

IMPROVE

Interagency Monitoring of Protected Visual Environments

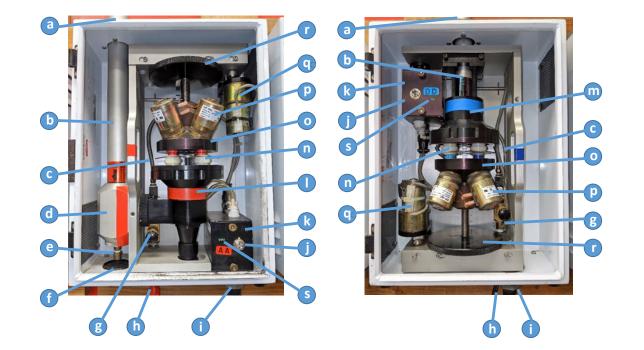
2020 CALENDAR

IMPROVE is a collaborative association of state, tribal, and federal agencies, and international partners. US Environmental Protection Agency is the primary funding source, with contracting and research support from the National Park Service. The Air Quality Research Center (AQRC) at the University of California, Davis provides field maintenance and operator support, sample handling, elemental analysis, and data processing; Research Triangle Institute (RTI) performs ions analysis; and Desert Research Institute (DRI) performs carbon analysis. IMPROVE data and documentation are available from the website http://vista. cira.colostate.edu/improve/ maintained by the Cooperative Institute for Research in the Atmosphere (CIRA).

For questions or problems with optical or scene monitoring equipment, contact Mark Tigges, Air Resource Specialists, Fort Collins, CO at 970-224-9300. For questions or problems with air sampler controllers, filters or flow checks, contact Air Quality Research Center, UC Davis at 530-752-1123, improvehelpdesk@ucdavis.edu, or visit https://aqrc.ucdavis.edu/ resources-for-operators.







a. stack compression sleeve

b. inlet stack

- c. braided hose
- d. inlet tee
- e. tee plug
- f. black cap
- g. flow control valve
- h. pump hose connector
- i. module cable connector
- j. motor control toggle switch
- k. electronics box (ebox)
- I. cyclone
- m. funnel
- n. cartridge with 4 filter cassettes
- o. solenoid manifold
- p. solenoid valve (4)
- q. motor assembly to raise solenoid manifold
- r. handwheel (flywheel) to raise manifold
- s. Ebox status LED lights

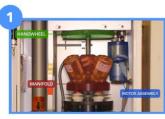
IMPROVE operator training videos: https://aqrc.ucdavis.edu/resources-for-operators

UC Davis General Lab: 530-752-1123 IMPROVE Help Desk: improvehelpdesk@ucdavis.edu





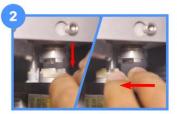
Disengaging Manifold Motor to Manually Raise/Lower the Manifold



Locate the motor assembly in the module.



Spin the hand wheel to the right to lower the manifold.



Separate the motor assembly from the coupling sliding the assembly down. Then pivot it towards to the hand wheel.



The spinning direction to raise and lower the manifold is opposite for the D module.



A gentle wiggle may be required to slide the assembly up or down.



If the motor starts to work again it can be reengaged with the hand wheel. Pivot the motor assembly back to its original location.



For the A, B, and C modules spin the hand wheel to the left to raise the manifold.



Rotate the hand wheel until the coupling snaps into alignment.

Electronics-Box Replacement (For A,B, and C modules. For the D module skip steps 3 and 9)



Disconnect the Orifice (ORI) and Cyclone (CYC) hoses by depressing the metal clasp and pulling on the hose.



Remove old electronics box and insert the new box.



Tighten the brass knobs.



Disconnect the grey cable located on top of the box by turning the metal collar counter-clockwise.



Re-connect grey cable on the top of the box.



Disconnect the grey module cable at the bottom of the module, by turning the connector body counter-clockwise.







(line up the key and keyway when connecting the electronic connectors)

Re-connect the hoses to the electronics box.

Re-connect the bottom grey module cable.

Loosen the brass knobs located on the black electronics box.

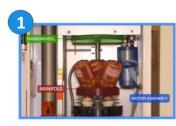
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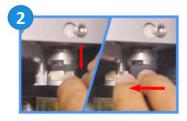
Replacing Plastic Motor Coupler



Locate the motor assembly in the module



If the plastic motor coupler does not line up with the upper hub, use the hand wheel to put it into place



Separate the motor assembly from the coupling sliding the assembly down. Then pivot it towards the hand wheel.



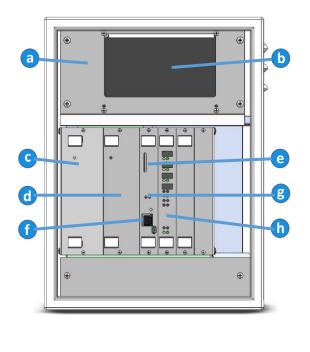
The motor should slide into place and the upper and lower hubs should fit securely into the plastic motor coupler



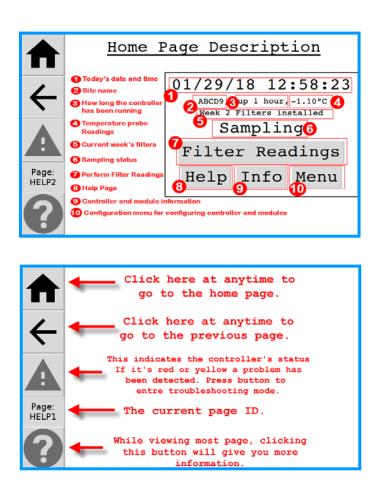
Remove the old plastic coupler and place the new one in. Make sure to center it on the metal hub.

QUICK REFERENCE: CONTROLLER

Controller Information



a. Display Faceplate	e. SD Card Slot
b. LCD Touch Screen	f. Ethernet Port
c. 5 V Power Supply Card	g. CPU Card
d. 24 V Power Supply Card	h. Hub Card

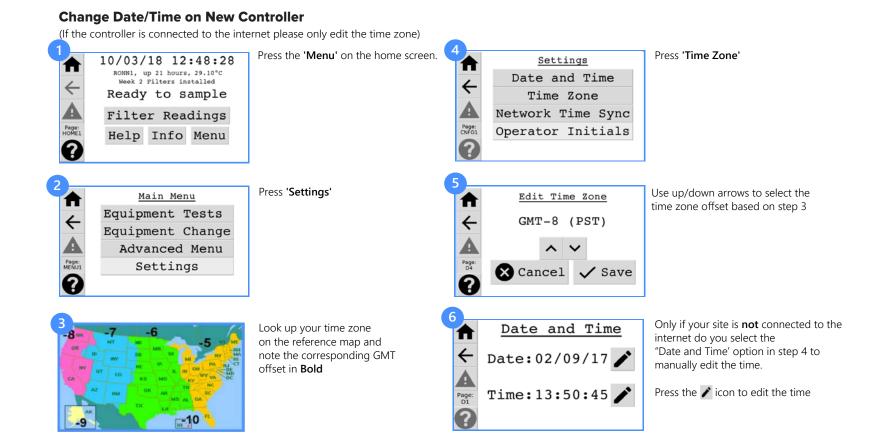


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Test Network Connection and Send Data to Server



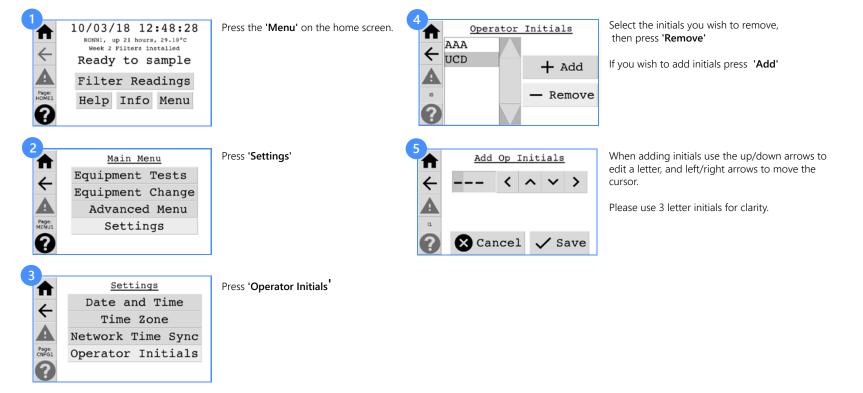
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Manage Operator Initials on New Controller





TUMALO FALLS: Near Three Sisters Wilderness, OR (THSII) Josh Grant

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JANUARY 2020

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DECEMBER 2019 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	FEBRUARY 2020 S M T W T F S 2 3 4 5 6 7 8 9 10 11 12 13 14 15		New Year's Day 1	2	3	4
22 23 24 25 26 27 28 29 30 31	16 17 18 19 20 21 22 23 24 25 26 27 28 29		IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
5	6	3-2-2 Week 2 7 2-3-2 Week 3	8	9	10	11
		Special cartridge change: move cassette 3 from old cartridge to new.				
Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
12	13	3-2-2 Week 3 14 2-3-2 Week 1	15	16	17	18
	IMPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
19	Martin Luther 20 King, Jr. Day	3-2-2 Week 1 21 2-3-2 Week 2	22	23	24	25
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
26	27	3-2-2 Week 2 28 2-3-2 Week 3	29	30	31	
		Special cartridge change: move cassette 3 from old cartridge to new.				
Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	



FEBRUARY 2020

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
JANUARY V V F S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	Image: Normal and the system Image: Normal and the system <th< th=""><th></th><th></th><th></th><th></th><th>1</th></th<>					1
2	3 IMPROVE Particle	3-2-2 Week 3 2-3-2 Week 1 Change IMPROVE	5 Alternate Sample	6 IMPROVE Particle	7	8
	Sampling Day	Particle cartridges	Change Day	Sampling Day		
9	10	3-2-2 Week 1 11 2-3-2 Week 2	12	13	14	15
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
16	President's Day 17	3-2-2 Week 2 2-3-2 Week 3 Special cartridge change: move cassette 3 from old cartridge to new.	19	20	21	22
Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
23	24	3-2-2 Week 3 25 2-3-2 Week 1	26	27	28	29
	IMPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		



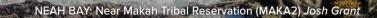
MARCH 2020

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3-2-2 Week 1 3 2-3-2 Week 2	4	5	6	7
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
8	9	3-2-2 Week 2 2-3-2 Week 3 Special cartridge change: move cassette 3 from old cartridge to new.	11	12	13	14
Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
15	16	3-2-2 Week 3 17 2-3-2 Week 1	18	19	20	21
	IMPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
22	23	3-2-2 Week 1 24 2-3-2 Week 2	25	26	27	28
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
29 Alternate Sample Change Day	30 Alternate Sample Change Day	3-2-2 Week 2 2-3-2 Week 3 Special cartridge change: move cassette 3 from old cartridge to new. IMPROVE Particle Sampling Day			K K	A PRI-L 2020 S M T W T S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30



APRIL 2020

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
			Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
5	6	3-2-2 Week 3 7 2-3-2 Week 1	8	9	10	11
	IMPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
12	13	3-2-2 Week 1 14 2-3-2 Week 2	15	16	17	18
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
19	20	3-2-2 Week 2 21 2-3-2 Week 3 Special cartridge change: move cassette 3 from old cartridge to new.	22	23	24	25
Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
26	27 IMPROVE Particle Sampling Day	3-2-2 Week 3 2-3-2 Week 1 Change IMPROVE Particle cartridges	29 Alternate Sample Change Day	30 IMPROVE Particle Sampling Day	MARCH 2020 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 14 14 14 14 14	MAY 2 U J U S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 31 25 26 27 28 29 30



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MAY 2020

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
3	4	3-2-2 Week 1 5 2-3-2 Week 2	6	7	8	9
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
10	11	3-2-2 Week 2 2-3-2 Week 3 Special cartridge change: move cassette 3 from old	13	14	15	16
Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
17	18	3-2-2 Week 3 19 2-3-2 Week 1	20	21	22	23
	IMPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
24	Memorial Day 25	3-2-2 Week 1 2-3-2 Week 2 26	27	28	29	30
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
31					A PRI Z O Z S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	JUNE 2020 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Alternate Sample Change Day					192021222324252627282930	21 22 23 24 25 26 27 28 29 30

TOOLIK LAKE: Near Toolik Lake, AK (TOOL1) Josh Grant

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JUNE 2020

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	3-2-2 Week 2 2 2-3-2 Week 3	3	4	5	6
		Special cartridge change: move cassette 3 from old cartridge to new.				
	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
7	8	3-2-2 Week 3 9 2-3-2 Week 1	10	11	12	13
	IMPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
14	15	3-2-2 Week 1 16 2-3-2 Week 2	17	18	19	20
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
21	22	3-2-2 Week 2 23 2-3-2 Week 3	24	25	26	27
		Special cartridge change: move cassette 3 from old cartridge to new.				
Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
28	29	3-2-2 Week 3 30 2-3-2 Week 1			M Y V T F S 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	JULY 2020 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
	IMPROVE Particle Sampling Day	Change IMPROVE Particle cartridges			²⁴ 25 26 27 28 29 30	26 27 28 29 30 31

BAENGNYEONGDO: Near Baengnyeongdo Island, South Korea (BYIS1) Josh Grant

JULY 2020

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
JUNE JUNE JUNE F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	A V V V V F S V -		1 Alternate Sample Change Day	2 IMPROVE Particle Sampling Day	3	Independence Day 4
5 IMPROVE Particle	6 Alternate Sample	3-2-2 Week 1 7 2-3-2 Week 2 Change IMPROVE	8 IMPROVE Particle	9	10	11 IMPROVE Particle
Sampling Day	Change Day	Particle cartridges	Sampling Day			Sampling Day
12	13	3-2-2 Week 2 2-3-2 Week 3 Special cartridge change: move cassette 3 from old cartridge to new. IMPROVE Particle	15	16	17	18
Alternate Sample Change Day	Alternate Sample Change Day	Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
19	20	3-2-2 Week 3 21 2-3-2 Week 1	22	23	24	25
	IMPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
26	27	3-2-2 Week 1 28 2-3-2 Week 2	29	30	31	
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			

INDIAN CREEK: Near Canyonlands NP, UT (CANY1) Josh Grant

AUGUST 2020

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
							1
							IMPROVE Particle Sampling Day
	2	3	3-2-2 Week 2 4 2-3-2 Week 3 Special cartridge change: move cassette 3 from old cartridge to new.	5	6	7	8
A	lternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
	9	10	3-2-2 Week 3 11 2-3-2 Week 1	12	13	14	15
		IMPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
	16	17	3-2-2 Week 1 2-3-2 Week 2	19	20	21	22
	IPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
	23	24	3-2-2 Week 2 25 2-3-2 Week 3 25 Special cartridge change: move cassette 3 from old cartridge to new.	26	27	28	29
А	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
	30	31				JULY V F S 8 M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	SEPTEMBER 2U2 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
		Sampling Day				19 20 21 22 23 24 25 26 27 28 29 30 31	20 21 22 23 24 25 26 27 28 29 30

BIG ARROYO: Near Sequoia NP, CA (SEQU1) Josh Grant

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SEPTEMBER 2020

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		3-2-2 Week 3 1 2-3-2 Week 1	2	3	4	5
		Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
6	Labor Day 7	3-2-2 Week 1 8 2-3-2 Week 2	9	10	11	12
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
13	14	3-2-2 Week 2 2-3-2 Week 3 Special cartridge change: move cassette 3 from old cartridge to new.	16	17	18	19
Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
20	21	3-2-2 Week 3 22 2-3-2 Week 1	23	24	25	26
	IMPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
	28	3-2-2 Week 1 29 2-3-2 Week 2			AUGUST 2020 S M T W T F S 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	OCTOBER 2020 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day		²³ ²⁴ 25 26 27 28 29	25 26 27 28 29 30 31

WONDERLAND: Near Joshua Tree NP, CA (JOSH1) Josh Grant

OCTOBER 2020

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	NO V T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 X X X X X			1	2	3 IMPROVE Particle Sampling Day
4	5	3-2-2 Week 2 6	7	8	9	10
Alternate Sample	Alternate Sample	2-3-2 Week 3 Special cartridge change: move cassette 3 from old cartridge to new. IMPROVE Particle	Alternate Sample	Alternate Sample	IMPROVE Particle	
Change Day 11	Change Day	Sampling Day	Change Day 14	Change Day 15	Sampling Day	17
	Columbus Day 12 IMPROVE Particle Sampling Day	2-3-2 Week 1 Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
18 IMPROVE Particle Sampling Day	19 Alternate Sample Change Day	3-2-2 Week 1 2-3-2 Week 2 Change IMPROVE Particle cartridges	21 IMPROVE Particle Sampling Day	22	23	24 IMPROVE Particle Sampling Day
25	26	3-2-2 Week 2 27 2-3-2 Week 3 Special cartridge change: move cassette 3 from old cartridge to new.	28	29	30	31
Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	

BEARTOOTH PASS: Near North Absaroka Wilderness (NOAB1) Josh Grant

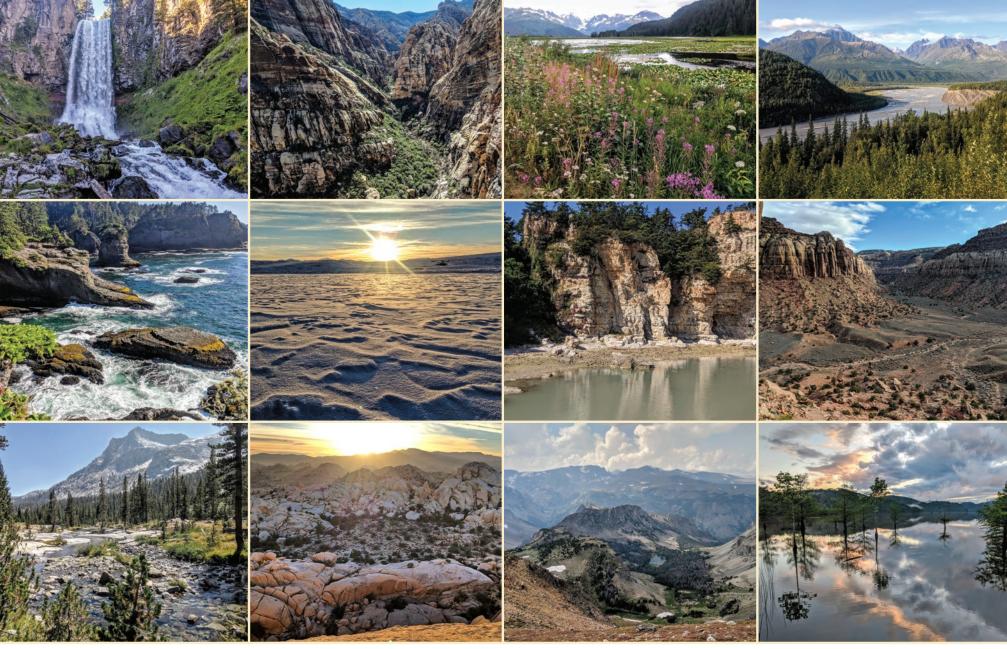
NOVEMBER 2020

SUNDAY		MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3-2-2 Week 3 3 2-3-2 Week 1	4	5	6	7
		MPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
	8	9	3-2-2 Week 1 10 2-3-2 Week 2	Veterans Day 11	12	13	14
IMPROVE Partic Sampling Day		Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
	15	16	3-2-2 Week 2 17 2-3-2 Week 3	18	19	20	21
			Special cartridge change: move cassette 3 from old cartridge to new.				
Alternate Sampl Change Day		Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
	22	23	3-2-2 Week 3 24 2-3-2 Week 1	25	Thanksgiving Day 26	27	28
	IN	MPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
IMPROVE Partic Sampling Day		30 Alternate Sample Change Day				OC TO F S S M T W T F S 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	DECEMBER 2 O 2 O S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

LAKE OCOEE: Near Cohutta, GA (COHU1) Josh Grant

DECEMBER 2020

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		3-2-2 Week 1 1 2-3-2 Week 2	2	3	4	5
		Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
6	7	3-2-2 Week 2 2-3-2 Week 3 Special cartridge change: move cassette 3 from old cartridge to new.	9	10	11	12
Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	Alternate Sample Change Day	Alternate Sample Change Day	IMPROVE Particle Sampling Day	
13	14	3-2-2 Week 3 15 2-3-2 Week 1	16	17	18	19
	IMPROVE Particle Sampling Day	Change IMPROVE Particle cartridges	Alternate Sample Change Day	IMPROVE Particle Sampling Day		
20	21	3-2-2 Week 1 22 2-3-2 Week 2	23	24	Christmas Day 25	26
IMPROVE Particle Sampling Day	Alternate Sample Change Day	Change IMPROVE Particle cartridges	IMPROVE Particle Sampling Day			IMPROVE Particle Sampling Day
27 Alternate Sample Change Day	28 Alternate Sample Change Day	3-2-2 Week 2 2-3-2 Week 3 Special cartridge change: move cassette 3 from old cartridge to new. IMPROVE Particle Sampling Day	30 Alternate Sample Change Day	31 Alternate Sample Change Day	NO F S F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 20 21 20 21	JANUARY 2 U21 S M T W T F S 1 2 1 2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30



Photographs taken by IMPROVE Field Engineer, Josh Grant. Cover Photo: HALF DOME (YOSEMITE NP) Josh Grant

