

Brown-0123 (23 January 2020)

Trish Quinn (Chief Scientist)

Compiled: 01.23 20:15 AST

1. Objective

Arrived at 14.383N and 55W at 6:30 am local time. It was a downwind run so we were not able to conduct atmospheric measurements. Once on station, we turned the bow into the wind for atmospheric sampling. This station was at the center of today's P3 dropsonde circle. The P3 did an overflight at 500' above the Brown at 11:40 local. We left the station at 18:00 local and started our transit to the next station upwind of BCO. Radiosondes every 4 hours.

2. Synoptic Situation

Winds held steady at 14 kts overnight and then began to decrease around 8:00 am local to 9 kts. Sea state of 3 to 5. Few clouds. Sargassum observed.

Field	Quantity	Notes
RH	71.6, 4.2	18 m asl
Tair	25.3, 0.32	18 m asl
Wind	6.3, 0.98 m/s	18 m asl
SST	26.5, 0.19	5 m bsl
Salinity	35.1, 0.17	5 m bsl
Precipitable water		
CN	126, 188	
CCN	125, 25 @ 0.3%	
Dust	No indicator	
Trade Inversion		

Cloud Observations: 01/23/20

Local Time (UTC -4)	Ship's Position	Coverage	Types	Codes	Remarks
0800	14°22'N 055°00'W	0/8 High	n/a		
		0/8 Mid	n/a		
		2/8 Low	Cu, Sc	C _L 1, C _L 2	
1200	14°22'N 055°00'W	0/8 High	n/a		
		1/8 Mid	As	C _M 7	
		2/8 Low	Cu, St	C _L 1, C _L 2	
1600	14°22'N 055°00'W	0/8 High	n/a		
		1/8 Mid	As	C _M 1	
		1/8 Low	Sc	C _{L5}	

3. Cruise-day Elements

Element	Position [°N, °W]	Time [UTC]	Notes
P3 Fly by	14.383, 55	15:40	500' flyby

Very strange CN and O3 observations yesterday and today. Mid to late afternoon on both days we observed simultaneous increases in CN and O3. Yesterday it was just one spike. Today it was several broad spikes occurring every ~10 minutes. CN were mainly in the Aitken mode size range. We have ruled out leaks and local (ship) sources. Could it be mixing down from aloft?

4. Instrument Status

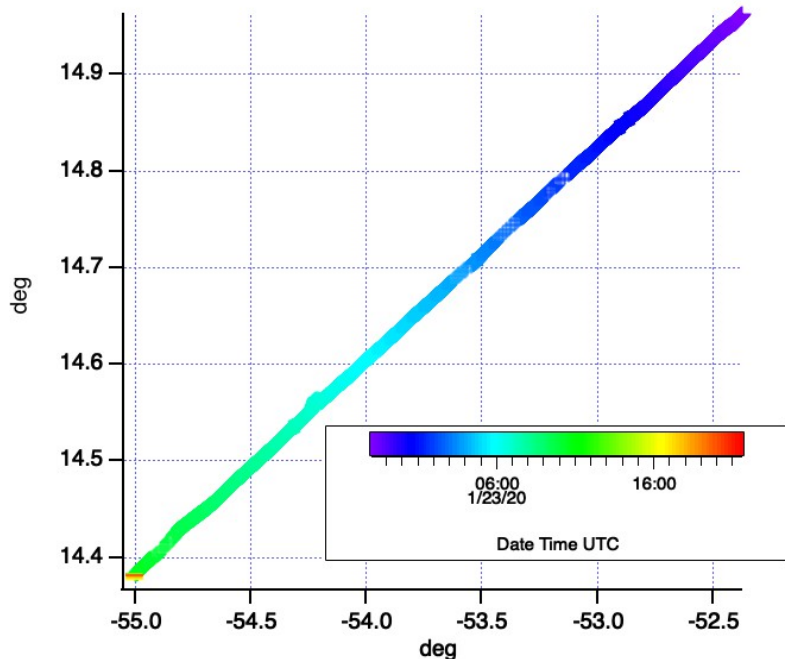
Cloud radar, microwave radiometer, and Picarro isotope instrument are not operational.

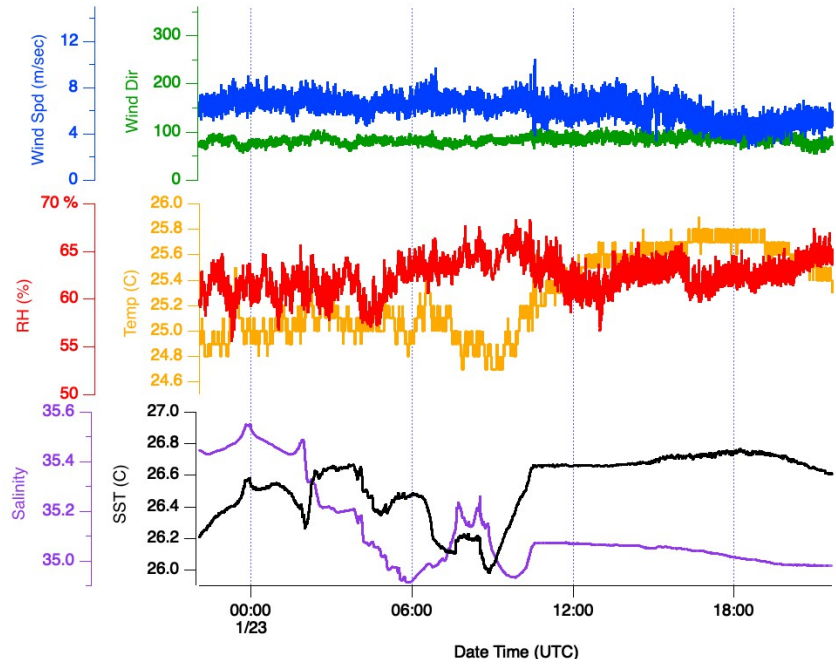
5. Outlook

Transiting overnight to 13.248N and 59.03W to be 20 nm upwind of BCO by 13:00 local tomorrow. We will sit at this station until local midnight on Jan. 25th.

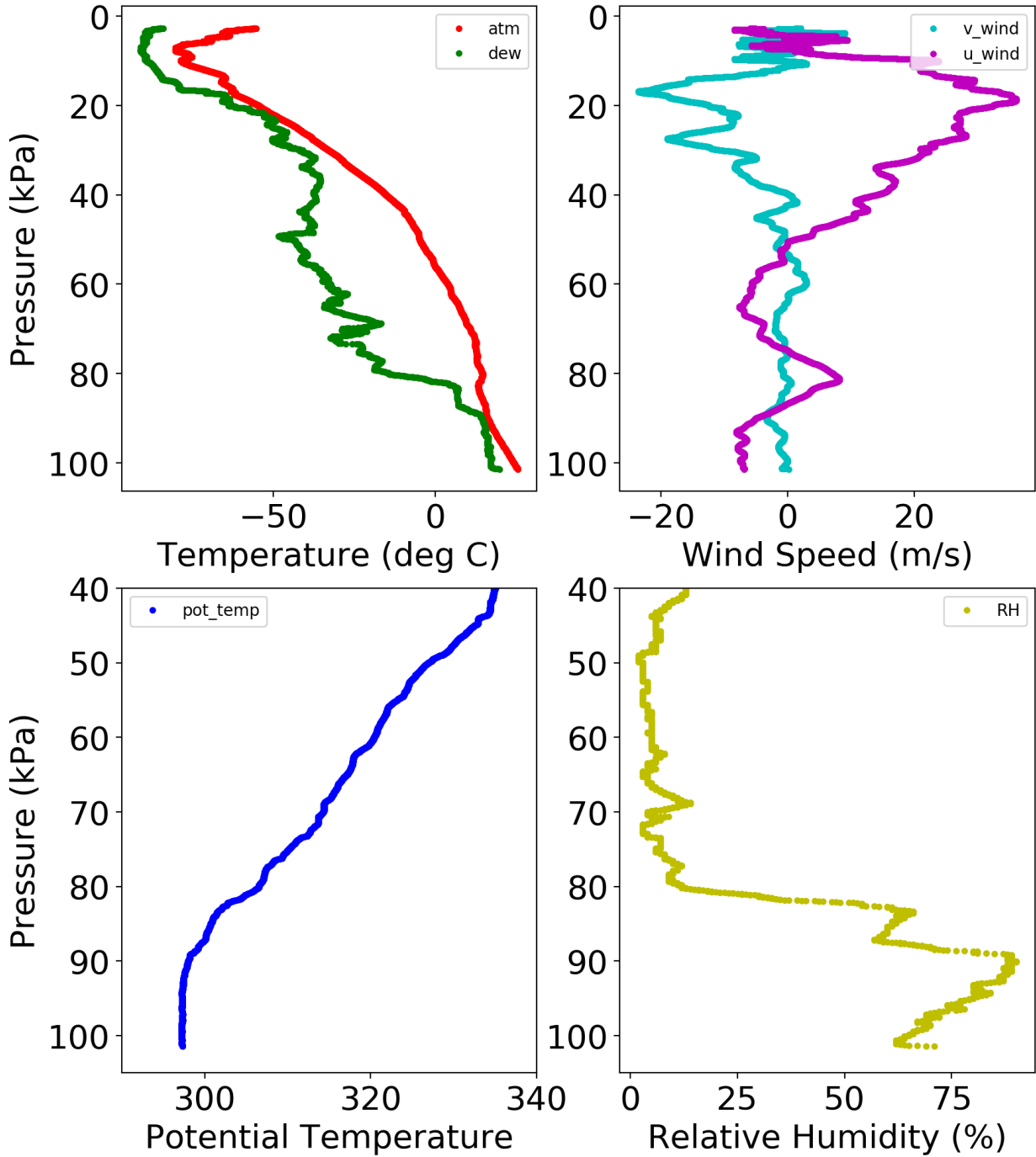
6. Figures

Today's track:

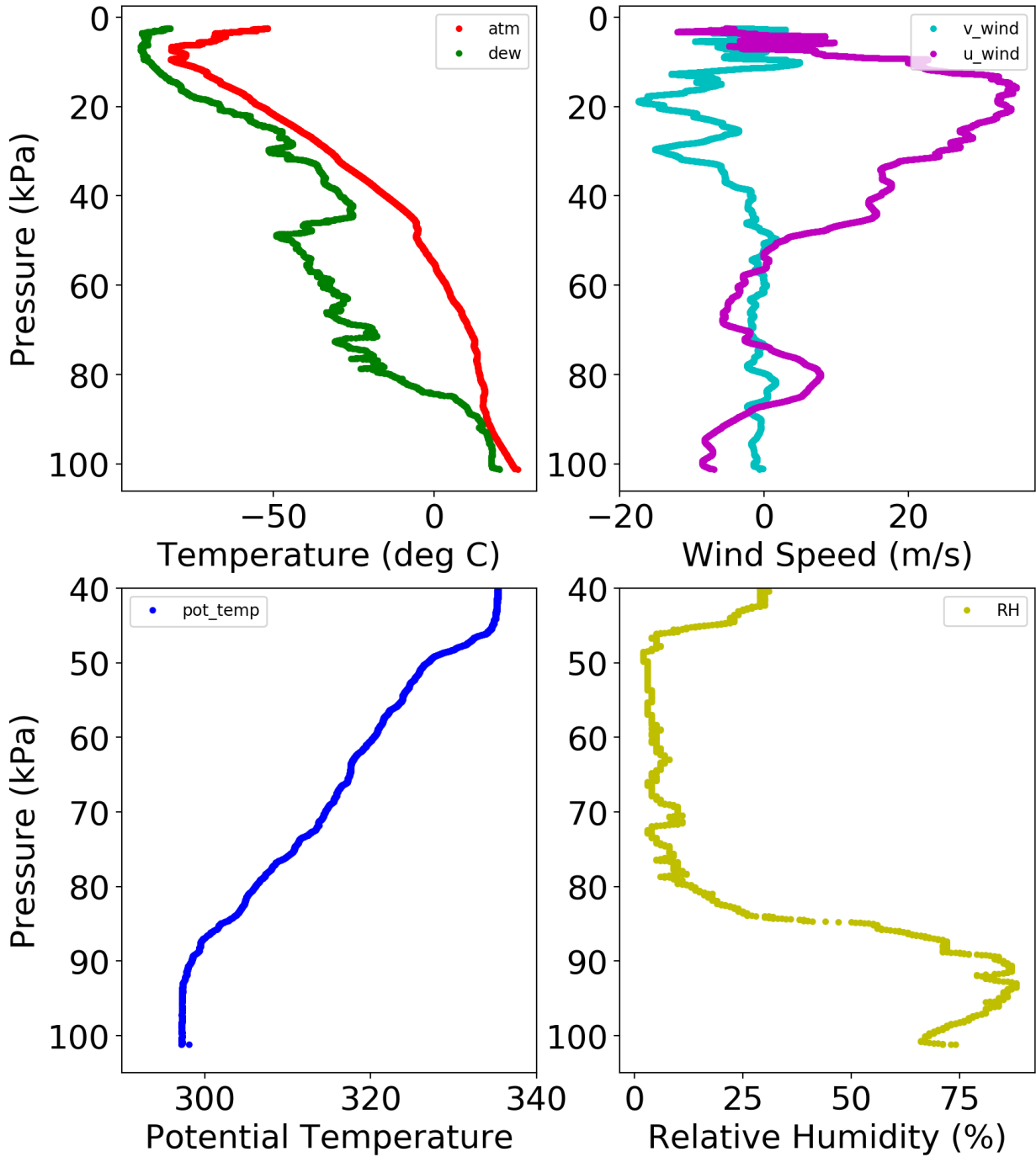




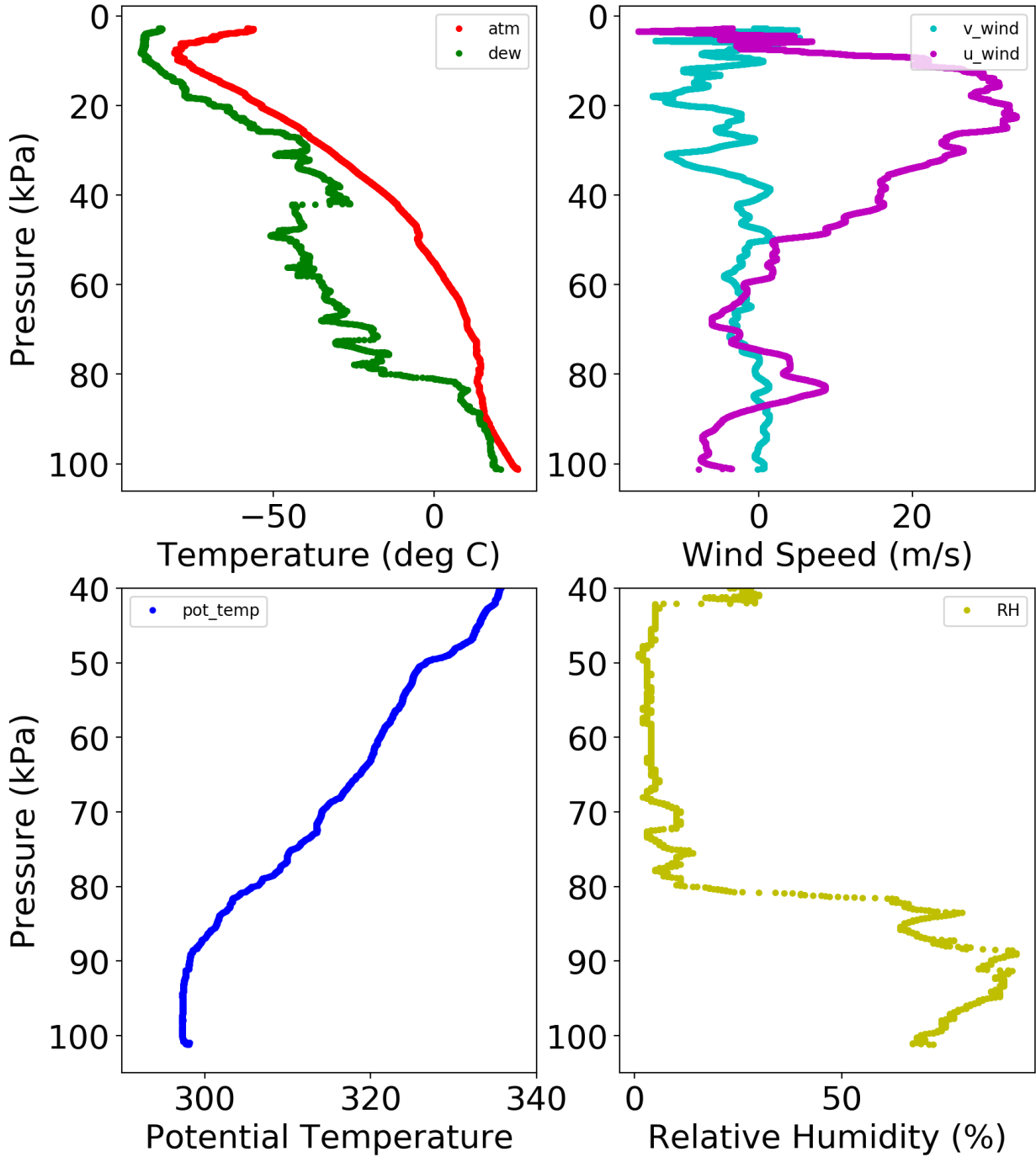
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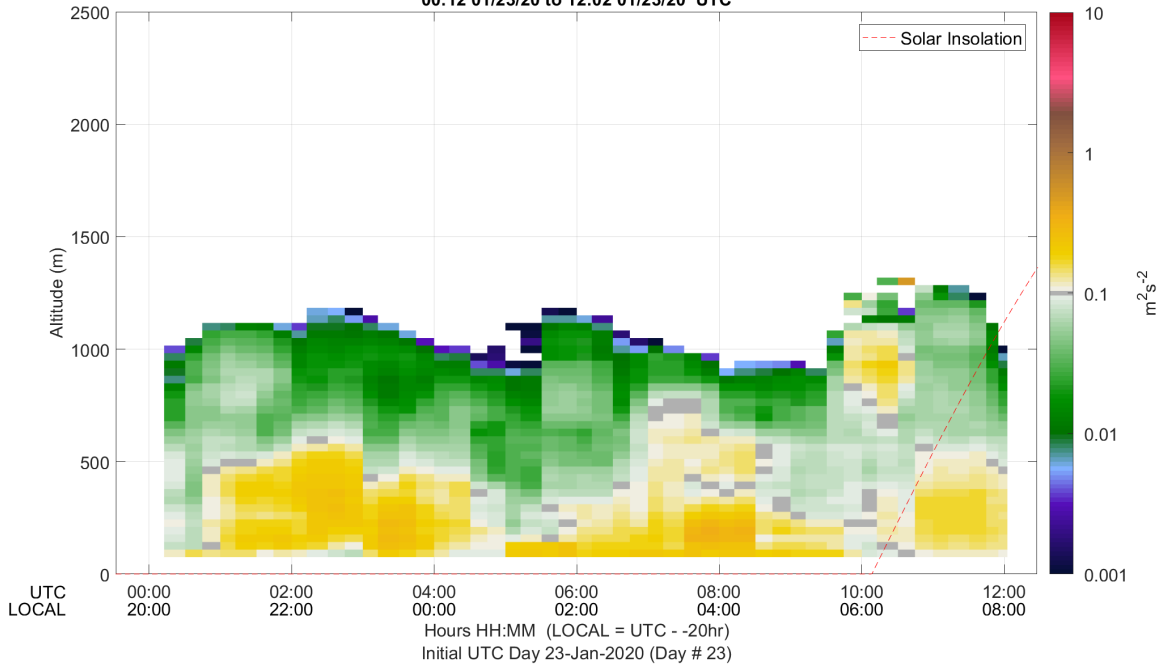
2020-01-23 0644UTC



2020-01-23 1048UTC



MicroDop02 ATOMIC R/V Brown- Vertical Velocity Variance Profiles
00:12 01/23/20 to 12:02 01/23/20 UTC



MicroDop02 ATOMIC R/V Brown- Vertical Velocity Variance Profiles
12:02 01/23/20 to 23:25 01/23/20 UTC

