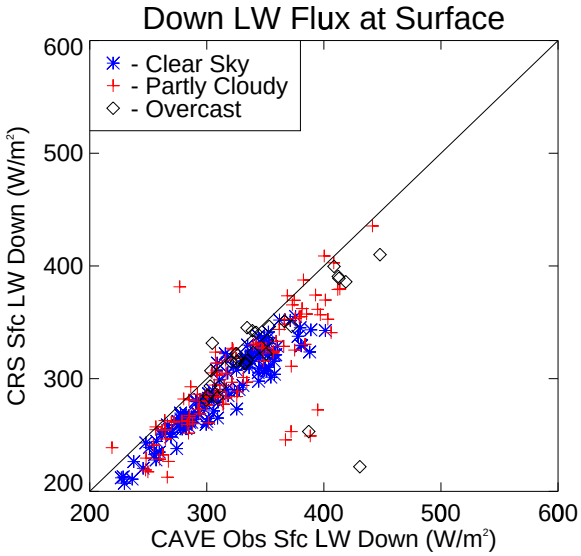
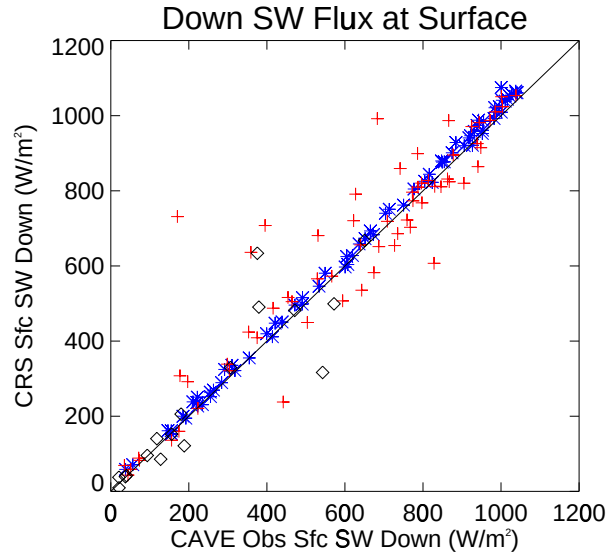
Desert Rock, NV (SURFRAD) Tuned CRS





All Sky

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	322.57	256.00	23.33	25.24	34.34	34.38	12.44	34.92
LW Up Sfc	459.28	248.00	16.96	25.91	30.92	--------	--------	--------
SW Dn Sfc	582.95	155.00	-21.08	81.19	83.63	-78.07	-56.99	83.63
SW Up Sfc	118.28	154.00	10.23	20.44	22.80	--------	--------	--------
LW Up TOA	273.73	275.00	3.29	6.50	7.28	-9.71	-13.00	7.28
SW Up TOA	200.26	158.00	0.15	20.32	20.25	43.42	43.27	20.25

Clear Sky VIRS

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Dir Bias Obs-CRS	Dif Bias Obs-CRS	AOT Frc Clr-Prs
LW Dn Sfc	313.39	127.00	23.60	13.20	27.01	--------	--------	0.79
LW Up Sfc	464.78	127.00	3.28	11.39	11.81	--------	--------	--------
SW Dn Sfc	635.00	74.00	-18.89	14.48	23.74	-2.59	-16.30	-12.90
SW Up Sfc	128.92	77.00	7.20	9.39	11.78	--------	--------	--------
LW Up TOA	296.73	139.00	1.77	2.16	2.78	--------	--------	-0.50
SW Up TOA	158.26	77.00	0.24	0.36	0.43	--------	--------	4.69

Clear Sky VIRS & L/AA

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Dir Bias Obs-CRS	Dif Bias Obs-CRS	AOT Frc Clr-Prs
LW Dn Sfc	323.22	42.00	29.74	13.94	32.78	--------	--------	0.89
LW Up Sfc	518.11	42.00	2.53	10.89	11.06	--------	--------	--------
SW Dn Sfc	720.83	42.00	-17.67	13.98	22.43	8.49	-26.16	-12.55
SW Up Sfc	145.55	42.00	8.45	9.18	12.39	--------	--------	--------
LW Up TOA	321.67	42.00	1.35	2.06	2.45	--------	--------	-0.71
SW Up TOA	173.31	42.00	0.20	0.34	0.39	--------	--------	4.07

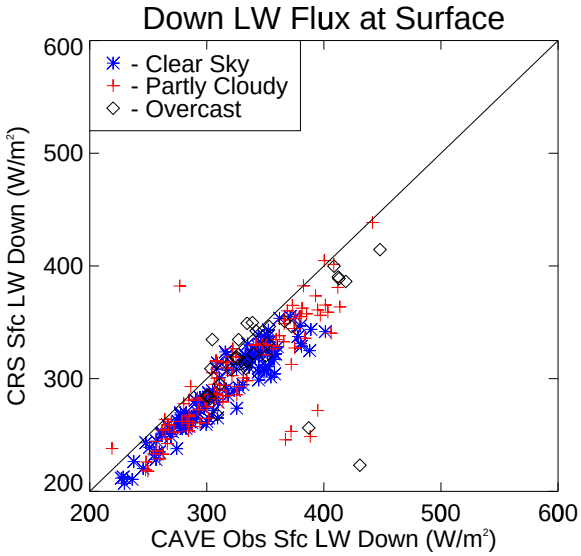
Overcast VIRS

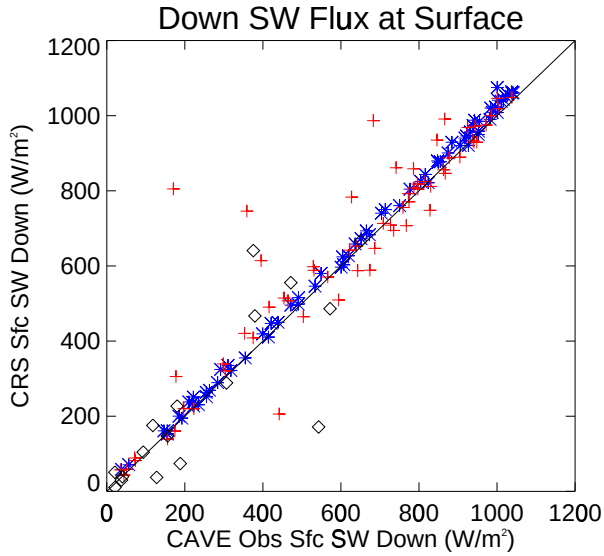
	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	349.93	30.00	23.66	43.42	48.81	72.82	49.16	48.81
LW Up Sfc	416.60	28.00	26.53	18.80	32.32	--------	--------	--------
SW Dn Sfc	251.89	17.00	-3.89	94.89	92.14	-298.54	-294.65	92.14
SW Up Sfc	47.64	16.00	7.74	17.78	18.87	--------	--------	--------
LW Up TOA	182.60	32.00	0.46	3.33	3.31	-74.76	-75.22	3.31
SW Up TOA	357.79	17.00	2.89	9.70	9.84	228.67	225.79	9.84

Overcast VIRS & L/AA

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	343.06	7.00	6.83	7.20	9.54	76.95	70.12	9.54
LW Up Sfc	417.88	7.00	15.64	21.06	24.99	--------	--------	--------
SW Dn Sfc	267.38	7.00	-19.18	147.54	137.93	-457.82	-438.64	137.93
SW Up Sfc	53.59	7.00	8.16	25.52	25.00	--------	--------	--------
LW Up TOA	188.25	7.00	-0.80	3.16	3.04	-70.19	-69.39	3.04
SW Up TOA	488.86	7.00	5.22	10.16	10.76	335.70	330.48	10.76

Desert Rock, NV (SURFRAD) Untuned CRS





All Sky

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	322.57	256.00	23.04	24.94	33.92	33.86	12.22	34.53
LW Up Sfc	459.28	248.00	33.38	25.87	42.20	--------	--------	--------
SW Dn Sfc	582.95	155.00	-22.23	85.50	88.07	-77.46	-55.23	88.07
SW Up Sfc	118.28	154.00	14.71	22.73	27.02	--------	--------	--------
LW Up TOA	273.73	275.00	8.87	10.19	13.50	-4.57	-13.44	13.50
SW Up TOA	200.26	158.00	5.89	31.94	32.38	47.83	41.94	32.38

Clear Sky VIRS

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Dir Bias Obs-CRS	Dif Bias Obs-CRS	AOT Frc Clr-Prs
LW Dn Sfc	313.39	127.00	23.00	13.33	26.55	--------	--------	0.78
LW Up Sfc	464.78	127.00	21.77	16.04	27.00	--------	--------	--------
SW Dn Sfc	635.00	74.00	-18.50	14.60	23.51	-2.25	-16.25	-12.87
SW Up Sfc	128.92	77.00	8.38	9.38	12.53	--------	--------	--------
LW Up TOA	296.73	139.00	7.83	5.99	9.85	--------	--------	-0.45
SW Up TOA	158.26	77.00	1.34	0.98	1.66	--------	--------	4.72

Clear Sky VIRS & L/AA

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Dir Bias Obs-CRS	Dif Bias Obs-CRS	AOT Frc Clr-Prs
LW Dn Sfc	323.22	42.00	29.24	14.14	32.40	--------	--------	0.88
LW Up Sfc	518.11	42.00	20.90	19.52	28.44	--------	--------	--------
SW Dn Sfc	720.83	42.00	-17.23	14.13	22.18	8.87	-26.11	-12.53
SW Up Sfc	145.55	42.00	9.55	9.17	13.16	--------	--------	--------
LW Up TOA	321.67	42.00	7.61	8.25	11.15	--------	--------	-0.65
SW Up TOA	173.31	42.00	1.24	0.85	1.50	--------	--------	4.10

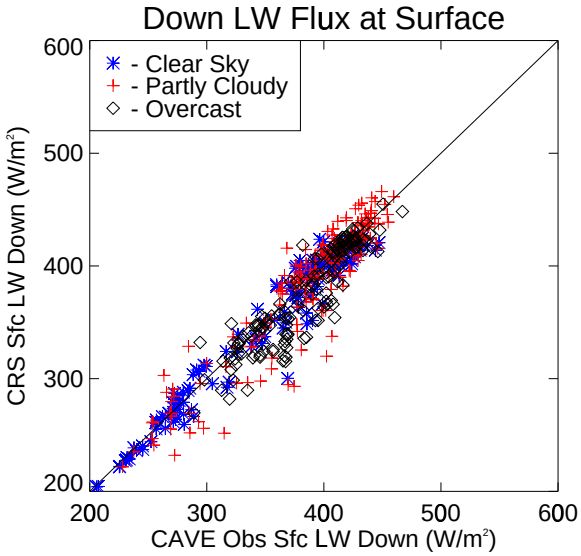
Overcast VIRS

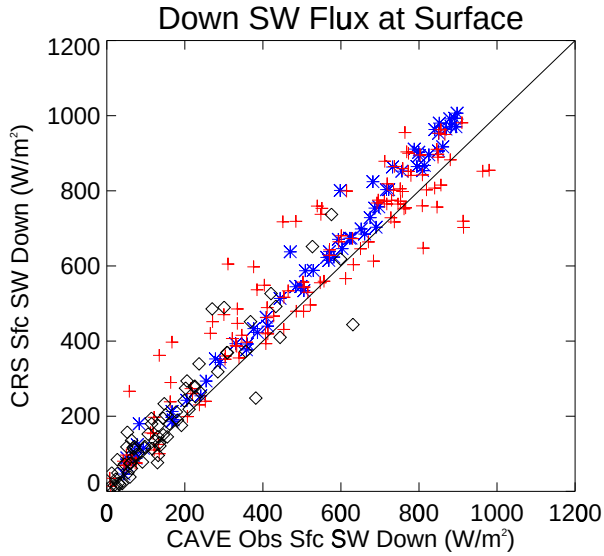
	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	349.93	30.00	23.47	43.66	48.93	72.82	49.35	48.93
LW Up Sfc	416.60	28.00	26.52	18.76	32.29	--------	--------	--------
SW Dn Sfc	251.89	17.00	6.48	127.06	123.44	-298.54	-305.02	123.44
SW Up Sfc	47.64	16.00	9.48	24.50	25.55	--------	--------	--------
LW Up TOA	182.60	32.00	1.19	5.84	5.87	-74.77	-75.96	5.87
SW Up TOA	357.79	17.00	-5.21	32.49	31.94	228.67	233.89	31.94

Overcast VIRS & L/AA

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	343.06	7.00	3.06	10.06	9.80	76.97	73.90	9.80
LW Up Sfc	417.88	7.00	15.37	20.88	24.70	--------	--------	--------
SW Dn Sfc	267.38	7.00	11.49	194.52	180.45	-457.82	-469.30	180.45
SW Up Sfc	53.59	7.00	13.35	35.82	35.75	--------	--------	--------
LW Up TOA	188.25	7.00	-0.30	7.60	7.04	-70.19	-69.89	7.04
SW Up TOA	488.86	7.00	-17.26	36.29	37.78	335.70	352.97	37.78

Goodwin Creek, MS (SURFRAD) Tuned CRS





All Sky

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	374.23	474.00	4.92	18.64	19.26	23.67	18.75	19.24
LW Up Sfc	434.10	466.00	8.33	17.78	19.62	--------	--------	--------
SW Dn Sfc	423.93	258.00	-49.68	71.08	86.61	-169.37	-119.69	86.61
SW Up Sfc	79.12	271.00	13.64	20.26	24.40	--------	--------	--------
LW Up TOA	250.47	475.00	1.36	3.66	3.90	-25.07	-26.42	3.90
SW Up TOA	229.93	271.00	-0.19	12.08	12.06	99.99	100.18	12.06

Clear Sky VIRS

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Dir Bias Obs-CRS	Dif Bias Obs-CRS	AOT Frc Clr-Prs
LW Dn Sfc	347.86	139.00	2.65	14.13	14.33	--------	--------	0.61
LW Up Sfc	435.34	133.00	4.27	15.43	15.95	--------	--------	--------
SW Dn Sfc	538.16	68.00	-64.89	38.85	75.49	-101.49	36.60	-15.31
SW Up Sfc	101.31	73.00	10.70	15.52	18.77	--------	--------	--------
LW Up TOA	281.12	140.00	1.83	2.56	3.14	--------	--------	-0.36
SW Up TOA	136.89	73.00	0.25	0.61	0.66	--------	--------	6.90

Clear Sky VIRS & L/AA

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Dir Bias Obs-CRS	Dif Bias Obs-CRS	AOT Frc Clr-Prs
LW Dn Sfc	307.33	13.00	8.17	13.66	15.46	--------	--------	0.63
LW Up Sfc	438.67	13.00	11.77	7.90	14.01	--------	--------	--------
SW Dn Sfc	608.09	13.00	-56.03	28.65	62.43	-44.91	-11.12	-12.06
SW Up Sfc	120.75	13.00	25.33	17.22	30.25	--------	--------	--------
LW Up TOA	285.56	13.00	1.06	1.54	1.82	--------	--------	-0.29
SW Up TOA	144.01	13.00	0.07	0.40	0.39	--------	--------	5.72

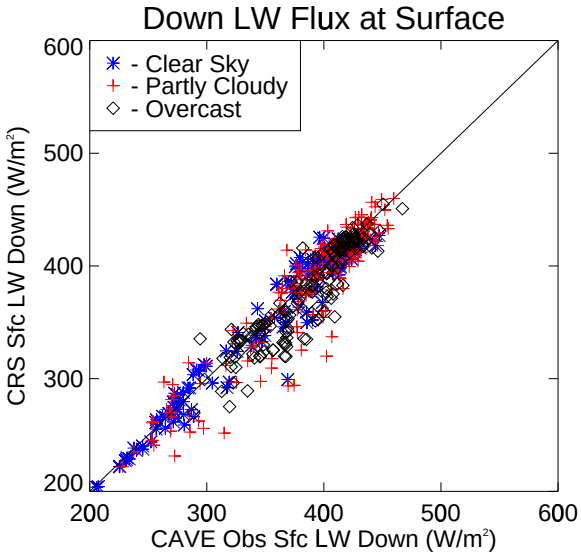
Overcast VIRS

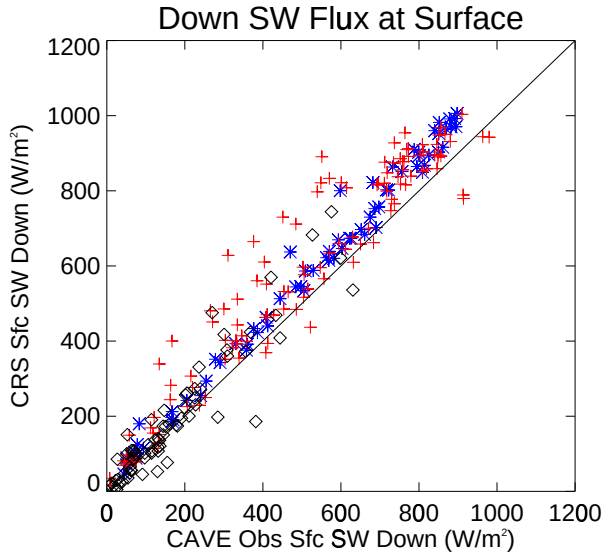
	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	383.44	148.00	10.02	17.98	20.53	44.61	34.59	20.53
LW Up Sfc	407.79	148.00	3.02	11.68	12.03	--------	--------	--------
SW Dn Sfc	174.62	71.00	-30.67	59.13	66.24	-309.14	-278.47	66.24
SW Up Sfc	32.50	74.00	5.66	11.57	12.81	--------	--------	--------
LW Up TOA	196.86	148.00	0.04	2.54	2.53	-69.22	-69.26	2.53
SW Up TOA	361.78	74.00	1.77	7.66	7.81	245.61	243.84	7.81

Overcast VIRS & L/AA

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	375.67	40.00	7.82	12.34	14.48	57.09	49.26	14.48
LW Up Sfc	399.87	40.00	3.93	11.87	12.36	--------	--------	--------
SW Dn Sfc	109.71	40.00	-28.04	36.64	45.77	-358.63	-330.60	45.77
SW Up Sfc	19.75	40.00	2.09	6.72	6.96	--------	--------	--------
LW Up TOA	202.65	40.00	-1.31	2.43	2.73	-60.29	-58.98	2.73
SW Up TOA	401.29	40.00	3.39	8.68	9.21	286.37	282.98	9.21

Goodwin Creek, MS (SURFRAD) Untuned CRS





All Sky

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	374.23	474.00	5.42	17.95	18.73	23.22	17.80	18.72
LW Up Sfc	434.10	466.00	9.64	17.90	20.31	--------	--------	--------
SW Dn Sfc	423.93	258.00	-59.49	73.80	94.68	-169.13	-109.64	94.68
SW Up Sfc	79.12	271.00	13.88	18.34	22.97	--------	--------	--------
LW Up TOA	250.47	475.00	1.98	6.30	6.59	-24.71	-26.69	6.59
SW Up TOA	229.93	271.00	7.33	25.46	26.45	101.17	93.83	26.45

Clear Sky VIRS

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Dir Bias Obs-CRS	Dif Bias Obs-CRS	AOT Frc Clr-Prs
LW Dn Sfc	347.86	139.00	1.49	14.38	14.41	--------	--------	0.59
LW Up Sfc	435.34	133.00	7.30	14.05	15.79	--------	--------	--------
SW Dn Sfc	538.16	68.00	-64.40	38.76	75.02	-101.09	36.69	-15.24
SW Up Sfc	101.31	73.00	10.94	15.01	18.49	--------	--------	--------
LW Up TOA	281.12	140.00	2.66	4.04	4.83	--------	--------	-0.35
SW Up TOA	136.89	73.00	0.55	1.80	1.87	--------	--------	6.88

Clear Sky VIRS & L/AA

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Dir Bias Obs-CRS	Dif Bias Obs-CRS	AOT Frc Clr-Prs
LW Dn Sfc	307.33	13.00	7.81	13.80	15.39	--------	--------	0.62
LW Up Sfc	438.67	13.00	14.12	7.59	15.89	--------	--------	--------
SW Dn Sfc	608.09	13.00	-55.86	28.72	62.30	-44.77	-11.09	-12.01
SW Up Sfc	120.75	13.00	24.91	16.66	29.62	--------	--------	--------
LW Up TOA	285.56	13.00	1.86	2.69	3.18	--------	--------	-0.29
SW Up TOA	144.01	13.00	-0.25	1.76	1.71	--------	--------	5.70

Overcast VIRS

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	383.44	148.00	9.40	17.34	19.67	44.60	35.21	19.67
LW Up Sfc	407.79	148.00	3.01	11.68	12.02	--------	--------	--------
SW Dn Sfc	174.62	71.00	-17.87	59.59	61.81	-309.14	-291.27	61.81
SW Up Sfc	32.50	74.00	7.36	10.70	12.93	--------	--------	--------
LW Up TOA	196.86	148.00	1.42	7.35	7.46	-69.22	-70.64	7.46
SW Up TOA	361.78	74.00	-10.09	22.61	24.62	245.61	255.70	24.62

Overcast VIRS & L/AA

	Obs Mean	N	Bias Obs-CRS	Std Dev	RMS	Obs Frc All-Clr	Mod Frc All-Clr	Forcing RMS
LW Dn Sfc	375.67	40.00	6.58	11.20	12.87	57.09	50.51	12.87
LW Up Sfc	399.87	40.00	3.91	11.86	12.34	--------	--------	--------
SW Dn Sfc	109.71	40.00	-9.08	39.73	40.27	-358.63	-349.55	40.27
SW Up Sfc	19.75	40.00	4.61	7.08	8.37	--------	--------	--------
LW Up TOA	202.65	40.00	-1.62	7.12	7.21	-60.28	-58.66	7.21
SW Up TOA	401.29	40.00	-13.96	20.07	24.24	286.37	300.32	24.24