

IMPACTS 2022 Cloud Probes – Science

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IMPACTS 2022 Cloud Probes

Hot-Wire Boom

WCM

CDP

King

HVPS-3B

HVPS-3A

RICE

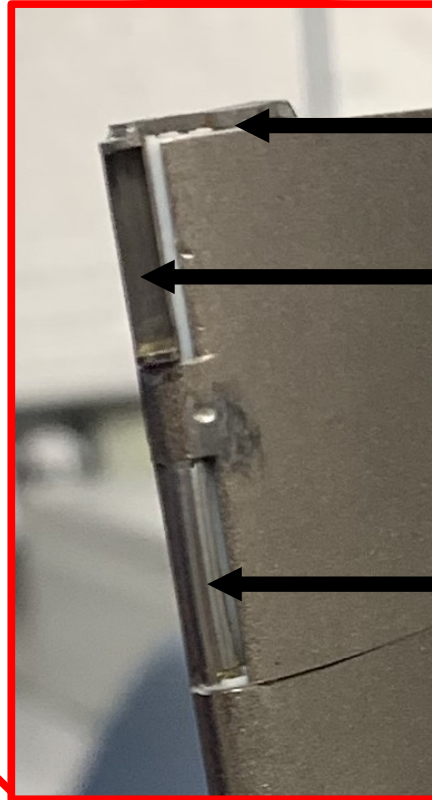
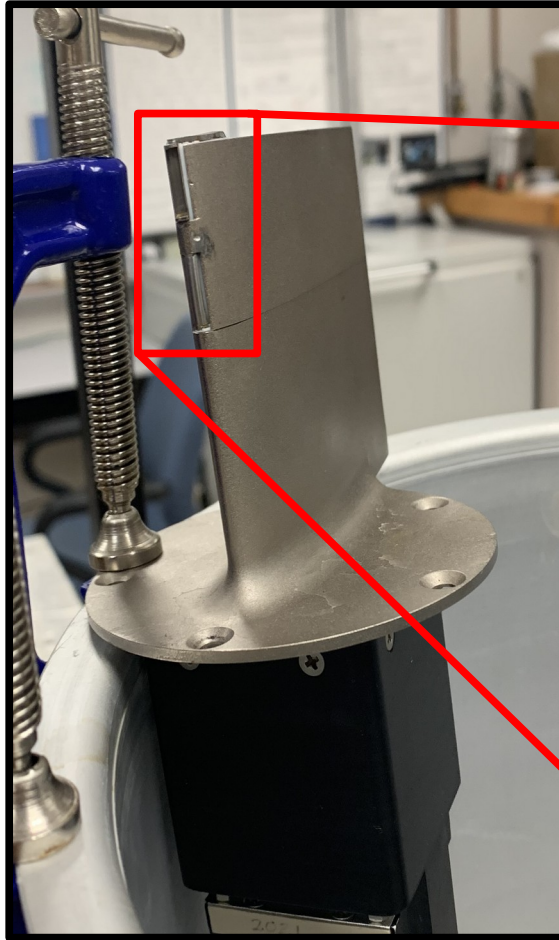
Hawkeye

2DS

Water Content Multi-element System (WCM)

Science Engineering Associates (SEA) Model WCM-3000

140 °C Sensors Elements

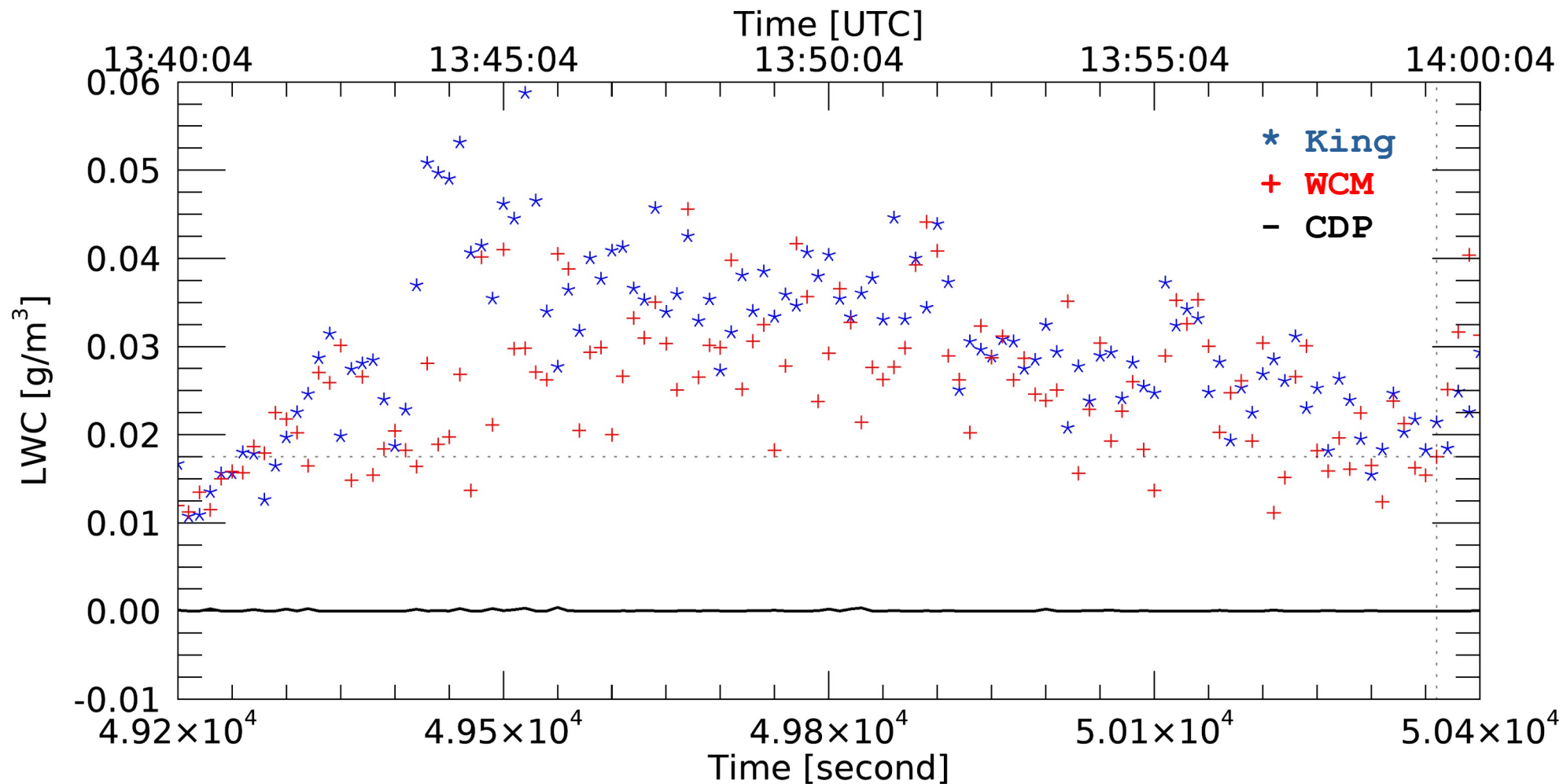


Dry Sensor

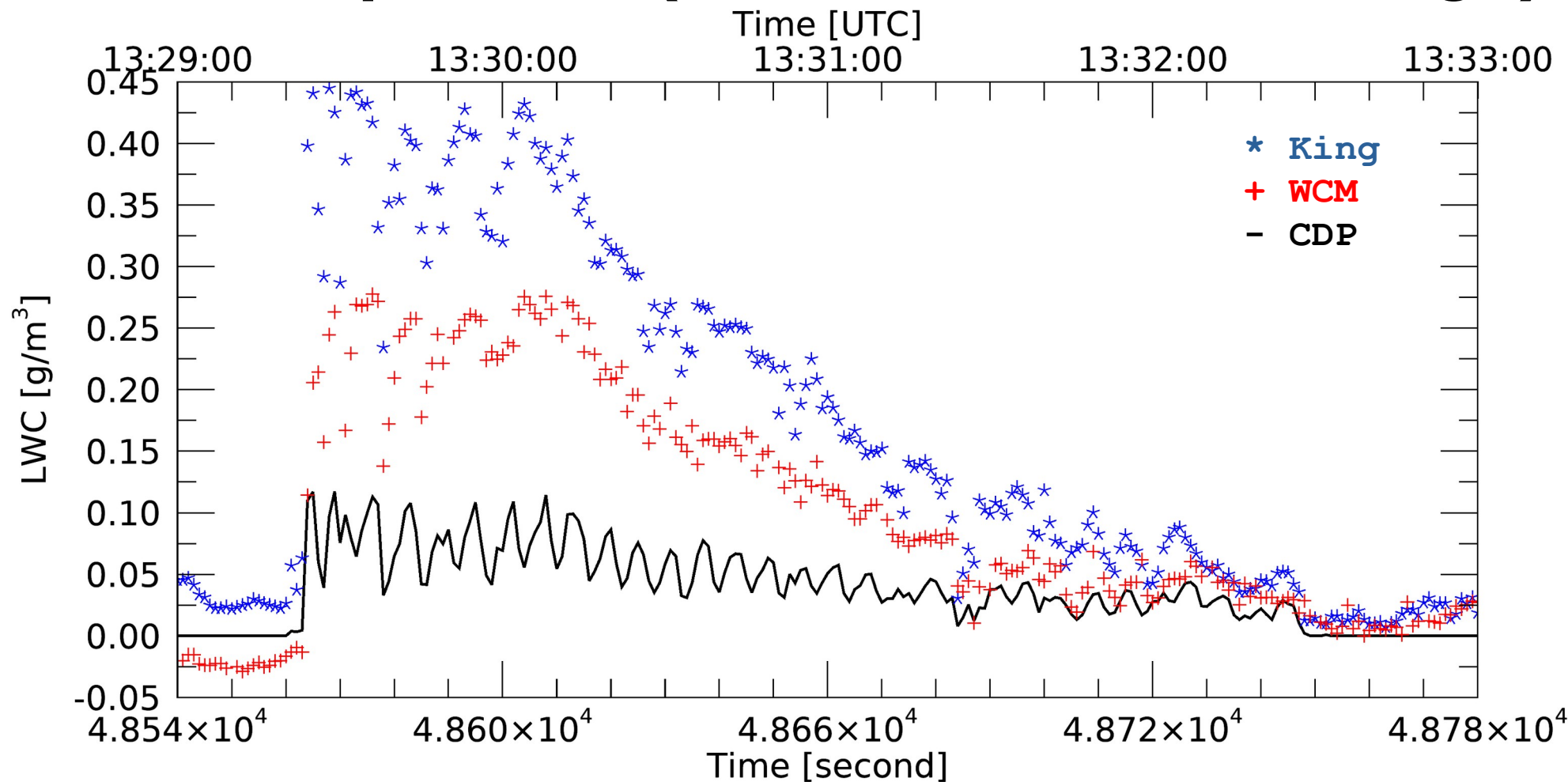
Total Water
Content Sensor

Liquid Water
Content Sensor

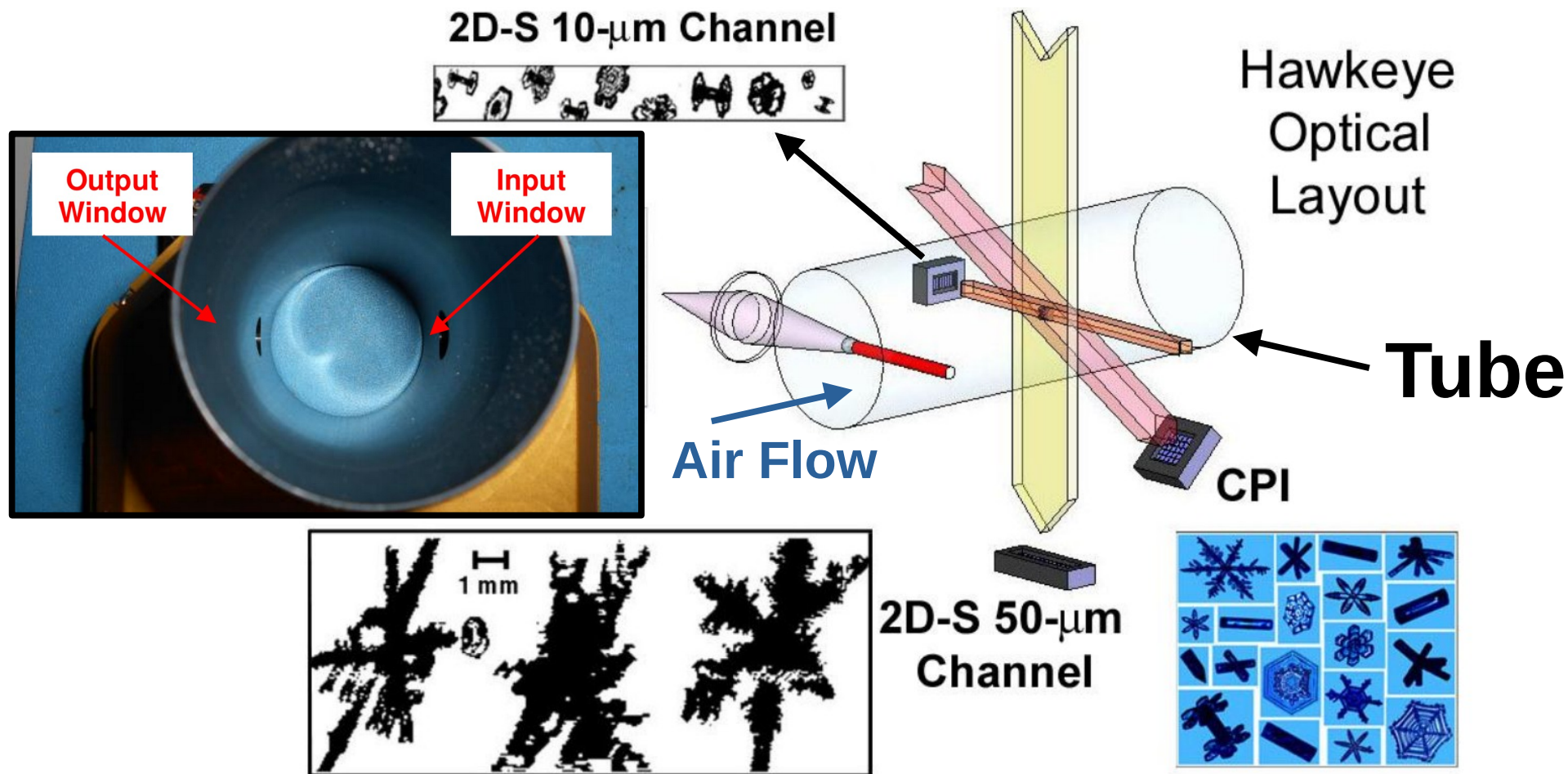
LWC Comparison (022/02/19 – 10 s Average)



LWC Comparison (022/02/19 – 1 s Average)



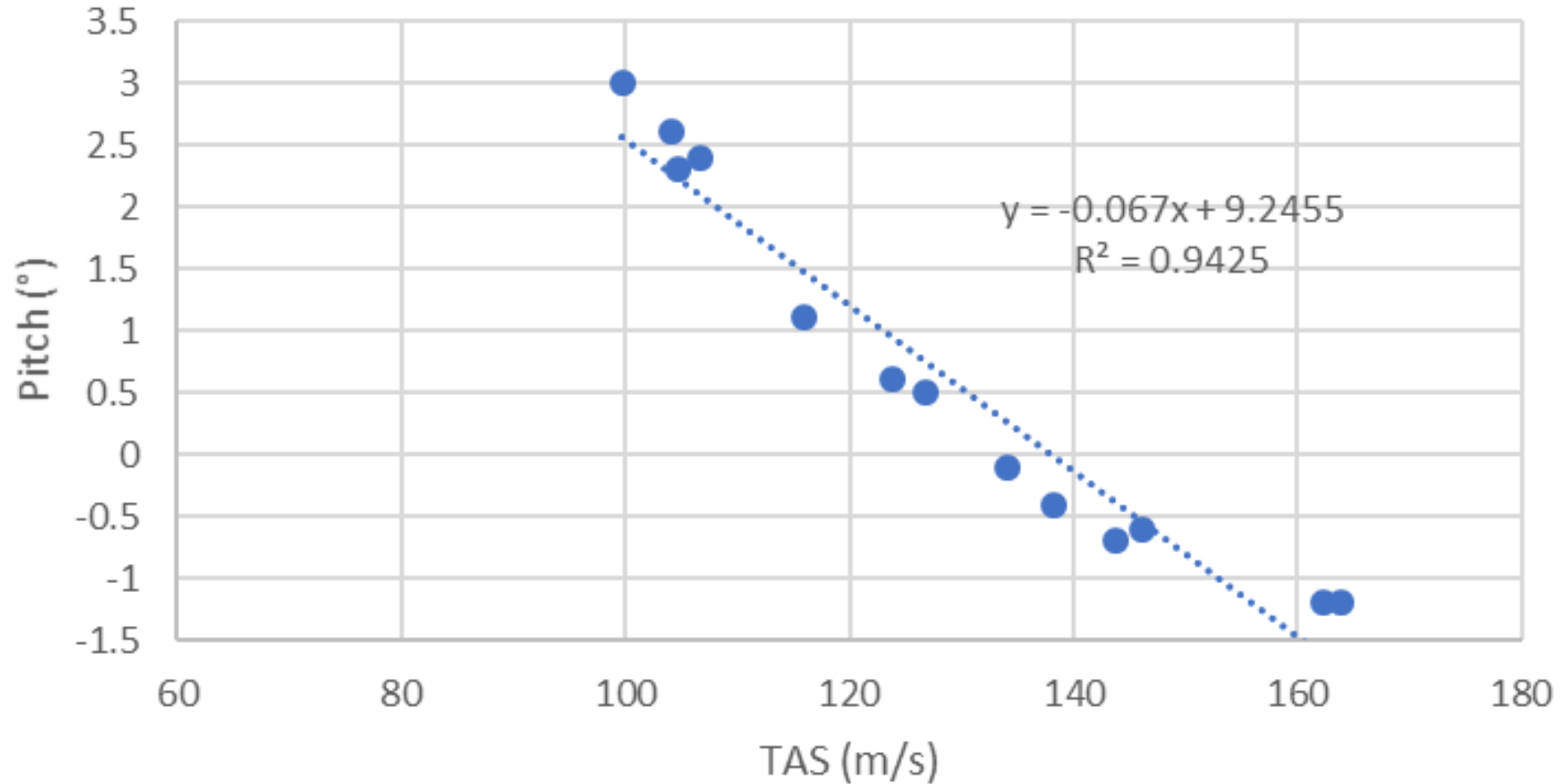
Hawkeye Shattering: Are Spectra Recoverable?



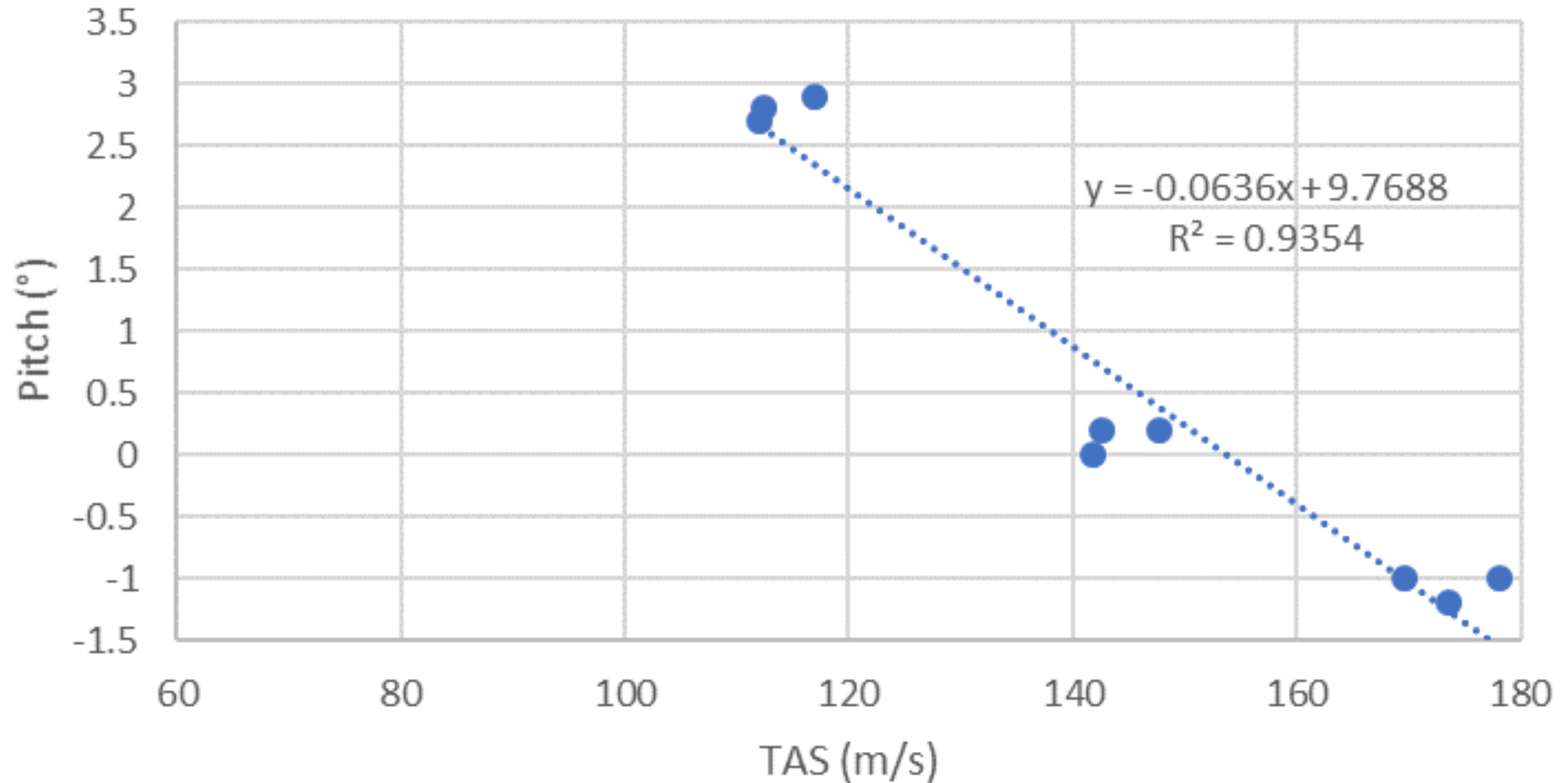
Speed Runs Segments (2022/02/19)

Start UTC	End UTC	Speed (TAS)	Pitch	Temperature	King LWC	WCM LWC	WCM TWC
15:04:00 (54240)	15:05:30 (54330)	99.7±0.8 m/s	3.0±0.2 °	-16.1±0.1 °C	0.04±0.02 g/m ³	0.03±0.02 g/m ³	0.05±0.05 g/m ³
15:06:00 (54360)	15:08:10 (54490)	116.0±0.6 m/s	1.1±0.1 °	-16.8±0.3 °C	0.04±0.03 g/m ³	0.03±0.026 g/m ³	0.05±0.033 g/m ³
15:08:55 (54535)	15:10:40 (54640)	138.3±1.4 m/s	-0.4±0.1 °	-16.9±0.1 °C	0.03±0.01 g/m ³	0.02±0.014 g/m ³	0.03±0.022 g/m ³
16:16:50 (58610)	16:18:50 (58730)	143.8±1.1 m/s	-0.7±0.2 °	-19.7±0.3 °C	0.02±0.03 g/m ³	0.03±0.020 g/m ³	0.05±0.047 g/m ³
16:19:40 (58780)	16:21:40 (58900)	123.9±0.7 m/s	0.6±0.2 °	-18.9±0.1 °C	0.03±0.01 g/m ³	0.04±0.019 g/m ³	0.06±0.036 g/m ³
16:22:20 (58940)	16:25:10 (59110)	104.1±0.8 m/s	2.6±0.3 °	-18.7±0.2 °C	0.04±0.02 g/m ³	0.03±0.020 g/m ³	0.04±0.039 g/m ³
17:04:15 (61455)	17:06:25 (61585)	106.7±0.8 m/s	2.4±0.4 °	-15.6±0.2 °C	0.04±0.02 g/m ³	0.03±0.017 g/m ³	0.05±0.037 g/m ³
17:07:00 (61620)	17:09:10 (61750)	126.7±0.5 m/s	0.5±0.1 °	-15.5±0.1 °C	0.03±0.01 g/m ³	0.04±0.023 g/m ³	0.05±0.038 g/m ³
17:10:00 (61800)	17:12:15 (61935)	146.1±0.7 m/s	-0.6±0.1 °	-15.3±0.2 °C	0.03±0.01 g/m ³	0.02±0.014 g/m ³	0.04±0.029 g/m ³
17:13:05 (61985)	17:15:10 (62110)	163.9±1.0 m/s	-1.2±0.1 °	-15.3±0.4 °C	0.03±0.01 g/m ³	0.03±0.014 g/m ³	0.06±0.035 g/m ³
17:40:15 (63615)	17:42:10 (63730)	104.6±0.7 m/s	2.3±0.2 °	-17.7±0.2 °C	0.04±0.01 g/m ³	0.04±0.022 g/m ³	0.06±0.048 g/m ³
17:43:00 (63780)	17:45:15 (63915)	134.0±0.8 m/s	-0.1±0.2 °	-17.6±0.3 °C	0.04±0.02 g/m ³	0.03±0.018 g/m ³	0.06±0.043 g/m ³
17:46:20 (63980)	17:48:30 (64110)	162.3±2.0 m/s	-1.2±0.3 °	-16.8±0.5 °C	0.03±0.01 g/m ³	0.03±0.017 g/m ³	0.04±0.029 g/m ³

Speed Runs (2022/02/19)



Speed Runs (2022/02/25)



Crystal Classification

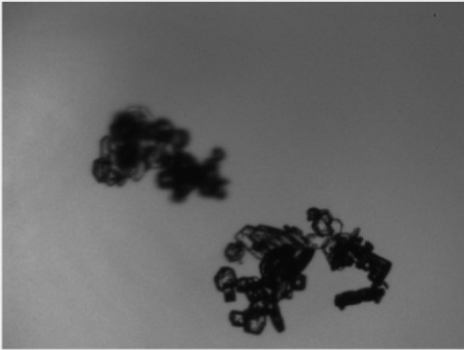
Main Read Me

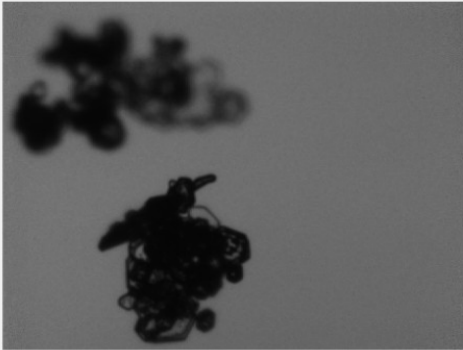
1: Choose Folder for PHIPS Data PHIPS Data Folder

2: Classifier

3: Load Existing Classification **3: Make New Classification**

Save

C1


C2


Selection

Plate

Skeleton Plate

Sectored Plate

Side Plane

Column

Hollow Column

Sheath

Capped Column

Needle

Dendrite

Frozen Droplet

Graupel

Bullet Rosette

Droplet

Irregular

Hold: Allow multiple Habits

Not Classified

Empty

Irregular + Potential Shattering

Previous

Next

Flag as "interesting"

Image /

Classified as:

Aggregate

Chain Agg.

Rimed

Pristine

Sublimating

Multiple

Cut off

Elongated

InterestingFlag

Shattering

☐ Skip Not Classified

☐ Skip Irregular

☐ Skip Shattering

☐ Skip Side Plane

☐ Skip Droplet

☐ Skip Aggregate

☐ Skip Multiple

☐ Skip B. Roset.

☐ Skip Ice

☐ Skip Rimed

☐ Skip Cut off

☐ Skip Non-pristine

☐ Skip Empty

☐ Skip Pristine

☐ Skip Elongated

Low

Medium

High

Attributes

Aggregate?

Yes

No

Chain Aggregat...

Yes

No

Rimed?

Yes

No

Pristine?

Yes

No

Sublimating?

Yes

No

Confidence Level

Low

Medium

High

Housekeeping Attributes

Multiple particles

Yes

No

Cut off?

Yes

No

Elongated?

Yes

No

Shattering?

Yes

No