen Road	1,330	22.2	671	11.2
Route 11 - Church Lane	1,068	17.8	0	0.0
Route 12 - Cow Drove	3,810	63.5	714	11.9
Route 13 - Railway	105	1.8	8	0.1
Route 1 - A17	204	3.4	0	0.0
Route 2 - B1395	5,303	88.4	523	8.7
Route 3 - Howell Fen Drove	4,722	78.7	7,308	121.8

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Route 4 - Heckington Road - south of Howell	0	0.0	0	0.0
Route 5 - Heckington Road - north of Howell	2,369	39.5	4,251	70.8
Route 6 - Thorpe Road	6,109	101.8	7,157	119.3
Route 7 - Lane connected to Thorpe Road	1,885	31.4	12,634	210.6
Route 8 - Field Lane	5,101	85.0	3,803	63.4
Route 9 - Littleworth Drove	3,756	62.6	588	9.8
FP 10 - RAF Barkston Heath NE	0	0.0	0	0.0
FP 11 - RAF Barkston Heath South	0	0.0	0	0.0
FP 12 - RAF Barkston Heath North	0	0.0	0	0.0
FP 13 - Anwick East	0	0.0	0	0.0
FP 14 - Anwick West	1,859	31.0	0	0.0
FP 15 - Boston East	6,873	114.5	0	0.0
FP 16 - Boston West	0	0.0	0	0.0
FP 1 - RAF Coningsby East	0	0.0	0	0.0
FP 2 - RAF Coningsby West	0	0.0	0	0.0
FP 3 - RAF Cranwell East	0	0.0	0	0.0
FP 4 - RAF Cranwell West	1,087	18.1	0	0.0
FP 5 - RAF Cranwell South	0	0.0	0	0.0
FP 6 - RAF Cranwell North	0	0.0	0	0.0
FP 7 - RAF Barkston Heath SE	0	0.0	0	0.0
FP 8 - RAF Barkston Heath NW	5,610	93.5	0	0.0
FP 9 - RAF Barkston Heath SW	5,841	97.3	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 17.5°
Orientation: 180.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.031220	-0.285520	2.15	4.50	6.65
2	53.026410	-0.281429	1.71	4.50	6.21
3	53.015080	-0.309410	12.15	4.50	16.65
4	53.016400	-0.310700	11.30	4.50	15.80
5	53.017740	-0.311170	9.88	4.50	14.38
6	53.019110	-0.310020	8.00	4.50	12.50
7	53.020790	-0.305940	6.00	4.50	10.50
8	53.021480	-0.304780	6.00	4.50	10.50
9	53.022330	-0.305120	2.01	4.50	6.51
10	53.022930	-0.305170	2.93	4.50	7.43

Name: PV array 2
Axis tracking: Fixed (no rotation)
Tilt: 17.5°
Orientation: 180.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.015650	-0.307960	2.00	4.50	6.50
2	53.024550	-0.285730	1.71	4.50	6.21
3	53.022400	-0.282910	7.02	4.50	11.52
4	53.012340	-0.305510	11.65	4.50	16.15

Name: PV array 3

Axis tracking: Fixed (no rotation)

Tilt: 17.5°

Orientation: 180.0°

Rated power: -

Panel material: Smooth glass with AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.023840	-0.279330	1.67	4.50	6.17
2	53.018380	-0.292170	3.97	4.50	8.47
3	53.012240	-0.305380	7.34	4.50	11.84
4	53.011750	-0.311260	8.93	4.50	13.43
5	53.008780	-0.311130	9.00	4.50	13.50
6	53.006320	-0.310110	9.05	4.50	13.55
7	53.003110	-0.309260	9.69	4.50	14.19
8	53.003950	-0.304800	10.00	4.50	14.50
9	53.004870	-0.300310	10.71	4.50	15.21
10	53.004720	-0.298810	7.95	4.50	12.45
11	53.005650	-0.296710	8.33	4.50	12.83
12	53.006130	-0.293170	6.15	4.50	10.65
13	53.007310	-0.289980	7.05	4.50	11.55
14	53.007880	-0.287620	6.78	4.50	11.28
15	53.008850	-0.284760	8.00	4.50	12.50
16	53.009140	-0.281960	6.58	4.50	11.08
17	53.010620	-0.282870	6.06	4.50	10.56
18	53.008912	-0.281640	5.00	4.50	9.50
19	53.010410	-0.280960	5.00	4.50	9.50
20	53.015960	-0.271410	5.00	4.50	9.50
21	53.019250	-0.273780	5.00	4.50	9.50
22	53.019210	-0.274090	2.20	4.50	6.70
23	53.021210	-0.276290	1.53	4.50	6.03

Name: PV array 4

Axis tracking: Fixed (no rotation)

Tilt: 17.5°

Orientation: 180.0°

Rated power: -

Panel material: Smooth glass with AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.031960	-0.286120	3.00	4.50	7.50
2	53.033380	-0.282250	3.00	4.50	7.50
3	53.031990	-0.280990	2.19	4.50	6.69
4	53.030280	-0.279770	1.58	4.50	6.08
5	53.026830	-0.277480	1.07	4.50	5.57
6	53.020210	-0.273010	1.16	4.50	5.66
7	53.019530	-0.274450	2.00	4.50	6.50
8	53.024200	-0.279700	2.00	4.50	6.50
9	53.026670	-0.281550	2.80	4.50	7.30

Route Receptors

Name: Route 10 - Star Fen Road

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	52.992540	-0.273189	5.98	1.00	6.98
2	52.994155	-0.273919	4.70	1.00	5.70
3	52.994297	-0.273833	4.57	1.00	5.57
4	52.994723	-0.272589	5.00	1.00	6.00
5	52.995524	-0.271054	5.51	1.00	6.51
6	52.995821	-0.270507	5.00	1.00	6.00
7	52.996396	-0.269788	5.00	1.00	6.00
8	52.996686	-0.269348	4.95	1.00	5.95
9	52.996751	-0.269123	4.78	1.00	5.78
10	52.996848	-0.268973	4.56	1.00	5.56
11	52.996957	-0.268951	4.30	1.00	5.30
12	52.997125	-0.269069	3.76	1.00	4.76
13	52.997261	-0.268994	3.51	1.00	4.51
14	52.997493	-0.268404	4.09	1.00	5.09
15	52.997668	-0.267707	4.60	1.00	5.60
16	52.997881	-0.266698	5.14	1.00	6.14
17	52.998275	-0.264617	4.42	1.00	5.42
18	52.998404	-0.263780	5.33	1.00	6.33
19	52.998546	-0.263308	5.65	1.00	6.65
20	52.998546	-0.263169	5.80	1.00	6.80
21	52.998417	-0.263094	5.92	1.00	6.92
22	52.997919	-0.262750	6.00	1.00	7.00
23	52.997506	-0.262375	6.00	1.00	7.00
24	52.996370	-0.261720	4.72	1.00	5.72
25	52.996195	-0.261710	4.45	1.00	5.45
26	52.996086	-0.261806	4.44	1.00	5.44
27	52.995995	-0.262257	4.96	1.00	5.96
28	52.995995	-0.262482	5.02	1.00	6.02
29	52.995598	-0.262291	4.44	1.00	5.44
30	52.994474	-0.261712	4.86	1.00	5.86

Name: Route 11 - Church Lane

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.032961	-0.256188	8.31	1.00	9.31
2	53.032264	-0.257454	9.82	1.00	10.82
3	53.031858	-0.258527	9.10	1.00	10.10
4	53.031774	-0.258934	7.92	1.00	8.92
5	53.031690	-0.259621	5.90	1.00	6.90
6	53.031671	-0.260029	5.30	1.00	6.30
7	53.031516	-0.260394	4.78	1.00	5.78
8	53.031393	-0.260769	4.23	1.00	5.23
9	53.031348	-0.260909	4.02	1.00	5.02
10	53.031116	-0.261070	3.96	1.00	4.96
11	53.030690	-0.261155	4.00	1.00	5.00
12	53.030290	-0.261005	4.00	1.00	5.00
13	53.029864	-0.260801	4.00	1.00	5.00
14	53.029658	-0.260823	4.00	1.00	5.00

Name: Route 12 - Cow Drove

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.011800	-0.258765	2.00	1.00	3.00
2	53.013324	-0.258057	1.24	1.00	2.24
3	53.014369	-0.257263	2.85	1.00	3.85
4	53.014653	-0.257070	3.00	1.00	4.00
5	53.015221	-0.256898	2.99	1.00	3.99
6	53.015764	-0.256576	2.20	1.00	3.20
7	53.016680	-0.255911	2.00	1.00	3.00
8	53.017300	-0.255546	1.99	1.00	2.99
9	53.017906	-0.254967	2.00	1.00	3.00
10	53.018255	-0.254387	2.00	1.00	3.00
11	53.019029	-0.253937	1.54	1.00	2.54
12	53.020785	-0.253014	2.00	1.00	3.00
13	53.022527	-0.252263	2.00	1.00	3.00
14	53.023444	-0.252070	2.10	1.00	3.10
15	53.024179	-0.252327	2.48	1.00	3.48
16	53.024425	-0.252134	2.19	1.00	3.19
17	53.024721	-0.251018	2.00	1.00	3.00
18	53.025483	-0.248293	1.00	1.00	2.00
19	53.025677	-0.248079	1.07	1.00	2.07
20	53.025986	-0.248444	1.57	1.00	2.57
21	53.029677	-0.252606	4.13	1.00	5.13
22	53.030026	-0.252714	5.17	1.00	6.17

Name: Route 13 - Railway
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	52.989060	-0.353150	9.00	2.75	11.75
2	52.980431	-0.310664	15.06	2.75	17.81
3	52.975986	-0.285859	8.04	2.75	10.79
4	52.973221	-0.271460	5.00	2.75	7.75

Name: Route 1 - A17
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	52.988660	-0.312795	5.00	1.00	6.00
2	52.989396	-0.308611	5.15	1.00	6.15
3	52.989668	-0.304835	6.00	1.00	7.00
4	52.989655	-0.302582	5.85	1.00	6.85
5	52.989448	-0.298869	6.78	1.00	7.78
6	52.988557	-0.295028	7.63	1.00	8.63
7	52.985263	-0.285566	7.78	1.00	8.78
8	52.982744	-0.278227	8.00	1.00	9.00
9	52.982085	-0.275159	7.81	1.00	8.81
10	52.981749	-0.272605	7.73	1.00	8.73
11	52.981542	-0.268957	7.70	1.00	8.70
12	52.981000	-0.263722	6.77	1.00	7.77
13	52.980754	-0.261619	5.01	1.00	6.01
14	52.980832	-0.259816	4.97	1.00	5.97
15	52.981749	-0.254667	5.00	1.00	6.00
16	52.982408	-0.251255	5.00	1.00	6.00
17	52.983454	-0.246491	4.74	1.00	5.74
18	52.984242	-0.244131	3.06	1.00	4.06
19	52.984630	-0.241771	3.00	1.00	4.00
20	52.984707	-0.240247	3.00	1.00	4.00
21	52.984643	-0.238616	2.77	1.00	3.77
22	52.984488	-0.235612	2.74	1.00	3.74
23	52.984359	-0.232029	1.99	1.00	2.99
24	52.984202	-0.229829	2.40	1.00	3.40
25	52.983608	-0.226697	4.00	1.00	5.00
26	52.982626	-0.223135	3.55	1.00	4.55
27	52.982187	-0.221826	3.84	1.00	4.84
28	52.980998	-0.217964	4.00	1.00	5.00

Name: Route 2 - B1395
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	52.984602	-0.233156	2.42	1.00	3.42
2	52.992637	-0.235795	2.18	1.00	3.18
3	52.999920	-0.238263	2.00	1.00	3.00
4	53.000372	-0.238070	2.38	1.00	3.38
5	53.004724	-0.234272	2.44	1.00	3.44
6	53.005641	-0.233800	2.53	1.00	3.53
7	53.006235	-0.233843	2.96	1.00	3.96
8	53.006893	-0.234379	3.00	1.00	4.00
9	53.007126	-0.234637	2.77	1.00	3.77
10	53.009011	-0.234272	1.97	1.00	2.97
11	53.016098	-0.236117	2.00	1.00	3.00
12	53.021700	-0.238563	3.19	1.00	4.19
13	53.022343	-0.238821	3.88	1.00	4.88
14	53.028680	-0.242297	1.13	1.00	2.13
15	53.031803	-0.244057	4.23	1.00	5.23

Name: Route 3 - Howell Fen Drove

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.002943	-0.309288	11.31	1.00	12.31
2	53.003640	-0.305973	9.20	1.00	10.20
3	53.003937	-0.304857	8.84	1.00	9.84
4	53.003814	-0.304299	9.21	1.00	10.21
5	53.004124	-0.302947	7.19	1.00	8.19
6	53.004834	-0.300276	6.72	1.00	7.72
7	53.004615	-0.299192	7.12	1.00	8.12
8	53.004608	-0.298817	7.36	1.00	8.36
9	53.005544	-0.296714	7.97	1.00	8.97
10	53.005880	-0.294149	7.36	1.00	8.36
11	53.005970	-0.293441	7.81	1.00	8.81
12	53.006151	-0.292787	8.00	1.00	9.00
13	53.006455	-0.292272	7.49	1.00	8.49
14	53.006952	-0.290791	7.00	1.00	8.00
15	53.007126	-0.290094	6.47	1.00	7.47
16	53.007300	-0.289386	6.00	1.00	7.00
17	53.007371	-0.288753	6.00	1.00	7.00
18	53.007533	-0.288002	6.00	1.00	7.00
19	53.007991	-0.286929	5.00	1.00	6.00
20	53.008353	-0.285878	5.01	1.00	6.01
21	53.008553	-0.285009	5.02	1.00	6.02
22	53.008585	-0.284279	5.00	1.00	6.00
23	53.008572	-0.284000	5.00	1.00	6.00
24	53.009018	-0.281747	5.00	1.00	6.00
25	53.009366	-0.280138	4.48	1.00	5.48

Name: Route 4 - Heckington Road - south of Howell

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.000241	-0.308706	10.94	1.00	11.94
2	52.998911	-0.307011	8.34	1.00	9.34
3	52.997929	-0.305745	8.17	1.00	9.17
4	52.997141	-0.304243	8.32	1.00	9.32
5	52.996560	-0.303728	8.12	1.00	9.12
6	52.995682	-0.303148	6.55	1.00	7.55
7	52.993758	-0.302269	5.16	1.00	6.16
8	52.991433	-0.301196	5.64	1.00	6.64
9	52.990593	-0.300938	6.00	1.00	7.00
10	52.989973	-0.300595	6.00	1.00	7.00
11	52.989625	-0.299887	6.09	1.00	7.09
12	52.989521	-0.299071	6.28	1.00	7.28

Name: Route 5 - Heckington Road - north of Howell

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.002889	-0.309415	11.57	1.00	12.57
2	53.003083	-0.309523	11.44	1.00	12.44
3	53.003244	-0.309608	11.34	1.00	12.34
4	53.003554	-0.309673	10.98	1.00	11.98
5	53.003845	-0.309769	10.56	1.00	11.56
6	53.004516	-0.310156	10.00	1.00	11.00
7	53.004955	-0.310220	10.00	1.00	11.00
8	53.006227	-0.310284	9.89	1.00	10.89
9	53.008186	-0.311035	8.46	1.00	9.46
10	53.008657	-0.311218	8.46	1.00	9.46
11	53.009032	-0.311282	9.00	1.00	10.00
12	53.010426	-0.311389	8.97	1.00	9.97
13	53.011259	-0.311389	8.24	1.00	9.24
14	53.012363	-0.311722	11.53	1.00	12.53
15	53.012492	-0.311690	12.03	1.00	13.03
16	53.012576	-0.311518	12.17	1.00	13.17
17	53.012795	-0.310499	12.07	1.00	13.07
18	53.012944	-0.310048	12.06	1.00	13.06
19	53.013144	-0.309952	12.37	1.00	13.37
20	53.014202	-0.310349	14.50	1.00	15.50
21	53.014654	-0.310499	15.16	1.00	16.16

Name: Route 6 - Thorpe Road

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.014674	-0.310628	15.31	1.00	16.31
2	53.014596	-0.311325	15.94	1.00	16.94
3	53.014654	-0.312409	16.98	1.00	17.98
4	53.014654	-0.313181	18.10	1.00	19.10
5	53.014583	-0.313911	19.16	1.00	20.16
6	53.014525	-0.315456	20.00	1.00	21.00
7	53.014590	-0.317022	19.00	1.00	20.00
8	53.014583	-0.318835	17.60	1.00	18.60
9	53.014532	-0.319318	17.00	1.00	18.00
10	53.014125	-0.320820	17.59	1.00	18.59
11	53.013738	-0.322204	17.65	1.00	18.65
12	53.013486	-0.323942	17.39	1.00	18.39
13	53.013402	-0.324167	17.64	1.00	18.64
14	53.013163	-0.324253	17.99	1.00	18.99
15	53.013086	-0.324511	17.96	1.00	18.96
16	53.013260	-0.326099	18.99	1.00	19.99
17	53.013344	-0.327139	19.59	1.00	20.59
18	53.013473	-0.329006	20.54	1.00	21.54

Name: Route 7 - Lane connected to Thorpe Road

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.014706	-0.310484	15.12	1.00	16.12
2	53.014867	-0.309958	14.41	1.00	15.41
3	53.015119	-0.309819	14.21	1.00	15.21
4	53.015487	-0.310023	13.49	1.00	14.49
5	53.016100	-0.310495	11.84	1.00	12.84
6	53.016319	-0.310806	11.64	1.00	12.64
7	53.017036	-0.311106	10.43	1.00	11.43
8	53.017488	-0.311278	10.23	1.00	11.23
9	53.018120	-0.311064	9.77	1.00	10.77
10	53.018488	-0.310731	8.76	1.00	9.76
11	53.018888	-0.310162	8.00	1.00	9.00
12	53.019211	-0.309680	8.00	1.00	9.00
13	53.019546	-0.309111	8.00	1.00	9.00
14	53.020650	-0.306354	5.08	1.00	6.08
15	53.020940	-0.306032	5.34	1.00	6.34
16	53.021295	-0.306032	5.86	1.00	6.86
17	53.021663	-0.306128	6.00	1.00	7.00
18	53.021921	-0.306246	6.00	1.00	7.00
19	53.022180	-0.306407	6.00	1.00	7.00
20	53.022393	-0.306214	6.00	1.00	7.00
21	53.023425	-0.304562	5.03	1.00	6.03
22	53.024987	-0.300710	2.05	1.00	3.05
23	53.026316	-0.297599	3.00	1.00	4.00
24	53.028400	-0.292395	2.20	1.00	3.20
25	53.030692	-0.293996	3.46	1.00	4.46

Name: Route 8 - Field Lane
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	53.014372	-0.328744	18.64	1.00	19.64
2	53.014972	-0.328187	17.71	1.00	18.71
3	53.015211	-0.327672	17.01	1.00	18.01
4	53.015566	-0.326974	17.30	1.00	18.30
5	53.016153	-0.326041	15.86	1.00	16.86
6	53.016463	-0.325655	15.02	1.00	16.02

Name: Route 9 - Littleworth Drove
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
1	52.988185	-0.292838	8.81	1.00	9.81
2	52.989231	-0.291250	6.68	1.00	7.68
3	52.991155	-0.280071	5.97	1.00	6.97
4	52.992085	-0.274749	5.00	1.00	6.00
5	52.995224	-0.257175	4.05	1.00	5.05
6	52.995108	-0.256574	4.28	1.00	5.28
7	52.994836	-0.255459	4.03	1.00	5.03
8	52.994823	-0.254600	3.15	1.00	4.15
9	52.995392	-0.251360	3.19	1.00	4.19
10	52.996903	-0.246618	3.84	1.00	4.84
11	52.997923	-0.237842	3.00	1.00	4.00

Flight Path Receptors

Name: FP 10 - RAF Barkston Heath NE

Description:

Threshold height: 15 m

Direction: 237.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	52.967416	-0.548849	98.49	15.24	113.73
Two-mile	52.983159	-0.508536	33.92	248.50	282.41

Name: FP 11 - RAF Barkston Heath South

Description:

Threshold height: 15 m

Direction: 358.1°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	52.958351	-0.555734	103.86	15.24	119.10
Two-mile	52.929455	-0.554116	106.00	181.79	287.78

Name: FP 12 - RAF Barkston Heath North

Description:

Threshold height: 15 m

Direction: 178.1°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	52.965485	-0.556203	102.03	15.24	117.27
Two-mile	52.994381	-0.557805	75.05	210.90	285.95

Name: FP 13 - Anwick East

Description:

Threshold height: 15 m

Direction: 242.1°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	53.045931	-0.327886	7.00	15.24	22.24
Two-mile	53.059478	-0.285349	8.96	181.96	190.92

Name: FP 14 - Anwick West

Description:

Threshold height: 15 m

Direction: 62.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	53.042800	-0.337714	10.82	15.24	26.06
Two-mile	53.029235	-0.380233	8.83	185.92	194.75

Name: FP 15 - Boston East

Description:

Threshold height: 15 m

Direction: 269.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	52.974620	-0.068597	1.32	15.24	16.56
Two-mile	52.975115	-0.020534	7.00	178.24	185.24

Name: FP 16 - Boston West

Description:

Threshold height: 15 m

Direction: 89.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	52.974633	-0.076215	3.99	15.24	19.23
Two-mile	52.974129	-0.124278	3.00	184.91	187.91

Name: FP 1 - RAF Coningsby East

Description:

Threshold height: 15 m

Direction: 252.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	53.096989	-0.146714	5.53	15.24	20.77
Two-mile	53.105909	-0.100859	5.10	184.35	189.46

Name: FP 2 - RAF Coningsby West

Description:

Threshold height: 15 m

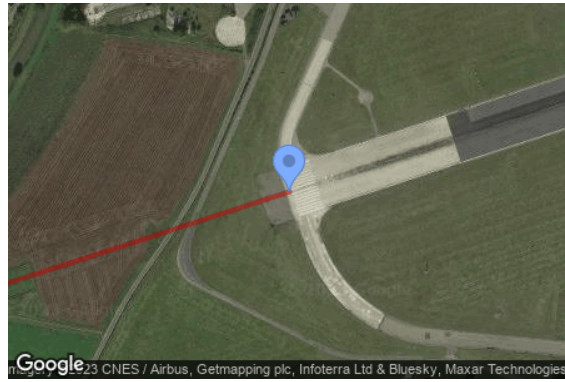
Direction: 72.1°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	53.089370	-0.185546	5.00	15.24	20.24
Two-mile	53.080459	-0.231398	2.00	186.93	188.93

Name: FP 3 - RAF Cranwell East

Description:

Threshold height: 15 m

Direction: 263.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	53.030912	-0.477375	53.41	15.24	68.65
Two-mile	53.034410	-0.429595	31.85	205.48	237.34

Name: FP 4 - RAF Cranwell West

Description:

Threshold height: 15 m

Direction: 83.1°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	53.028562	-0.508128	67.52	15.24	82.76
Two-mile	53.025068	-0.555906	90.38	161.07	251.45

Name: FP 5 - RAF Cranwell South

Description:

Threshold height: 15 m

Direction: 7.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	53.021116	-0.485429	53.51	15.24	68.75
Two-mile	52.992420	-0.491310	52.18	185.25	237.43

Name: FP 6 - RAF Cranwell North

Description:

Threshold height: 15 m

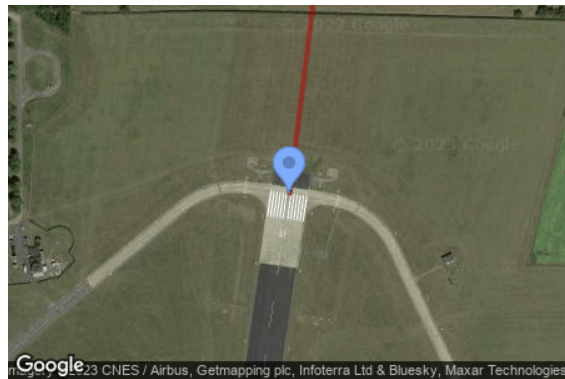
Direction: 187.1°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	53.034010	-0.482327	54.29	15.24	69.53
Two-mile	53.062702	-0.476386	48.93	189.28	238.21

Name: FP 7 - RAF Barkston Heath SE

Description:

Threshold height: 15 m

Direction: 280.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	52.957707	-0.553650	103.78	15.24	119.02
Two-mile	52.952686	-0.506329	85.06	202.64	287.70

Name: FP 8 - RAF Barkston Heath NW

Description:

Threshold height: 15 m

Direction: 100.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	52.960217	-0.572271	112.02	15.24	127.26
Two-mile	52.965253	-0.619591	41.01	254.94	295.95

Name: FP 9 - RAF Barkston Heath SW

Description:

Threshold height: 15 m

Direction: 57.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (m)	Height above ground (m)	Total elevation (m)
Threshold	52.958568	-0.571792	111.36	15.24	126.60
Two-mile	52.942834	-0.612106	56.55	238.73	295.28

Glare Analysis Results

Summary of Results Glare with potential for temporary after-image predicted

PV Array	Tilt °	Orient °	Annual Green Glare		Annual Yellow Glare		Energy kWh	Peak Luminance
			min	hr	min	hr		cd/m ²
PV array 1	17.5	180.0	16,616	276.9	7,383	123.0	-	2,783,106
PV array 2	17.5	180.0	12,095	201.6	11,426	190.4	-	2,514,596
PV array 3	17.5	180.0	11,763	196.1	14,999	250.0	-	3,481,984
PV array 4	17.5	180.0	16,558	276.0	3,849	64.2	-	676,143

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

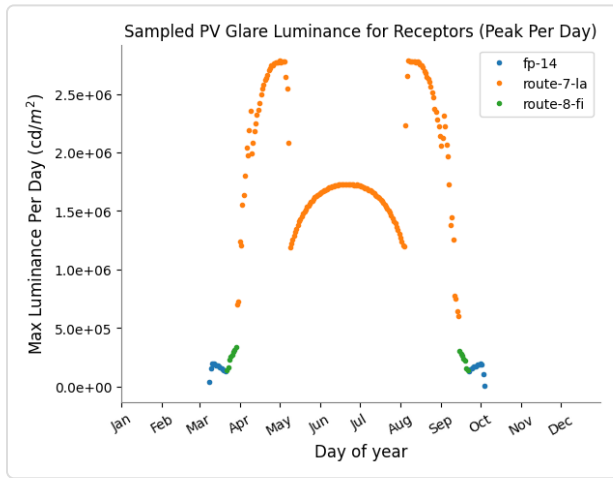
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Route 10 - Star Fen Road	1,330	22.2	671	11.2
Route 11 - Church Lane	1,068	17.8	0	0.0
Route 12 - Cow Drove	3,810	63.5	714	11.9
Route 13 - Railway	105	1.8	8	0.1
Route 1 - A17	204	3.4	0	0.0
Route 2 - B1395	5,303	88.4	523	8.7
Route 3 - Howell Fen Drove	4,722	78.7	7,308	121.8
Route 4 - Heckington Road - south of Howell	0	0.0	0	0.0
Route 5 - Heckington Road - north of Howell	2,369	39.5	4,251	70.8
Route 6 - Thorpe Road	6,109	101.8	7,157	119.3
Route 7 - Lane connected to Thorpe Road	1,885	31.4	12,634	210.6
Route 8 - Field Lane	5,101	85.0	3,803	63.4
Route 9 - Littleworth Drove	3,756	62.6	588	9.8
FP 10 - RAF Barkston Heath NE	0	0.0	0	0.0
FP 11 - RAF Barkston Heath South	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
FP 12 - RAF Barkston Heath North	0	0.0	0	0.0
FP 13 - Anwick East	0	0.0	0	0.0
FP 14 - Anwick West	1,859	31.0	0	0.0
FP 15 - Boston East	6,873	114.5	0	0.0
FP 16 - Boston West	0	0.0	0	0.0
FP 1 - RAF Coningsby East	0	0.0	0	0.0
FP 2 - RAF Coningsby West	0	0.0	0	0.0
FP 3 - RAF Cranwell East	0	0.0	0	0.0
FP 4 - RAF Cranwell West	1,087	18.1	0	0.0
FP 5 - RAF Cranwell South	0	0.0	0	0.0
FP 6 - RAF Cranwell North	0	0.0	0	0.0
FP 7 - RAF Barkston Heath SE	0	0.0	0	0.0
FP 8 - RAF Barkston Heath NW	5,610	93.5	0	0.0
FP 9 - RAF Barkston Heath SW	5,841	97.3	0	0.0

PV: PV array 1 potential temporary after-image

Receptor results ordered by category of glare

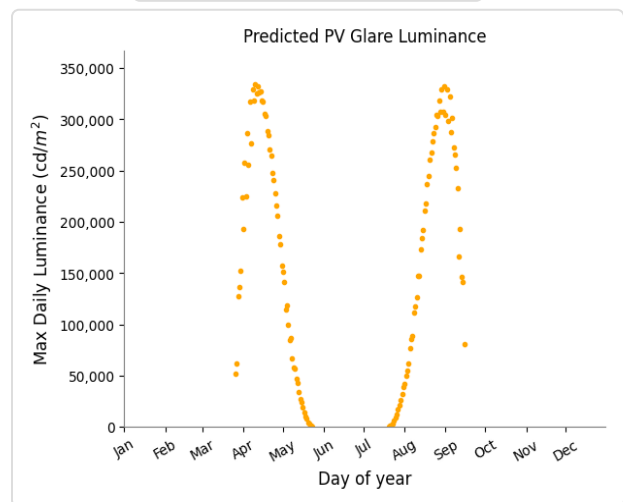
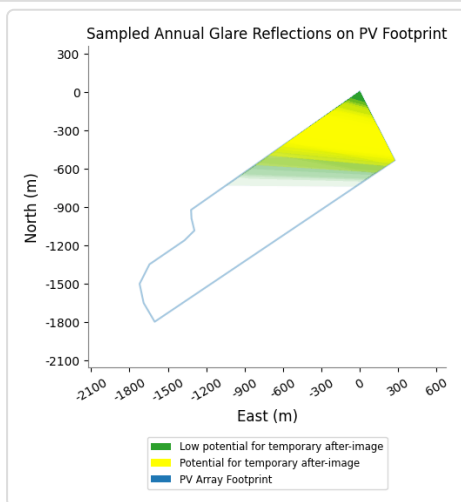
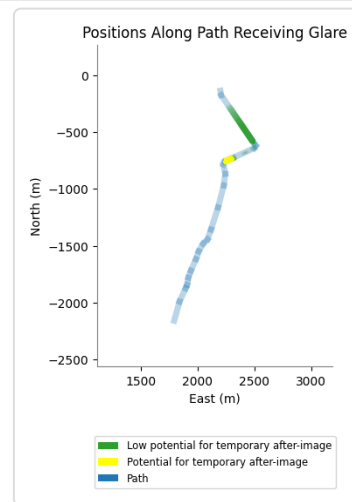
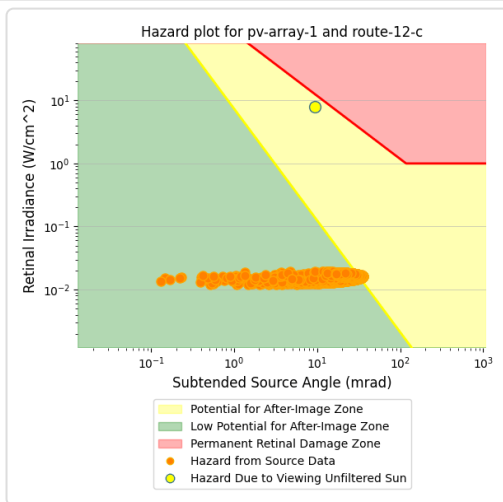
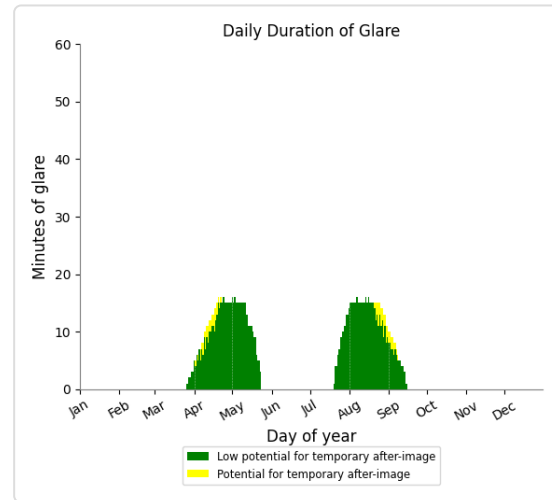
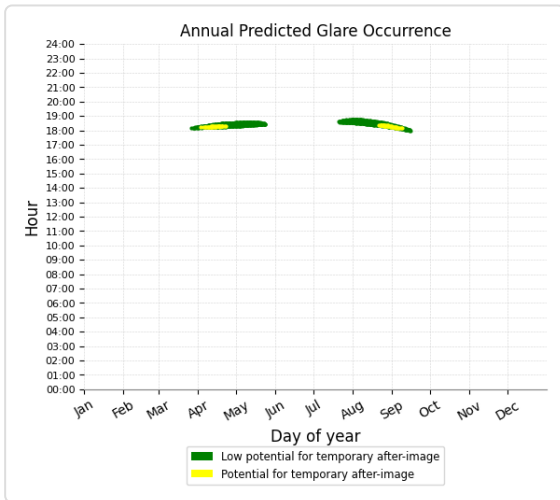
Receptor	Annual Green Glare		Annual Yellow Glare		Peak Luminance
	min	hr	min	hr	cd/m ²
Route 12 - Cow Drove	1,207	20.1	76	1.3	333,943
Route 6 - Thorpe Road	2,384	39.7	1,536	25.6	1,020,930
Route 7 - Lane connected to Thorpe Road	94	1.6	3,827	63.8	2,783,106
Route 8 - Field Lane	834	13.9	1,944	32.4	1,017,899
Route 2 - B1395	2,201	36.7	0	0.0	260,264
Route 3 - Howell Fen Drove	1,814	30.2	0	0.0	136,478
Route 9 - Littleworth Drove	1,250	20.8	0	0.0	128,431
Route 10 - Star Fen Road	0	0.0	0	0.0	0
Route 11 - Church Lane	0	0.0	0	0.0	0
Route 13 - Railway	0	0.0	0	0.0	0
Route 1 - A17	0	0.0	0	0.0	0
Route 4 - Heckington Road - south of Howell	0	0.0	0	0.0	0
Route 5 - Heckington Road - north of Howell	0	0.0	0	0.0	0
FP 14 - Anwick West	811	13.5	0	0.0	193,838
FP 15 - Boston East	2,138	35.6	0	0.0	68,782
FP 4 - RAF Cranwell West	602	10.0	0	0.0	46,519
FP 8 - RAF Barkston Heath NW	1,834	30.6	0	0.0	68,382
FP 9 - RAF Barkston Heath SW	1,447	24.1	0	0.0	67,379
FP 10 - RAF Barkston Heath NE	0	0.0	0	0.0	0
FP 11 - RAF Barkston Heath South	0	0.0	0	0.0	0
FP 12 - RAF Barkston Heath North	0	0.0	0	0.0	0
FP 13 - Anwick East	0	0.0	0	0.0	0
FP 16 - Boston West	0	0.0	0	0.0	0
FP 1 - RAF Coningsby East	0	0.0	0	0.0	0
FP 2 - RAF Coningsby West	0	0.0	0	0.0	0
FP 3 - RAF Cranwell East	0	0.0	0	0.0	0
FP 5 - RAF Cranwell South	0	0.0	0	0.0	0
FP 6 - RAF Cranwell North	0	0.0	0	0.0	0
FP 7 - RAF Barkston Heath SE	0	0.0	0	0.0	0



PV array 1 and Route: Route 12 - Cow Drove

Yellow glare: 76 min.

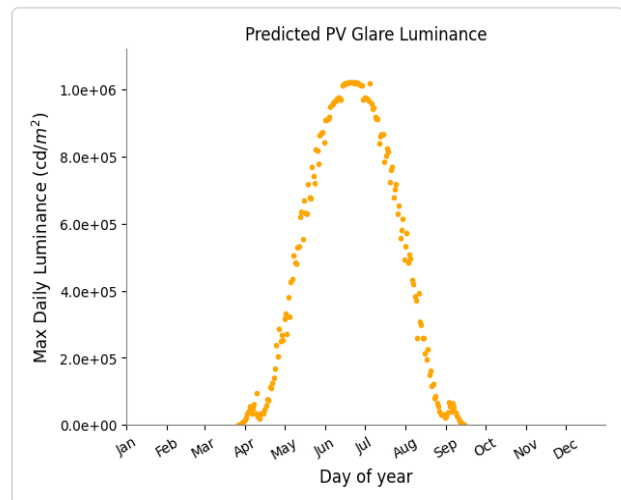
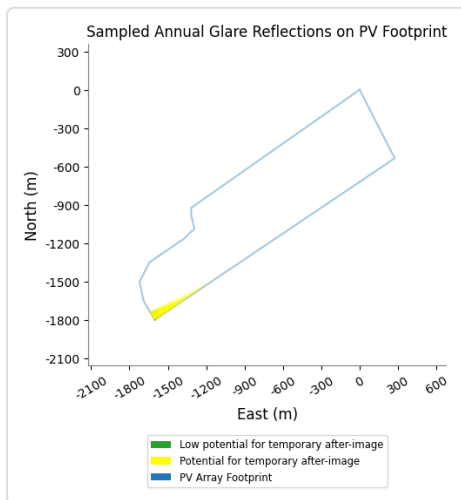
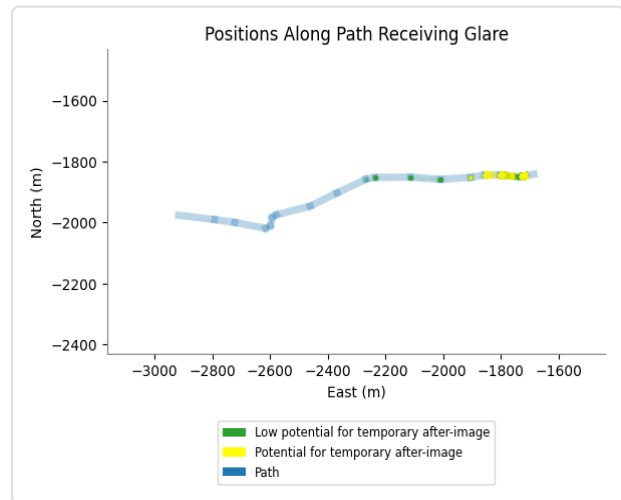
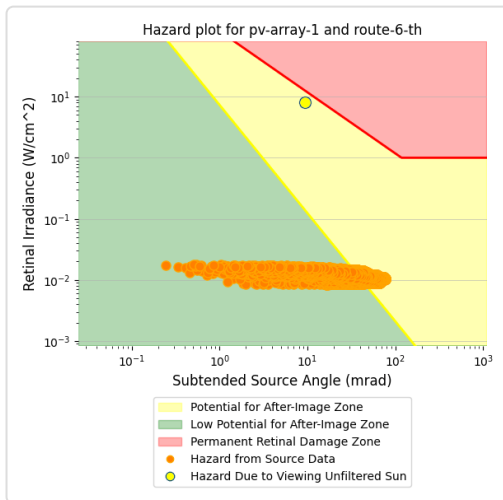
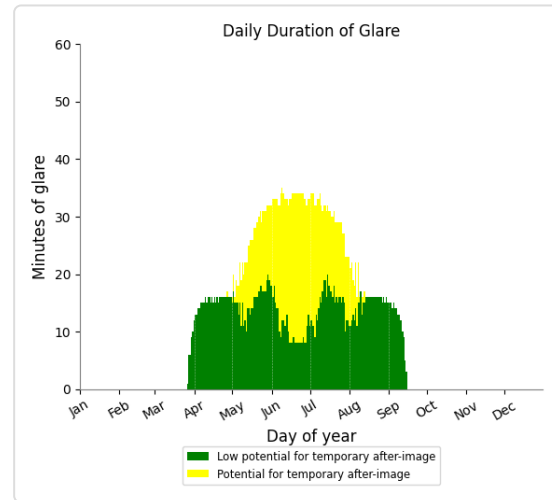
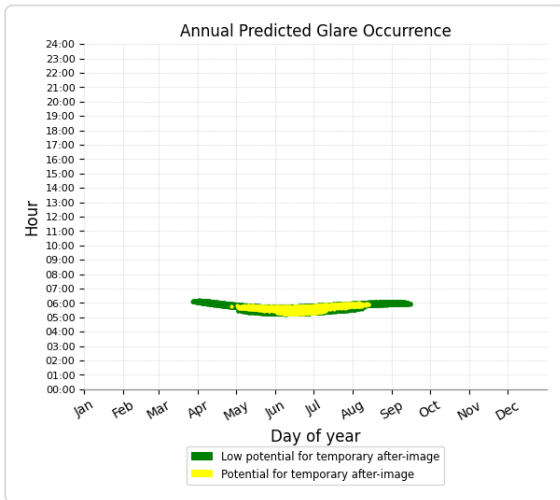
Green glare: 1,207 min.



PV array 1 and Route: Route 6 - Thorpe Road

Yellow glare: 1,536 min.

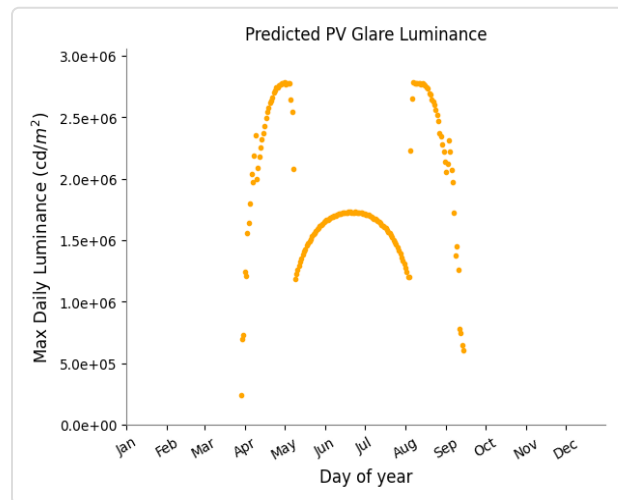
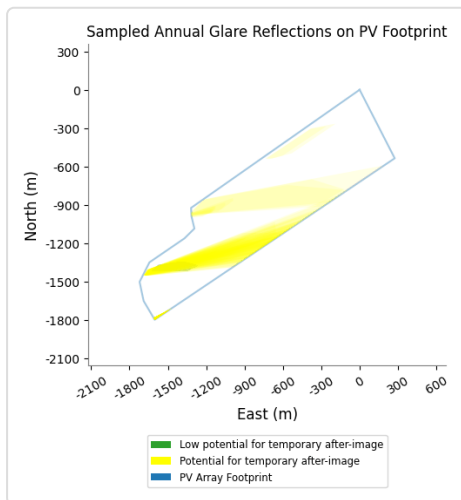
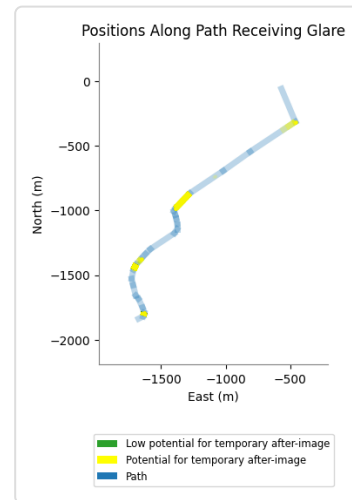
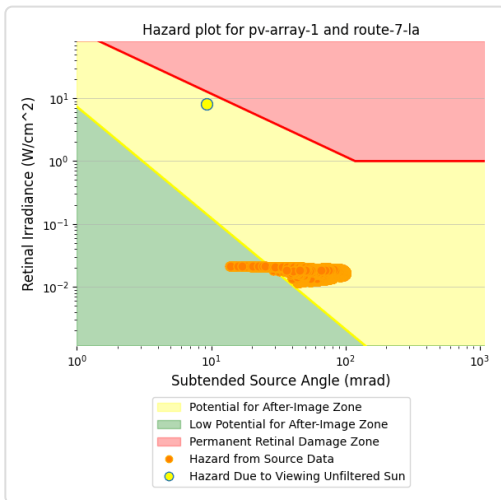
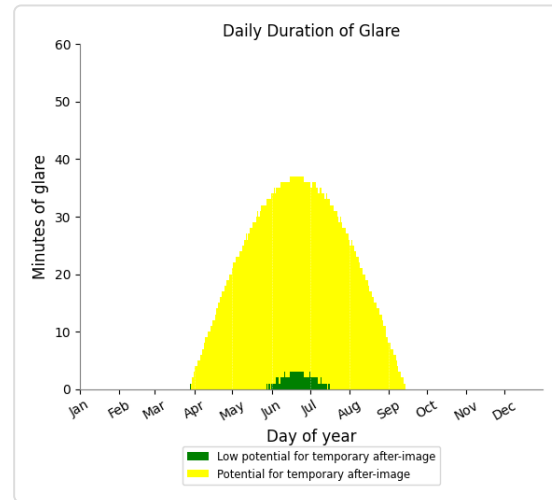
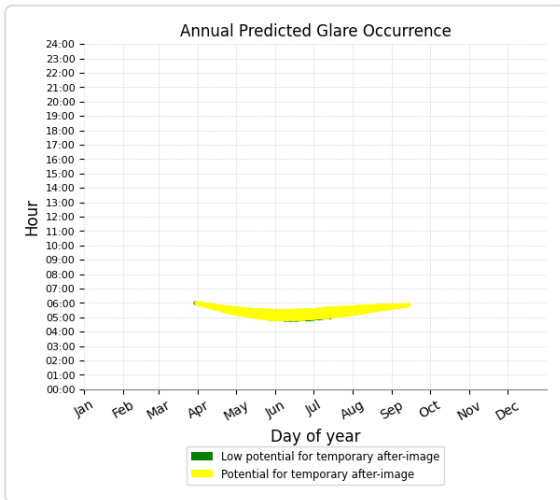
Green glare: 2,384 min.



PV array 1 and Route: Route 7 - Lane connected to Thorpe Road

Yellow glare: 3,827 min.

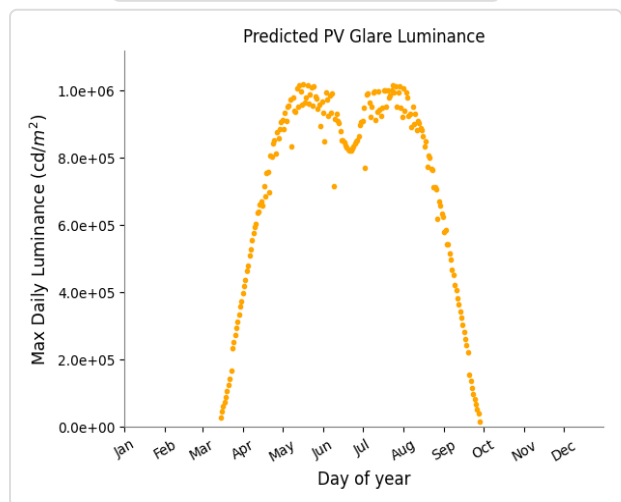
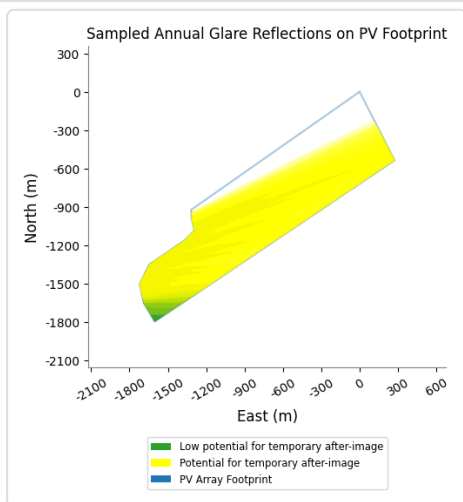
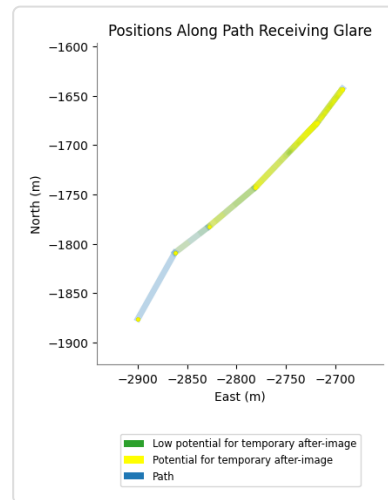
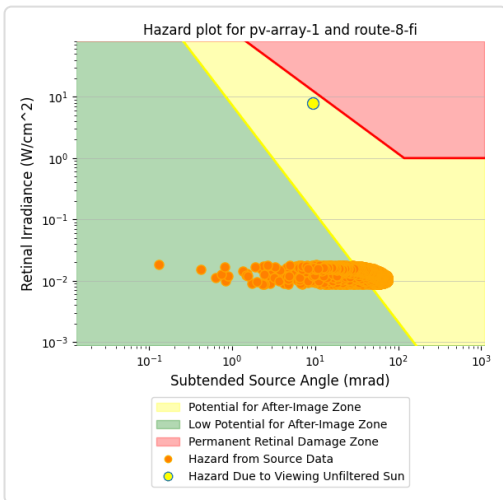
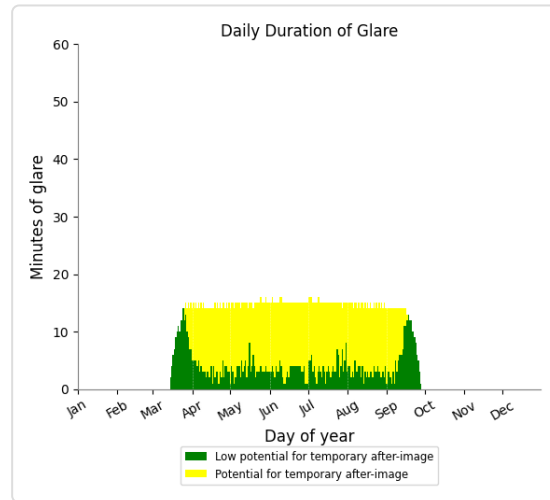
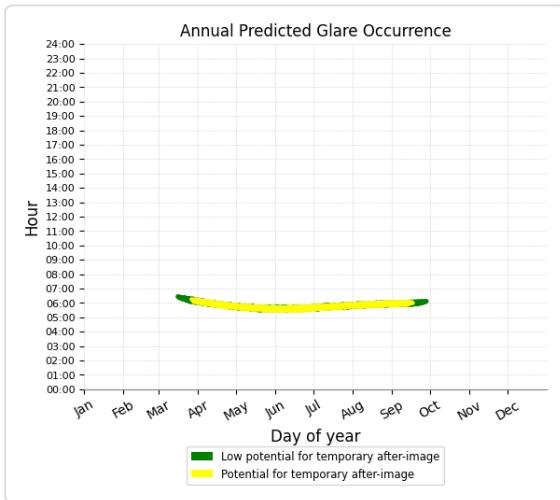
Green glare: 94 min.



PV array 1 and Route: Route 8 - Field Lane

Yellow glare: 1,944 min.

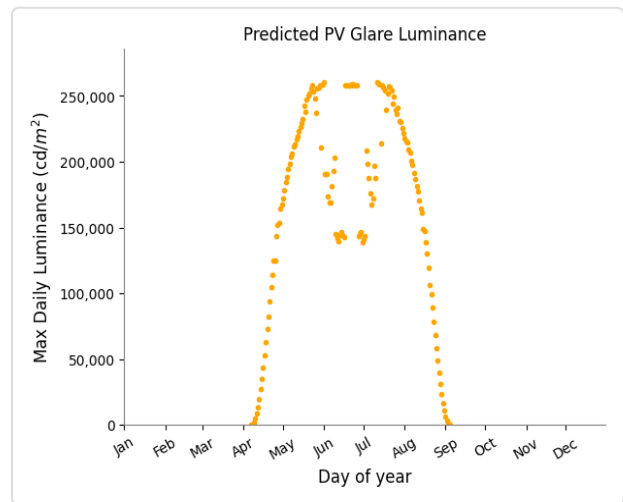
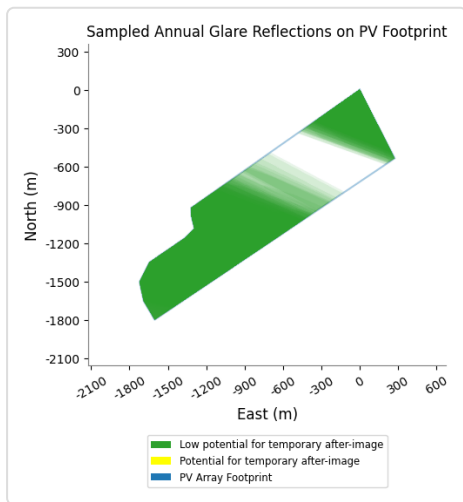
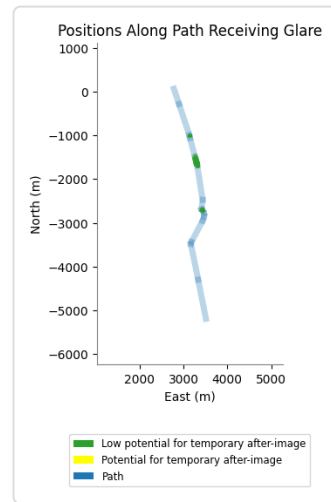
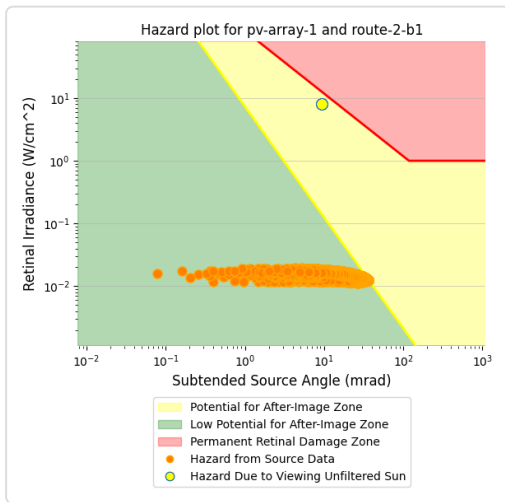
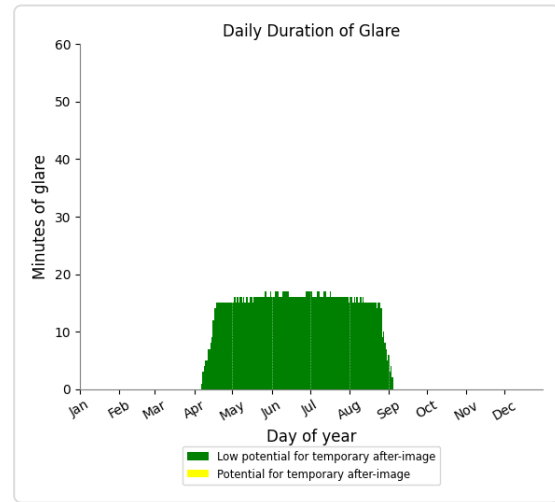
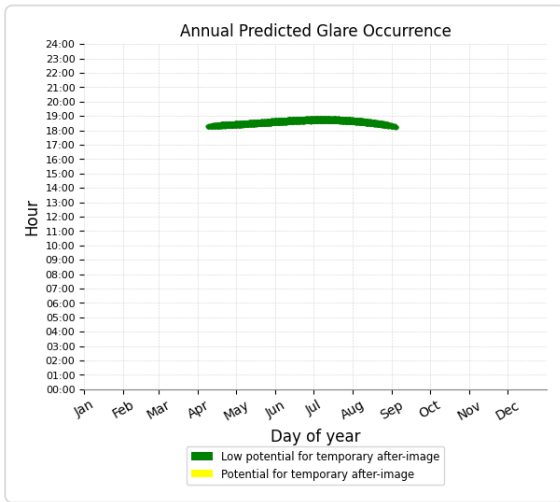
Green glare: 834 min.



PV array 1 and Route: Route 2 - B1395

Yellow glare: none

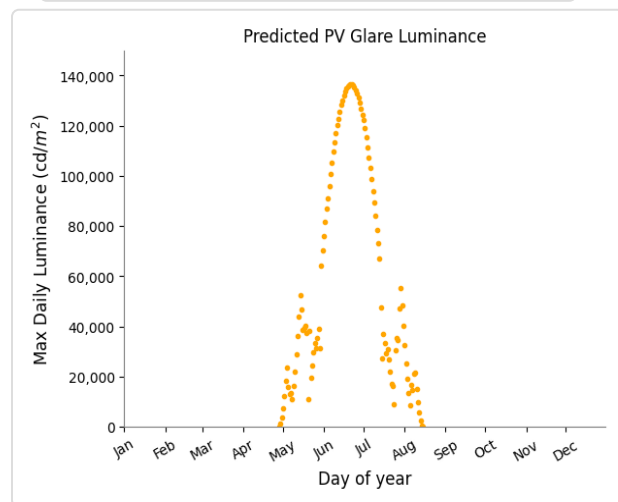
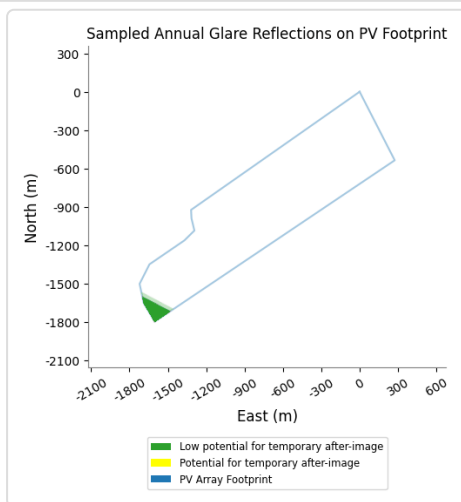
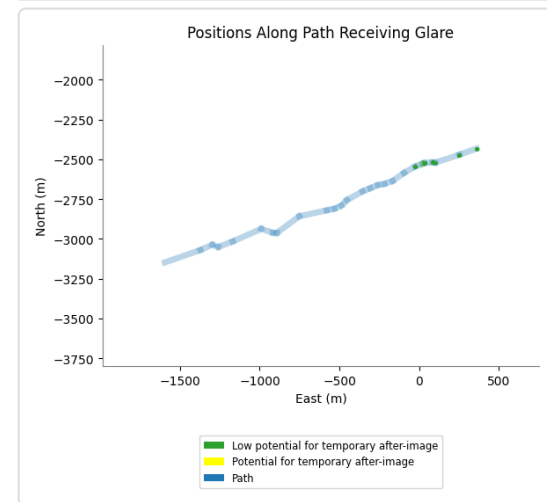
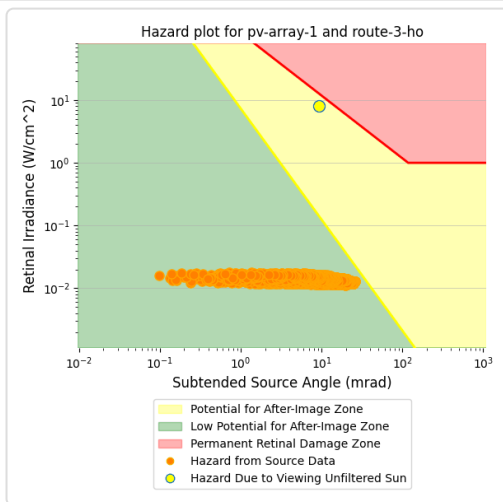
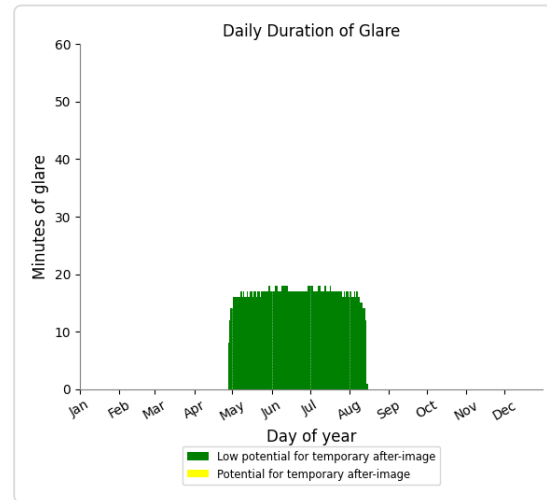
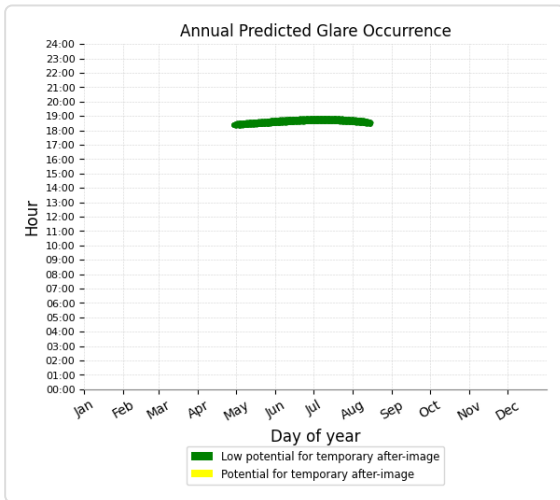
Green glare: 2,201 min.



PV array 1 and Route: Route 3 - Howell Fen Drive

Yellow glare: none

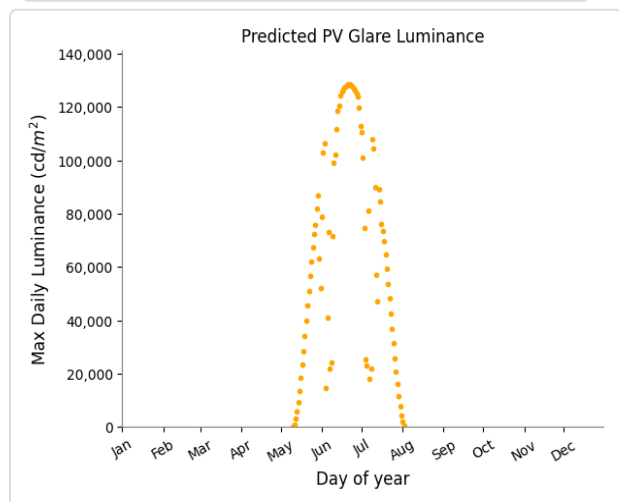
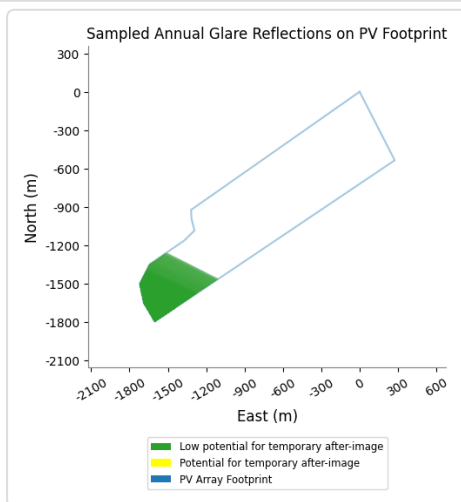
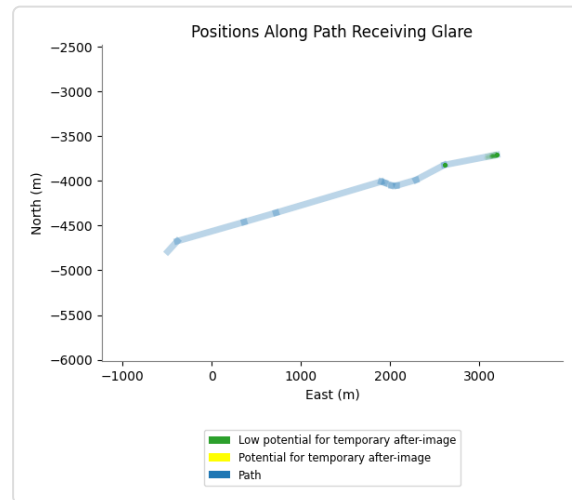
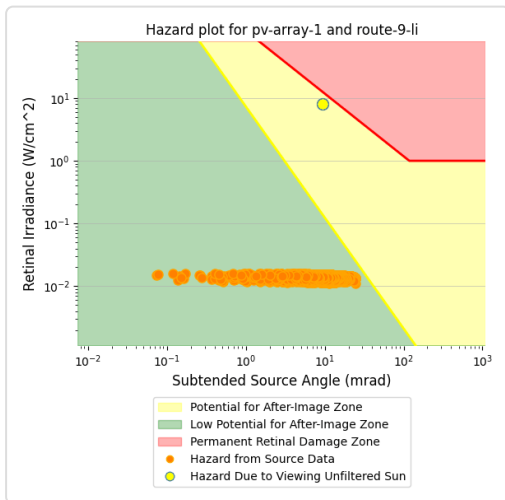
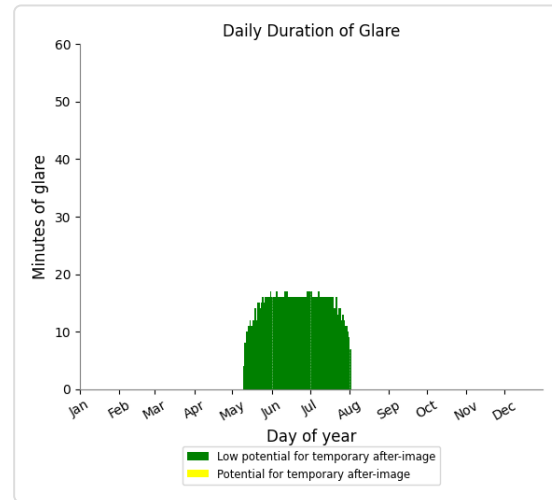
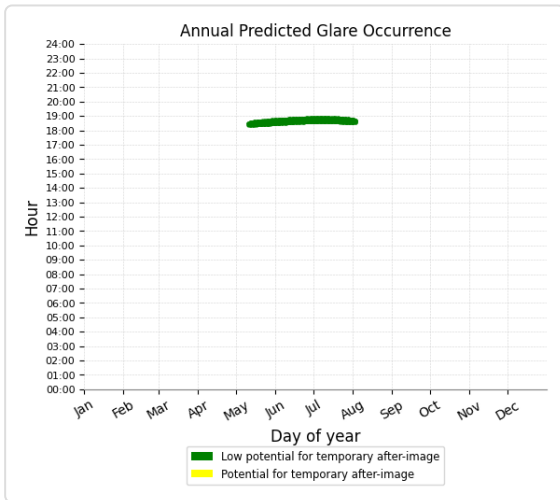
Green glare: 1,814 min.



PV array 1 and Route: Route 9 - Littleworth Drive

Yellow glare: none

Green glare: 1,250 min.



PV array 1 and Route: Route 10 - Star Fen Road

No glare found

PV array 1 and Route: Route 11 - Church Lane

No glare found

PV array 1 and Route: Route 13 - Railway

No glare found

PV array 1 and Route: Route 1 - A17

No glare found

PV array 1 and Route: Route 4 - Heckington Road - south of Howell

No glare found

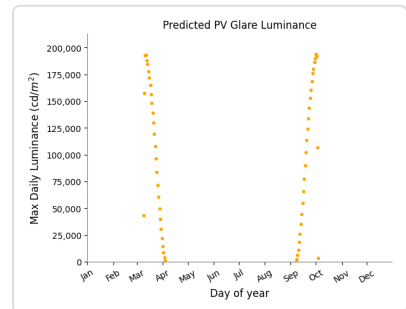
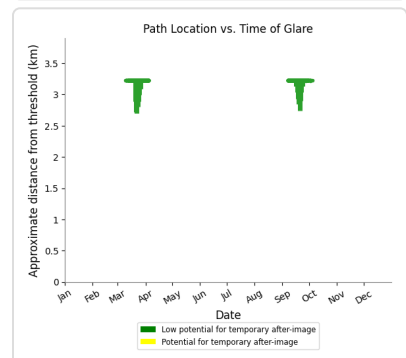
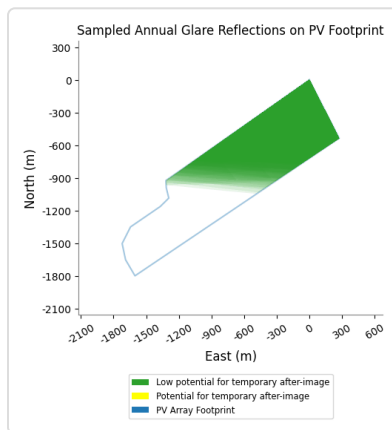
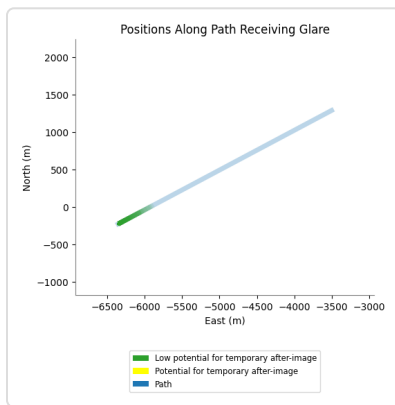
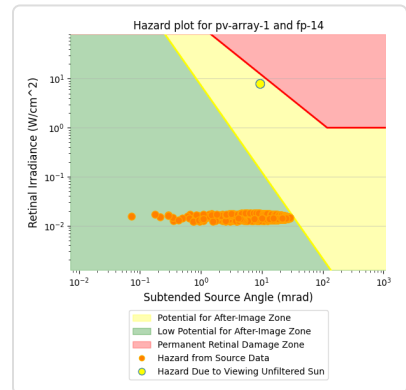
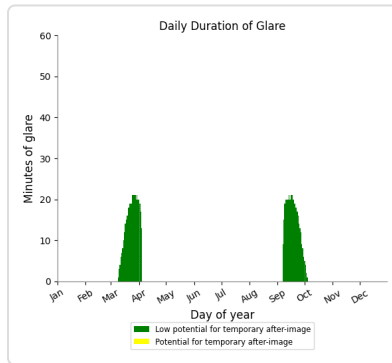
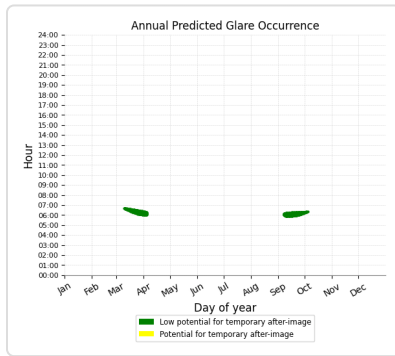
PV array 1 and Route: Route 5 - Heckington Road - north of Howell

No glare found

PV array 1 and FP: FP 14 - Anwick West

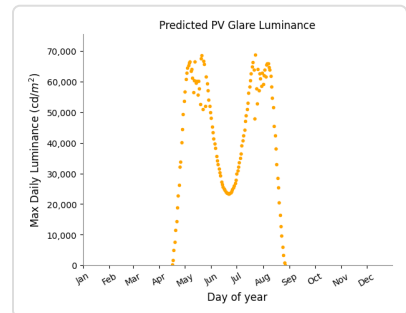
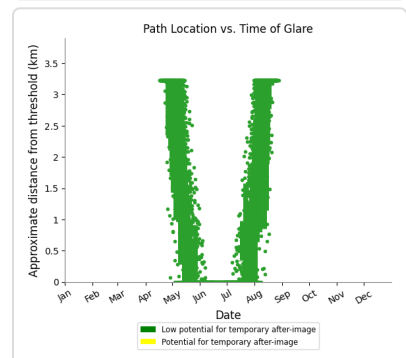
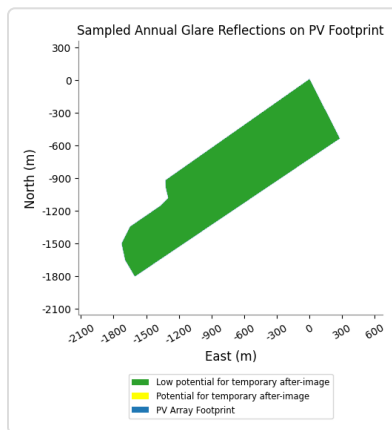
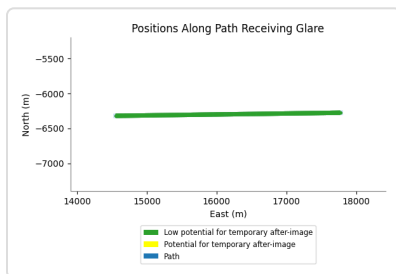
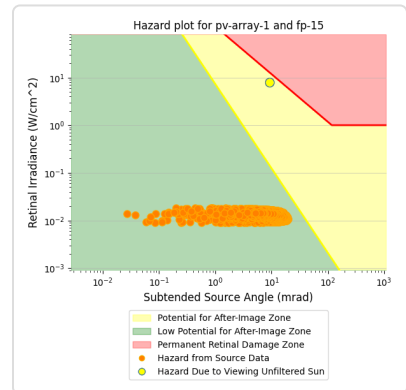
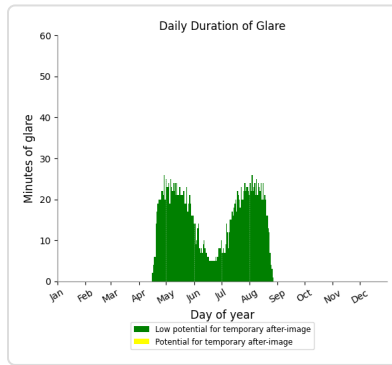
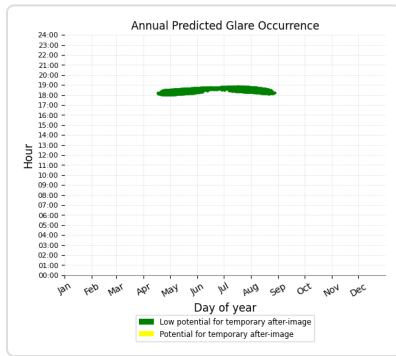
Yellow glare: none

Green glare: 811 min.



PV array 1 and FP: FP 15 - Boston East

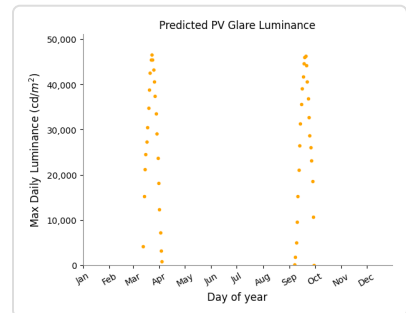
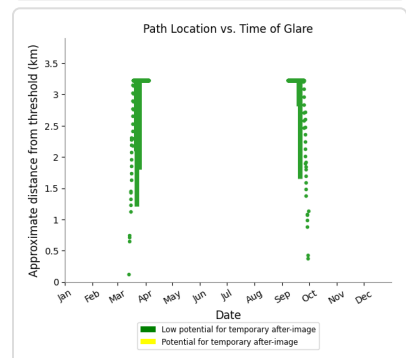
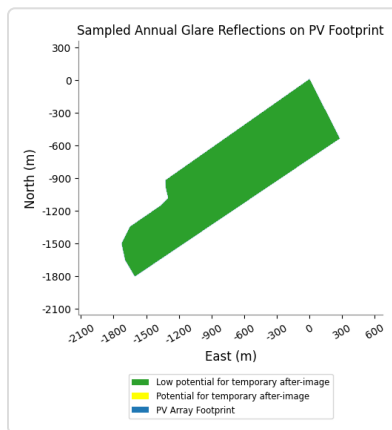
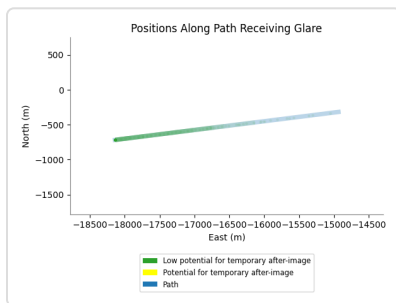
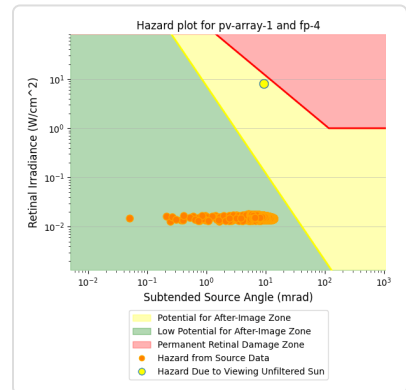
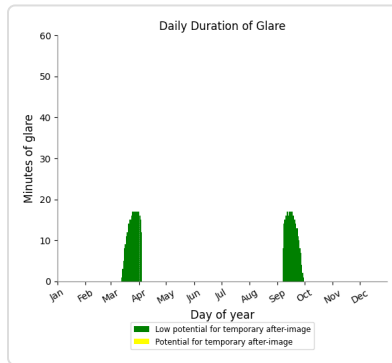
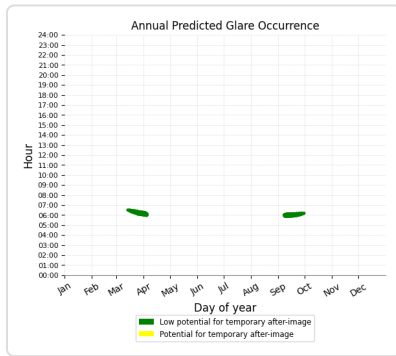
Yellow glare: none
 Green glare: 2,138 min.



PV array 1 and FP: FP 4 - RAF Cranwell West

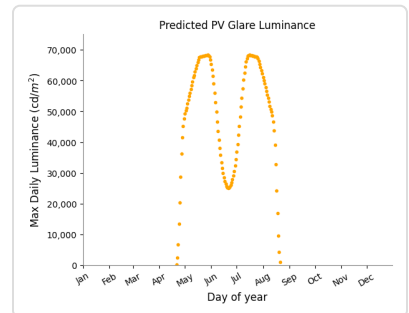
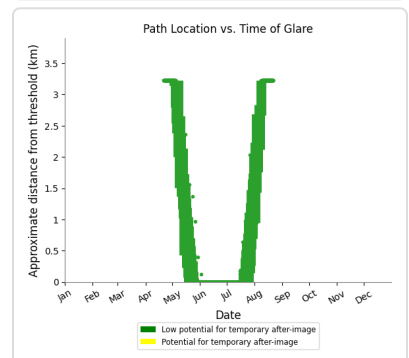
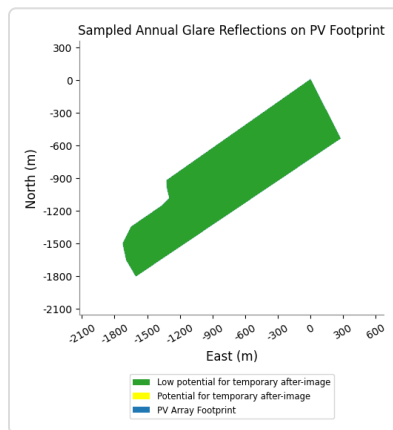
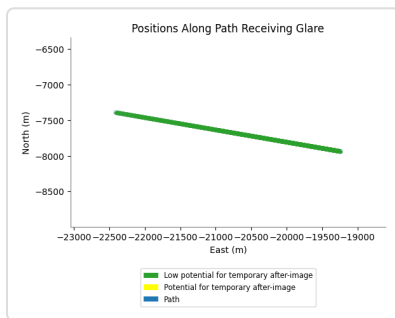
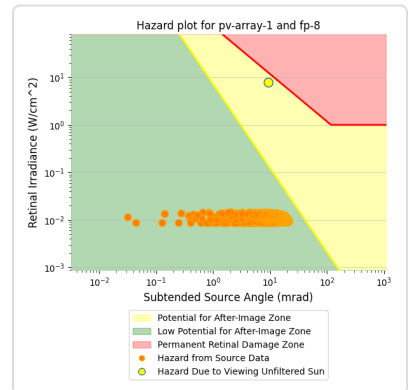
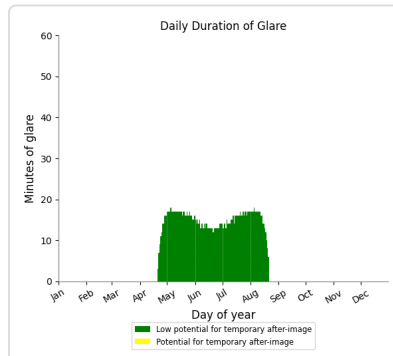
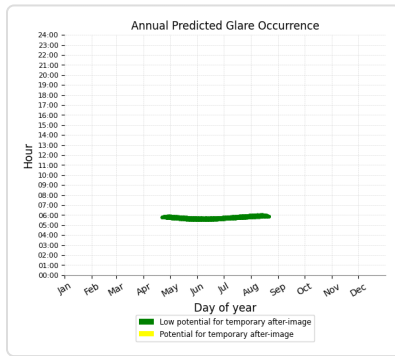
Yellow glare: none

Green glare: 602 min.



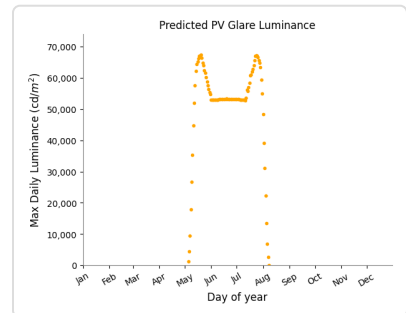
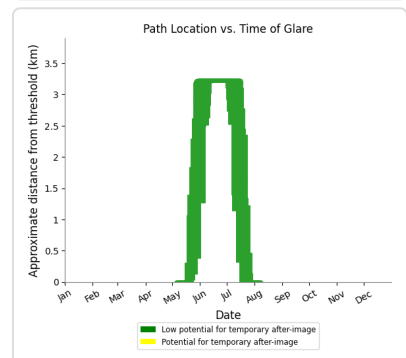
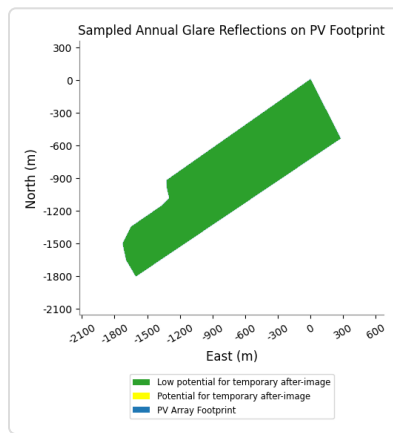
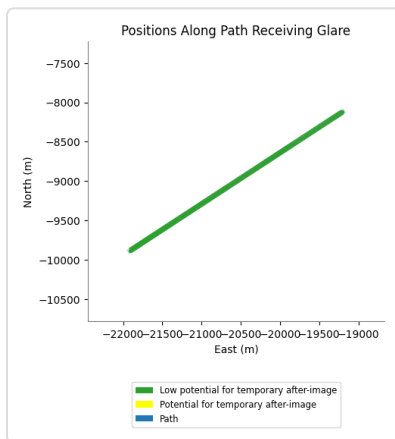
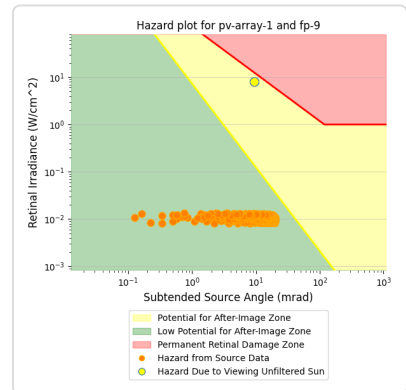
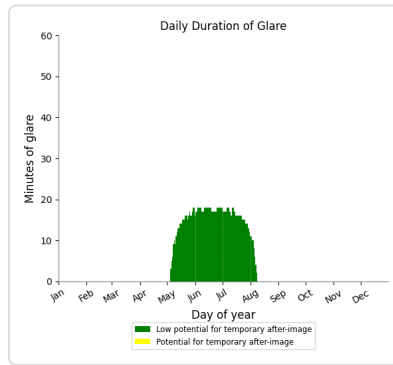
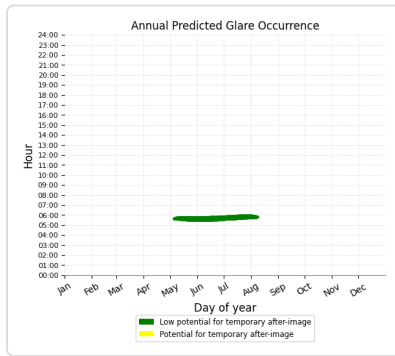
PV array 1 and FP: FP 8 - RAF Barkston Heath NW

Yellow glare: none
 Green glare: 1,834 min.



PV array 1 and FP: FP 9 - RAF Barkston Heath SW

Yellow glare: none
Green glare: 1,447 min.



PV array 1 and FP: FP 10 - RAF Barkston Heath NE

No glare found

PV array 1 and FP: FP 11 - RAF Barkston Heath South

No glare found

PV array 1 and FP: FP 12 - RAF Barkston Heath North

No glare found

PV array 1 and FP: FP 13 - Anwick East

No glare found

PV array 1 and FP: FP 16 - Boston West

No glare found

PV array 1 and FP: FP 1 - RAF Coningsby East

No glare found

PV array 1 and FP: FP 2 - RAF Coningsby West

No glare found

PV array 1 and FP: FP 3 - RAF Cranwell East

No glare found

PV array 1 and FP: FP 5 - RAF Cranwell South

No glare found

PV array 1 and FP: FP 6 - RAF Cranwell North

No glare found

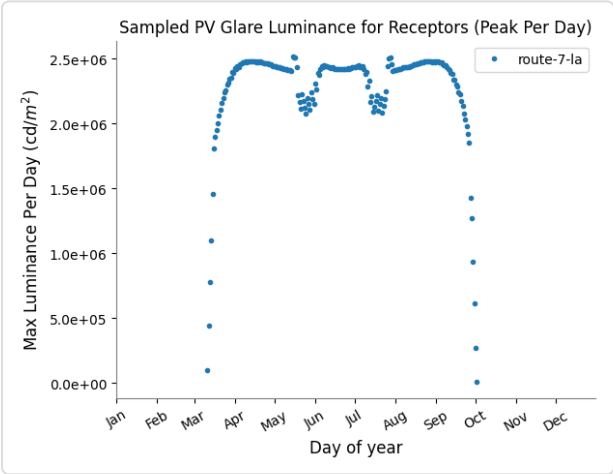
PV array 1 and FP: FP 7 - RAF Barkston Heath SE

No glare found

PV: PV array 2 potential temporary after-image

Receptor results ordered by category of glare

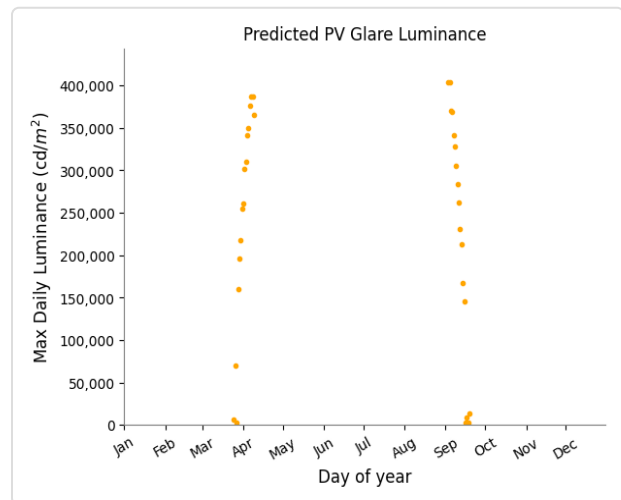
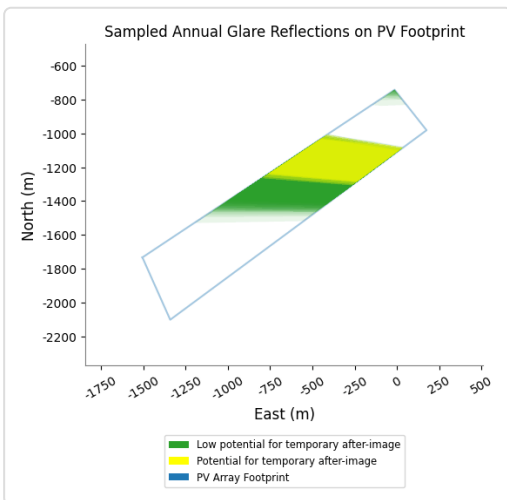
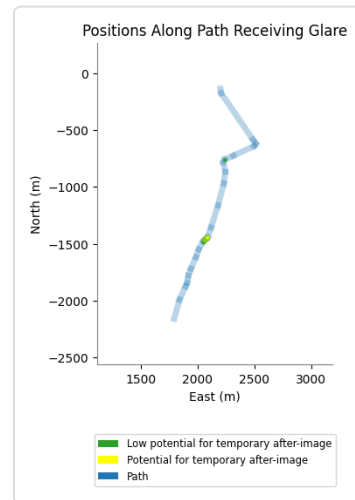
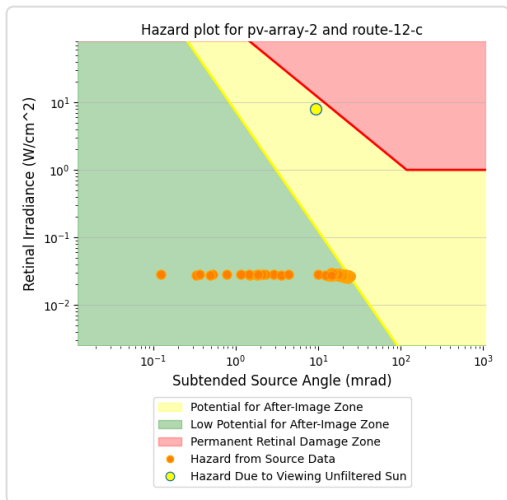
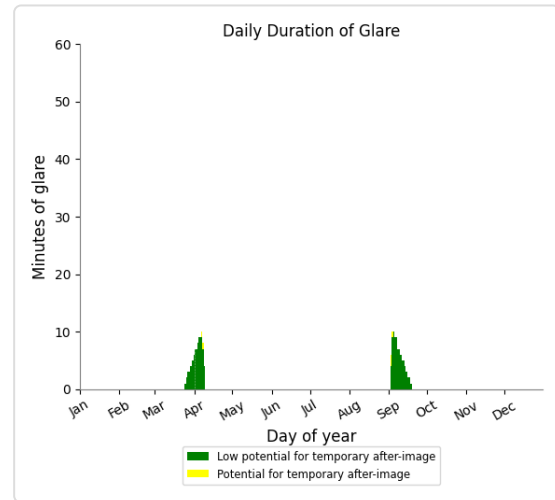
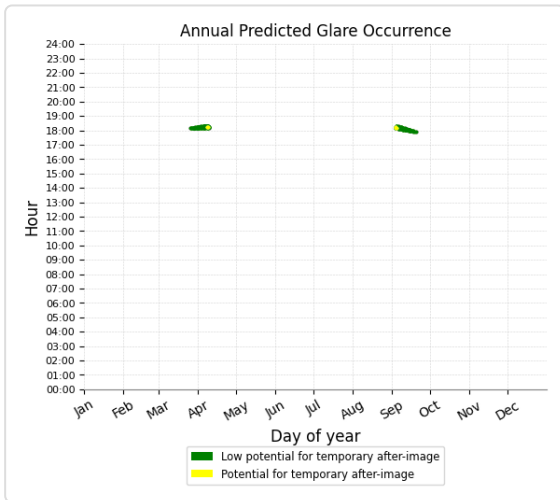
Receptor	Annual Green Glare		Annual Yellow Glare		Peak Luminance
	min	hr	min	hr	cd/m ²
Route 12 - Cow Drove	178	3.0	5	0.1	403,445
Route 3 - Howell Fen Drove	2,274	37.9	2	0.0	609,405
Route 5 - Heckington Road - north of Howell	216	3.6	2,252	37.5	2,406,317
Route 6 - Thorpe Road	563	9.4	3,591	59.9	2,366,406
Route 7 - Lane connected to Thorpe Road	480	8.0	4,253	70.9	2,514,596
Route 8 - Field Lane	804	13.4	1,319	22.0	1,139,259
Route 9 - Littleworth Drove	1,406	23.4	4	0.1	403,776
Route 2 - B1395	2,293	38.2	0	0.0	349,621
Route 10 - Star Fen Road	0	0.0	0	0.0	0
Route 11 - Church Lane	0	0.0	0	0.0	0
Route 13 - Railway	0	0.0	0	0.0	0
Route 1 - A17	0	0.0	0	0.0	0
Route 4 - Heckington Road - south of Howell	0	0.0	0	0.0	0
FP 14 - Anwick West	79	1.3	0	0.0	31,933
FP 15 - Boston East	1,159	19.3	0	0.0	109,676
FP 4 - RAF Cranwell West	159	2.6	0	0.0	47,557
FP 8 - RAF Barkston Heath NW	1,111	18.5	0	0.0	94,208
FP 9 - RAF Barkston Heath SW	1,373	22.9	0	0.0	93,981
FP 10 - RAF Barkston Heath NE	0	0.0	0	0.0	0
FP 11 - RAF Barkston Heath South	0	0.0	0	0.0	0
FP 12 - RAF Barkston Heath North	0	0.0	0	0.0	0
FP 13 - Anwick East	0	0.0	0	0.0	0
FP 16 - Boston West	0	0.0	0	0.0	0
FP 1 - RAF Coningsby East	0	0.0	0	0.0	0
FP 2 - RAF Coningsby West	0	0.0	0	0.0	0
FP 3 - RAF Cranwell East	0	0.0	0	0.0	0
FP 5 - RAF Cranwell South	0	0.0	0	0.0	0
FP 6 - RAF Cranwell North	0	0.0	0	0.0	0
FP 7 - RAF Barkston Heath SE	0	0.0	0	0.0	0



PV array 2 and Route: Route 12 - Cow Drove

Yellow glare: 5 min.

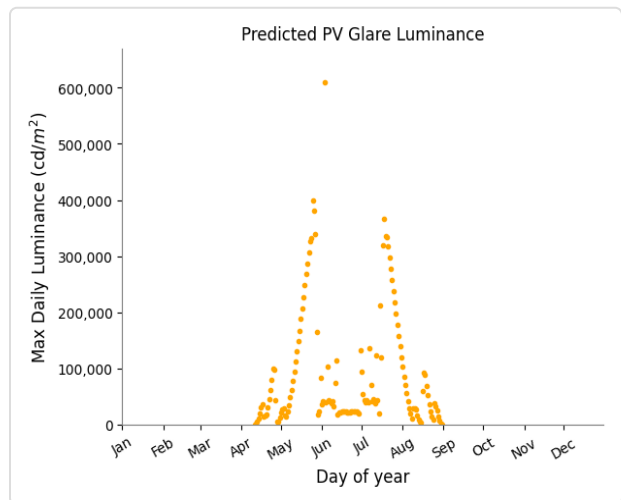
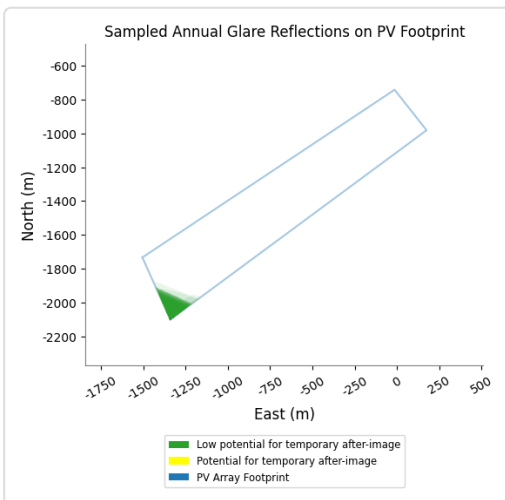
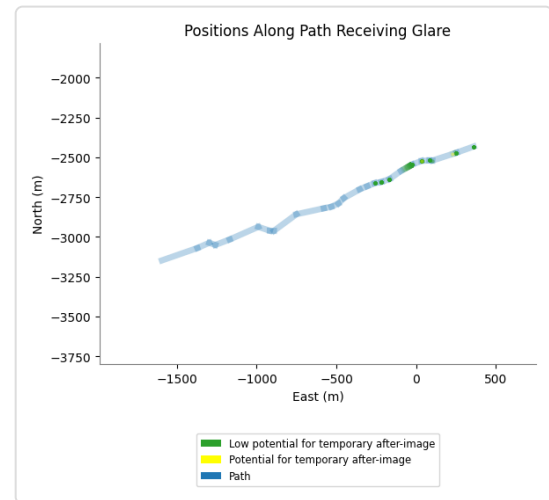
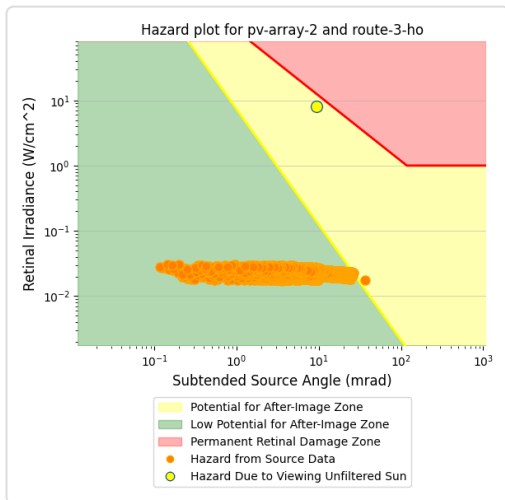
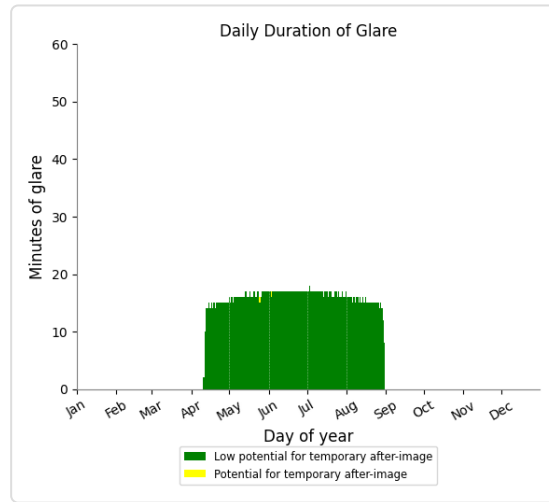
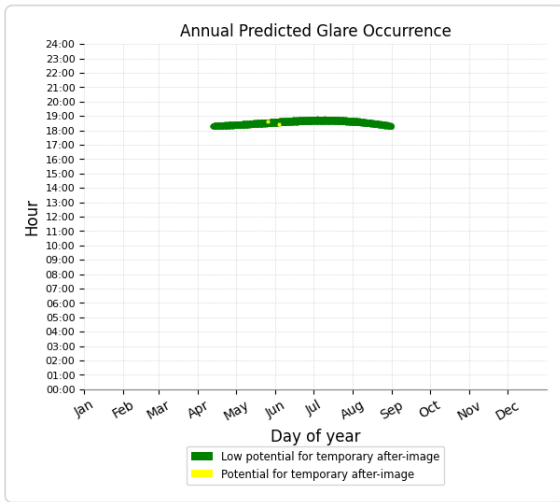
Green glare: 178 min.



PV array 2 and Route: Route 3 - Howell Fen Drive

Yellow glare: 2 min.

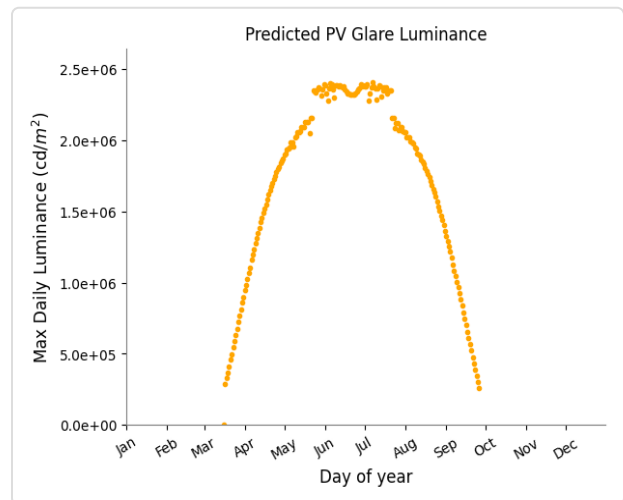
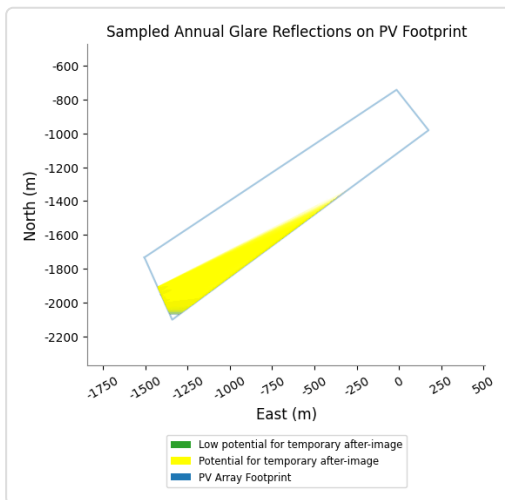
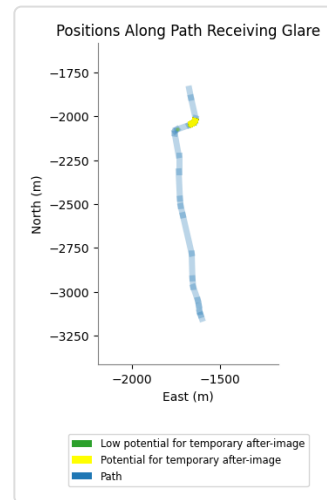
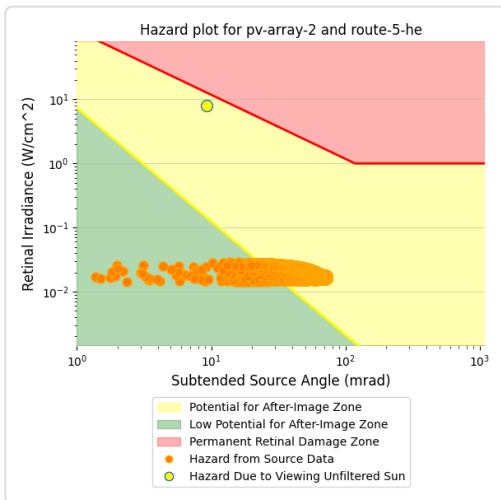
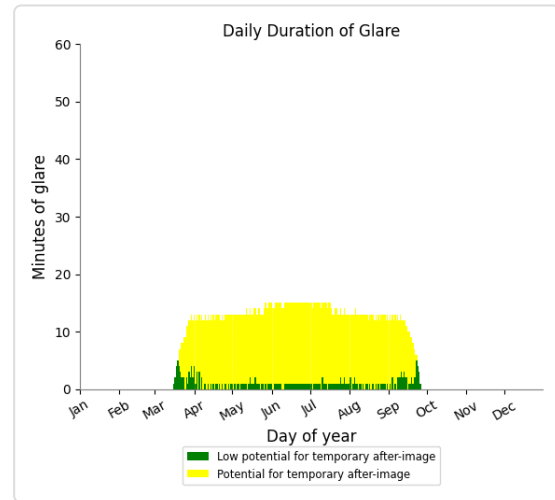
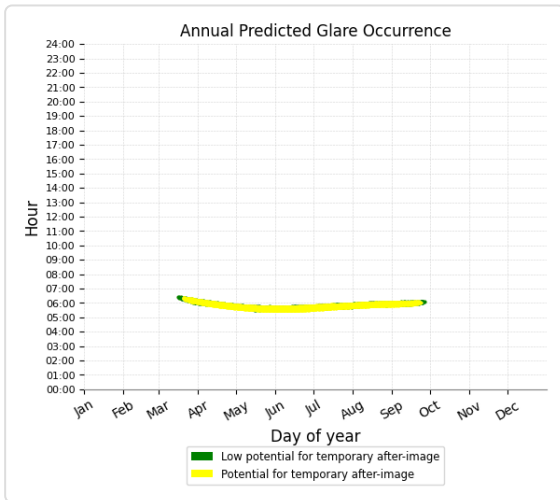
Green glare: 2,274 min.



PV array 2 and Route: Route 5 - Heckington Road - north of Howell

Yellow glare: 2,252 min.

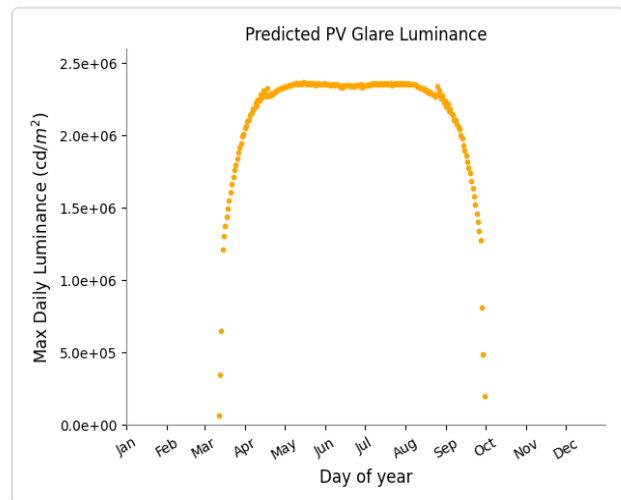
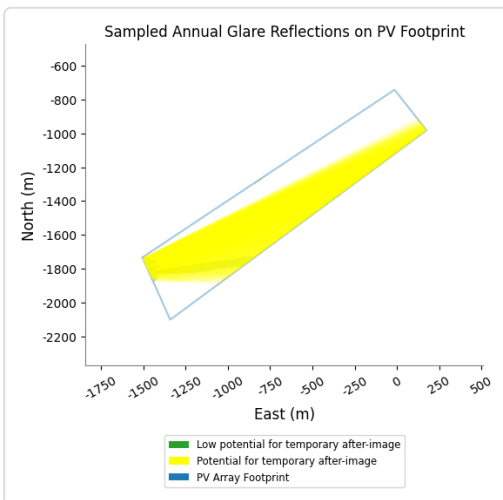
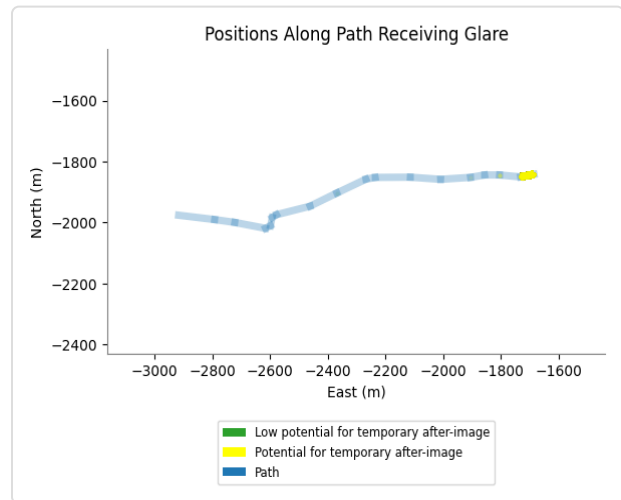
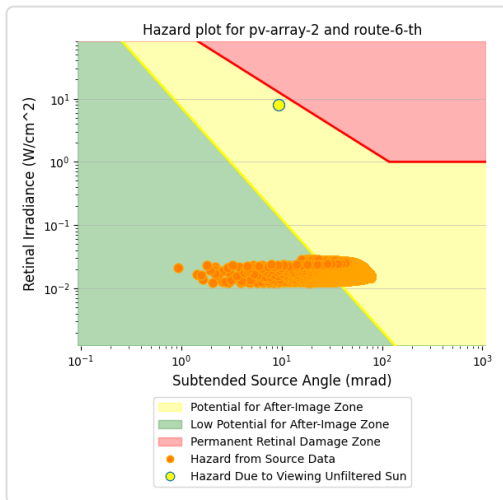
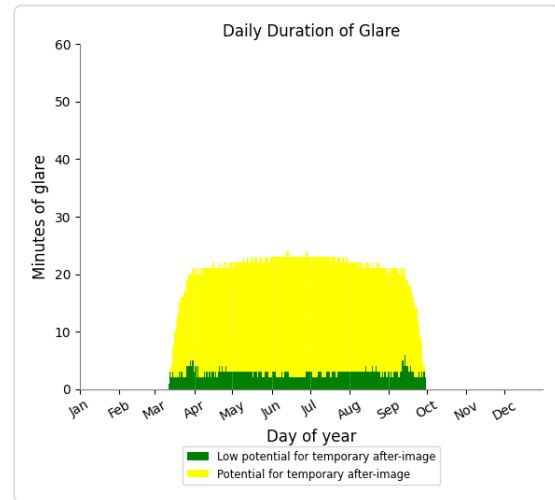
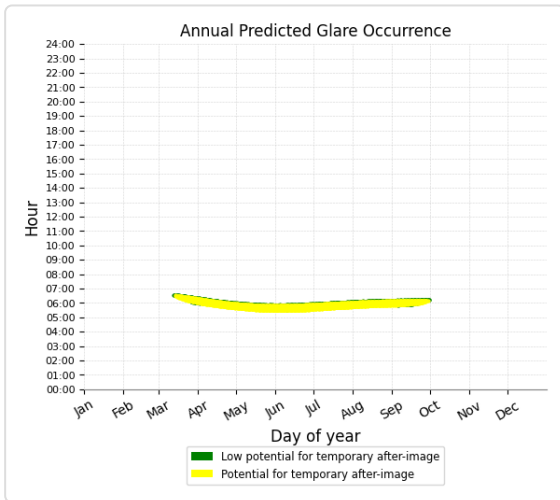
Green glare: 216 min.



PV array 2 and Route: Route 6 - Thorpe Road

Yellow glare: 3,591 min.

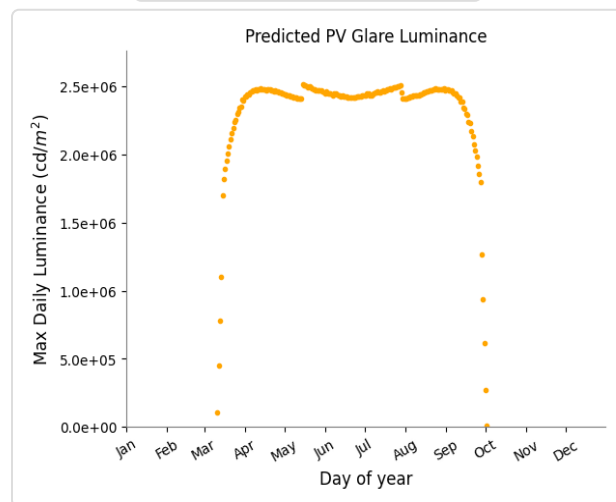
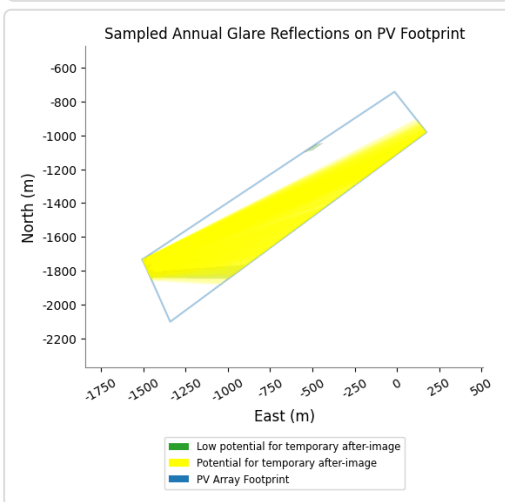
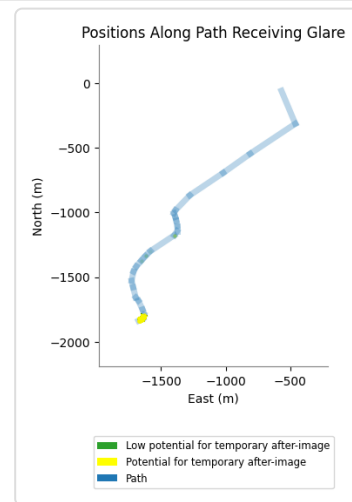
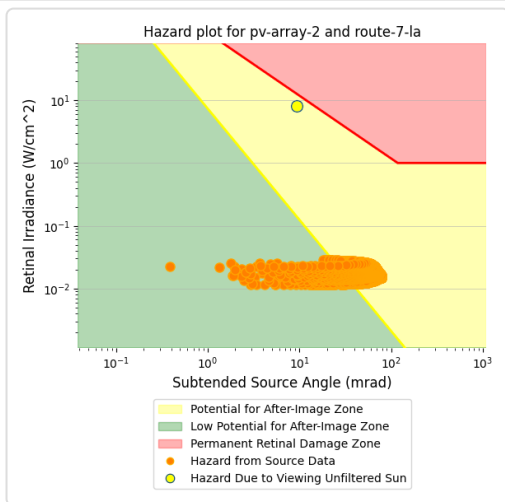
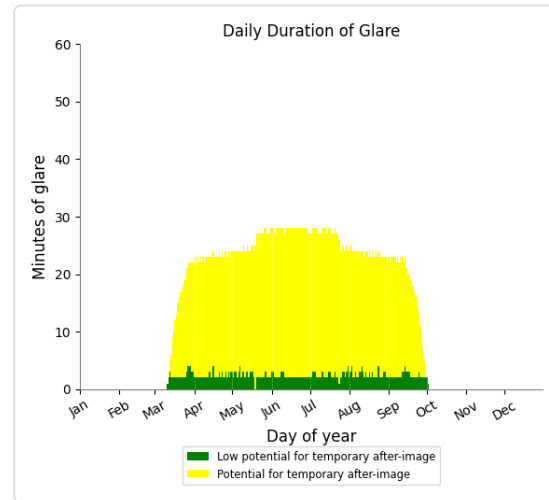
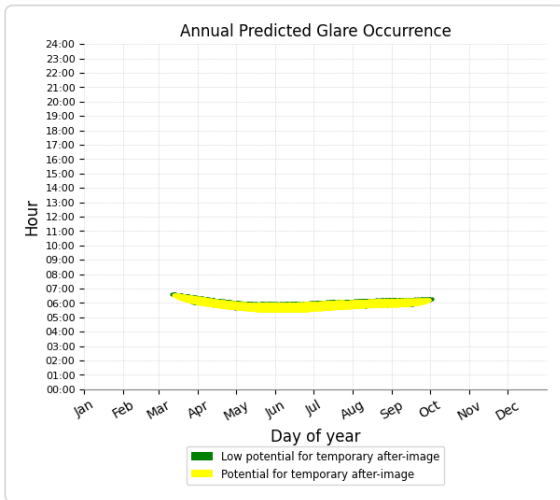
Green glare: 563 min.



PV array 2 and Route: Route 7 - Lane connected to Thorpe Road

Yellow glare: 4,253 min.

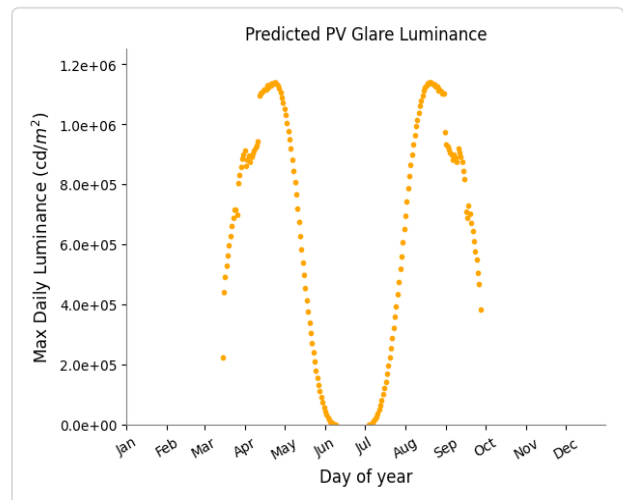
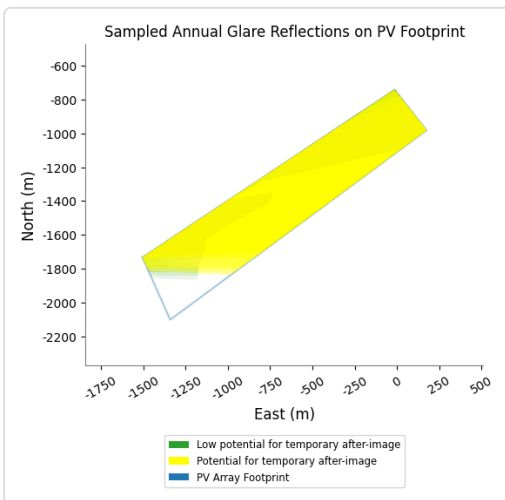
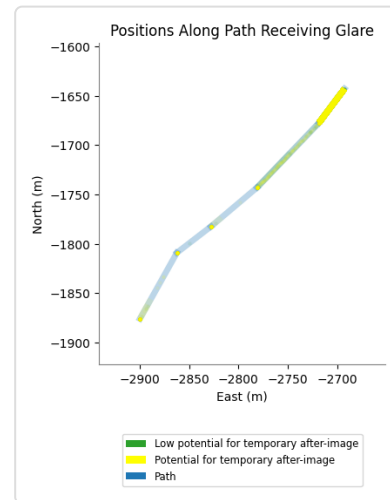
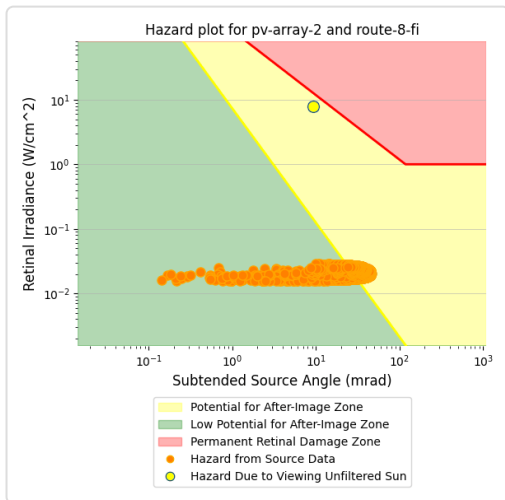
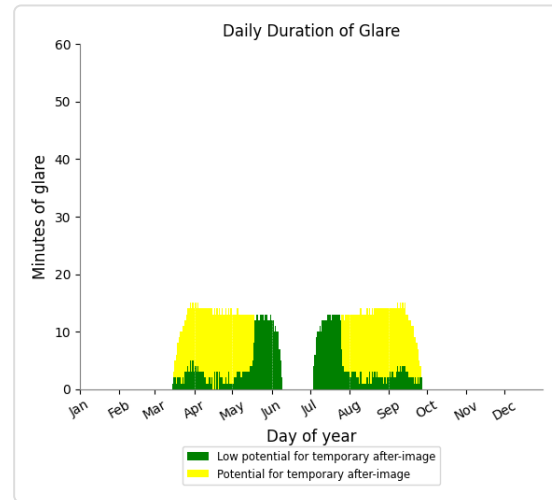
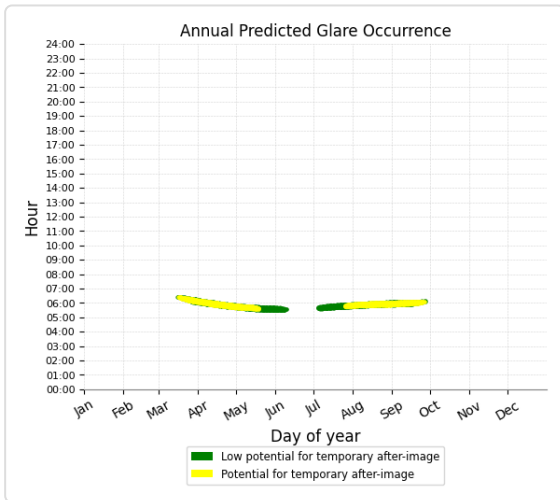
Green glare: 480 min.



PV array 2 and Route: Route 8 - Field Lane

Yellow glare: 1,319 min.

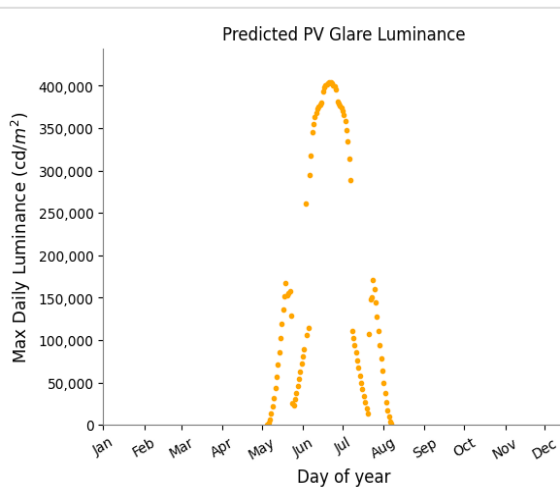
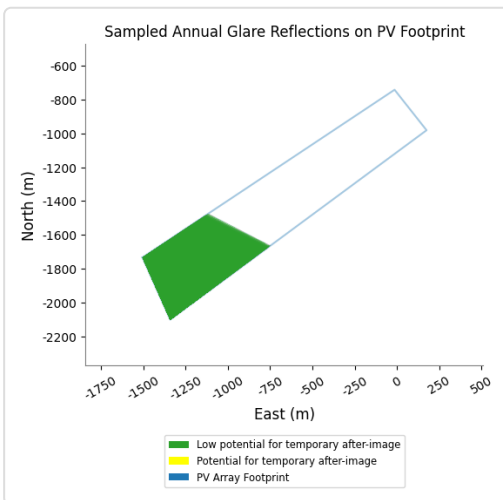
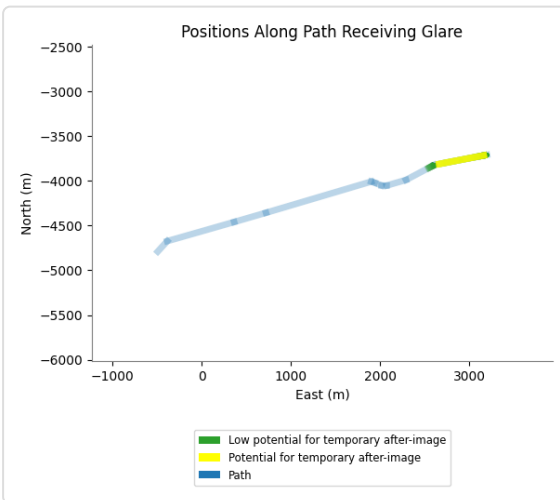
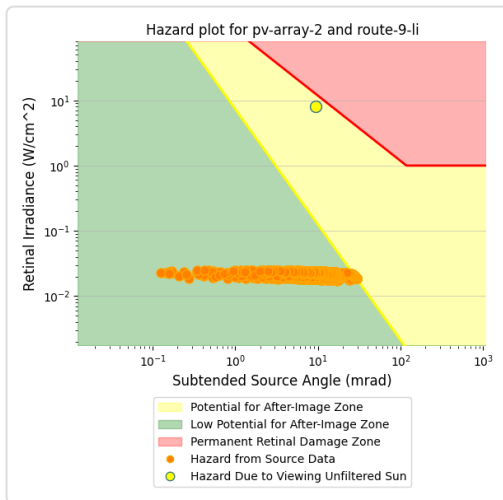
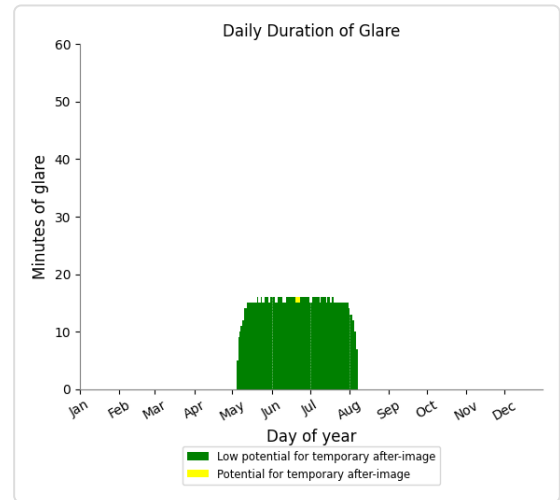
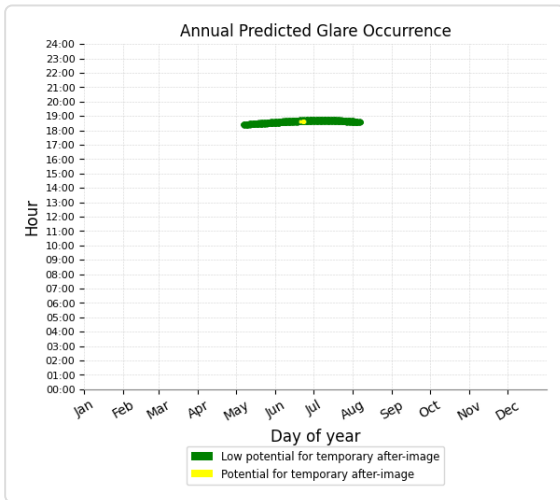
Green glare: 804 min.



PV array 2 and Route: Route 9 - Littleworth Drive

Yellow glare: 4 min.

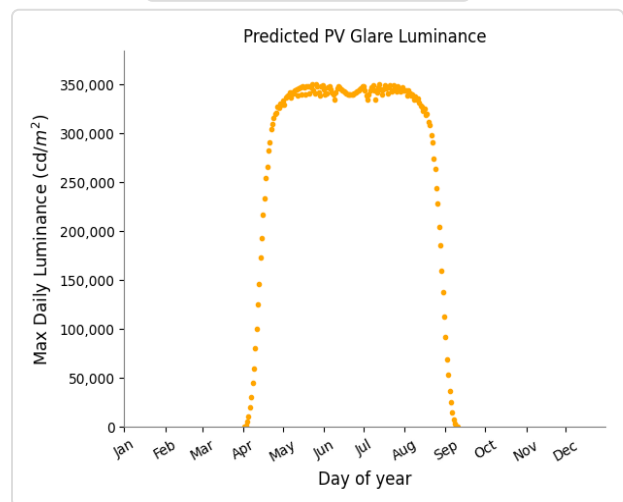
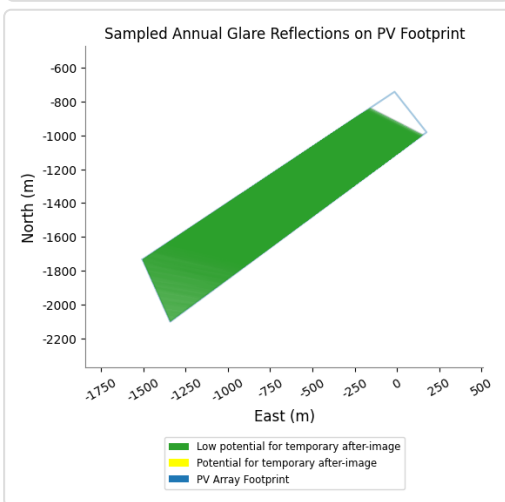
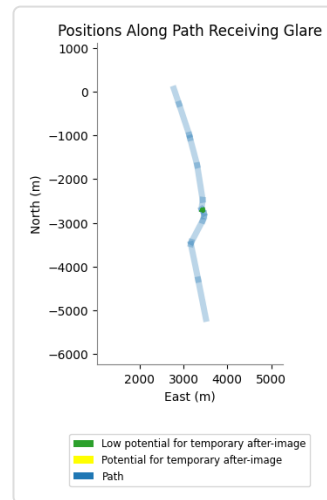
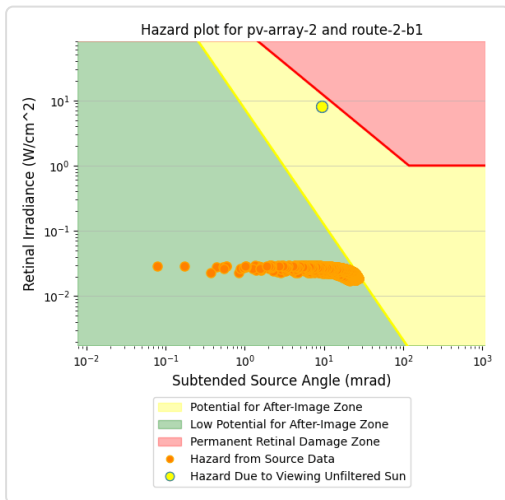
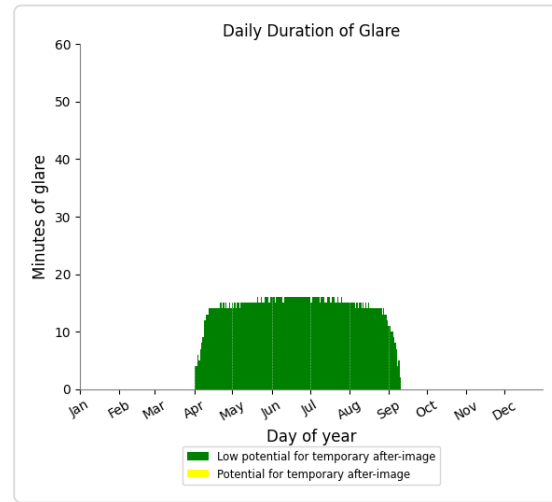
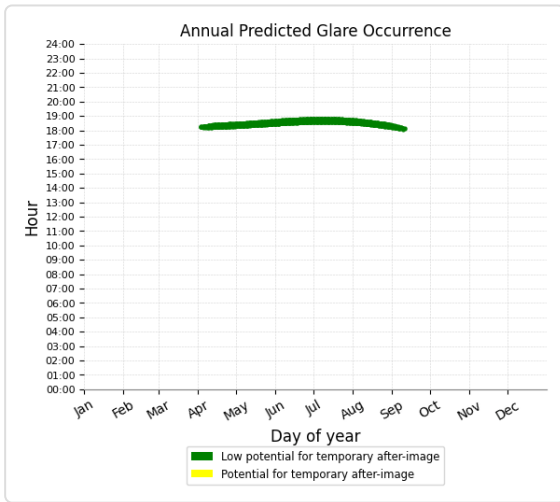
Green glare: 1,406 min.



PV array 2 and Route: Route 2 - B1395

Yellow glare: none

Green glare: 2,293 min.



PV array 2 and Route: Route 10 - Star Fen Road

No glare found

PV array 2 and Route: Route 11 - Church Lane

No glare found

PV array 2 and Route: Route 13 - Railway

No glare found

PV array 2 and Route: Route 1 - A17

No glare found

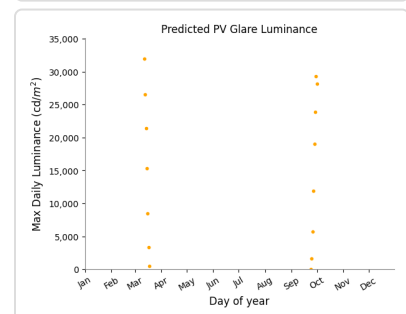
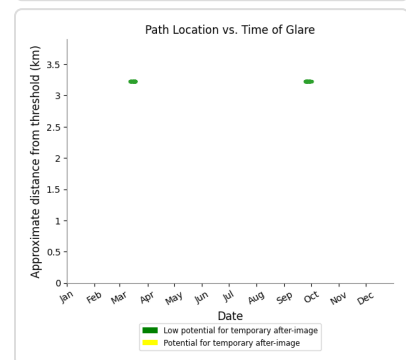
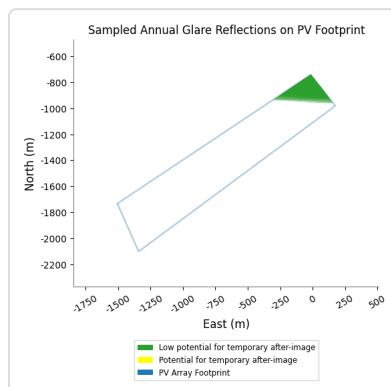
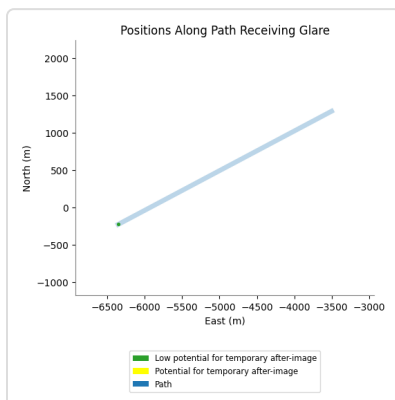
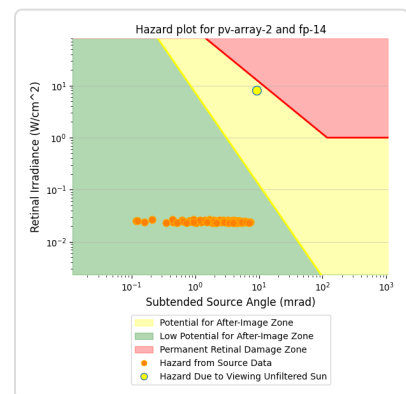
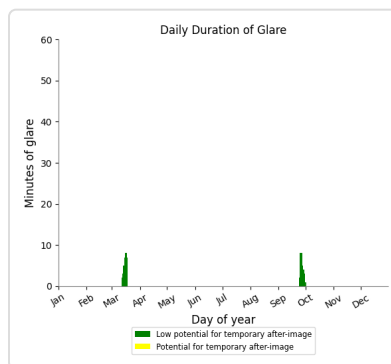
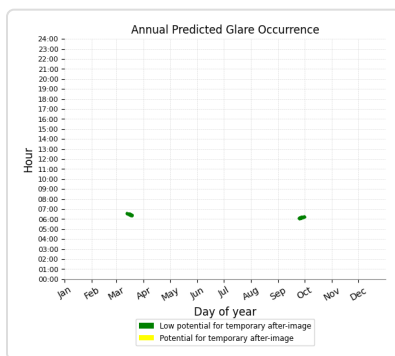
PV array 2 and Route: Route 4 - Heckington Road - south of Howell

No glare found

PV array 2 and FP: FP 14 - Anwick West

Yellow glare: none

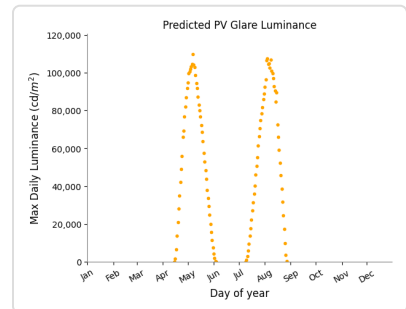
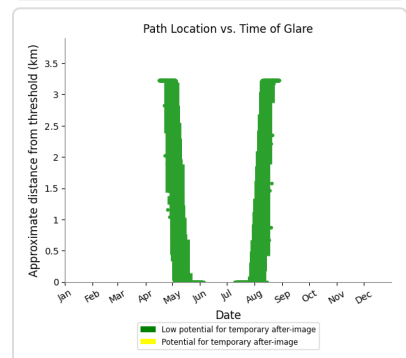
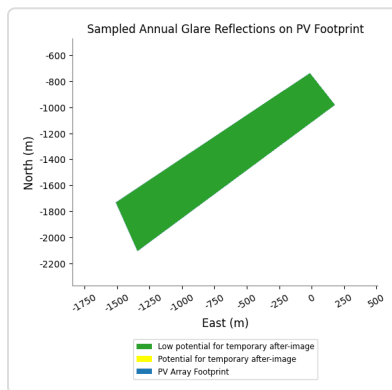
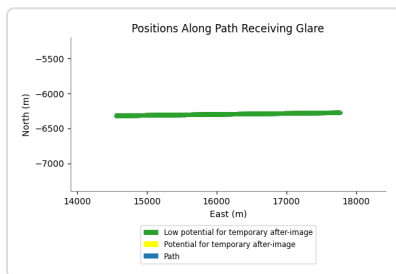
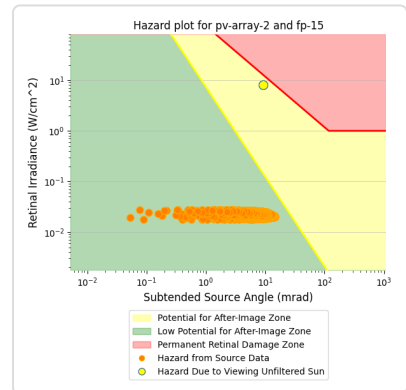
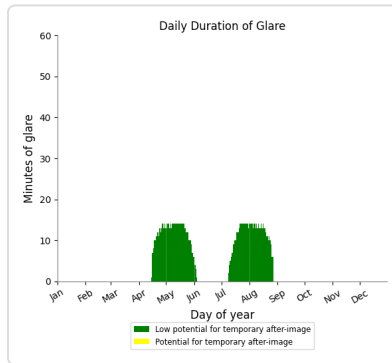
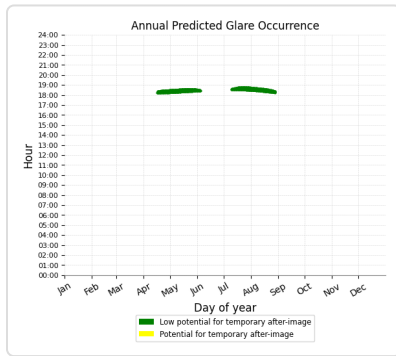
Green glare: 79 min.



PV array 2 and FP: FP 15 - Boston East

Yellow glare: none

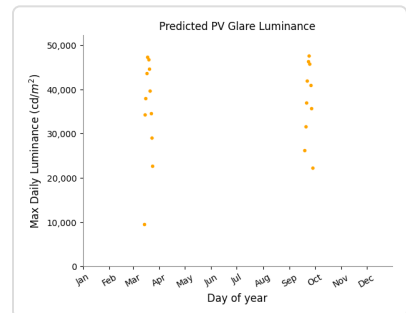
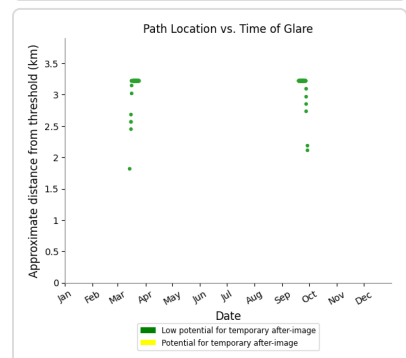
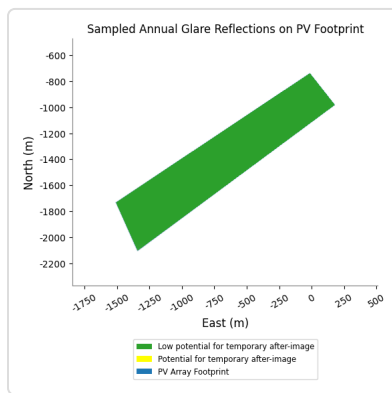
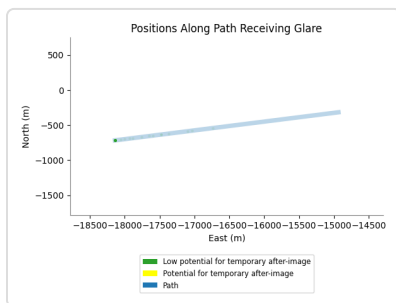
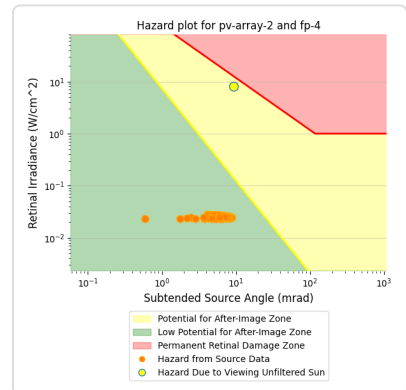
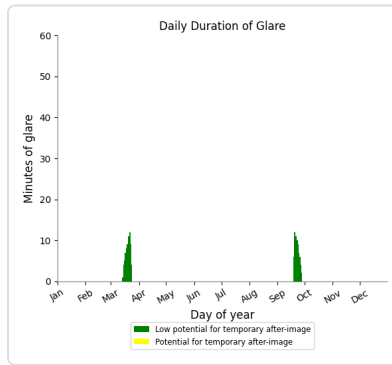
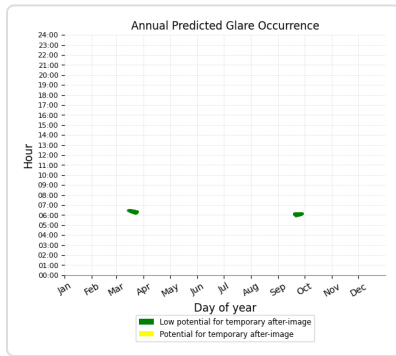
Green glare: 1,159 min.



PV array 2 and FP: FP 4 - RAF Cranwell West

Yellow glare: none

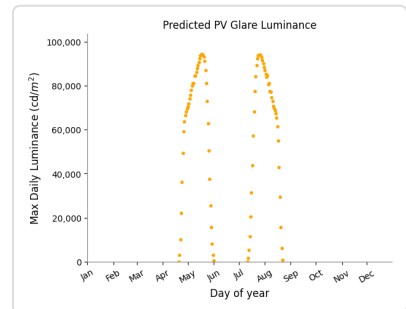
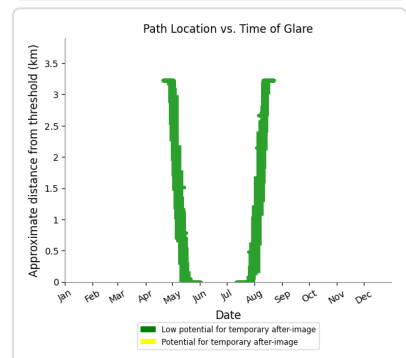
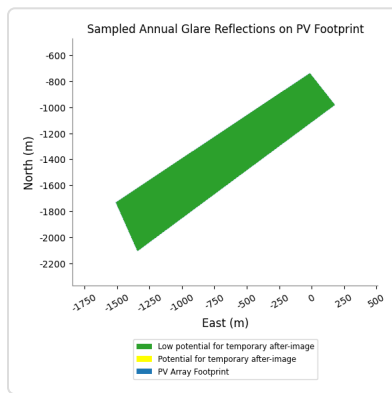
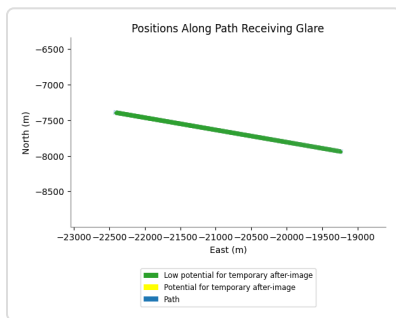
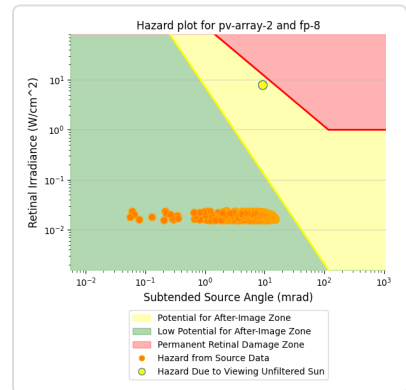
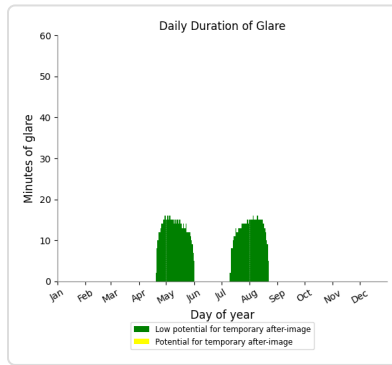
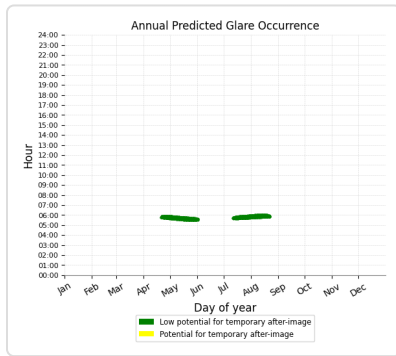
Green glare: 159 min.



PV array 2 and FP: FP 8 - RAF Barkston Heath NW

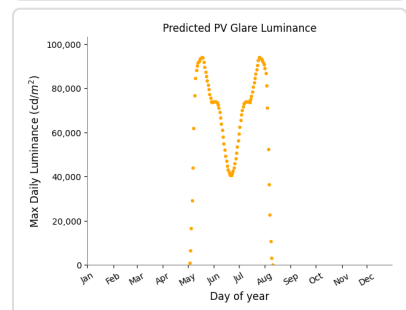
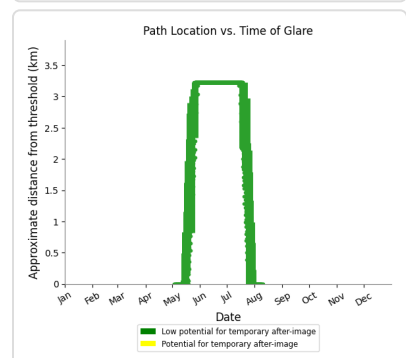
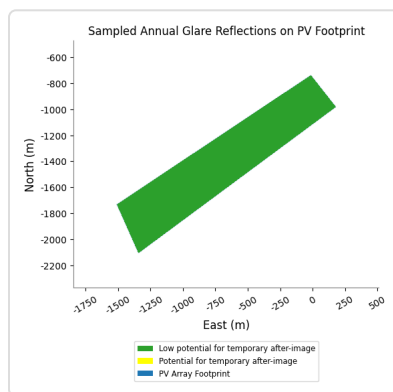
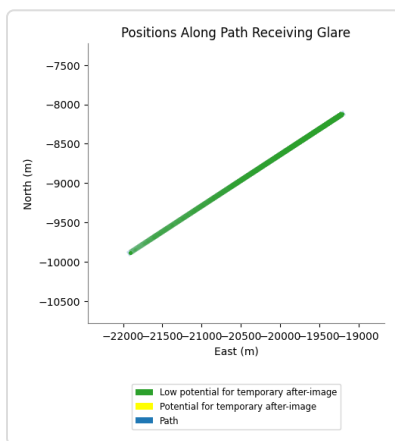
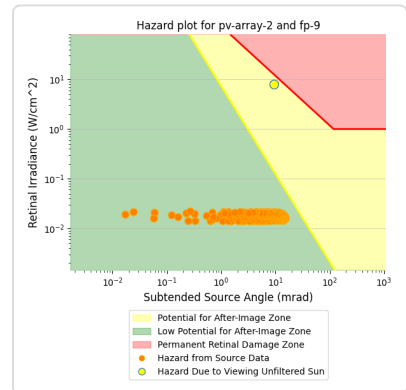
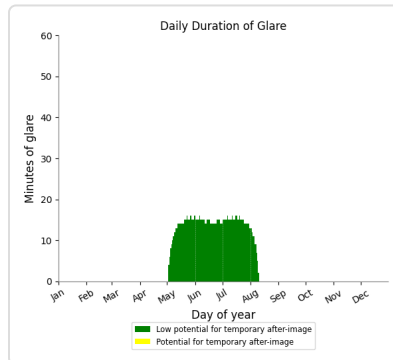
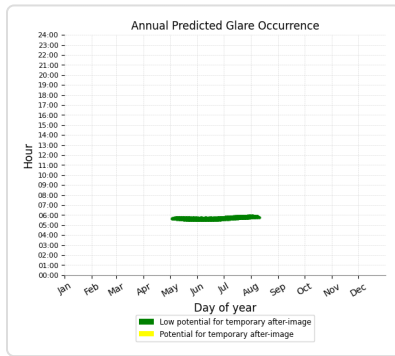
Yellow glare: none

Green glare: 1,111 min.



PV array 2 and FP: FP 9 - RAF Barkston Heath SW

Yellow glare: none
Green glare: 1,373 min.



PV array 2 and FP: FP 10 - RAF Barkston Heath NE

No glare found

PV array 2 and FP: FP 11 - RAF Barkston Heath South

No glare found

PV array 2 and FP: FP 12 - RAF Barkston Heath North

No glare found

PV array 2 and FP: FP 13 - Anwick East

No glare found

PV array 2 and FP: FP 16 - Boston West

No glare found

PV array 2 and FP: FP 1 - RAF Coningsby East

No glare found

PV array 2 and FP: FP 2 - RAF Coningsby West

No glare found

PV array 2 and FP: FP 3 - RAF Cranwell East

No glare found

PV array 2 and FP: FP 5 - RAF Cranwell South

No glare found

PV array 2 and FP: FP 6 - RAF Cranwell North

No glare found

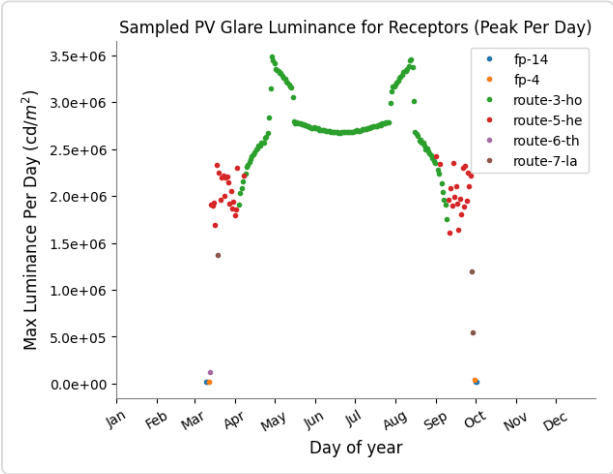
PV array 2 and FP: FP 7 - RAF Barkston Heath SE

No glare found

PV: PV array 3 potential temporary after-image

Receptor results ordered by category of glare

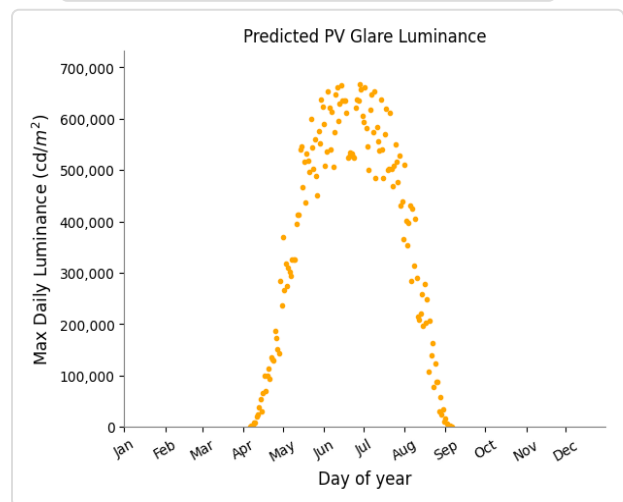
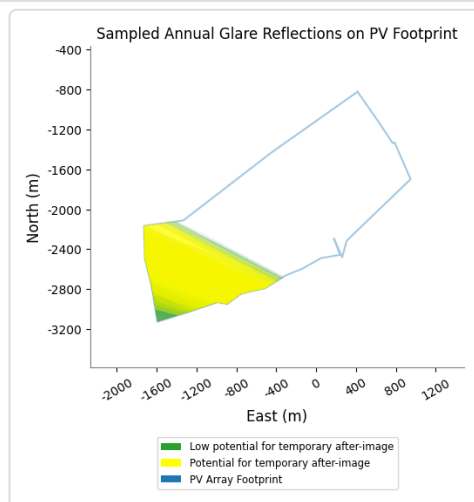
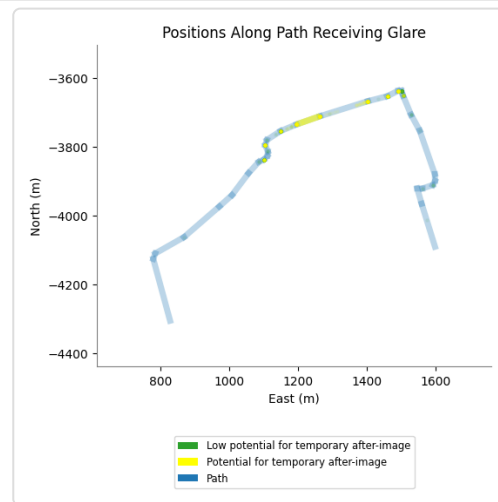
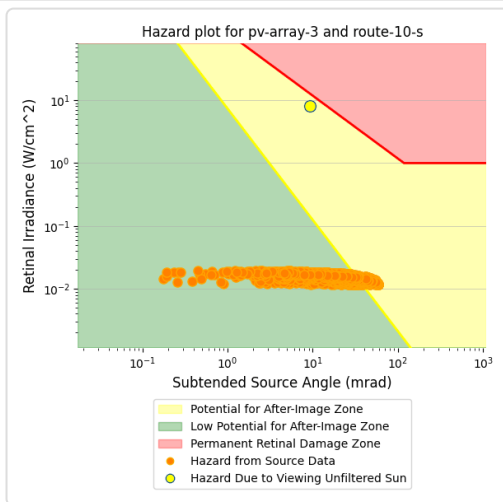
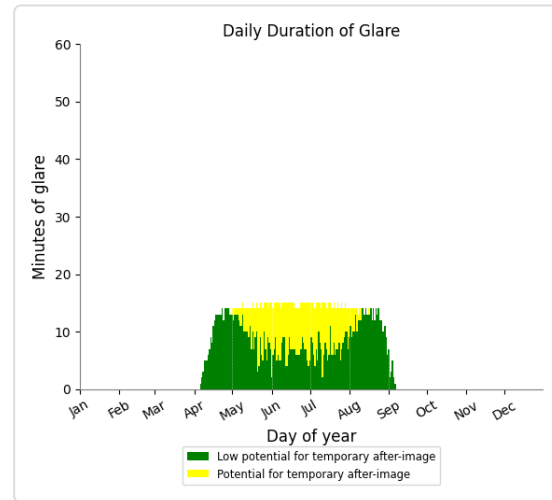
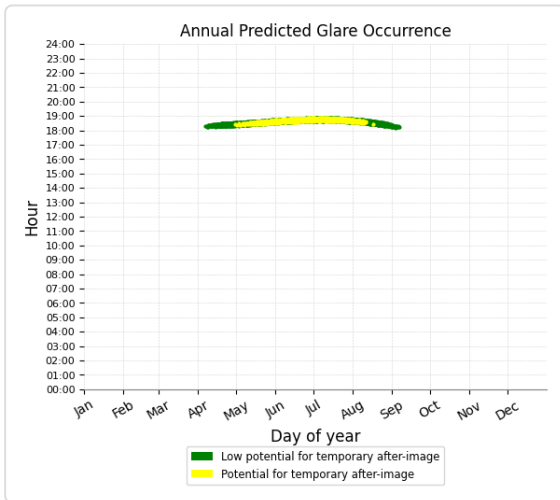
Receptor	Annual Green Glare		Annual Yellow Glare		Peak Luminance
	min	hr	min	hr	cd/m ²
Route 10 - Star Fen Road	1,330	22.2	671	11.2	666,810
Route 13 - Railway	105	1.8	8	0.1	313,470
Route 3 - Howell Fen Drove	634	10.6	7,306	121.8	3,481,984
Route 5 - Heckington Road - north of Howell	350	5.8	1,999	33.3	2,423,960
Route 6 - Thorpe Road	842	14.0	2,030	33.8	1,526,209
Route 7 - Lane connected to Thorpe Road	1,126	18.8	1,861	31.0	1,578,276
Route 8 - Field Lane	945	15.8	540	9.0	671,893
Route 9 - Littleworth Drove	1,100	18.3	584	9.7	627,433
Route 1 - A17	204	3.4	0	0.0	73,989
Route 11 - Church Lane	0	0.0	0	0.0	0
Route 12 - Cow Drove	0	0.0	0	0.0	0
Route 2 - B1395	0	0.0	0	0.0	0
Route 4 - Heckington Road - south of Howell	0	0.0	0	0.0	0
FP 14 - Anwick West	129	2.1	0	0.0	24,298
FP 15 - Boston East	1,658	27.6	0	0.0	146,447
FP 4 - RAF Cranwell West	226	3.8	0	0.0	65,625
FP 8 - RAF Barkston Heath NW	1,419	23.6	0	0.0	138,883
FP 9 - RAF Barkston Heath SW	1,695	28.2	0	0.0	126,578
FP 10 - RAF Barkston Heath NE	0	0.0	0	0.0	0
FP 11 - RAF Barkston Heath South	0	0.0	0	0.0	0
FP 12 - RAF Barkston Heath North	0	0.0	0	0.0	0
FP 13 - Anwick East	0	0.0	0	0.0	0
FP 16 - Boston West	0	0.0	0	0.0	0
FP 1 - RAF Coningsby East	0	0.0	0	0.0	0
FP 2 - RAF Coningsby West	0	0.0	0	0.0	0
FP 3 - RAF Cranwell East	0	0.0	0	0.0	0
FP 5 - RAF Cranwell South	0	0.0	0	0.0	0
FP 6 - RAF Cranwell North	0	0.0	0	0.0	0
FP 7 - RAF Barkston Heath SE	0	0.0	0	0.0	0



PV array 3 and Route: Route 10 - Star Fen Road

Yellow glare: 671 min.

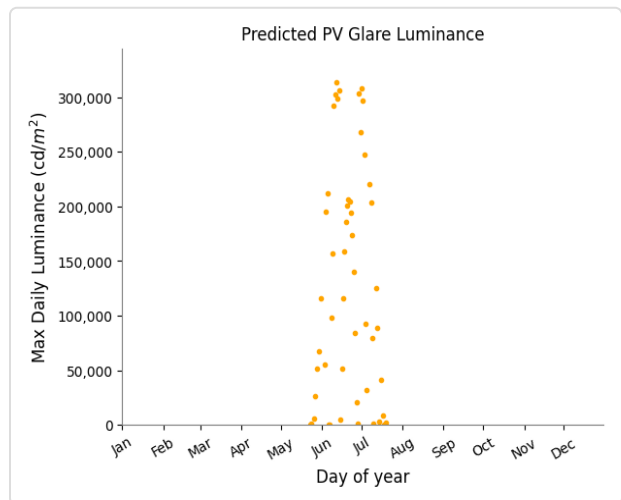
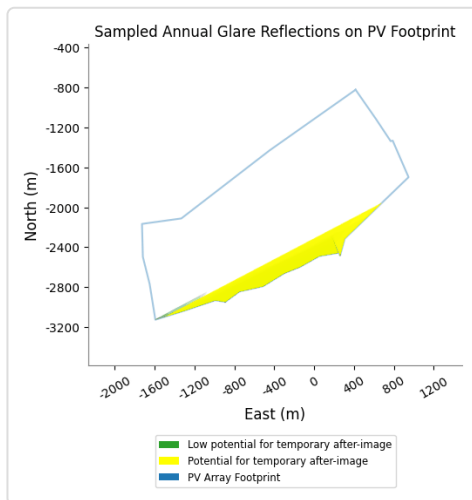
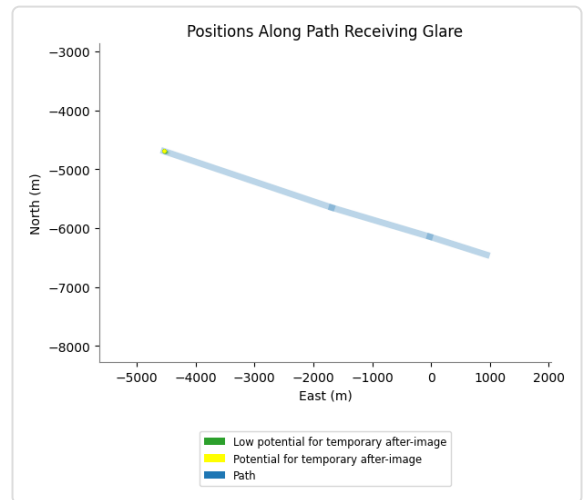
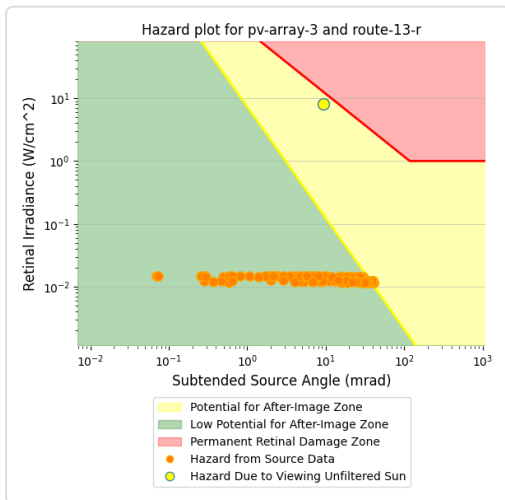
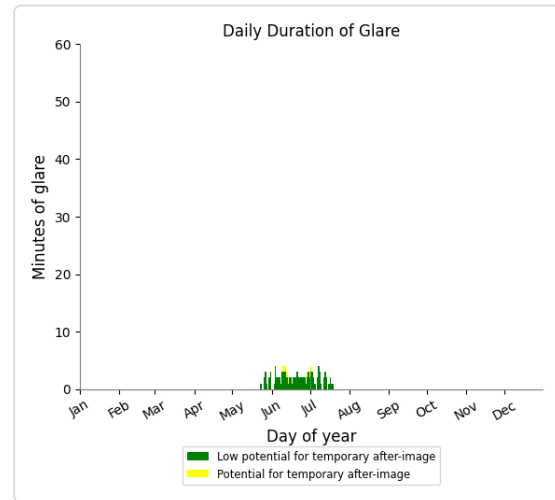
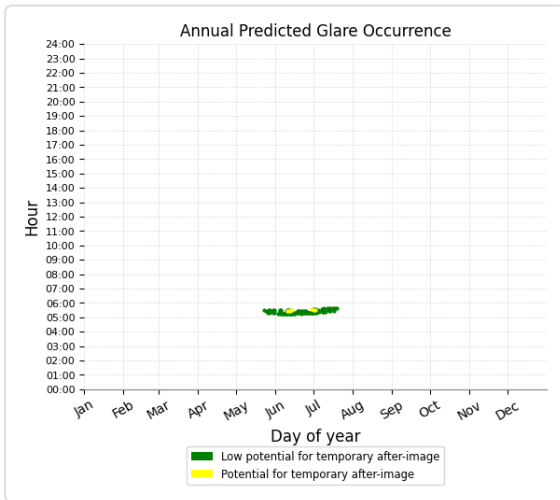
Green glare: 1,330 min.



PV array 3 and Route: Route 13 - Railway

Yellow glare: 8 min.

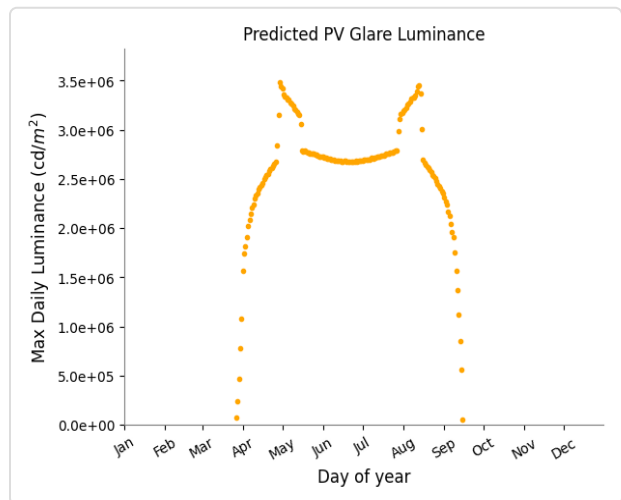
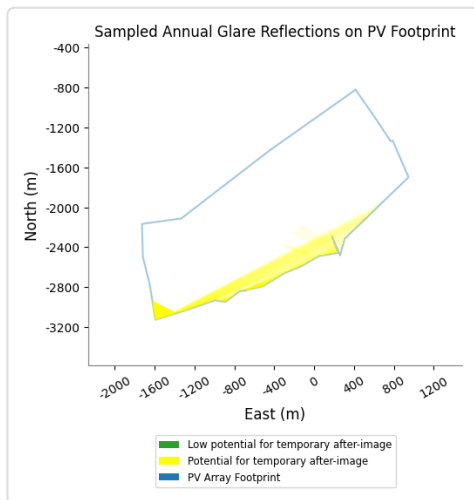
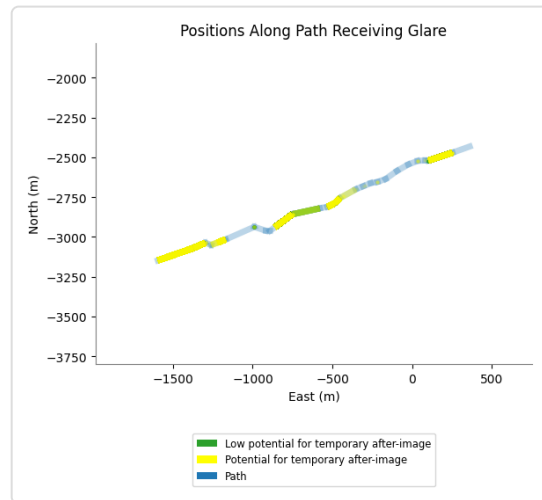
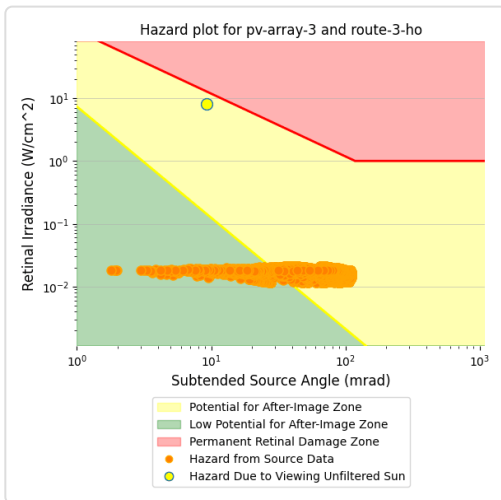
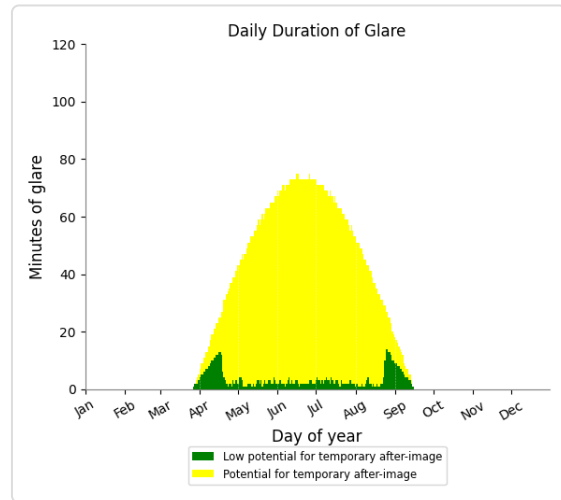
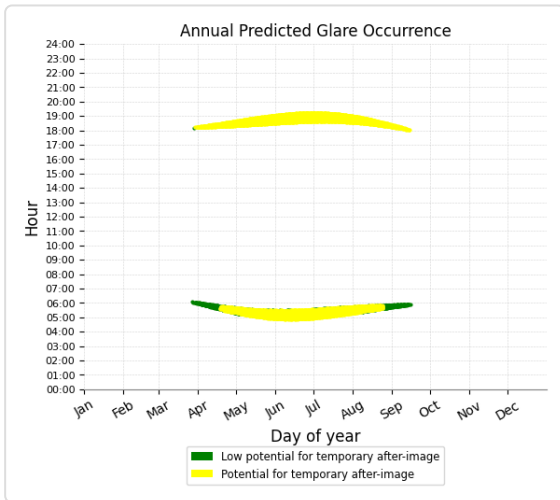
Green glare: 105 min.



PV array 3 and Route: Route 3 - Howell Fen Drive

Yellow glare: 7,306 min.

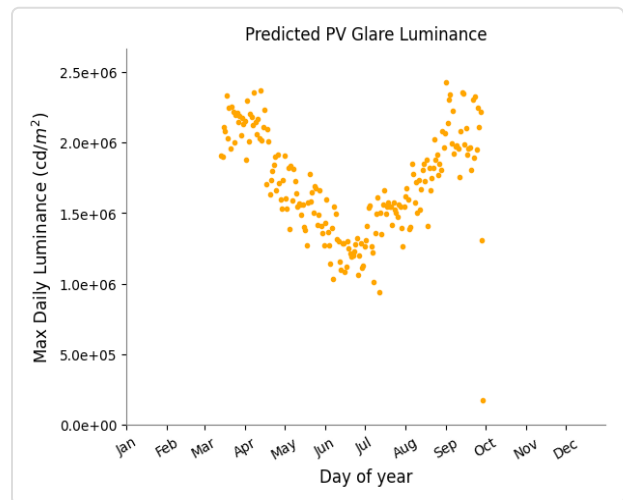
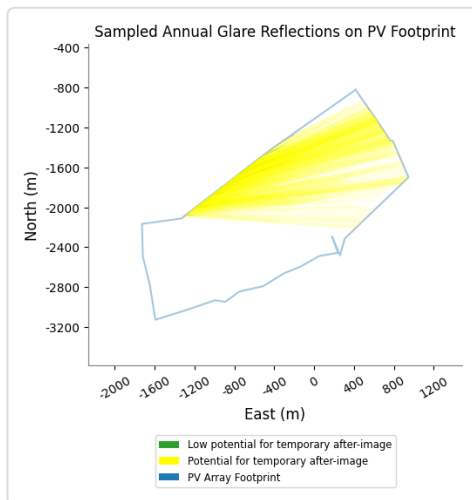
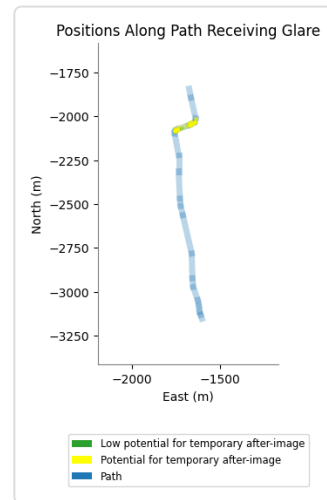
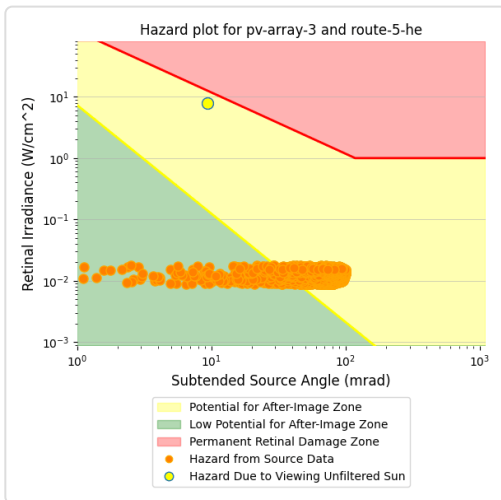
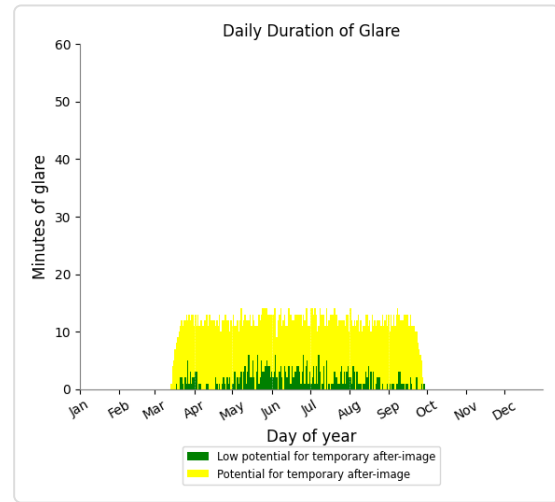
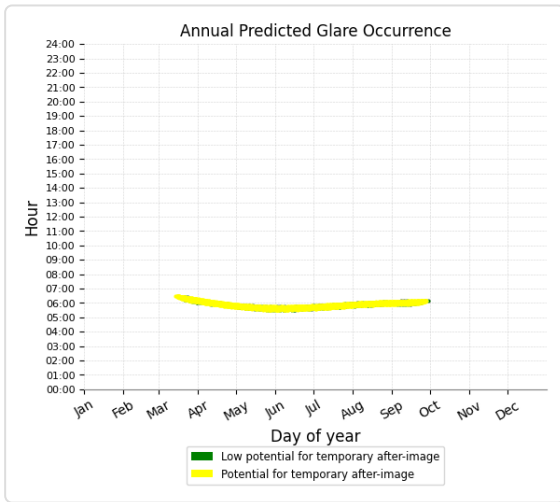
Green glare: 634 min.



PV array 3 and Route: Route 5 - Heckington Road - north of Howell

Yellow glare: 1,999 min.

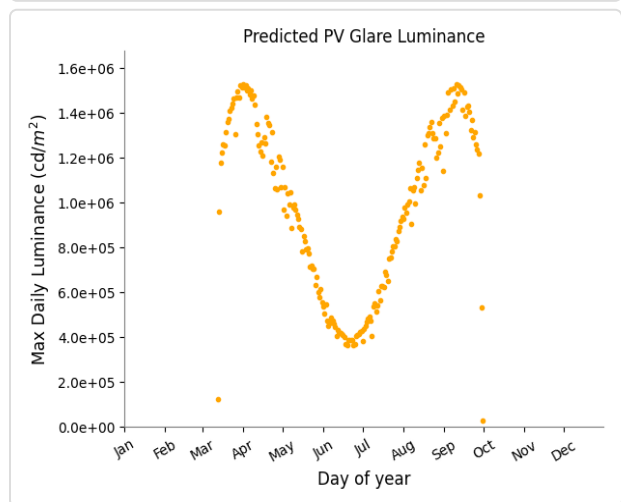
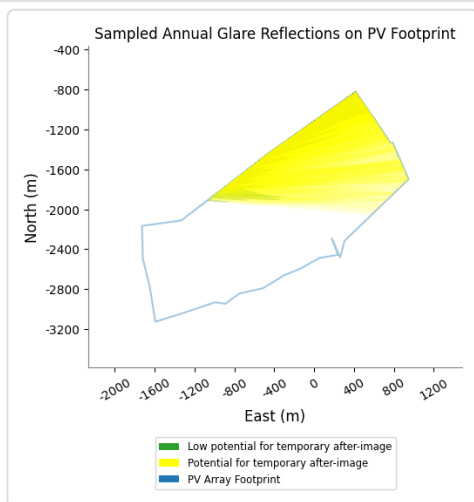
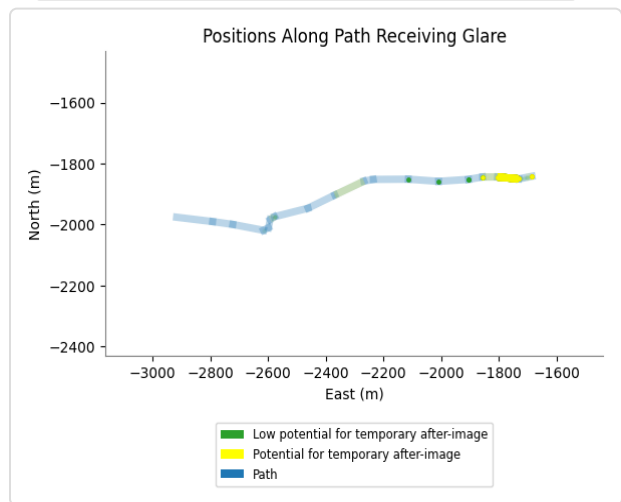
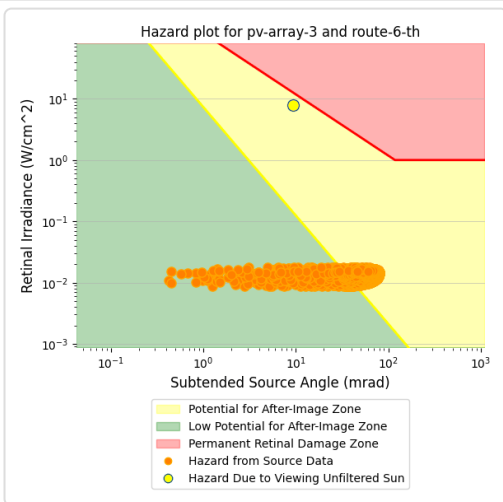
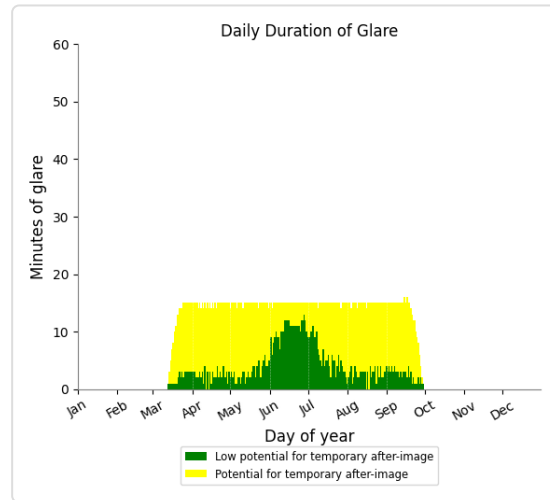
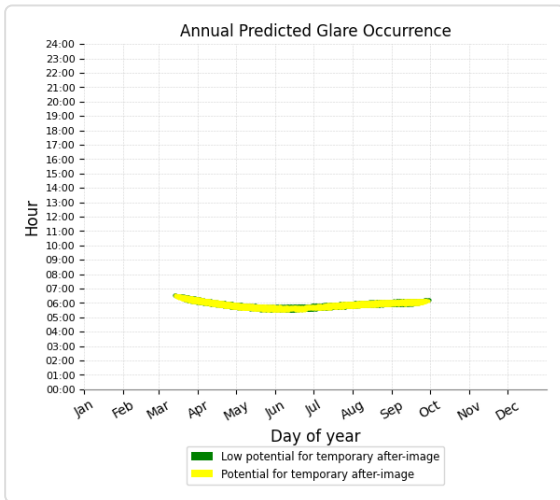
Green glare: 350 min.



PV array 3 and Route: Route 6 - Thorpe Road

Yellow glare: 2,030 min.

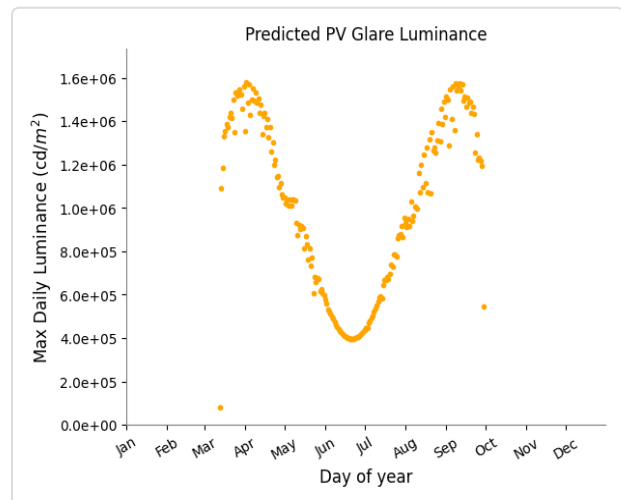
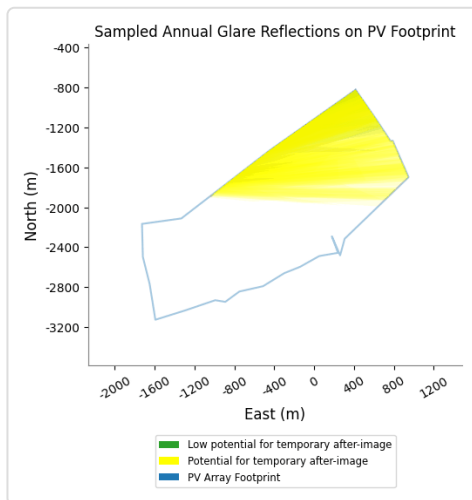
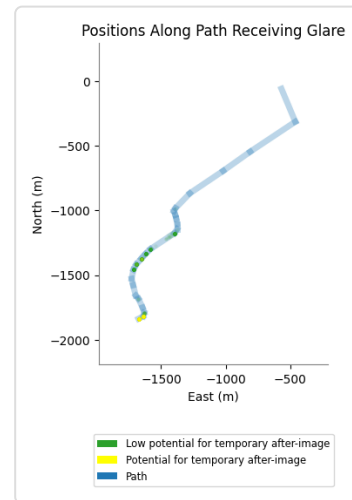
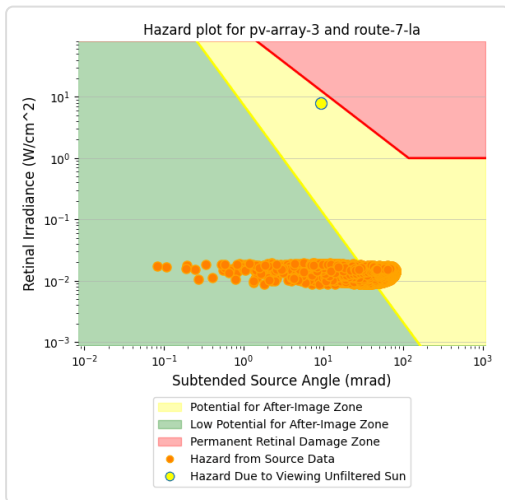
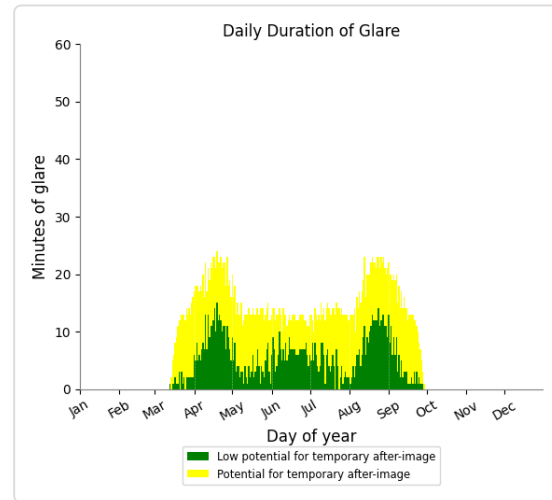
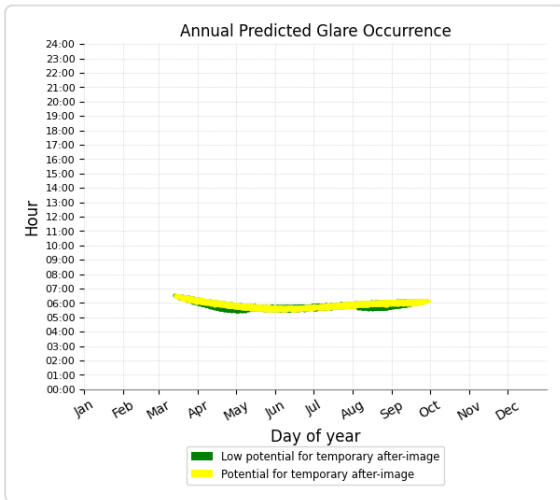
Green glare: 842 min.



PV array 3 and Route: Route 7 - Lane connected to Thorpe Road

Yellow glare: 1,861 min.

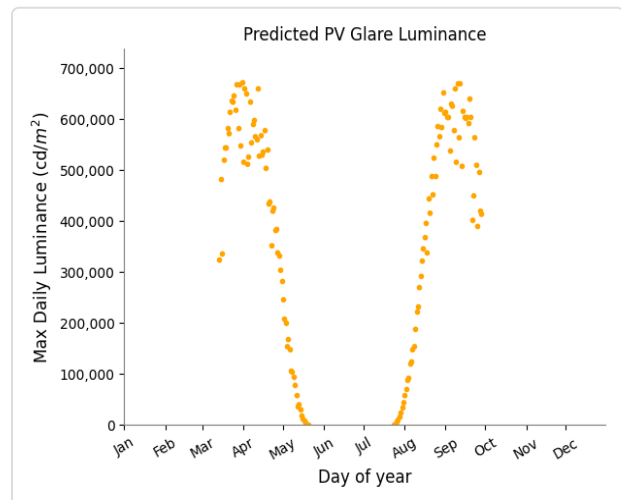
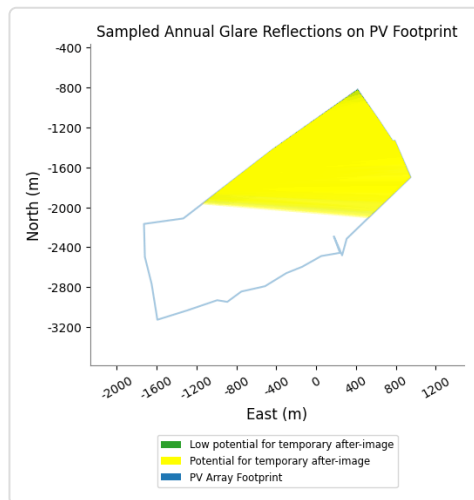
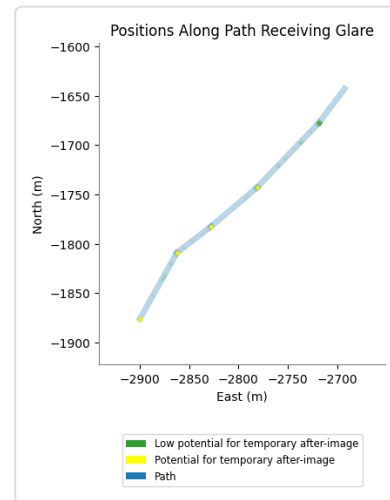
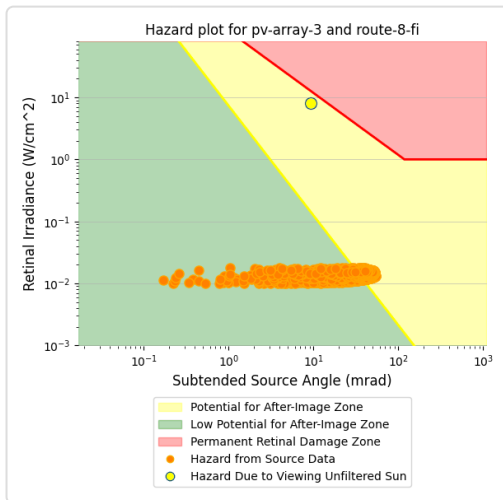
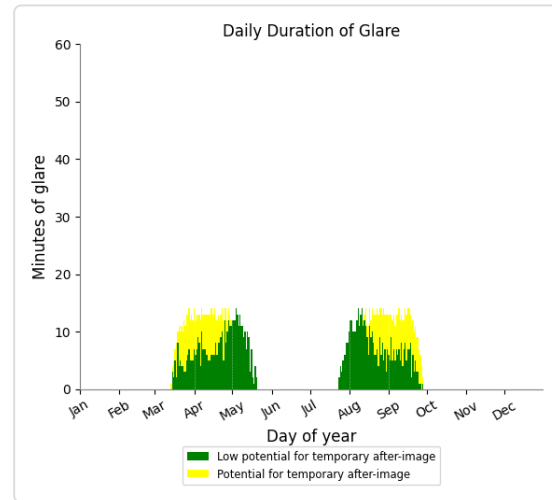
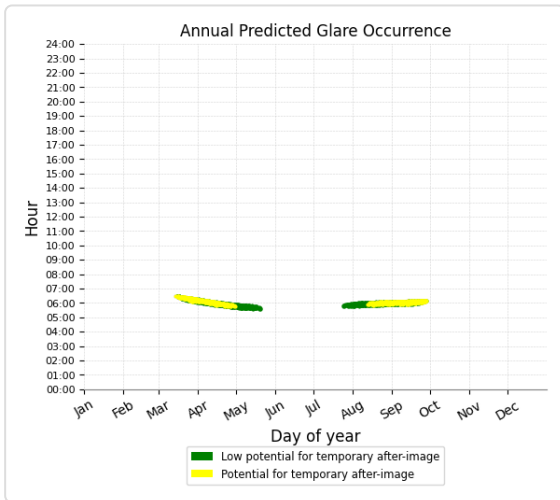
Green glare: 1,126 min.



PV array 3 and Route: Route 8 - Field Lane

Yellow glare: 540 min.

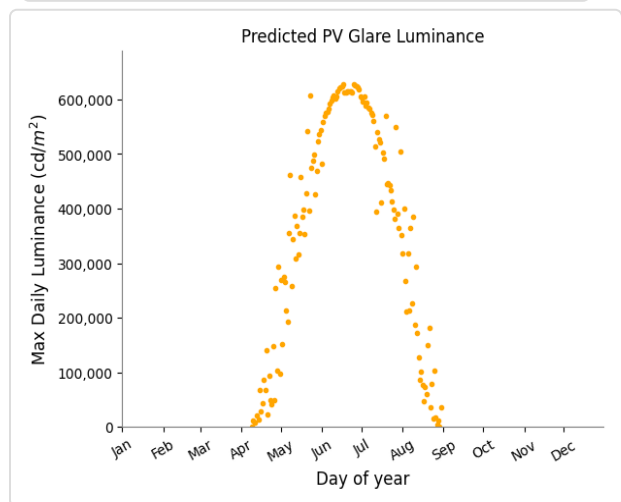
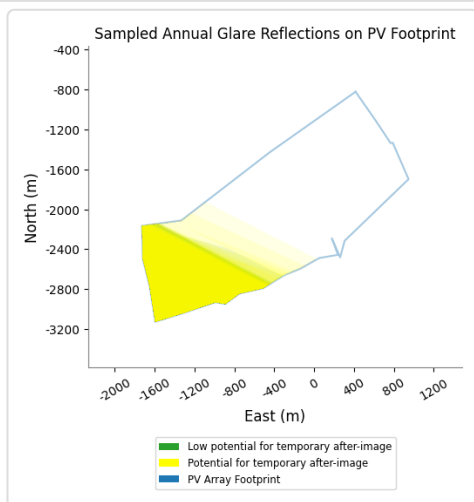
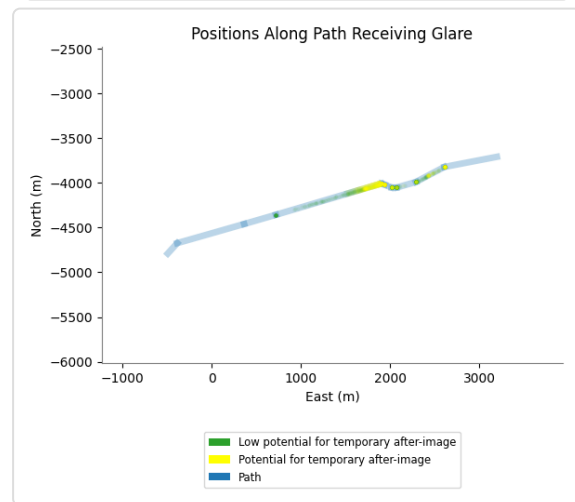
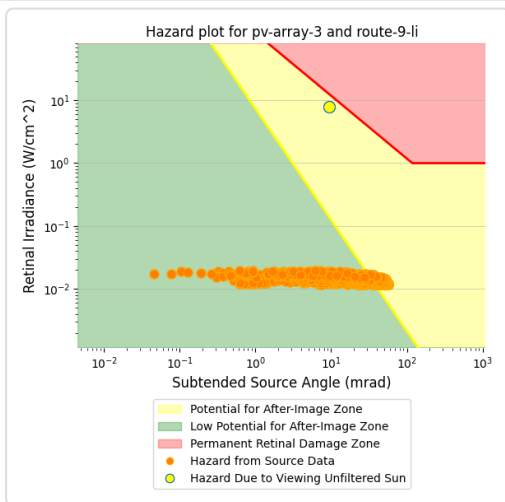
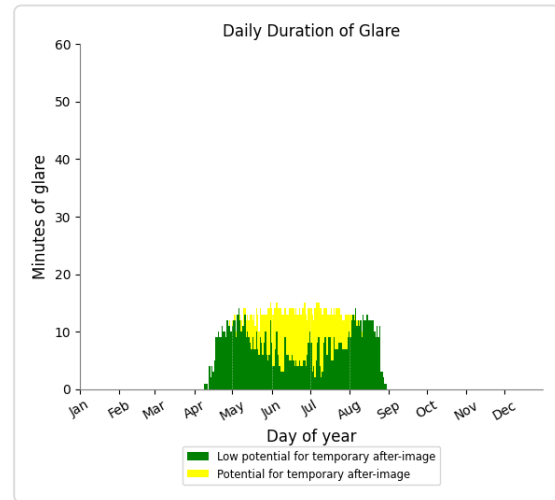
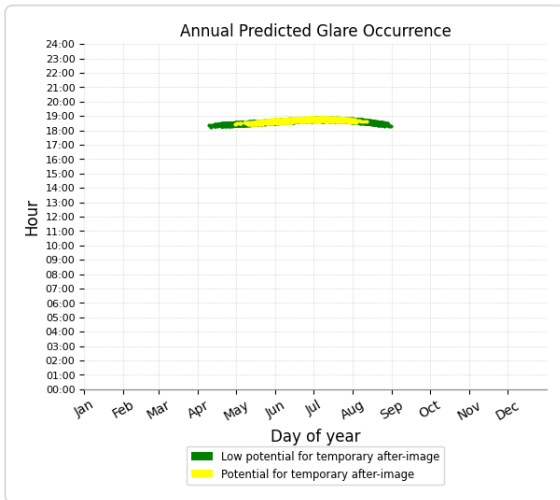
Green glare: 945 min.



PV array 3 and Route: Route 9 - Littleworth Drive

Yellow glare: 584 min.

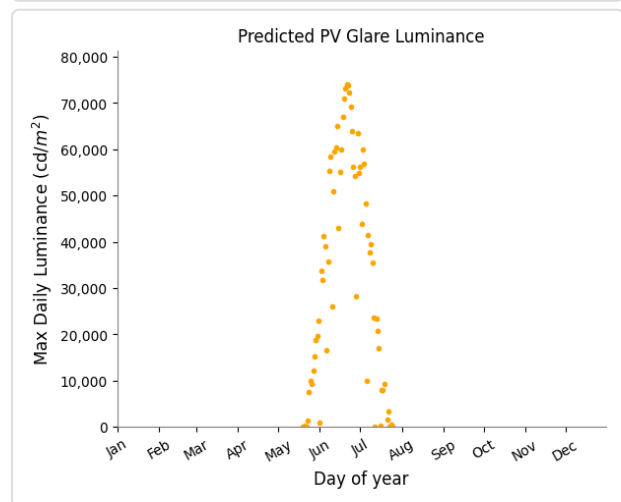
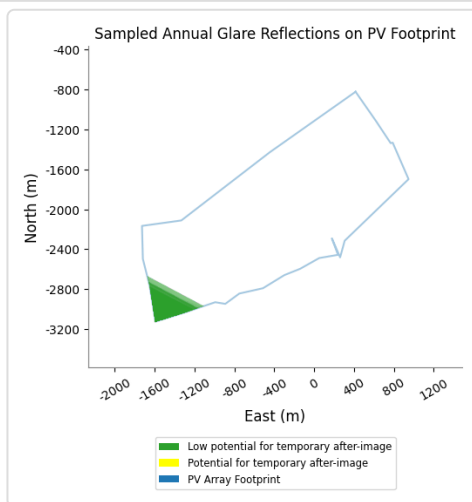
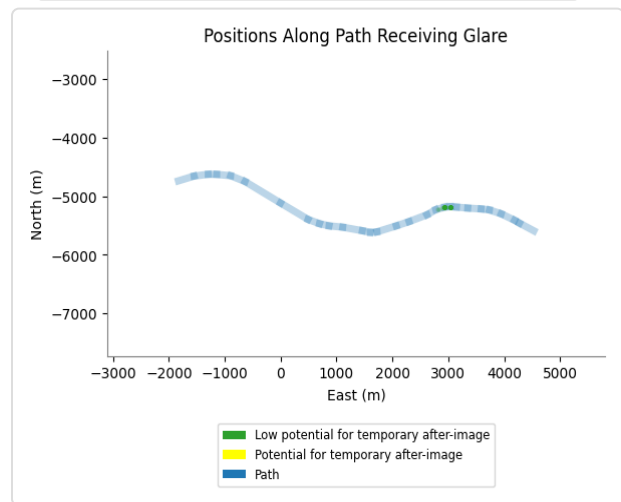
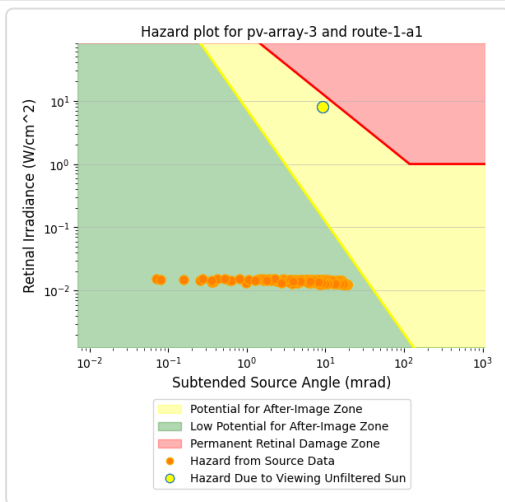
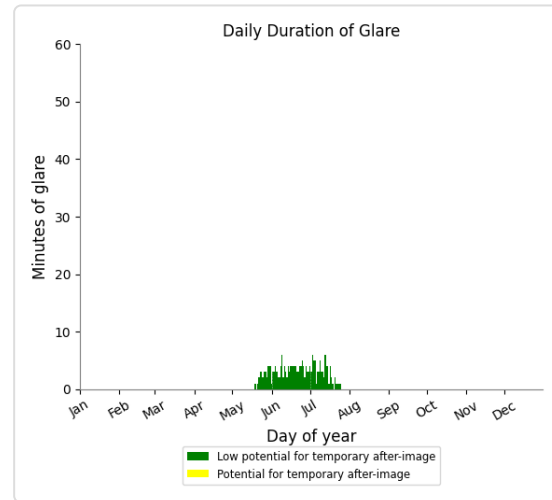
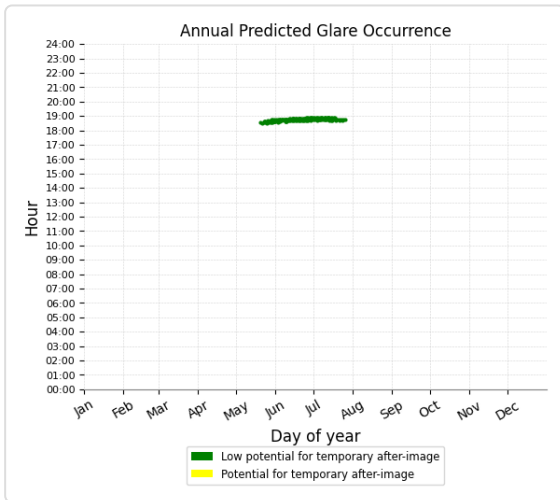
Green glare: 1,100 min.



PV array 3 and Route: Route 1 - A17

Yellow glare: none

Green glare: 204 min.



PV array 3 and Route: Route 11 - Church Lane

No glare found

PV array 3 and Route: Route 12 - Cow Drove

No glare found

PV array 3 and Route: Route 2 - B1395

No glare found

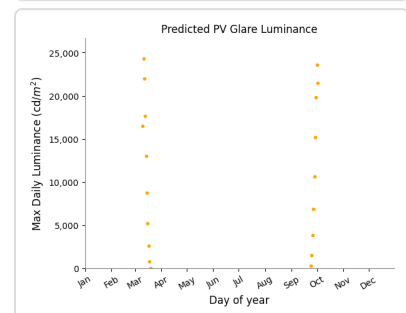
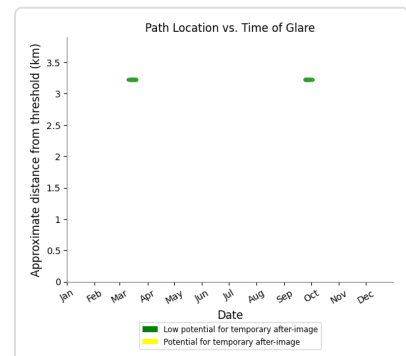
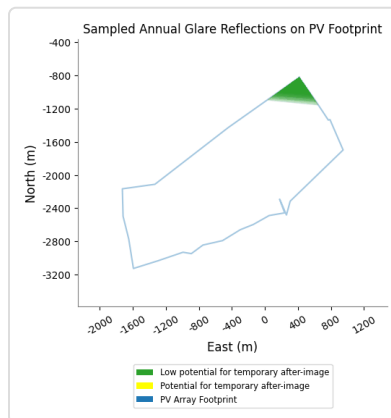
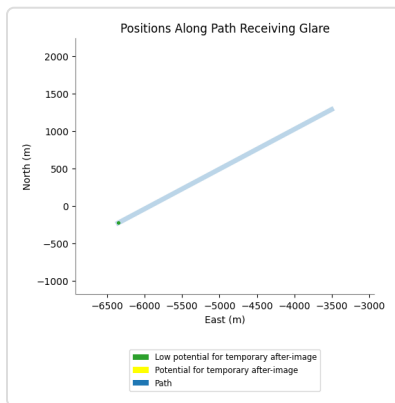
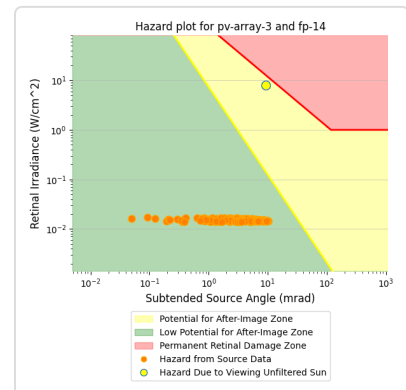
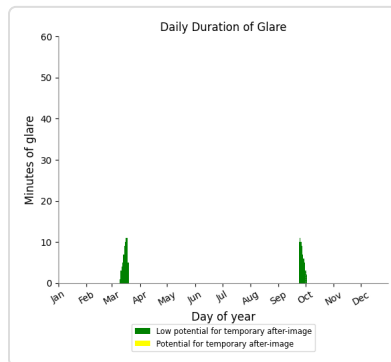
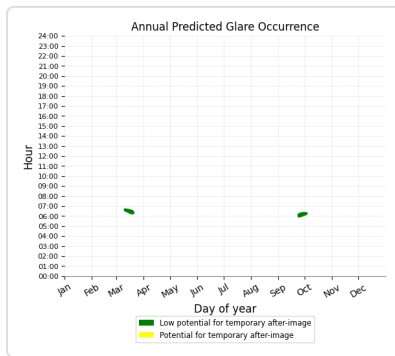
PV array 3 and Route: Route 4 - Heckington Road - south of Howell

No glare found

PV array 3 and FP: FP 14 - Anwick West

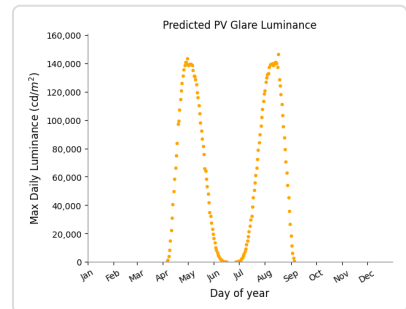
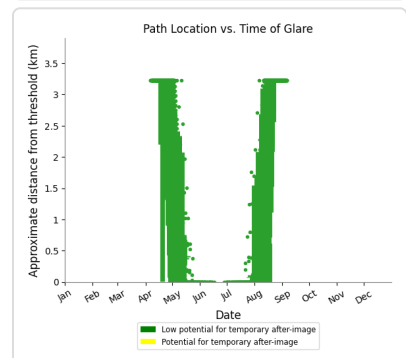
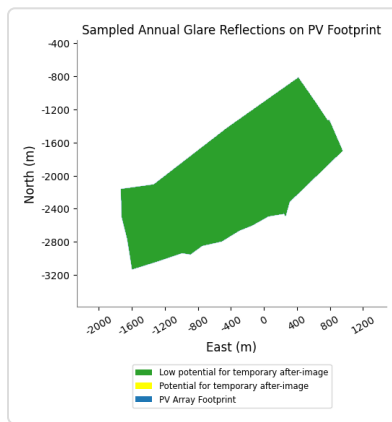
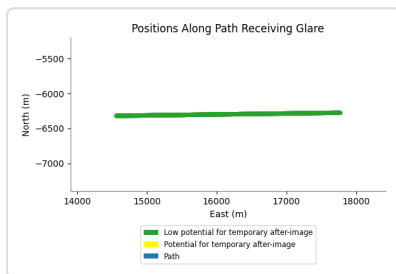
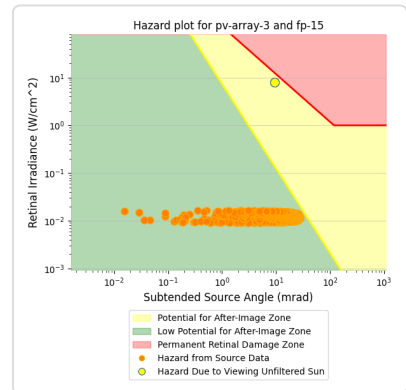
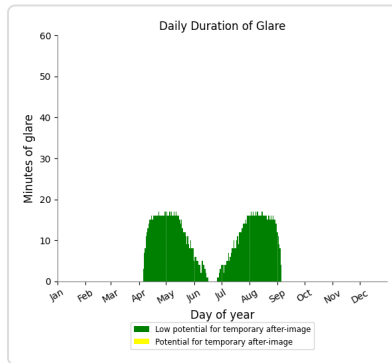
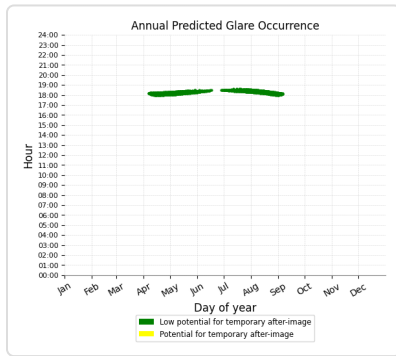
Yellow glare: none

Green glare: 129 min.



PV array 3 and FP: FP 15 - Boston East

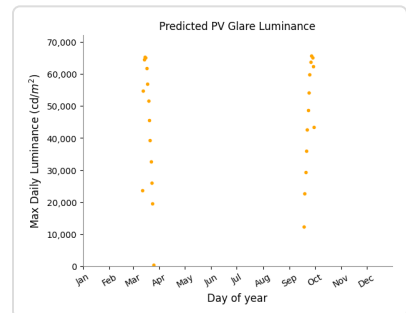
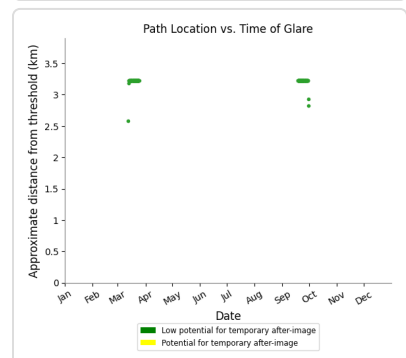
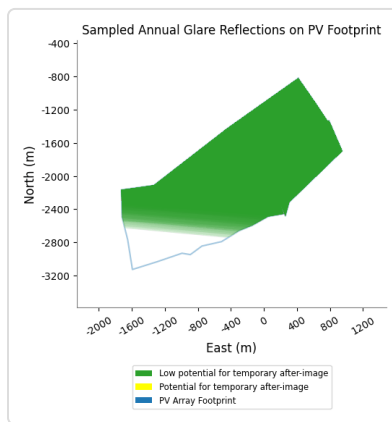
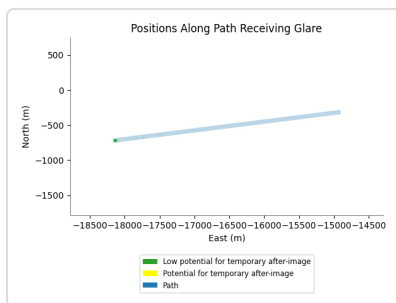
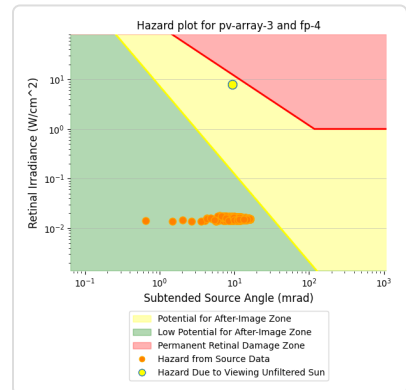
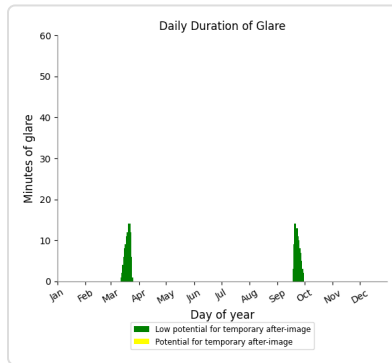
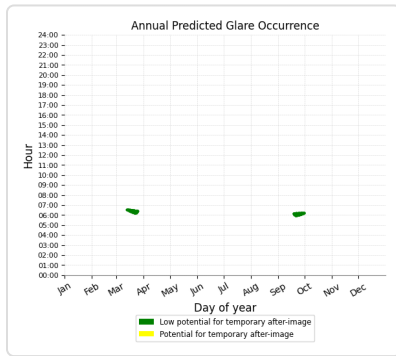
Yellow glare: none
 Green glare: 1,658 min.



PV array 3 and FP: FP 4 - RAF Cranwell West

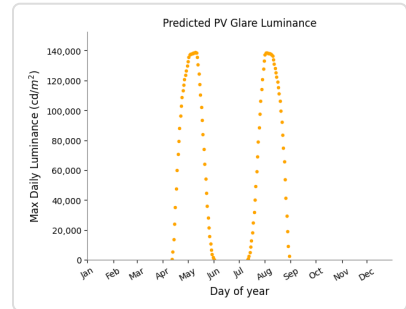
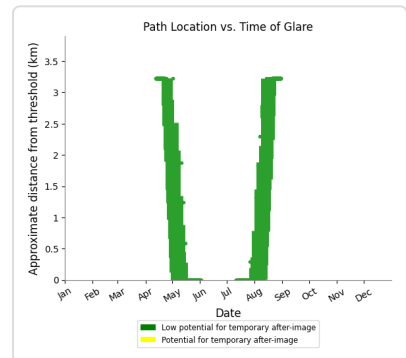
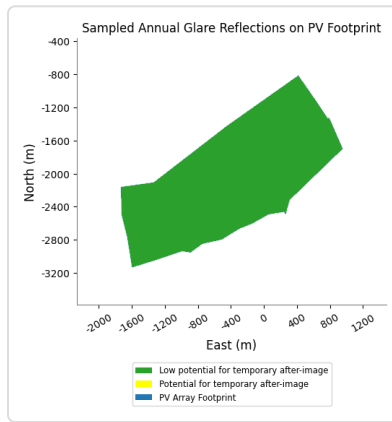
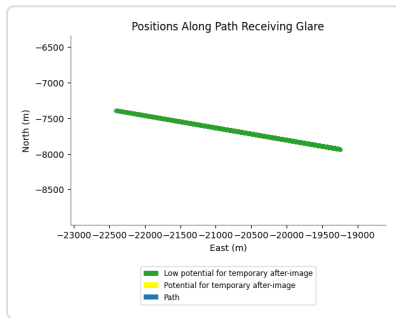
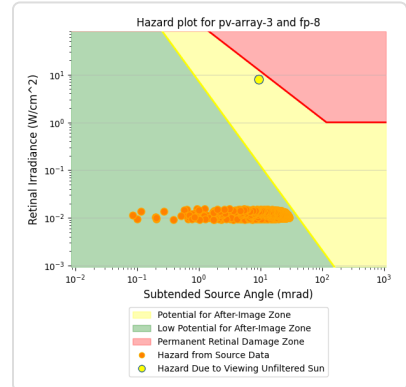
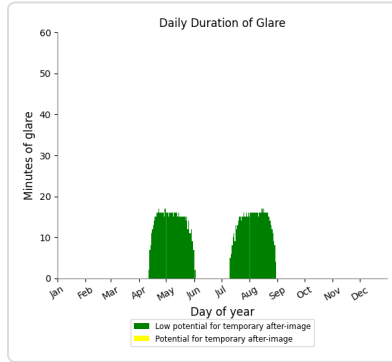
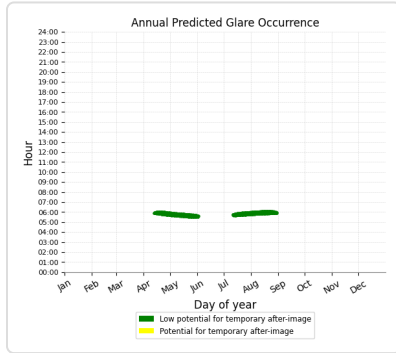
Yellow glare: none

Green glare: 226 min.



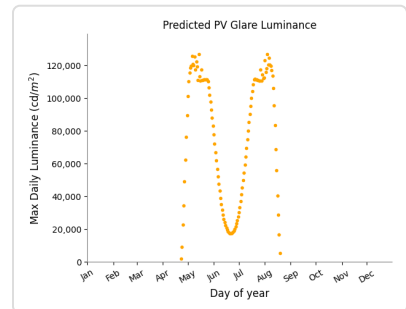
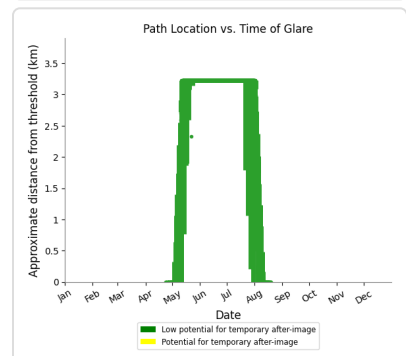
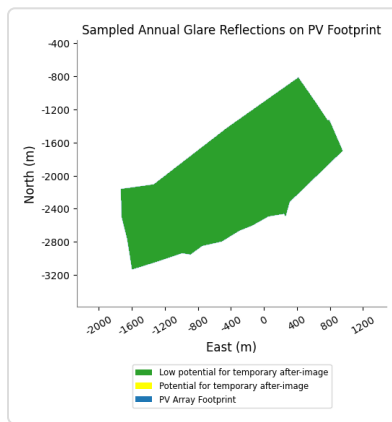
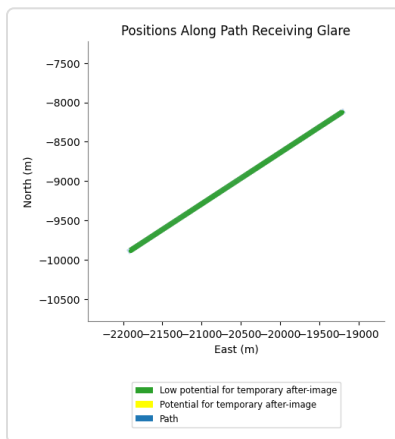
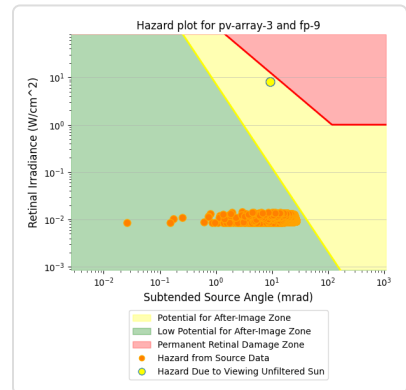
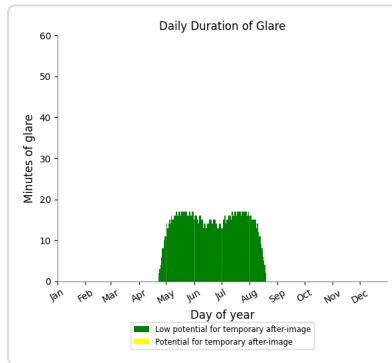
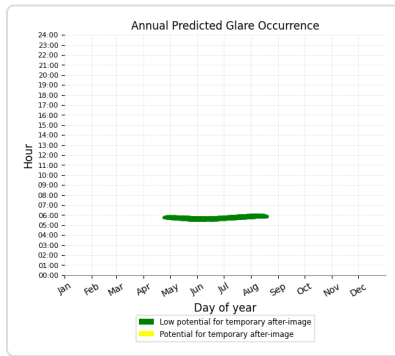
PV array 3 and FP: FP 8 - RAF Barkston Heath NW

Yellow glare: none
 Green glare: 1,419 min.



PV array 3 and FP: FP 9 - RAF Barkston Heath SW

Yellow glare: none
Green glare: 1,695 min.



PV array 3 and FP: FP 10 - RAF Barkston Heath NE

No glare found

PV array 3 and FP: FP 11 - RAF Barkston Heath South

No glare found

PV array 3 and FP: FP 12 - RAF Barkston Heath North

No glare found

PV array 3 and FP: FP 13 - Anwick East

No glare found

PV array 3 and FP: FP 16 - Boston West

No glare found

PV array 3 and FP: FP 1 - RAF Coningsby East

No glare found

PV array 3 and FP: FP 2 - RAF Coningsby West

No glare found

PV array 3 and FP: FP 3 - RAF Cranwell East

No glare found

PV array 3 and FP: FP 5 - RAF Cranwell South

No glare found

PV array 3 and FP: FP 6 - RAF Cranwell North

No glare found

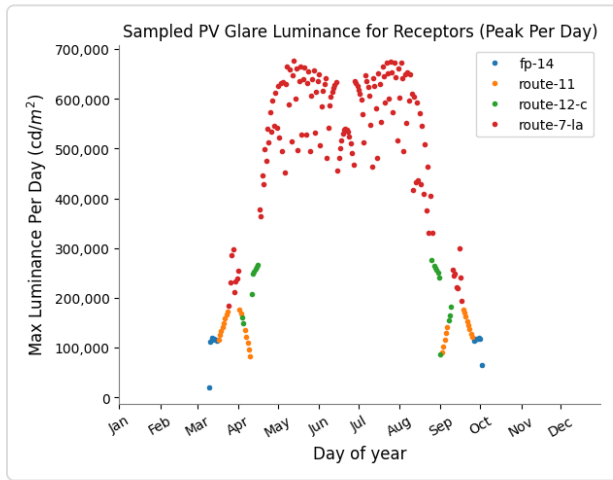
PV array 3 and FP: FP 7 - RAF Barkston Heath SE

No glare found

PV: PV array 4 potential temporary after-image

Receptor results ordered by category of glare

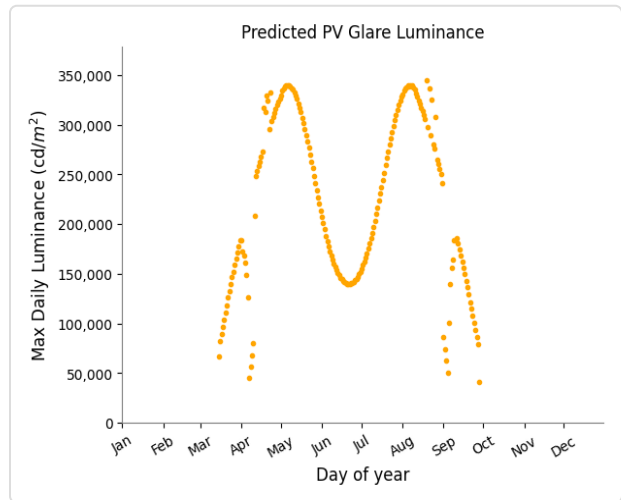
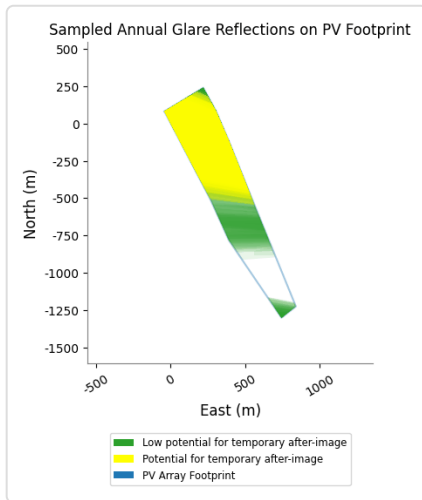
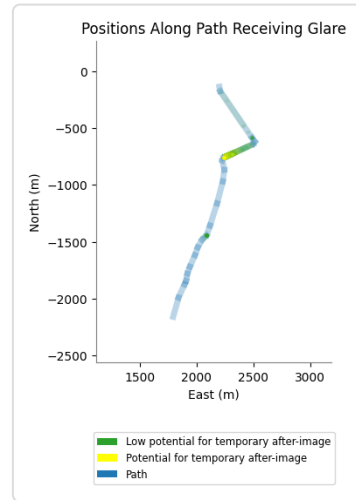
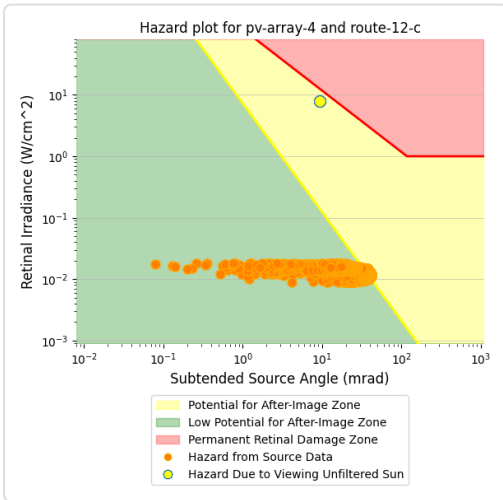
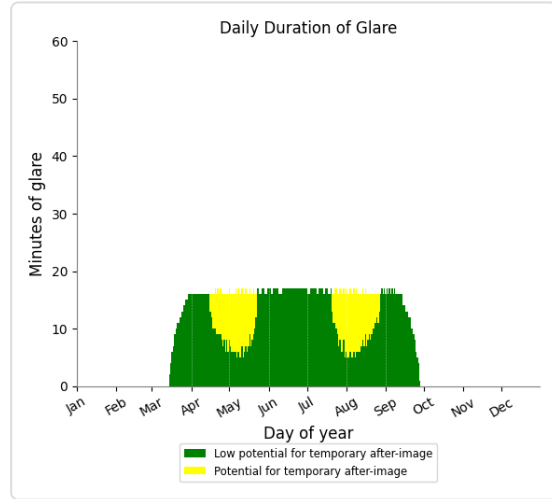
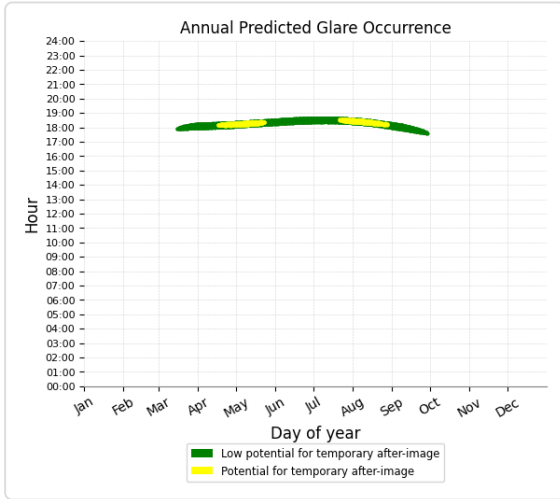
Receptor	Annual Green Glare		Annual Yellow Glare		Peak Luminance
	min	hr	min	hr	cd/m ²
Route 12 - Cow Drove	2,425	40.4	633	10.6	344,497
Route 2 - B1395	809	13.5	523	8.7	350,533
Route 7 - Lane connected to Thorpe Road	185	3.1	2,693	44.9	883,278
Route 11 - Church Lane	1,068	17.8	0	0.0	190,481
Route 5 - Heckington Road - north of Howell	1,803	30.1	0	0.0	154,794
Route 6 - Thorpe Road	2,320	38.7	0	0.0	173,428
Route 8 - Field Lane	2,518	42.0	0	0.0	167,768
Route 10 - Star Fen Road	0	0.0	0	0.0	0
Route 13 - Railway	0	0.0	0	0.0	0
Route 1 - A17	0	0.0	0	0.0	0
Route 3 - Howell Fen Drove	0	0.0	0	0.0	0
Route 4 - Heckington Road - south of Howell	0	0.0	0	0.0	0
Route 9 - Littleworth Drove	0	0.0	0	0.0	0
FP 14 - Anwick West	840	14.0	0	0.0	119,456
FP 15 - Boston East	1,918	32.0	0	0.0	40,001
FP 4 - RAF Cranwell West	100	1.7	0	0.0	10,188
FP 8 - RAF Barkston Heath NW	1,246	20.8	0	0.0	18,645
FP 9 - RAF Barkston Heath SW	1,326	22.1	0	0.0	20,947
FP 10 - RAF Barkston Heath NE	0	0.0	0	0.0	0
FP 11 - RAF Barkston Heath South	0	0.0	0	0.0	0
FP 12 - RAF Barkston Heath North	0	0.0	0	0.0	0
FP 13 - Anwick East	0	0.0	0	0.0	0
FP 16 - Boston West	0	0.0	0	0.0	0
FP 1 - RAF Coningsby East	0	0.0	0	0.0	0
FP 2 - RAF Coningsby West	0	0.0	0	0.0	0
FP 3 - RAF Cranwell East	0	0.0	0	0.0	0
FP 5 - RAF Cranwell South	0	0.0	0	0.0	0
FP 6 - RAF Cranwell North	0	0.0	0	0.0	0
FP 7 - RAF Barkston Heath SE	0	0.0	0	0.0	0



PV array 4 and Route: Route 12 - Cow Drove

Yellow glare: 633 min.

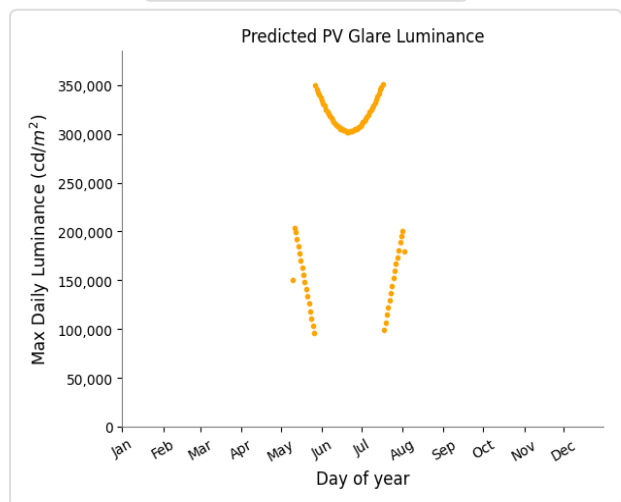
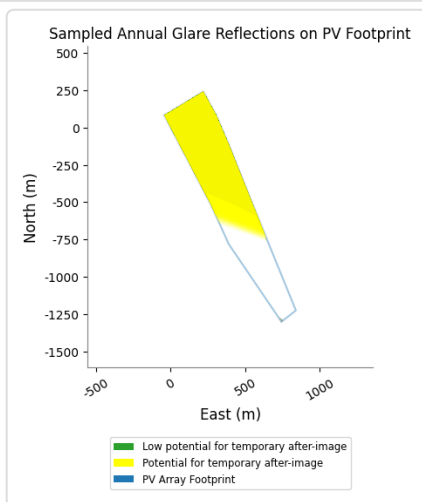
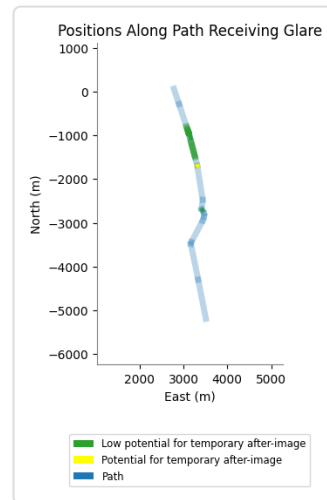
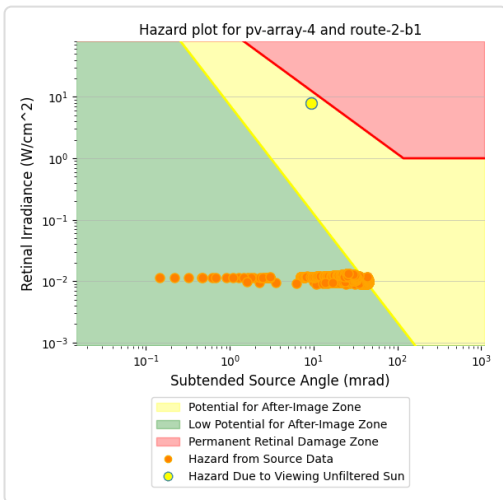
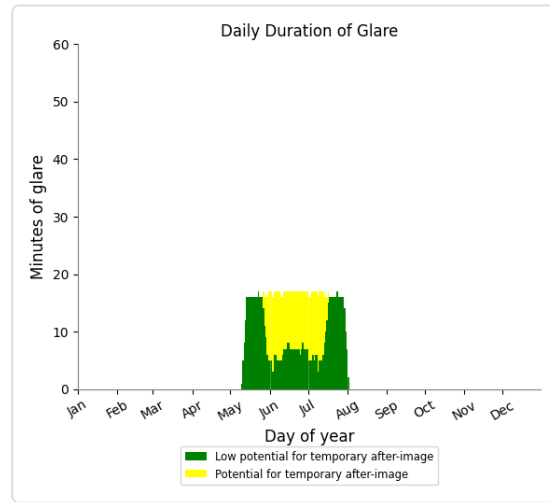
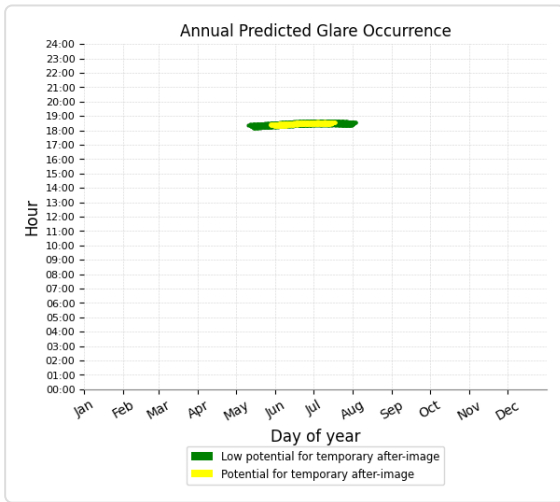
Green glare: 2,425 min.



PV array 4 and Route: Route 2 - B1395

Yellow glare: 523 min.

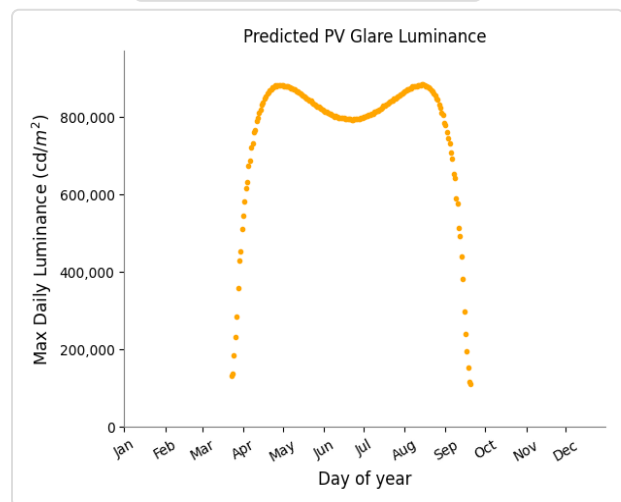
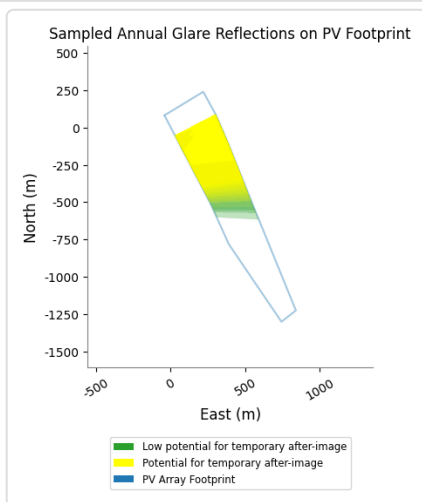
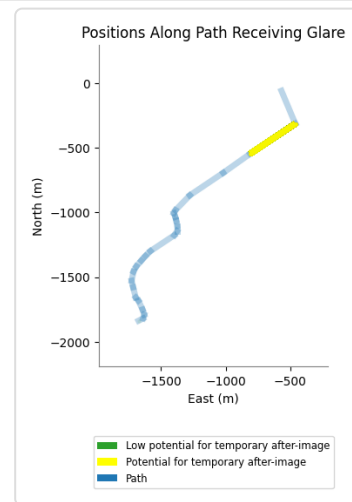
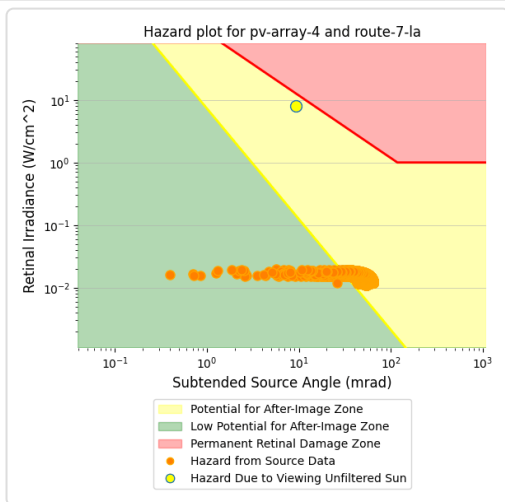
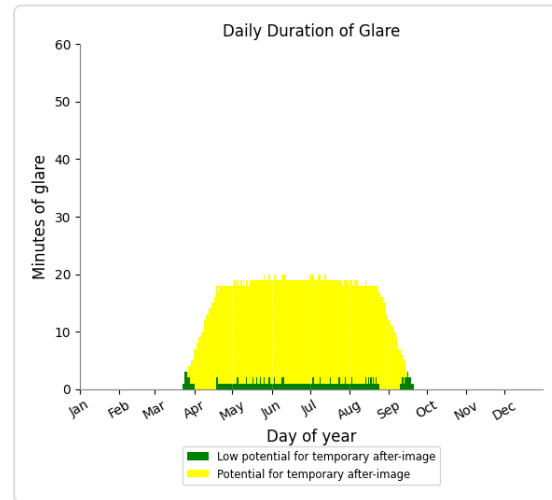
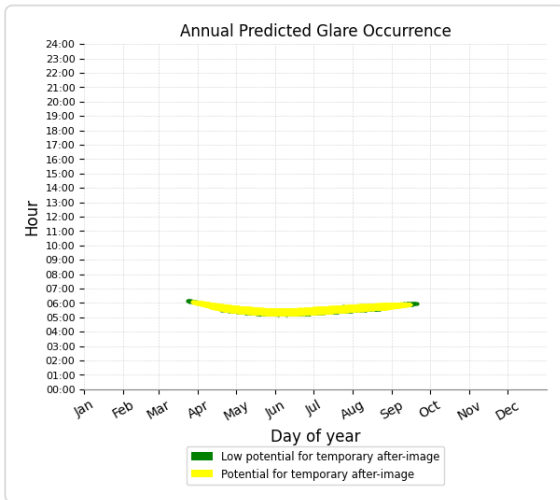
Green glare: 809 min.



PV array 4 and Route: Route 7 - Lane connected to Thorpe Road

Yellow glare: 2,693 min.

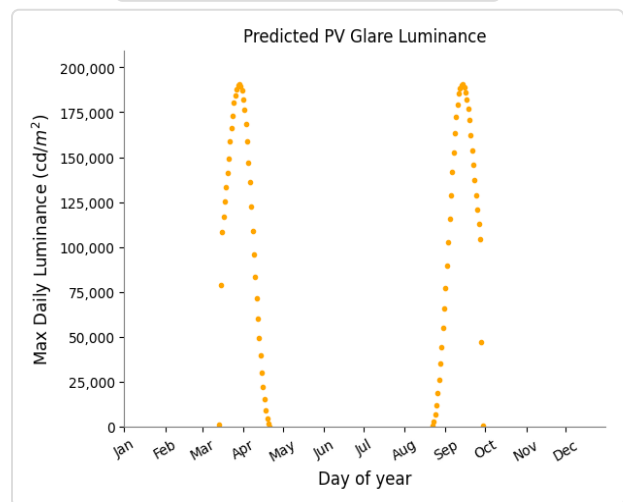
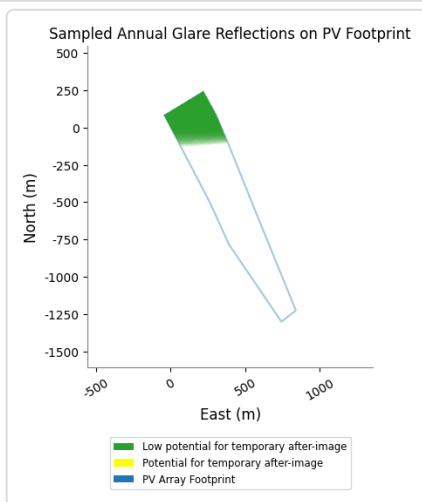
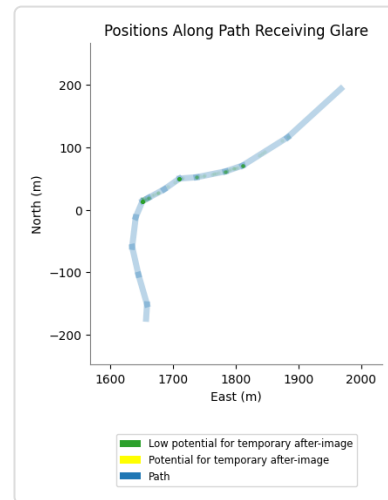
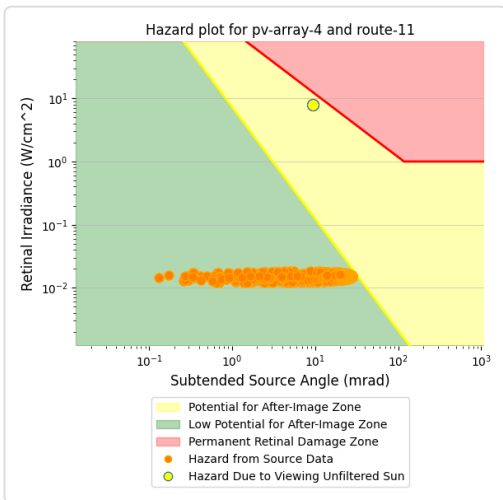
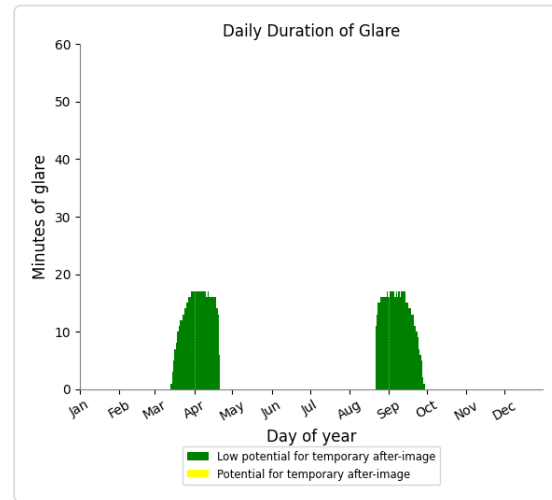
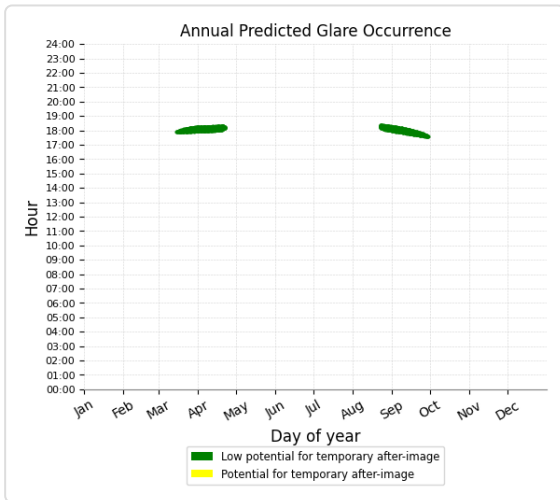
Green glare: 185 min.



PV array 4 and Route: Route 11 - Church Lane

Yellow glare: none

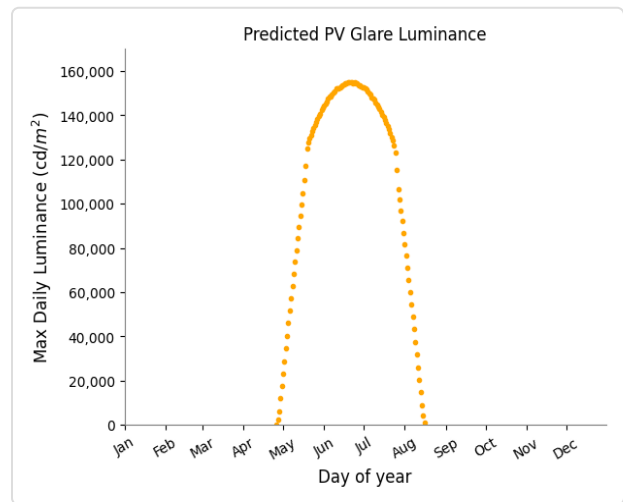
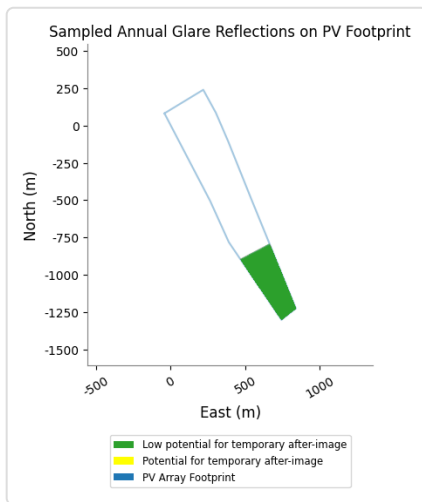
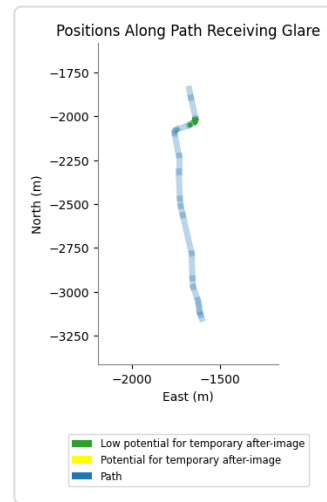
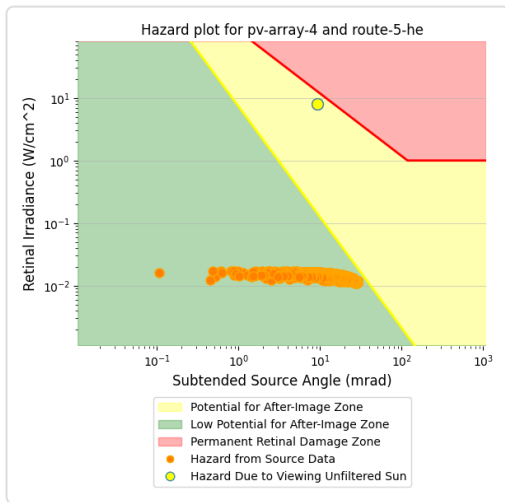
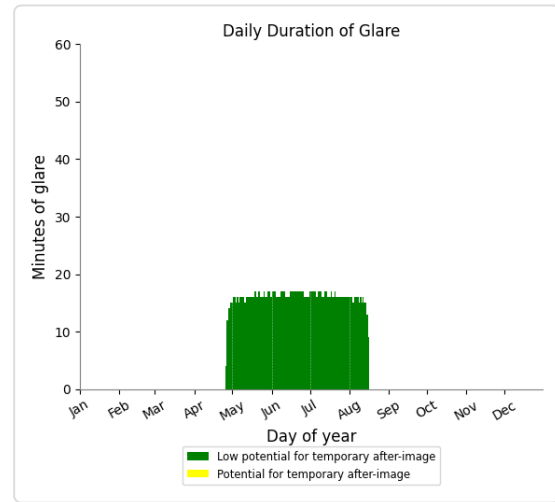
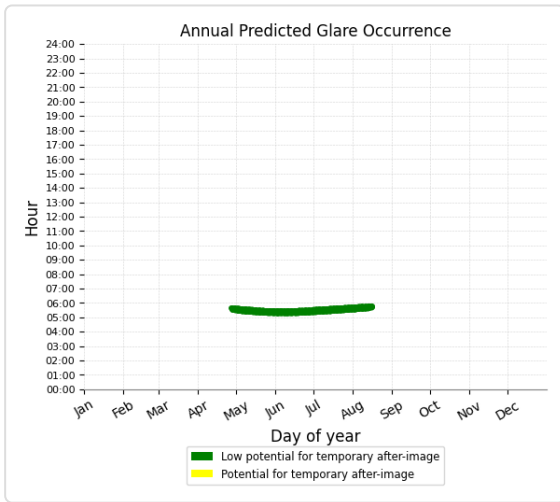
Green glare: 1,068 min.



PV array 4 and Route: Route 5 - Heckington Road - north of Howell

Yellow glare: none

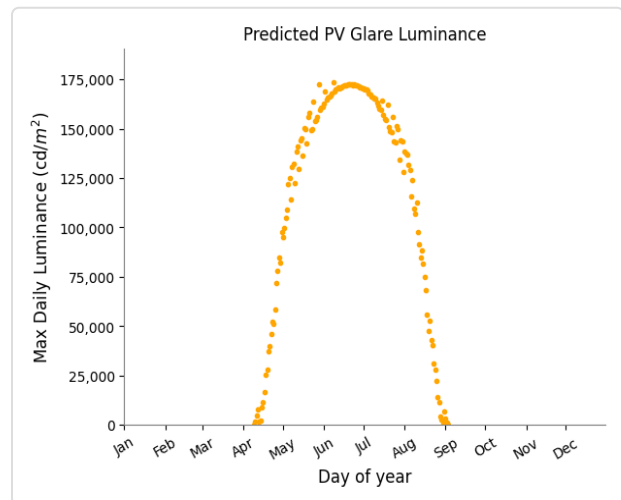
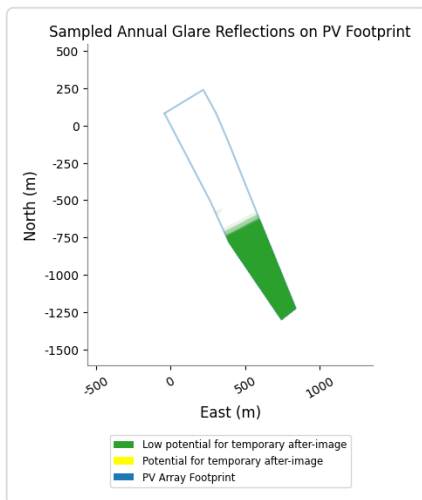
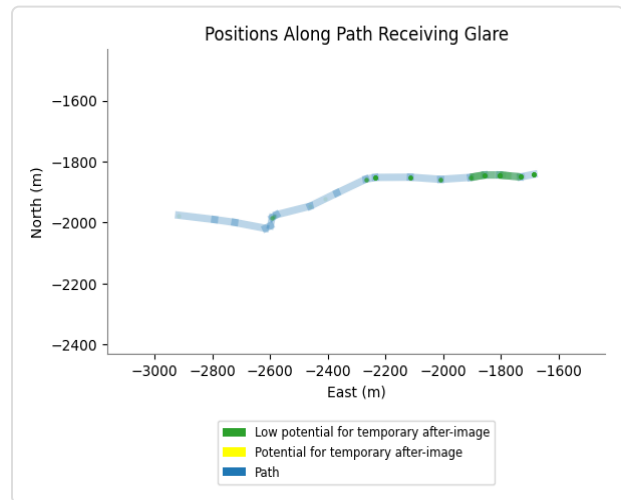
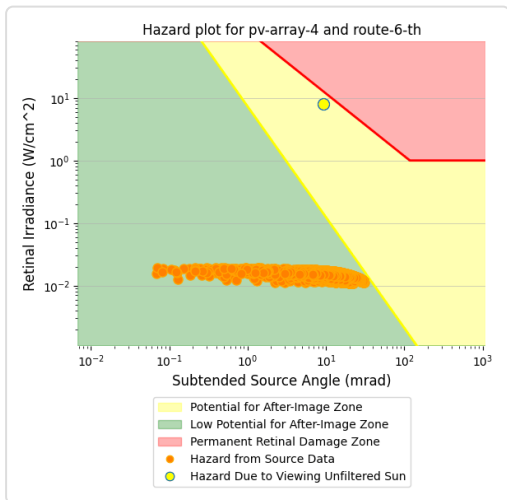
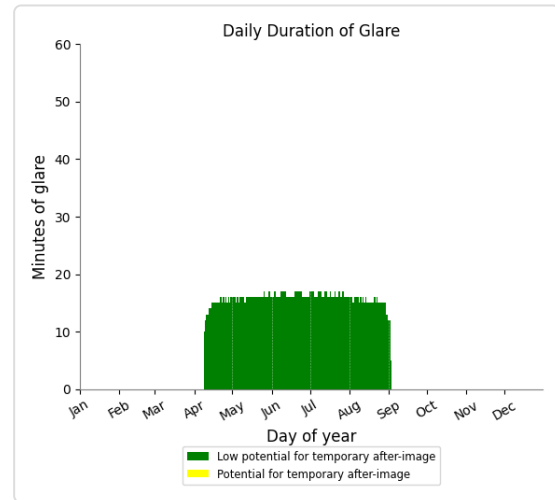
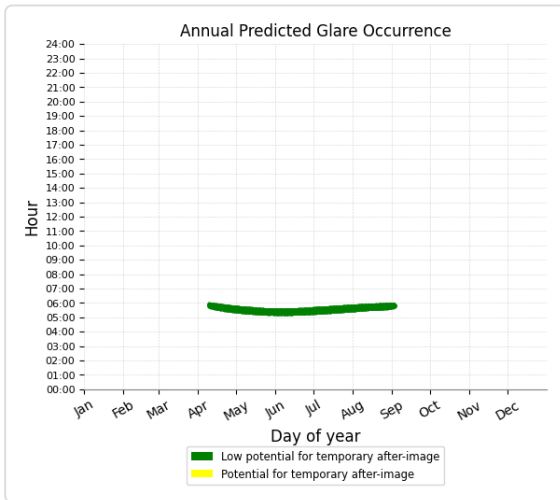
Green glare: 1,803 min.



PV array 4 and Route: Route 6 - Thorpe Road

Yellow glare: none

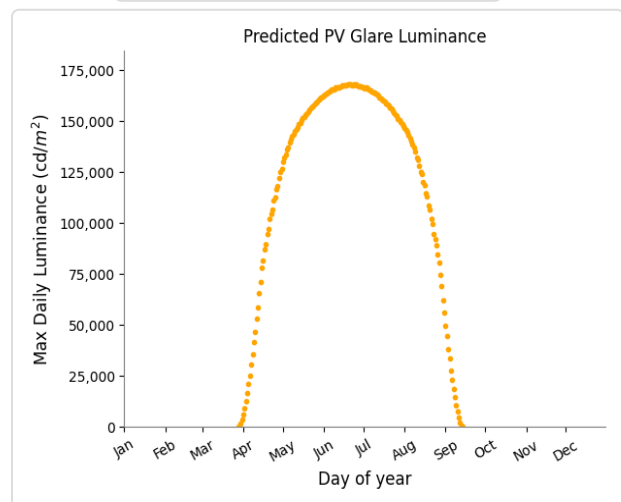
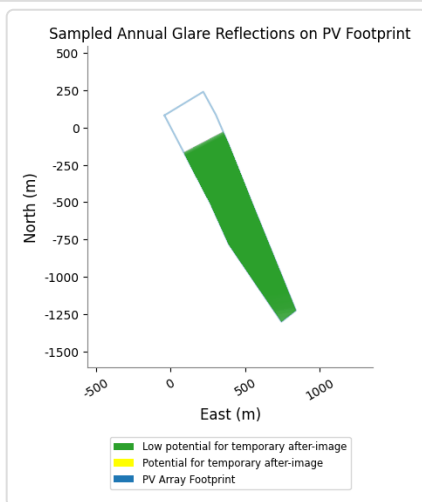
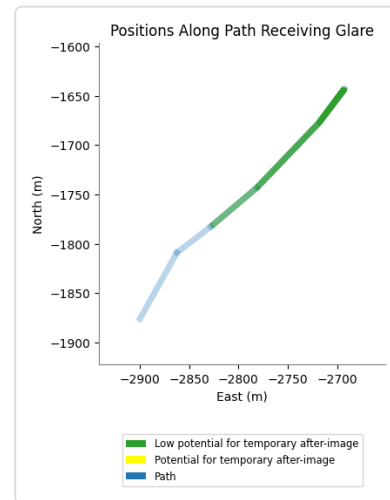
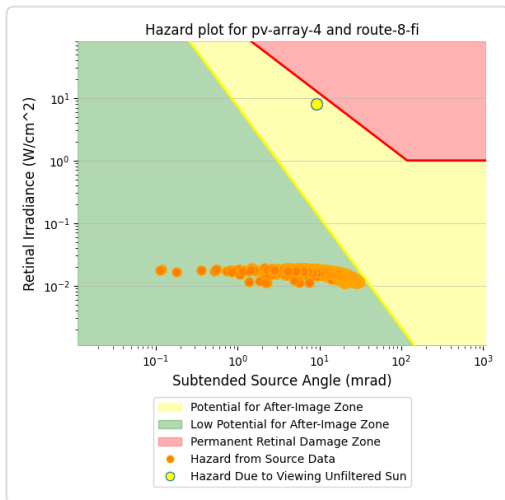
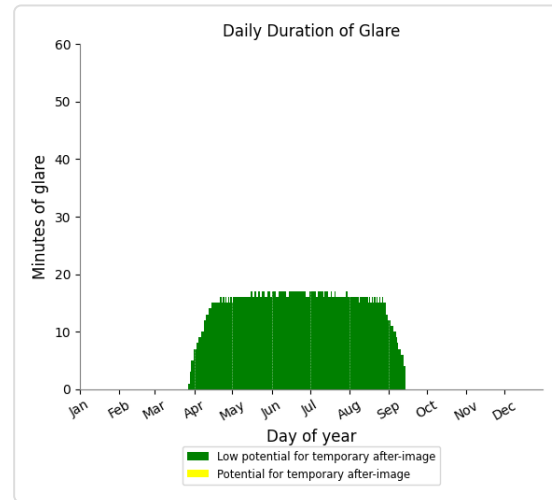
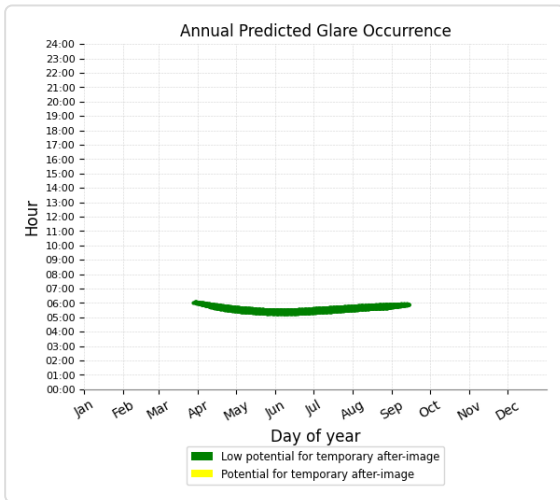
Green glare: 2,320 min.



PV array 4 and Route: Route 8 - Field Lane

Yellow glare: none

Green glare: 2,518 min.



PV array 4 and Route: Route 10 - Star Fen Road

No glare found

PV array 4 and Route: Route 13 - Railway

No glare found

PV array 4 and Route: Route 1 - A17

No glare found

PV array 4 and Route: Route 3 - Howell Fen Drove

No glare found

PV array 4 and Route: Route 4 - Heckington Road - south of Howell

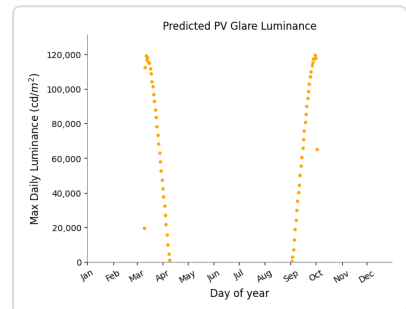
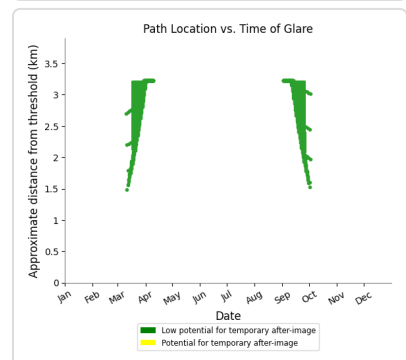
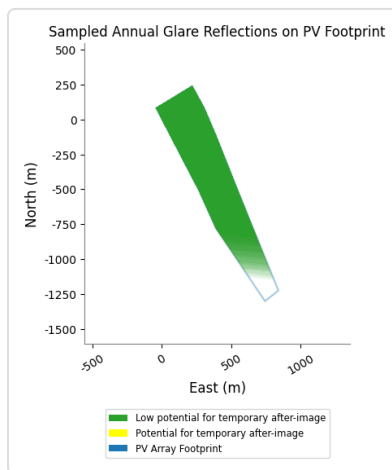
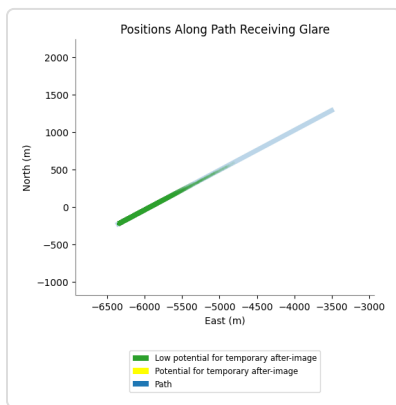
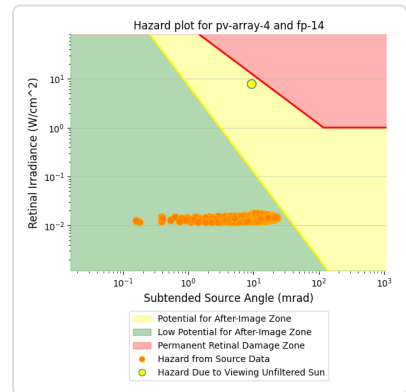
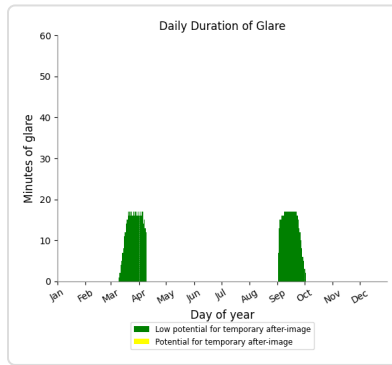
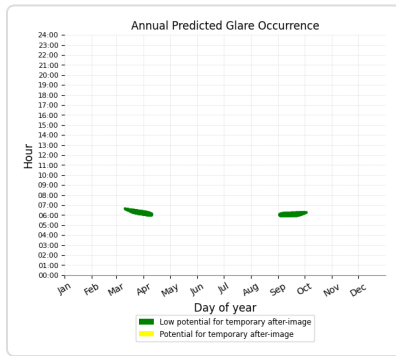
No glare found

PV array 4 and Route: Route 9 - Littleworth Drove

No glare found

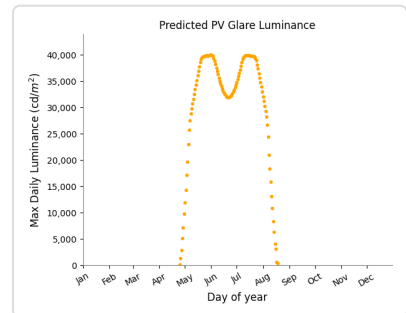
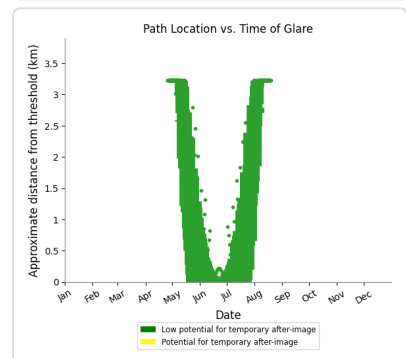
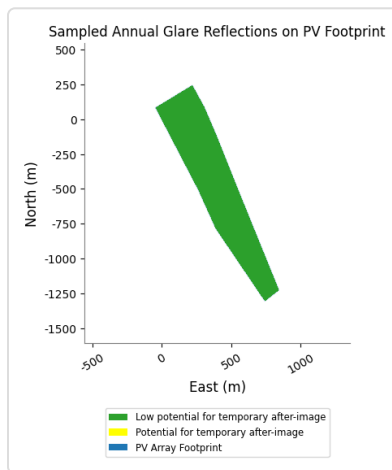
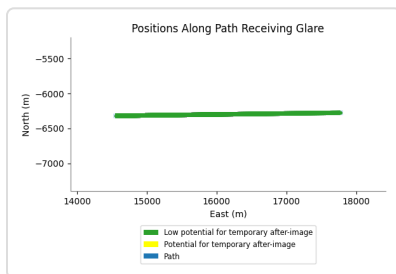
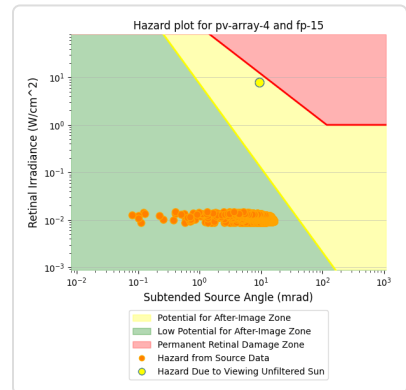
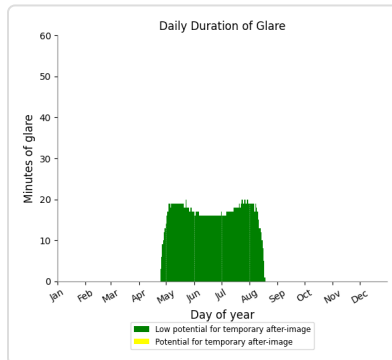
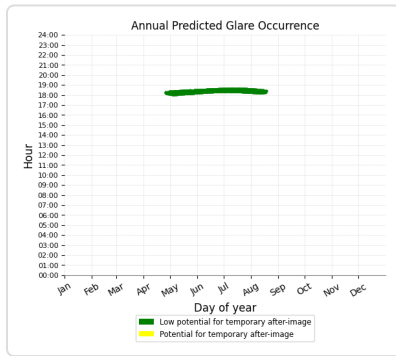
PV array 4 and FP: FP 14 - Anwick West

Yellow glare: none
 Green glare: 840 min.



PV array 4 and FP: FP 15 - Boston East

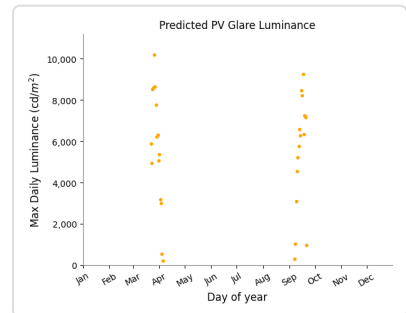
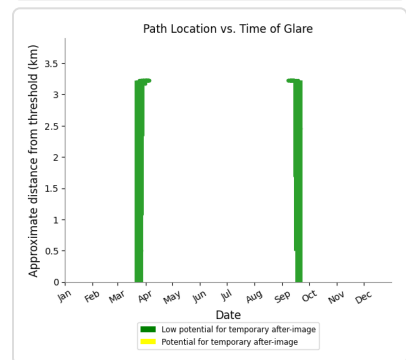
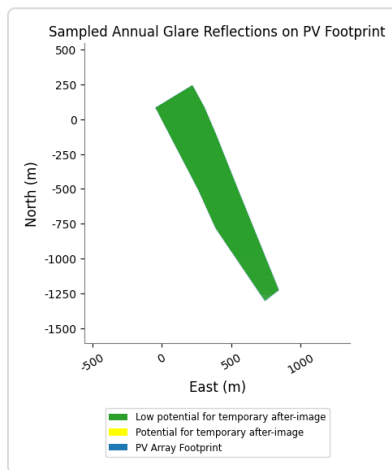
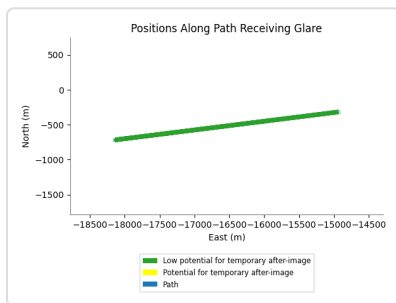
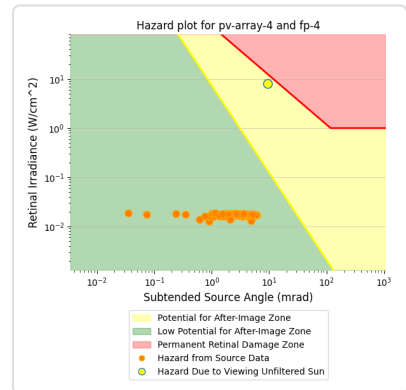
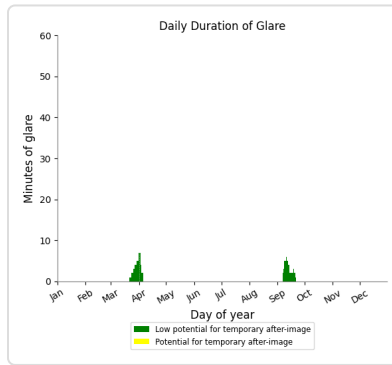
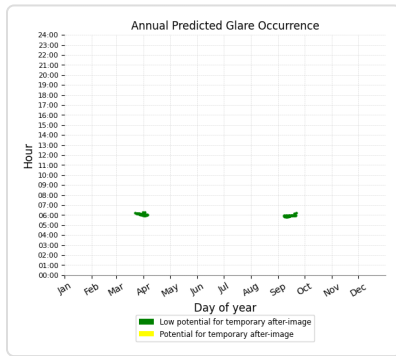
Yellow glare: none
 Green glare: 1,918 min.



PV array 4 and FP: FP 4 - RAF Cranwell West

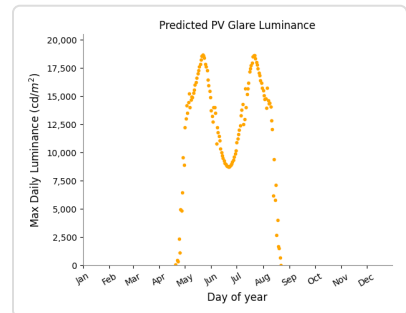
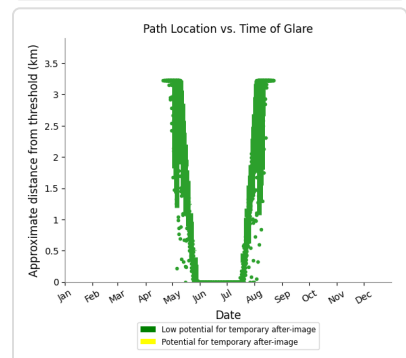
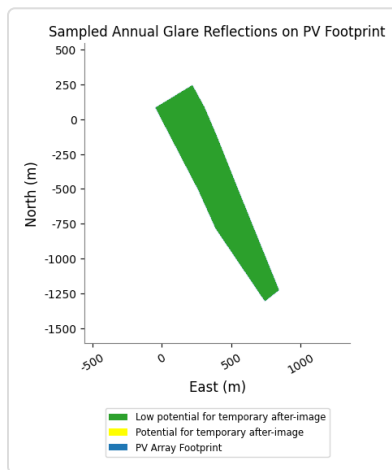
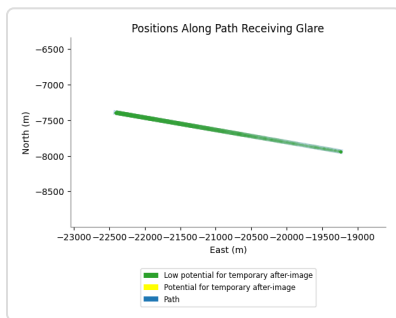
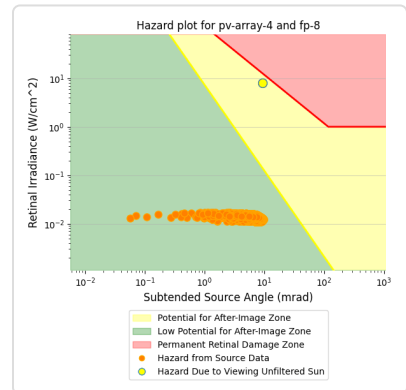
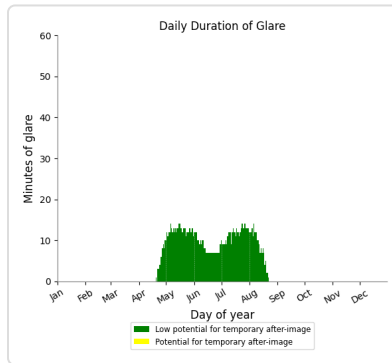
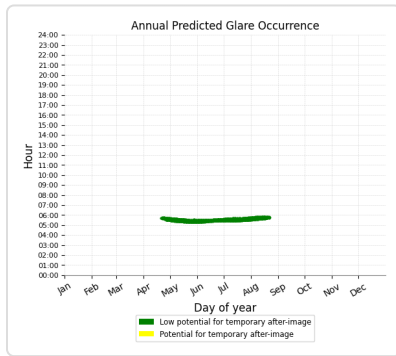
Yellow glare: none

Green glare: 100 min.



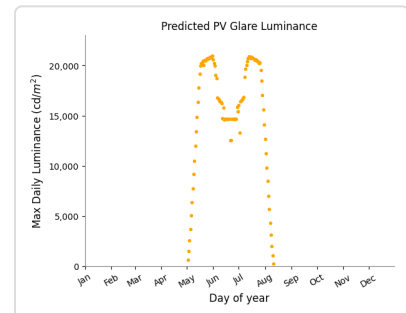
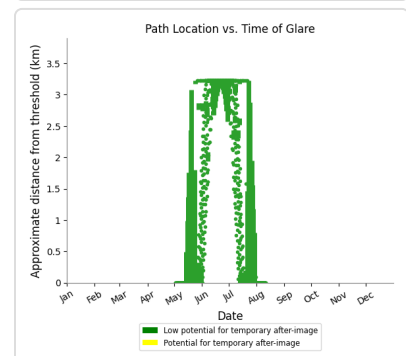
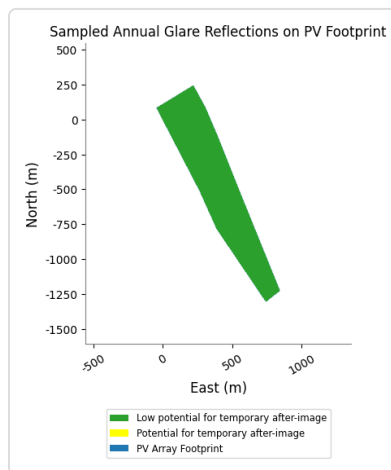
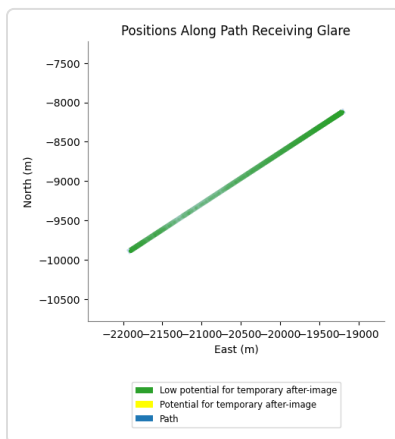
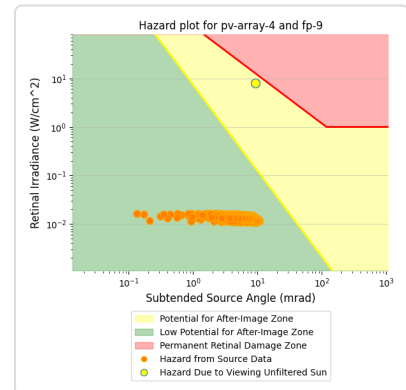
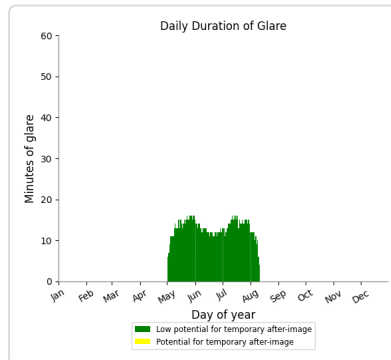
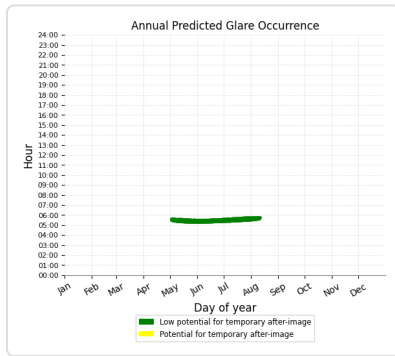
PV array 4 and FP: FP 8 - RAF Barkston Heath NW

Yellow glare: none
 Green glare: 1,246 min.



PV array 4 and FP: FP 9 - RAF Barkston Heath SW

Yellow glare: none
Green glare: 1,326 min.



PV array 4 and FP: FP 10 - RAF Barkston Heath NE

No glare found

PV array 4 and FP: FP 11 - RAF Barkston Heath South

No glare found

PV array 4 and FP: FP 12 - RAF Barkston Heath North

No glare found

PV array 4 and FP: FP 13 - Anwick East

No glare found

PV array 4 and FP: FP 16 - Boston West

No glare found

PV array 4 and FP: FP 1 - RAF Coningsby East

No glare found

PV array 4 and FP: FP 2 - RAF Coningsby West

No glare found

PV array 4 and FP: FP 3 - RAF Cranwell East

No glare found

PV array 4 and FP: FP 5 - RAF Cranwell South

No glare found

PV array 4 and FP: FP 6 - RAF Cranwell North

No glare found

PV array 4 and FP: FP 7 - RAF Barkston Heath SE

No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.

Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare. This primarily affects V1 analyses of path receptors.

Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.

The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.

The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.

The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Refer to the Help page at www.forgesolar.com/help/ for assumptions and limitations not listed here.

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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