PRINCETON UNIVERSITY

———Dot-roach analysis———
convergenceId=v104214 dotRoachId0=v104217 darkRoachId0=v104245 mod4Id0=v104255

Arnaud Le Fur

auto
2024-02-15

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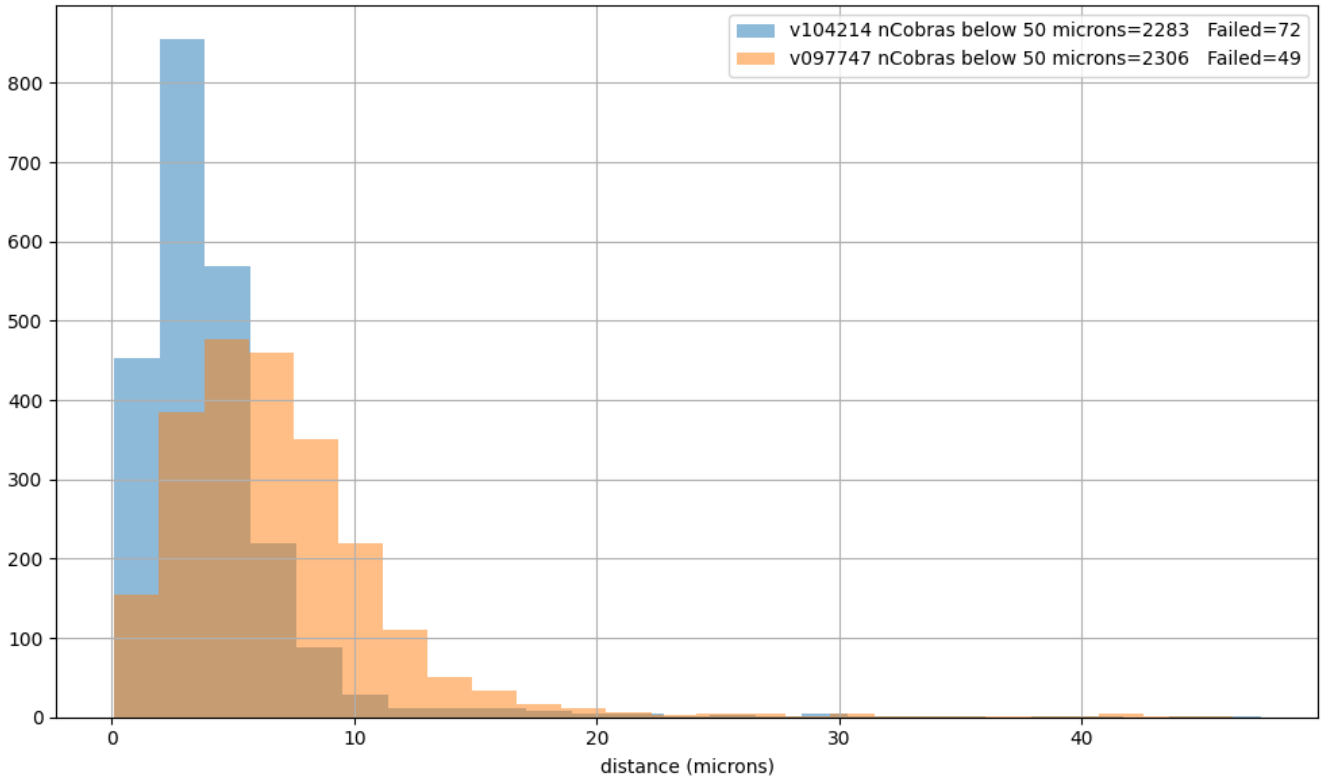
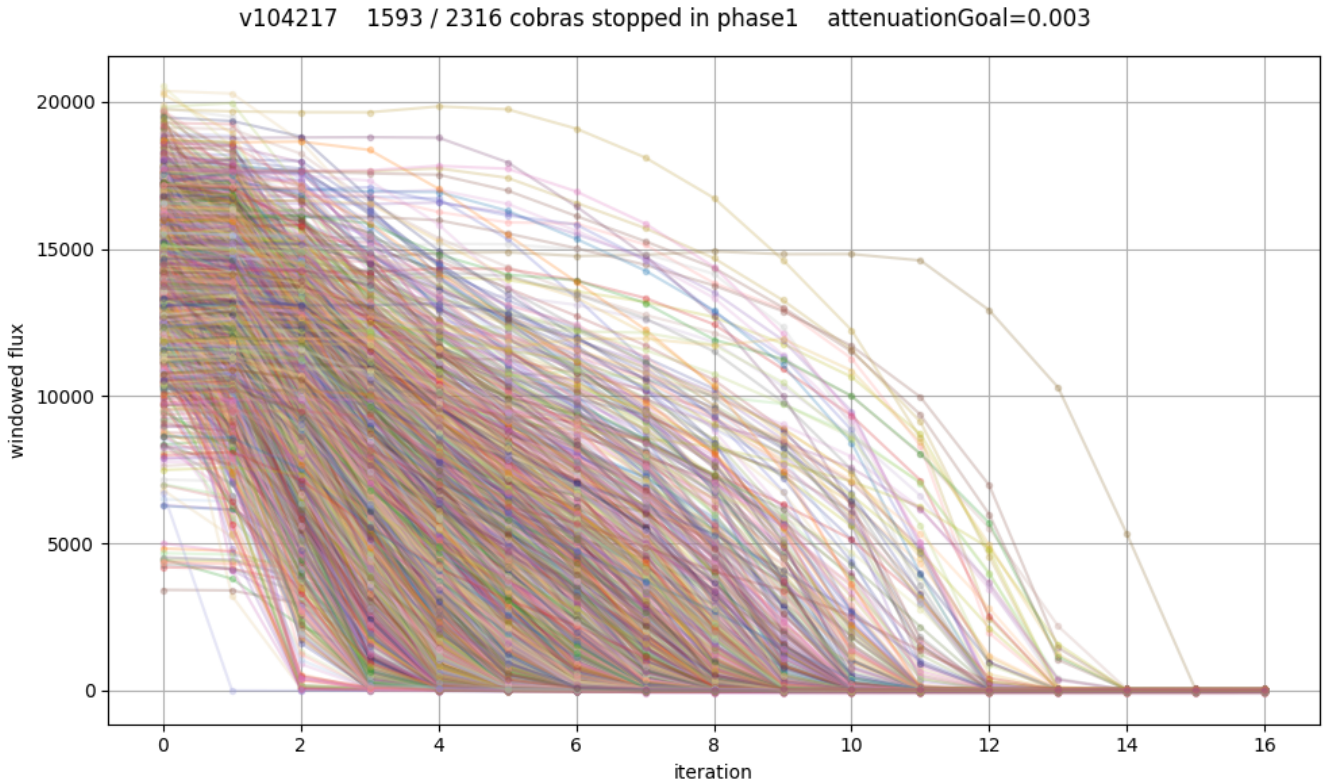
Near-dot convergence results



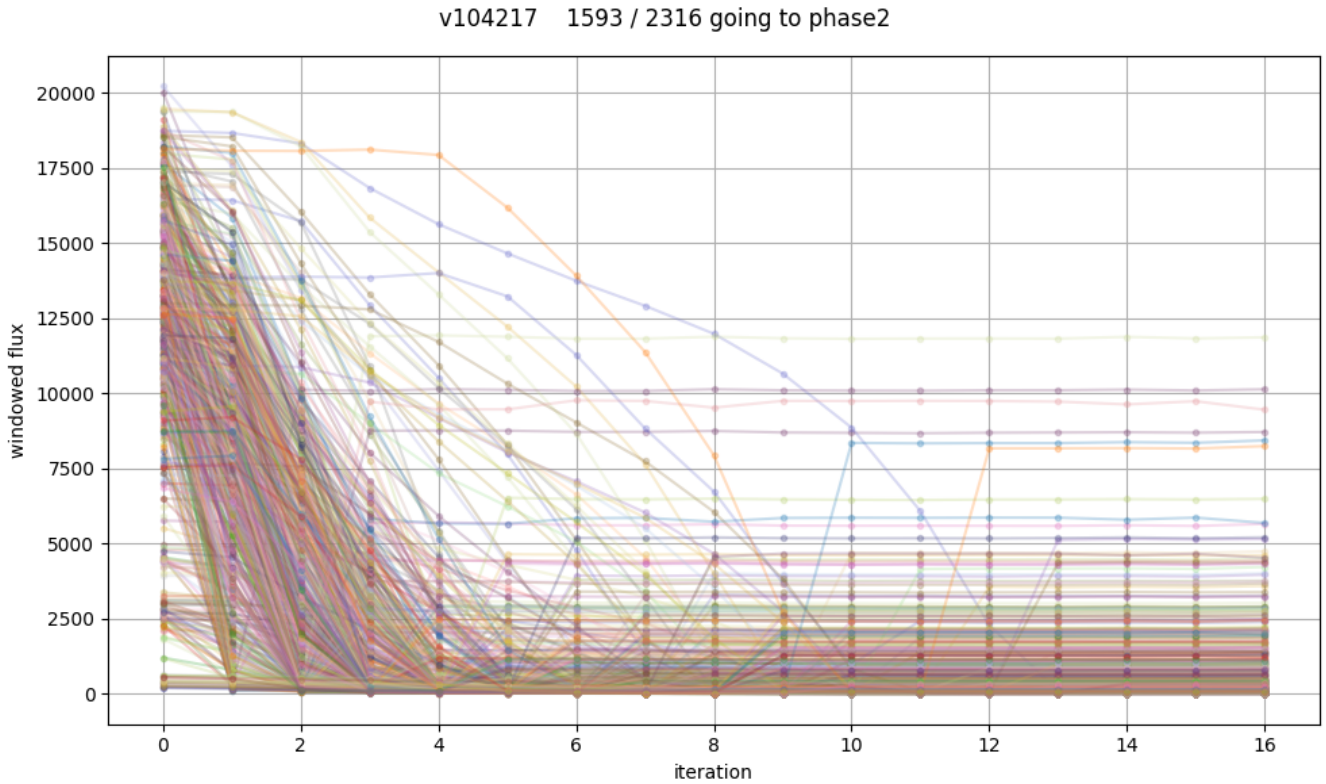
- There are more cobras below 10 microns
- There are more cobras with larger residuals

Cobras stopped in phase 1



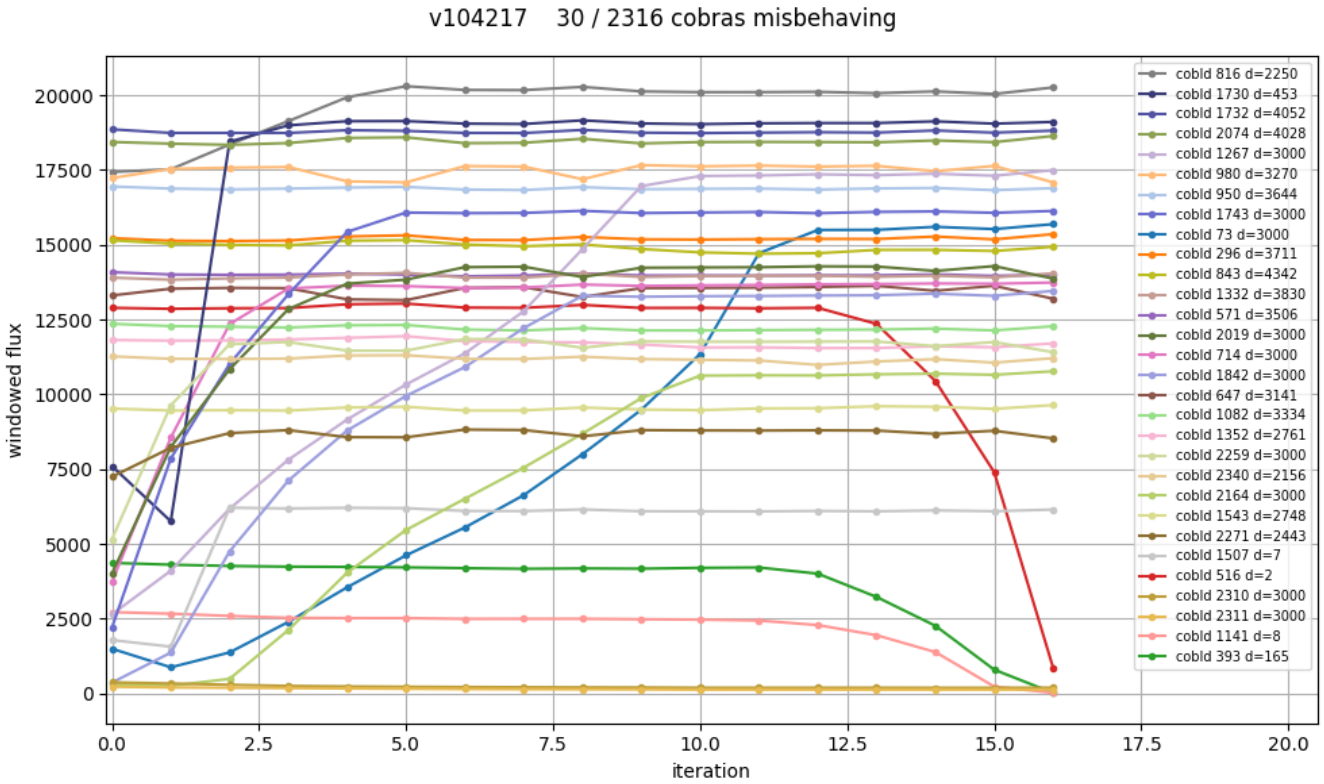
That's the cobras that reached a sufficient attenuation going through the dot moving phi in one direction.

Cobras going to phase 2



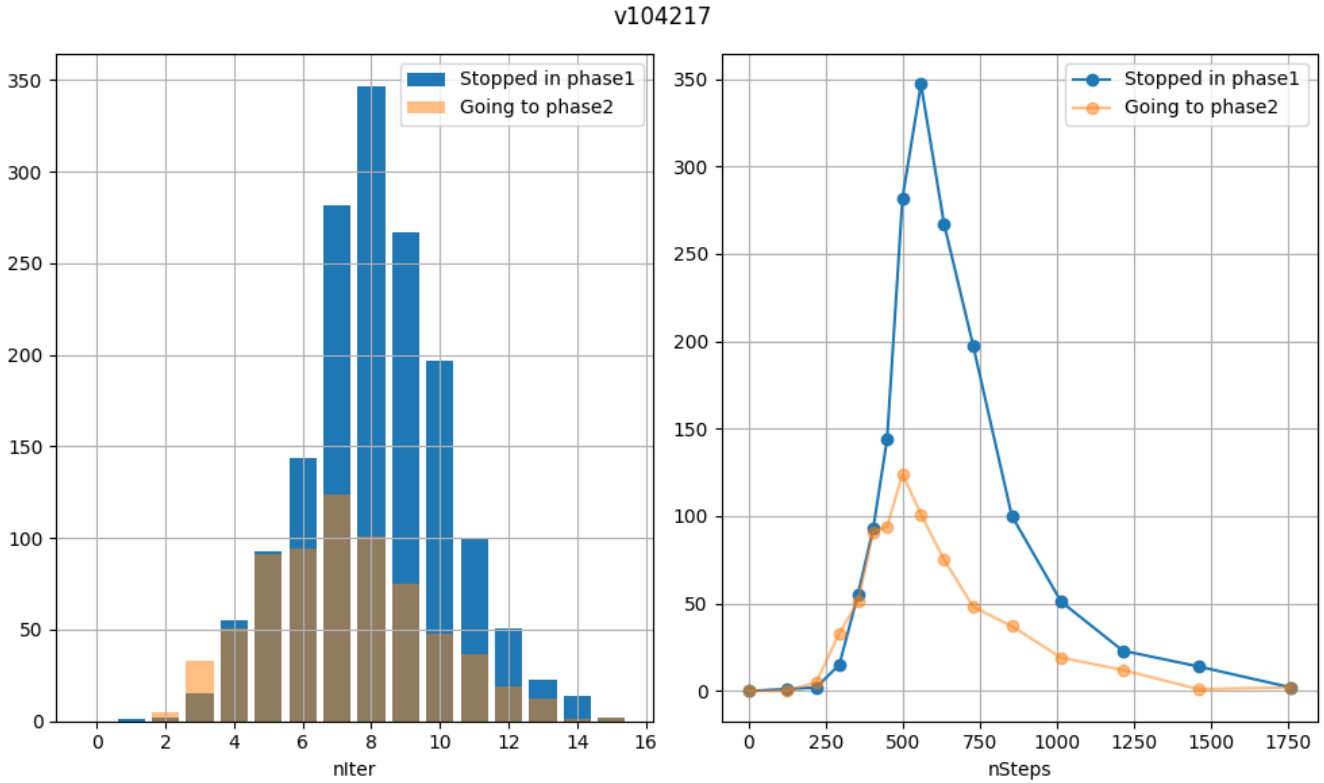
That's the cobras that have overshoot during phase 1, phi will go in the opposite direction in the next phase.

Cobras that did not behave as expected



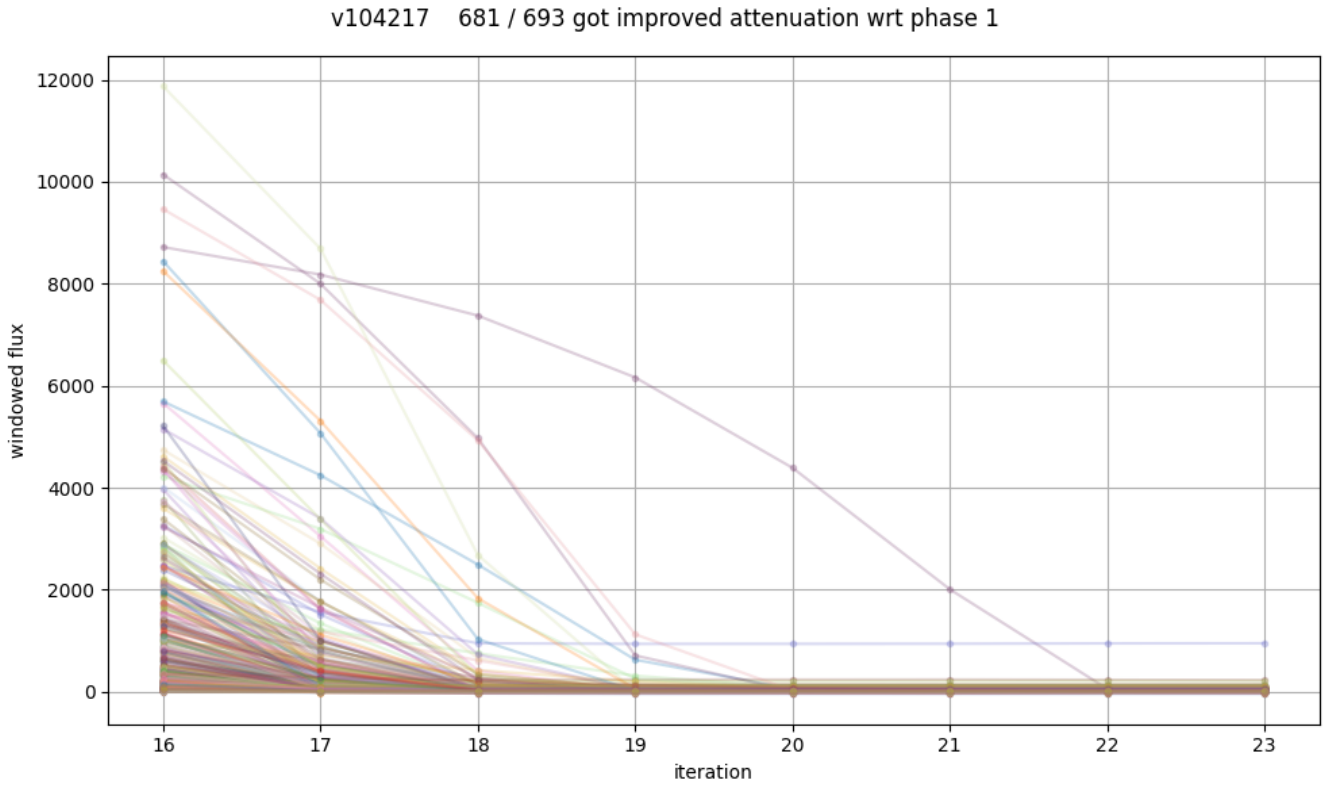
- 6 cobras started in the shadow of the dot.
- 13 Some cobras did not cross the dot.
- 11 cobras cross the dot partly.
- 0 cobras were going in but late.

How many iteration required to enter the dot

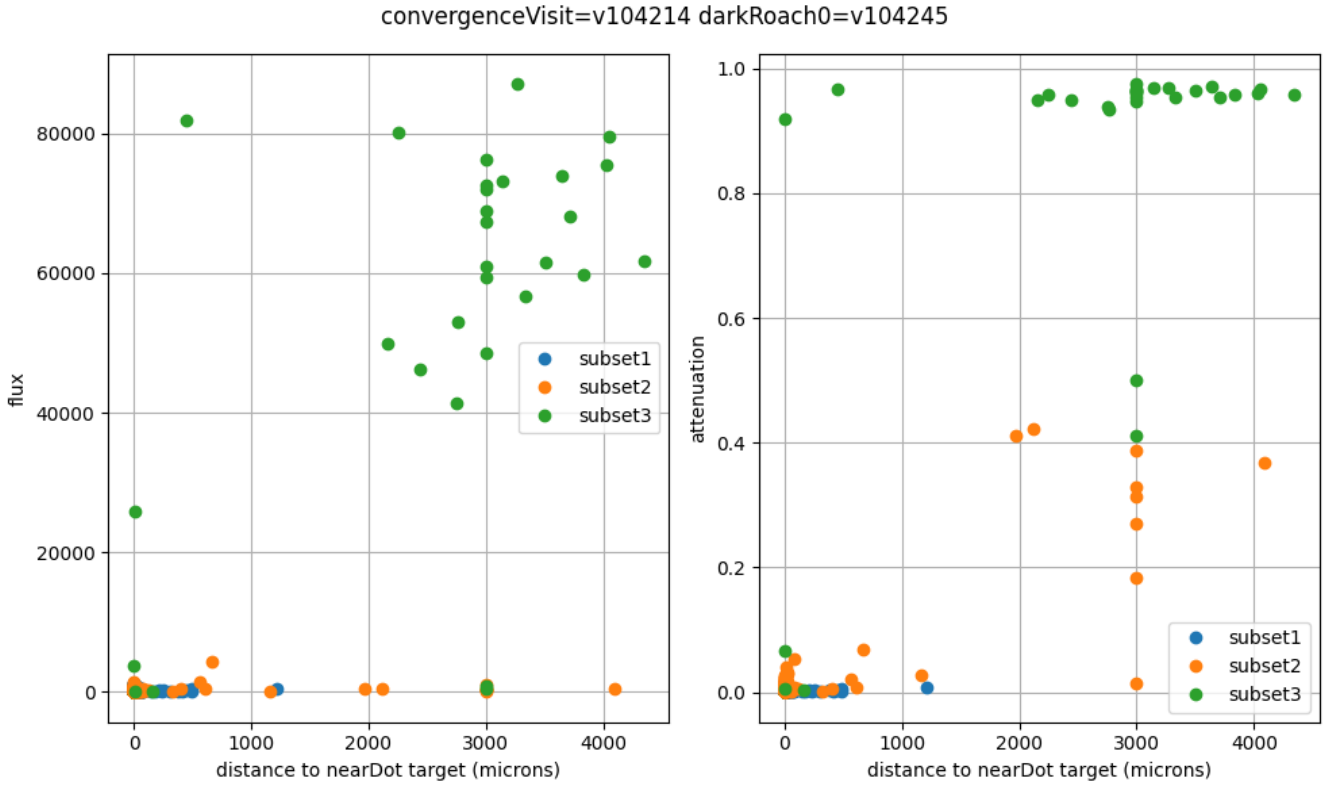


Right figure show you in terms of phi steps.

Cobras in phase 2

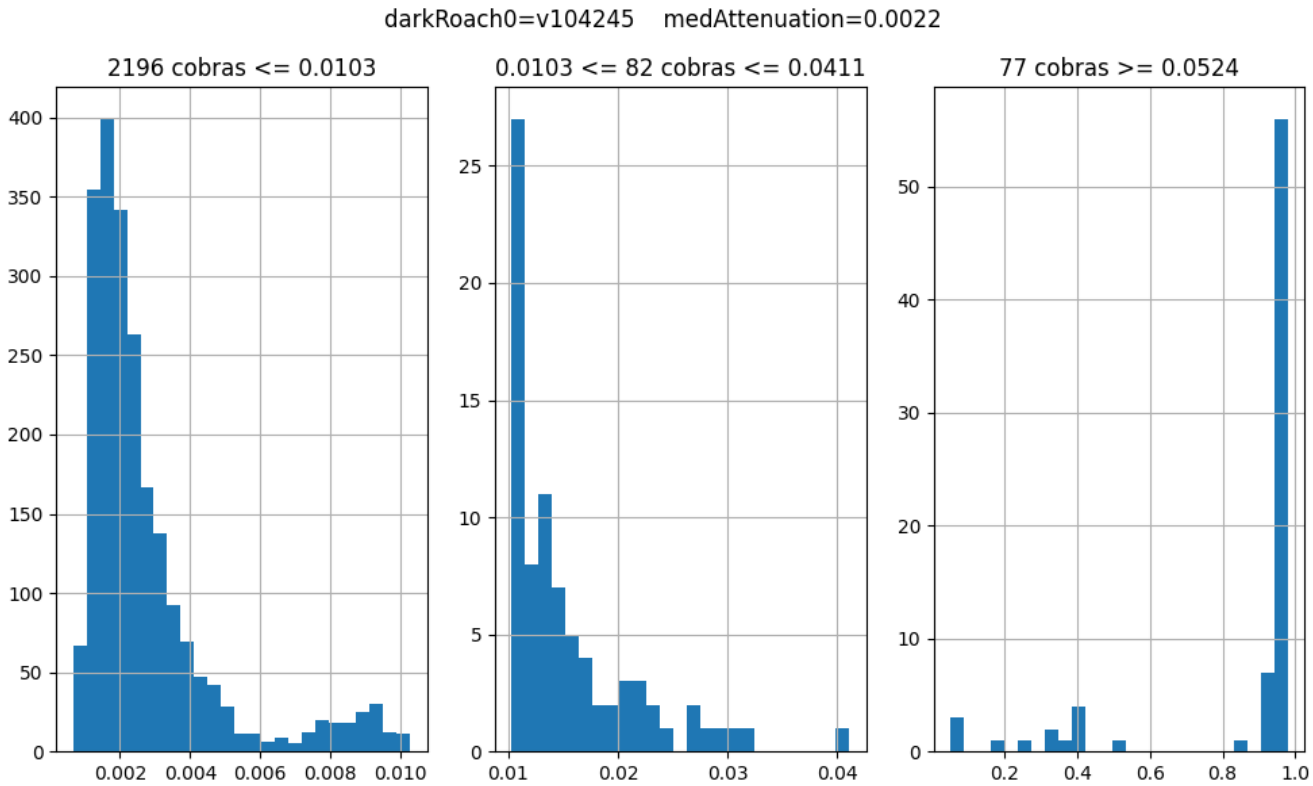


Flux in dark-roach vs distance in near-dot convergence



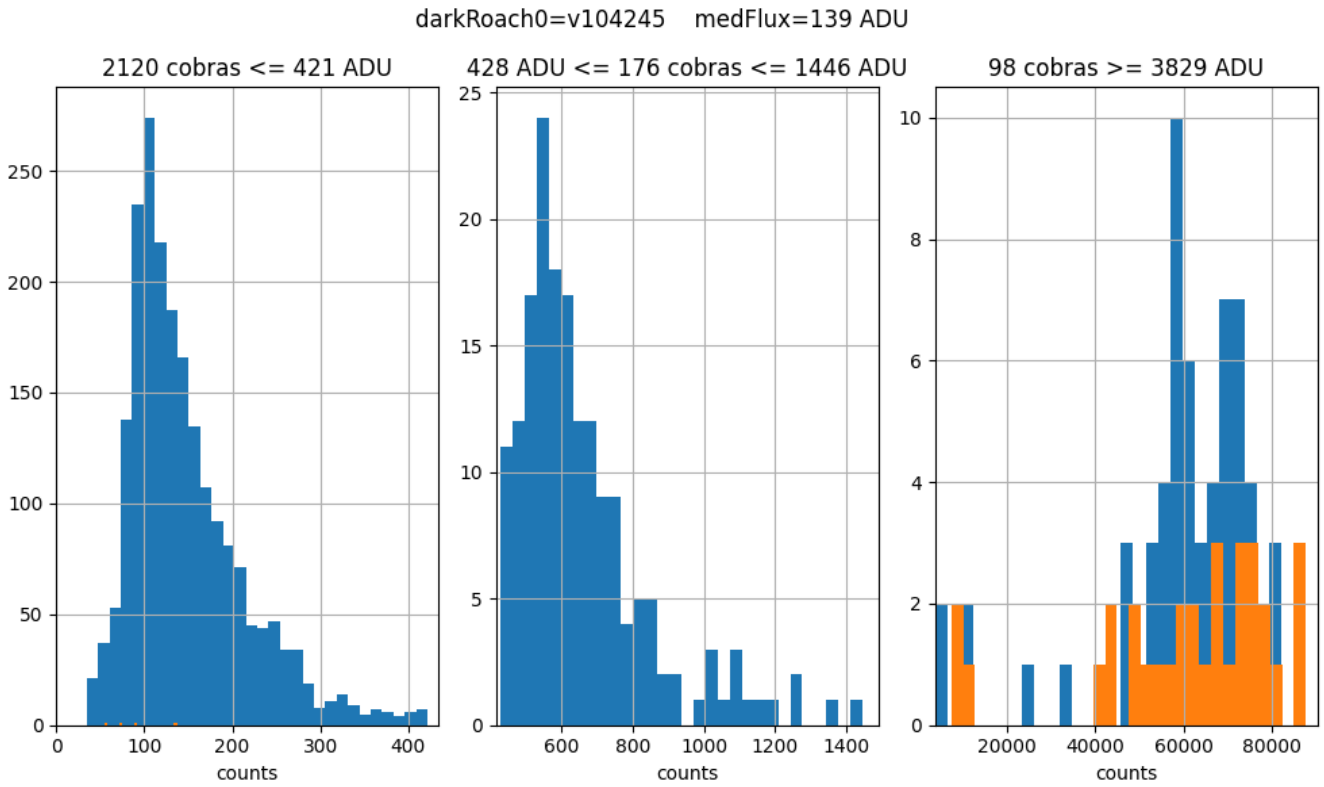
- We can observe that the tolerance to distance is quite high, problems start to appear when distance $>$0.7mm.
- We can also see there are a few converged cobras that end up having a high flux.

Final Attenuation for working cobras



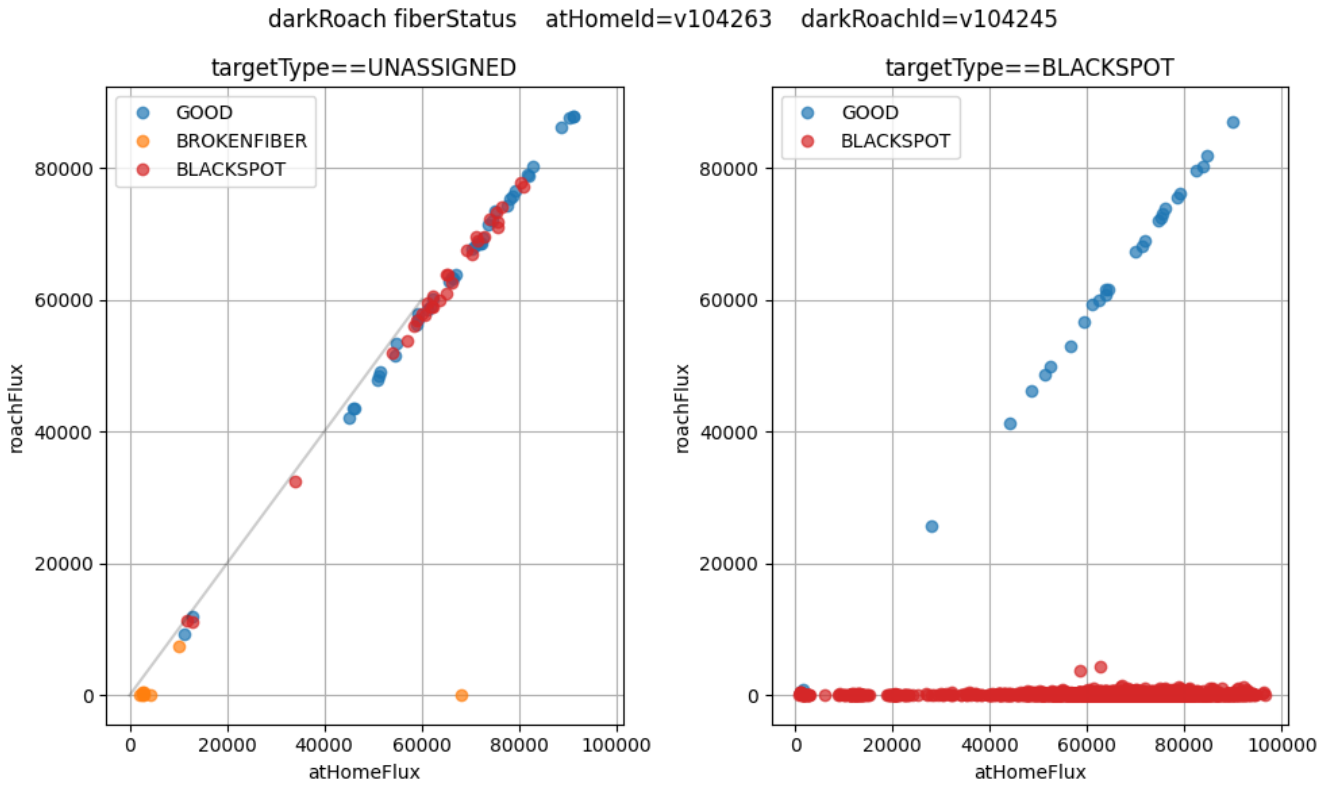
- Intrisic problem due to the extraction (bright neighbours, scattered light) can bias the results.

Final flux for all cobras



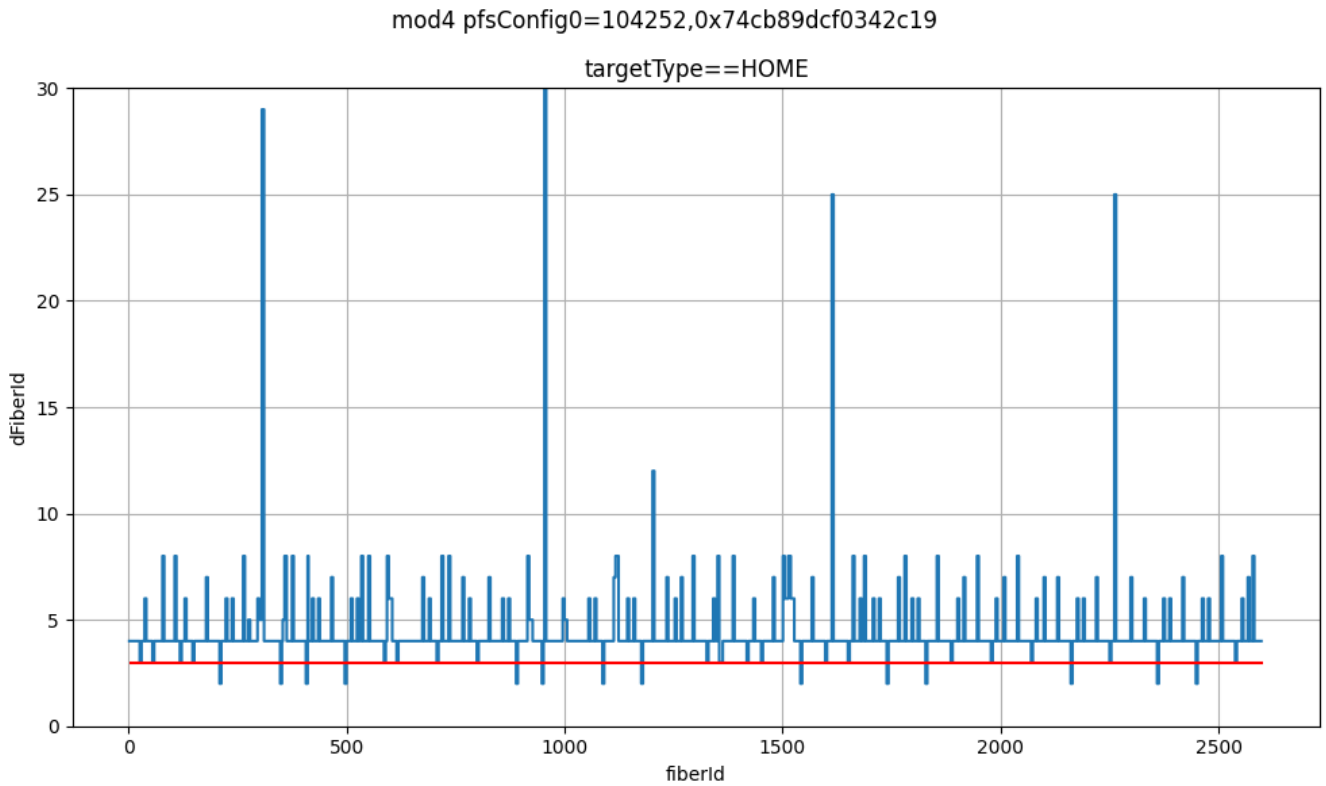
- Same conclusion as previous slide.
- intrisic problem due to the extraction (bright neighbours, scattered light) can increase the apparent flux.

DarkRoach PfsConfig fiberStatus wrt targetType



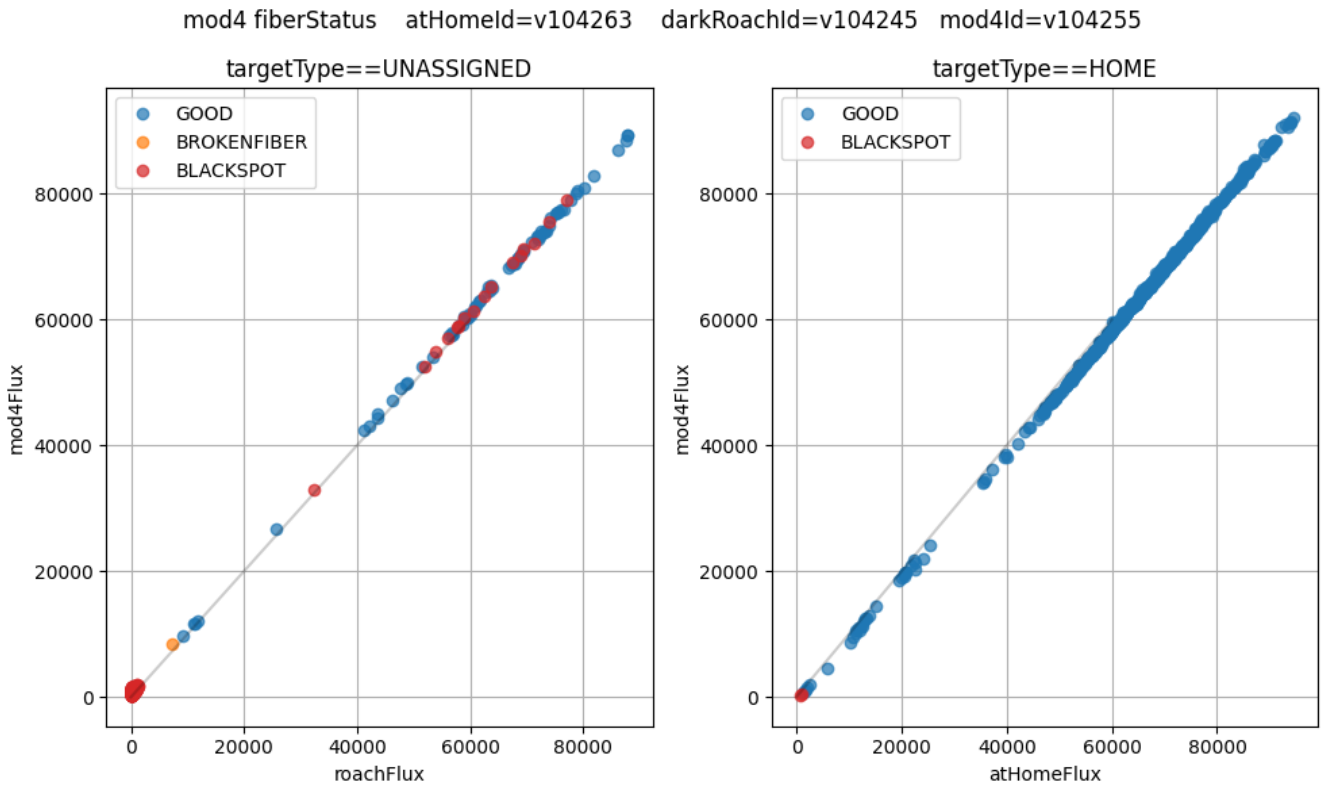
- TargetType is set correctly.
- FiberStatus looks very wrong, many fibers with high sps flux are labelled BLACKSPOT.

Mod4 PfsDesign



- This show you dFiberId(fiberId[i+1] - fiberId[i]) for the fibers that are revealed.
- In the context of MOD4, it should be at least 4.
- The PfsDesign is incorrect ! 33 do not respect that rule.

Mod4 PfsConfig fiberStatus wrt targetType

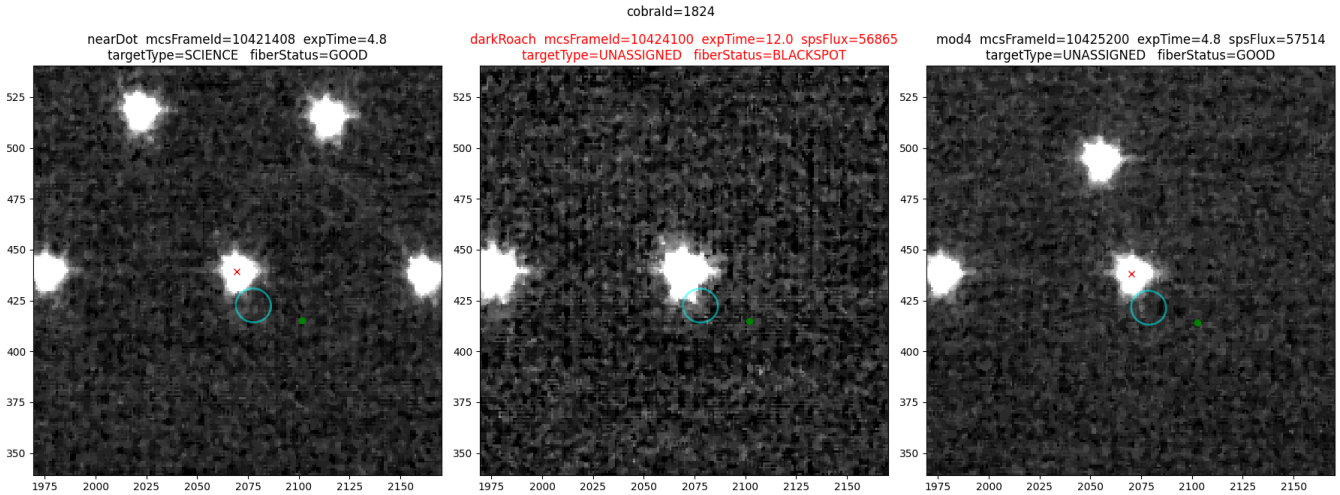


- TargetType is set correctly, 17 UNASSIGNED fibers was moved from dot.
- FiberStatus looks very wrong, many fibers with high sps flux are labelled BLACKSPOT.

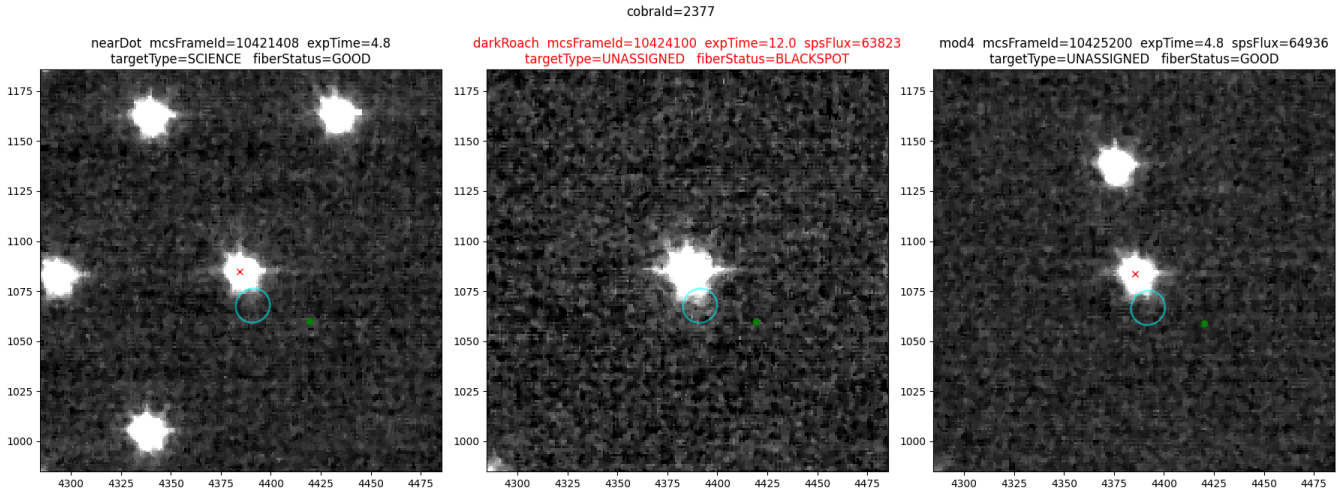
Conclusion

- In the context of dotRoach, convergence was worst than July.
- DotRoach worked OK
- DarkRoach pfsConfig.targetType is correct, BLACKSPOT cobras are driven behind BLACKSPOT.
- DarkRoach pfsConfig.fiberStatus is wrong, many cobras are not matched by mcs.
- Mod4 PfsDesign is wrong, misindentified cobras are driven back to HOME.
- Mod4 PfsConfig.targetType is correct, fps is driving only HOME cobras to HOME
- Mod4 PfsConfig.fiberStatus is wrong, many cobras are not matched by mcs.

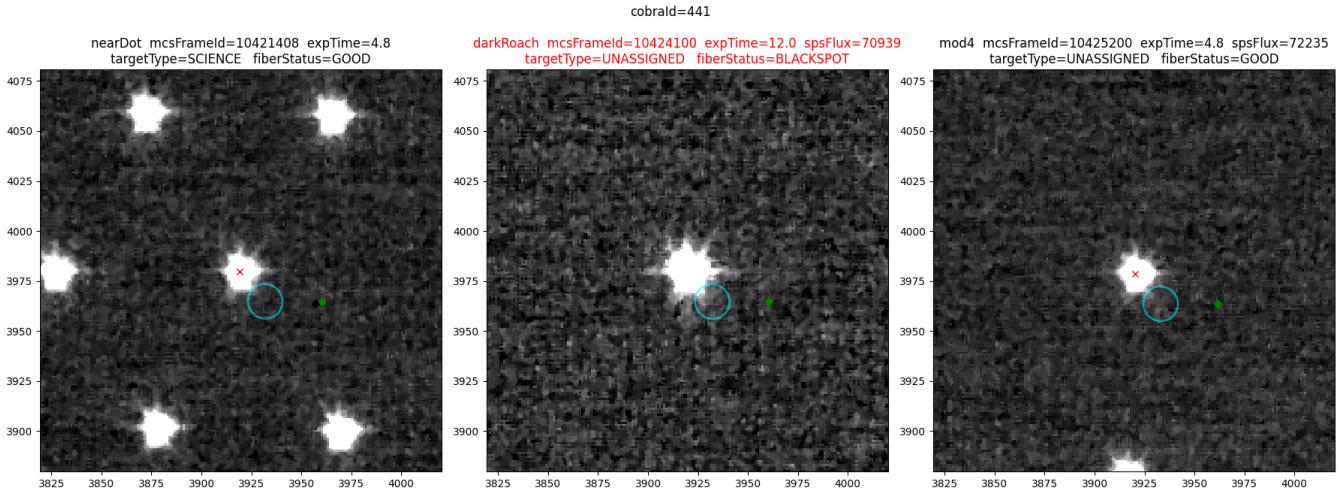
Cobrald 1824



Cobrald 2377



Cobrald 441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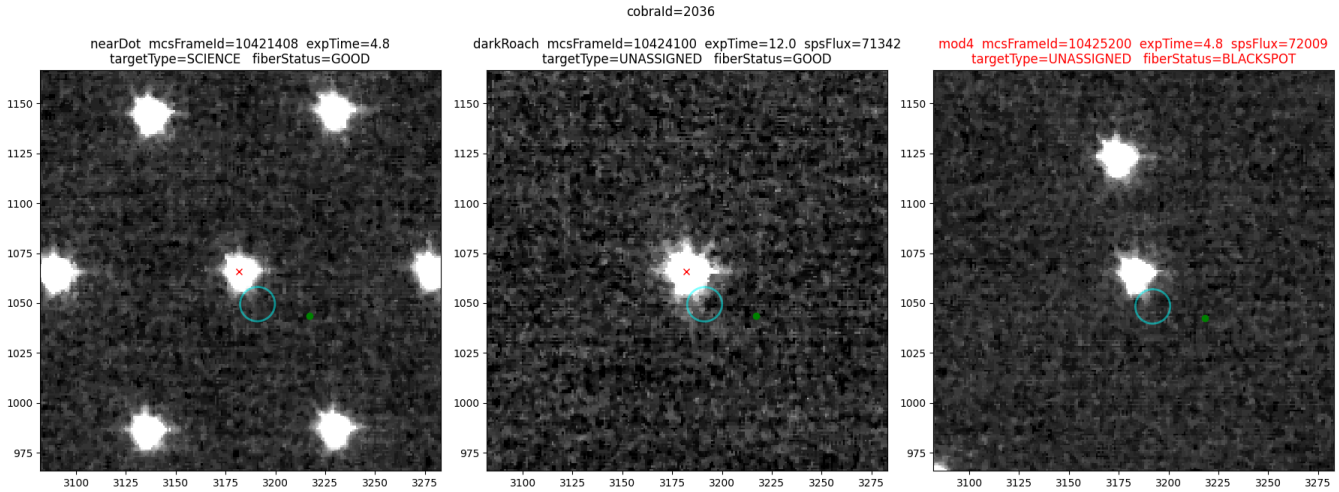
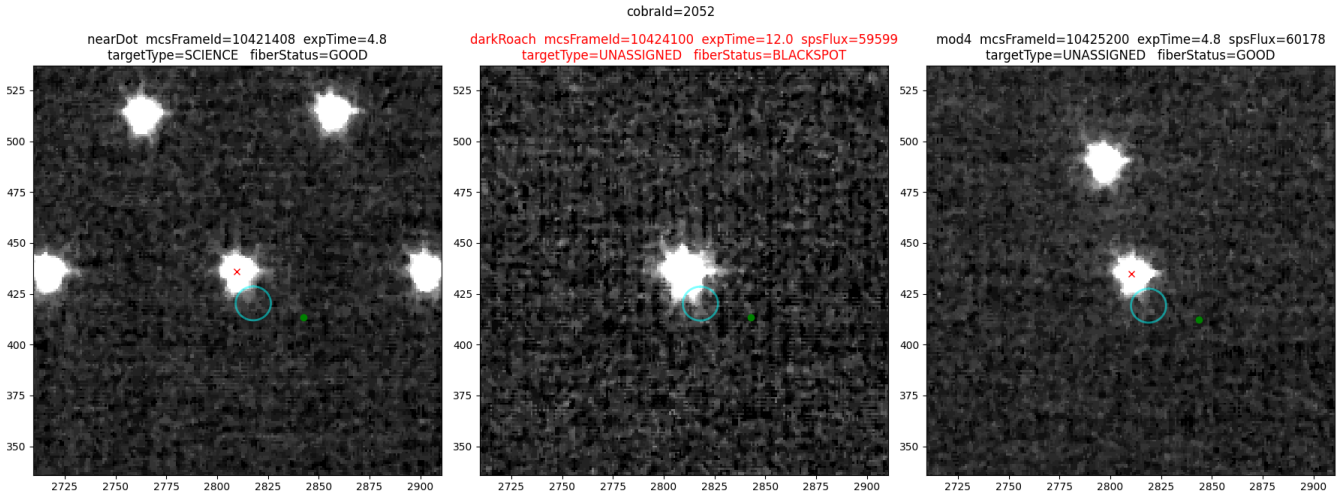
4000

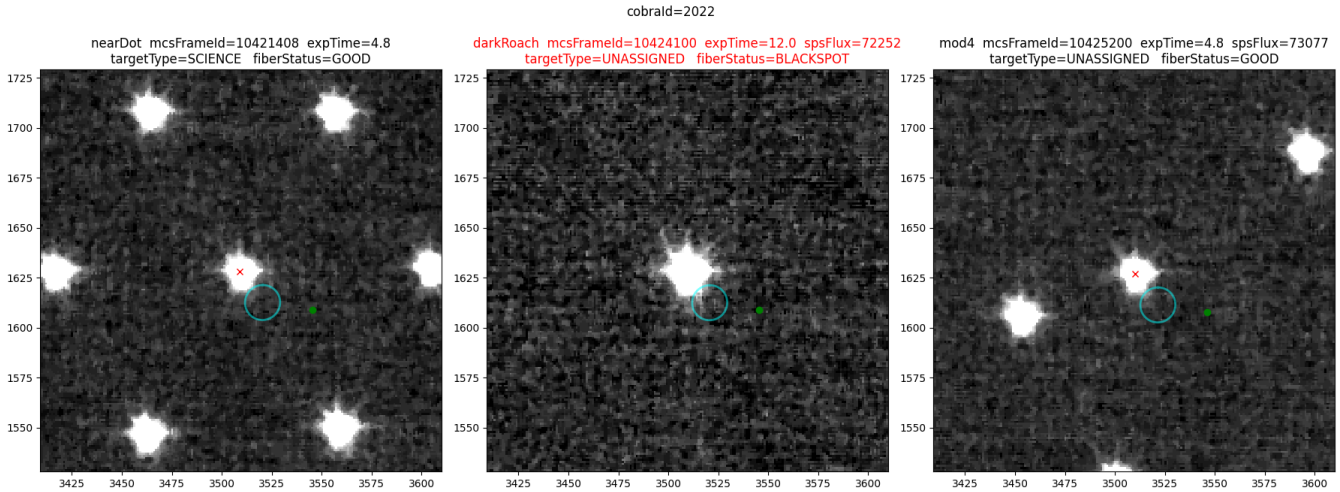
Cobrald 2036



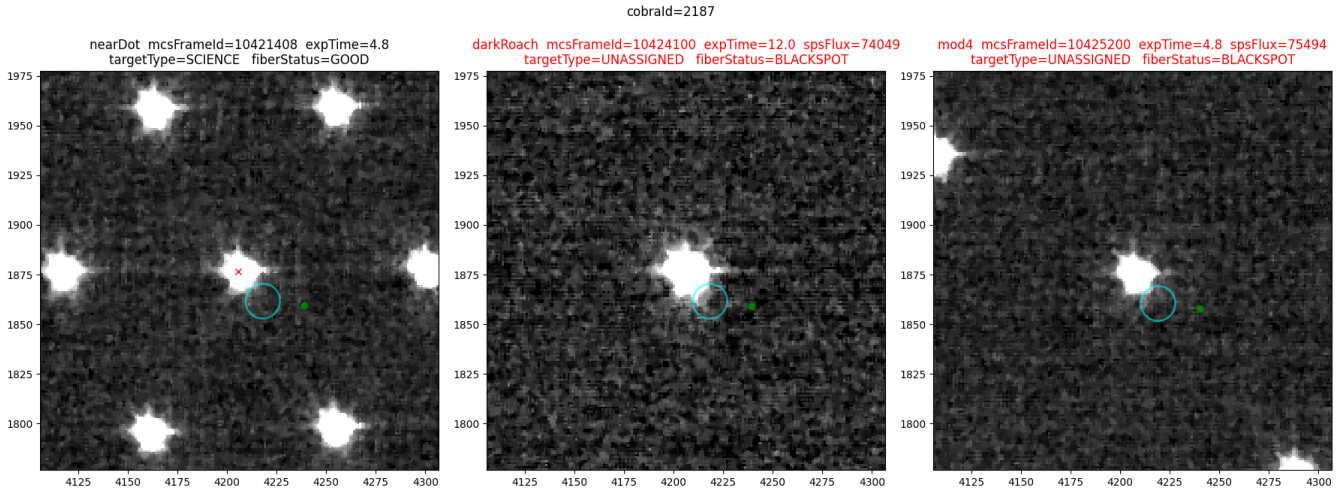
Cobrald 2052



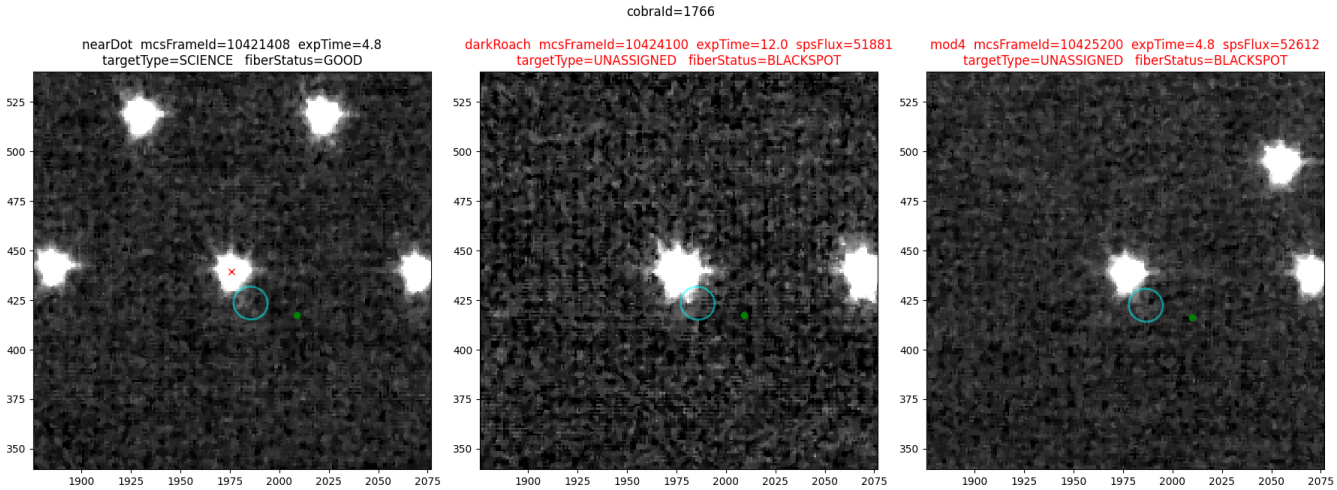
Cobrald 2022



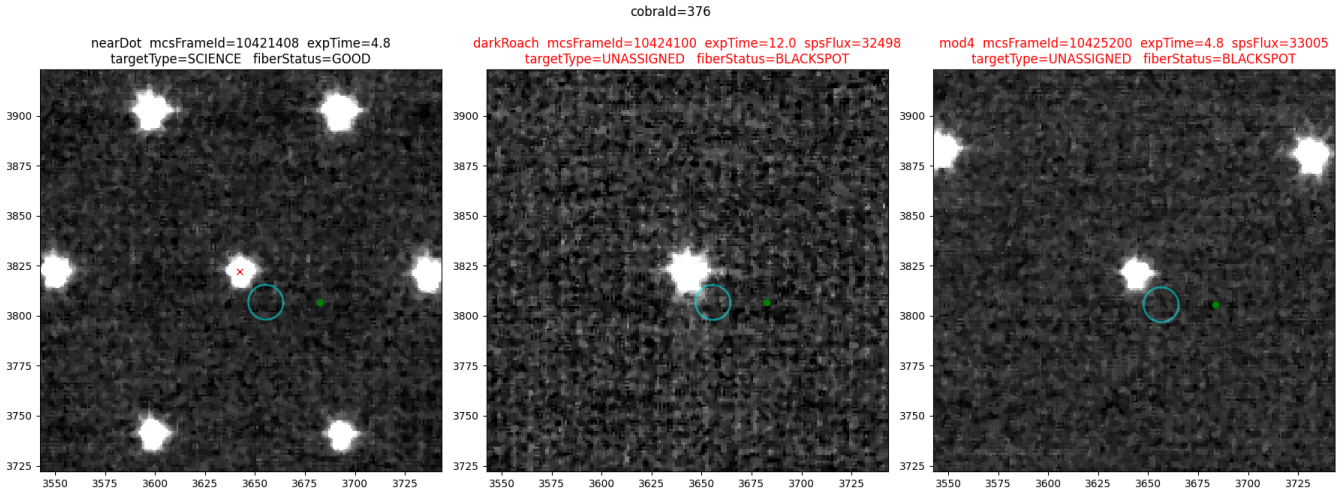
Cobrald 2187



Cobrald 1766



Cobrald 376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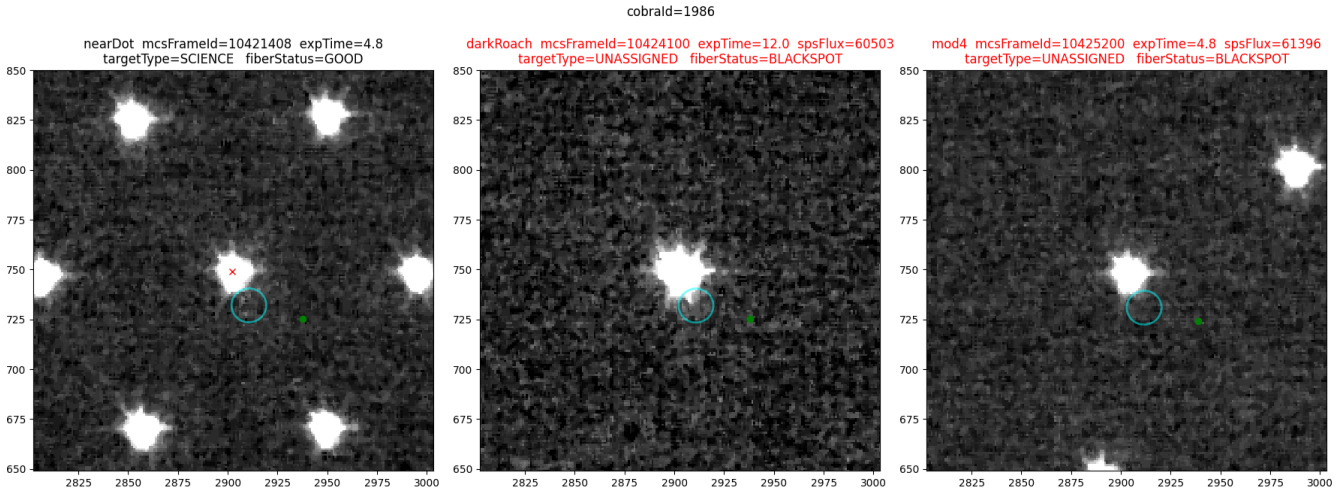
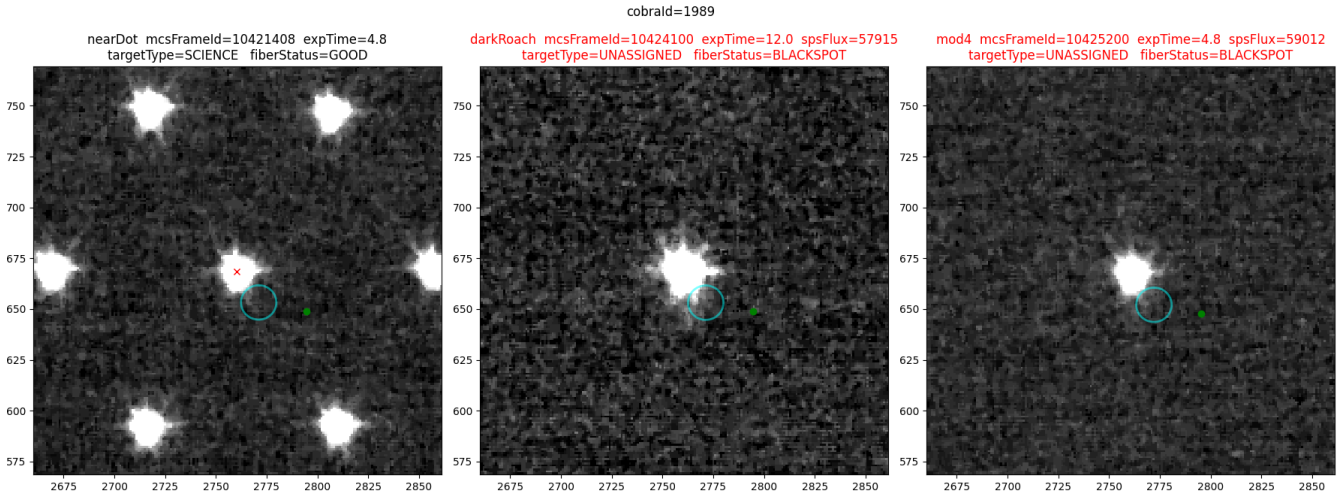
3725

Cobrald 1986



Cobrald 1989



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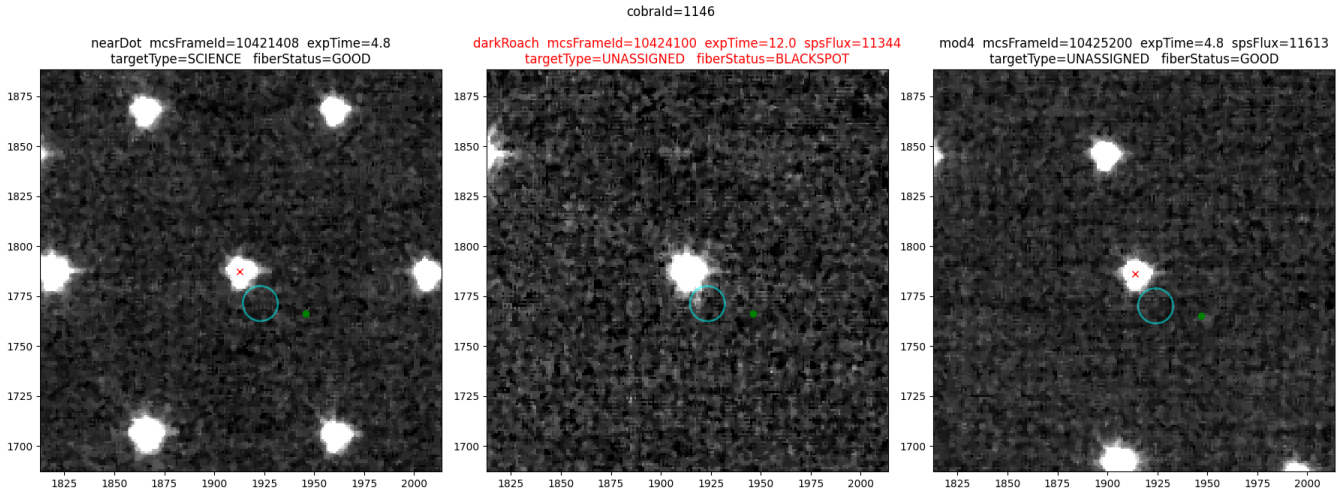
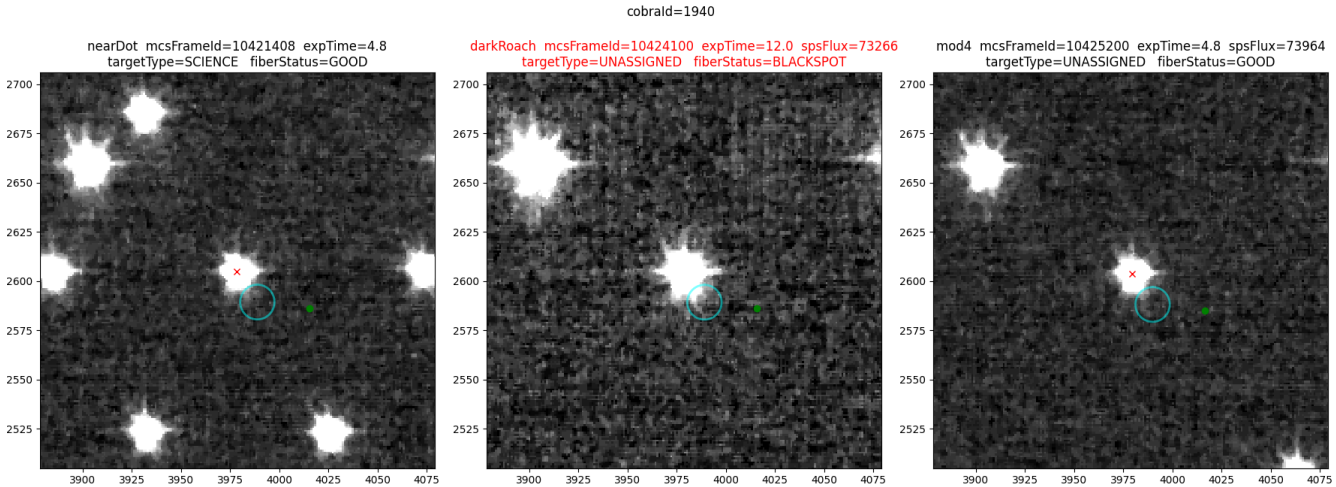
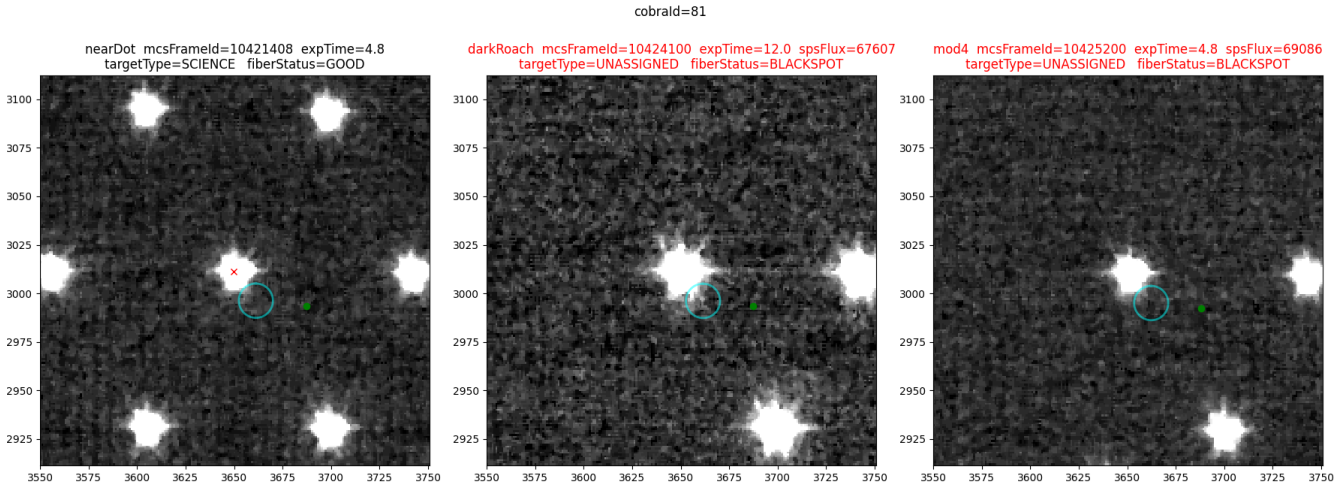


Cobrald 1940



Cobrald 81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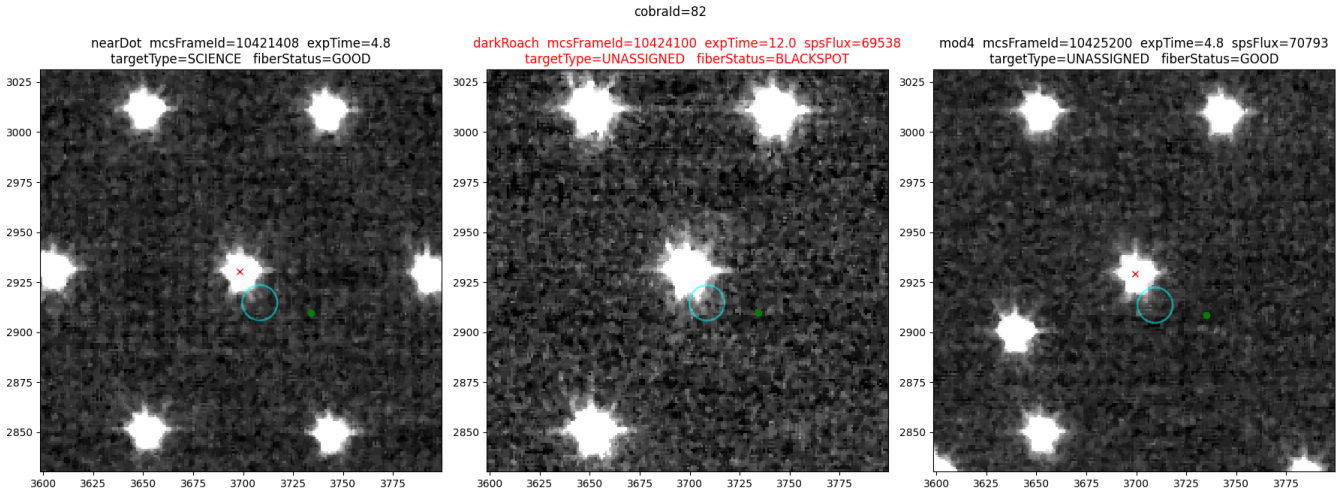
Cobrald 82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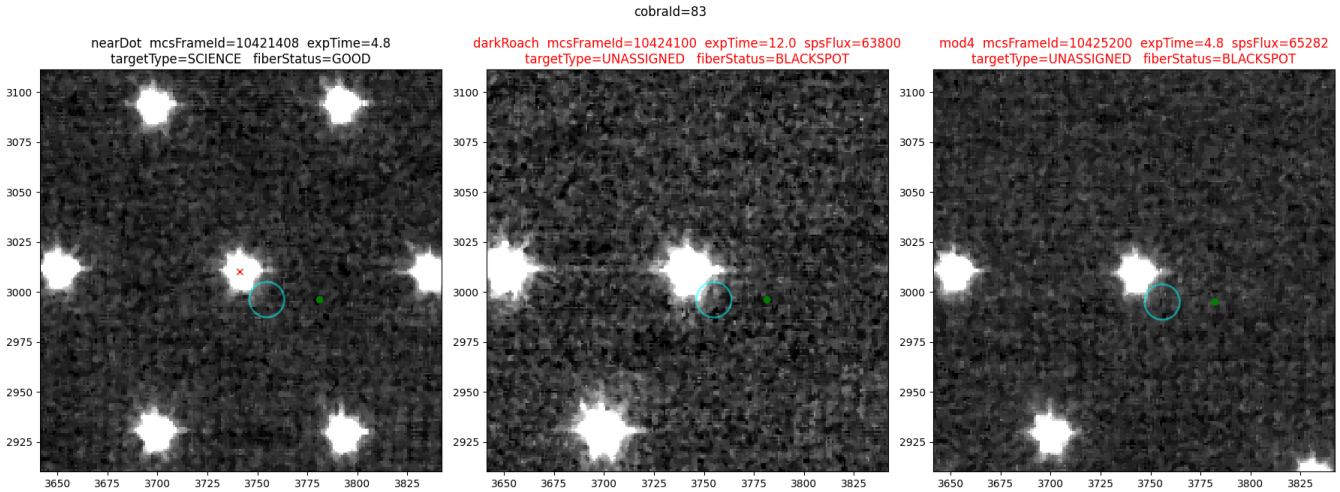
Cobrald 83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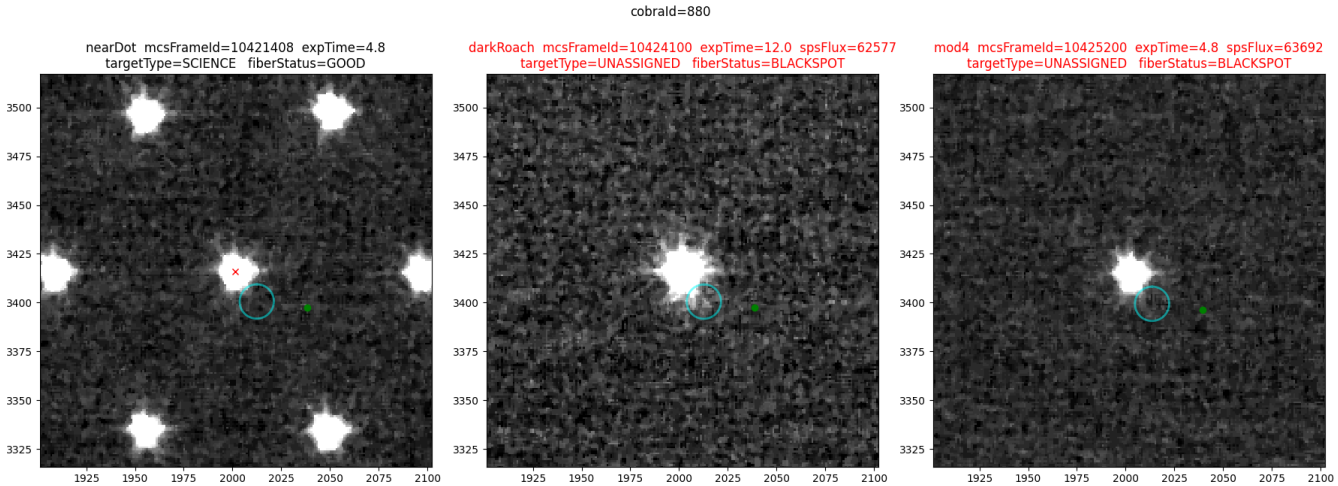
Cobrald 880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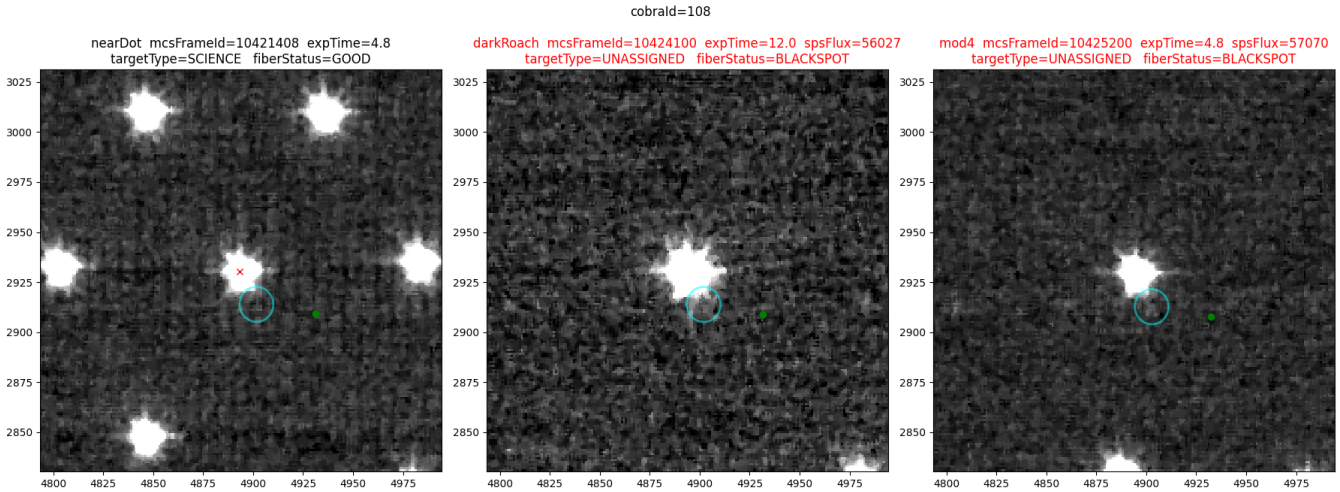
Cobrald 108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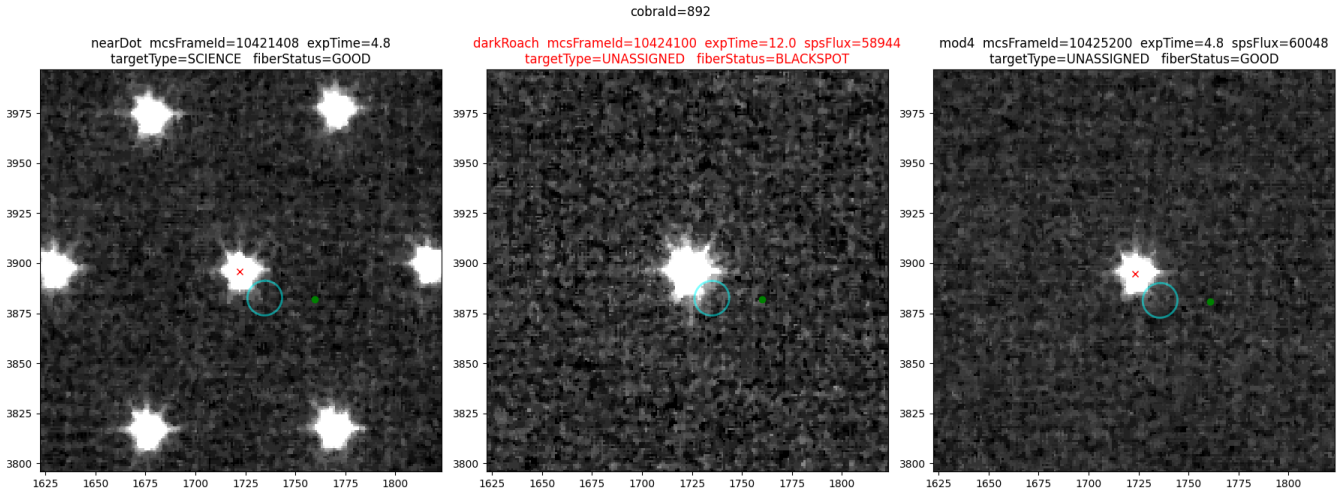
Cobrald 892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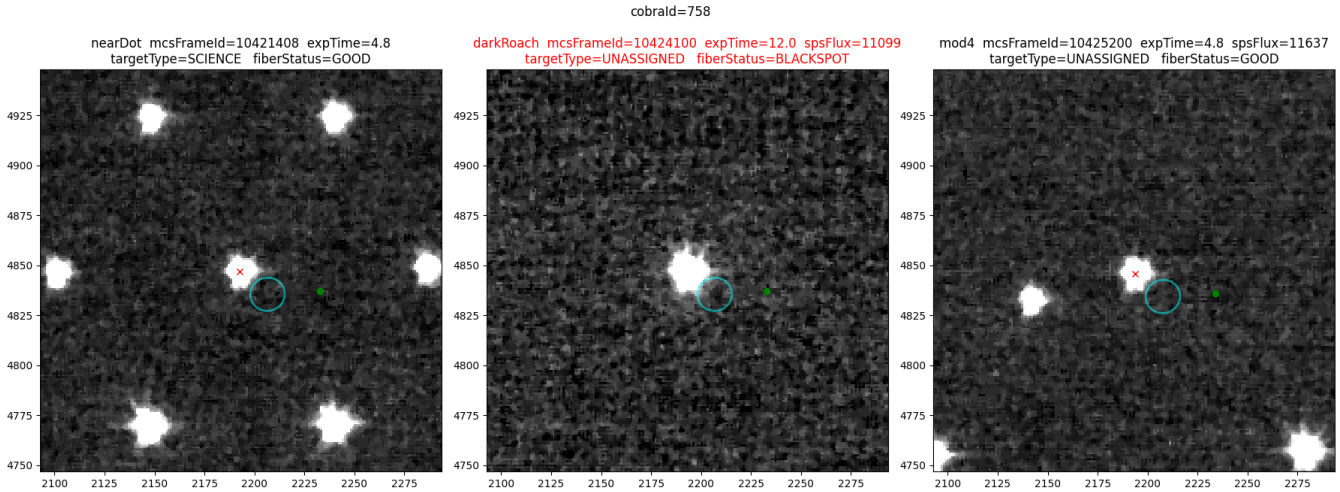
Cobrald 758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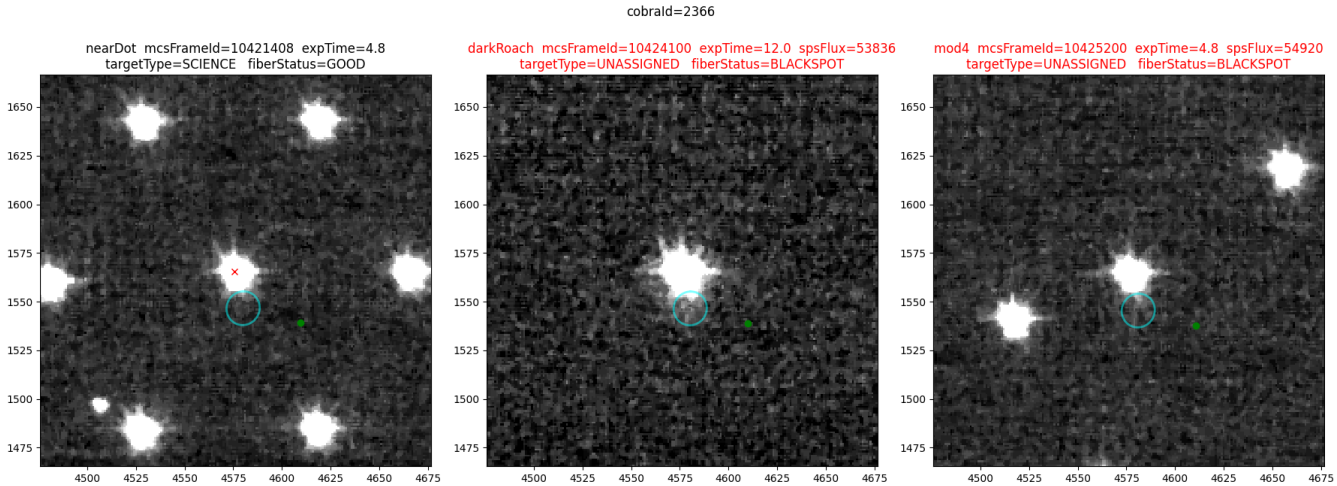
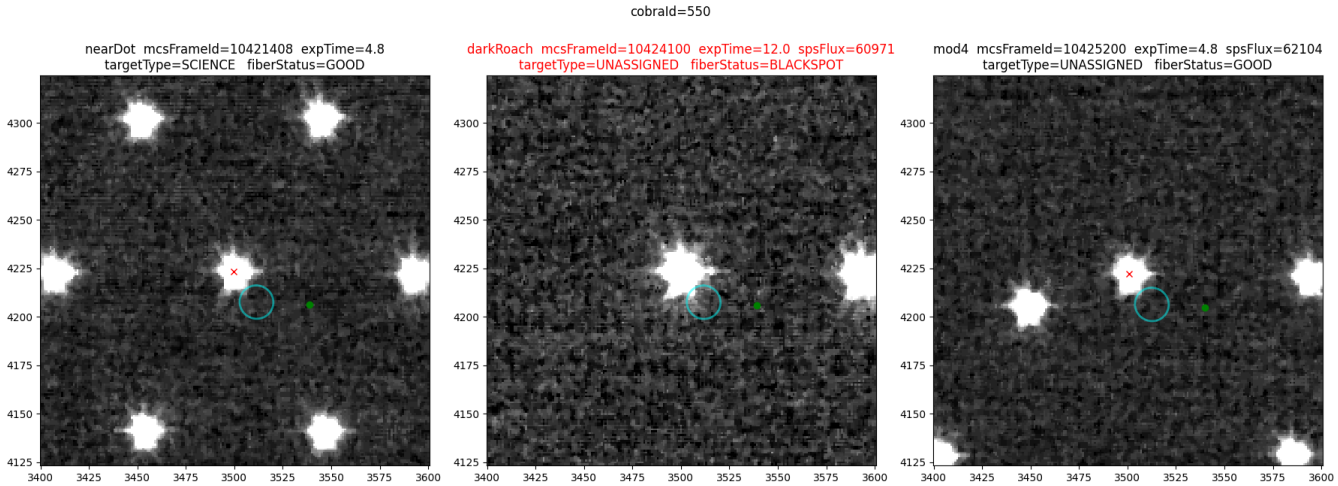
Cobrald 2366



Cobrald 550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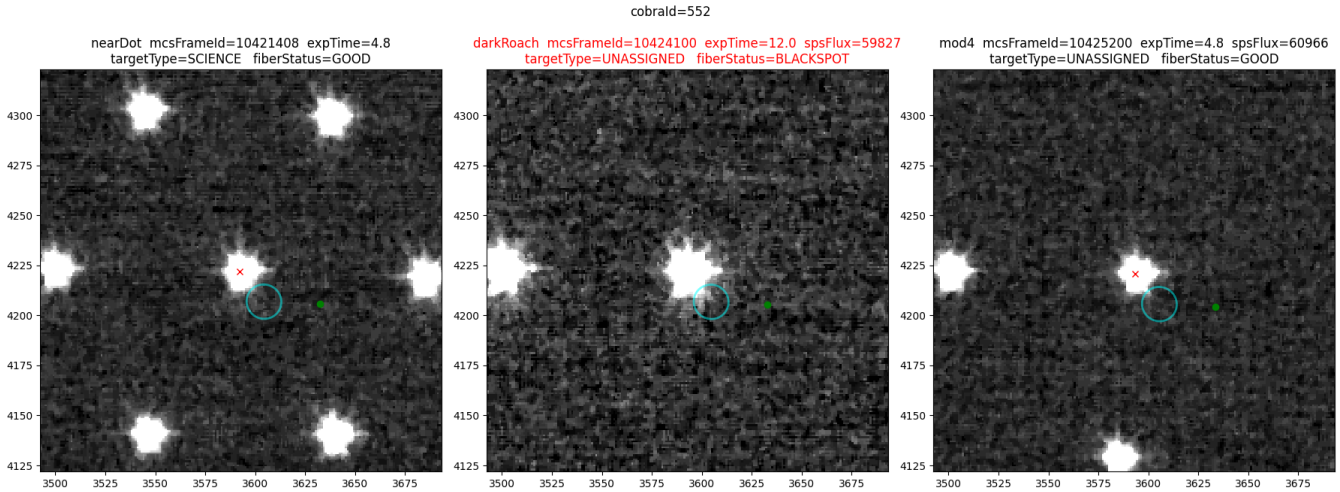
Cobrald 552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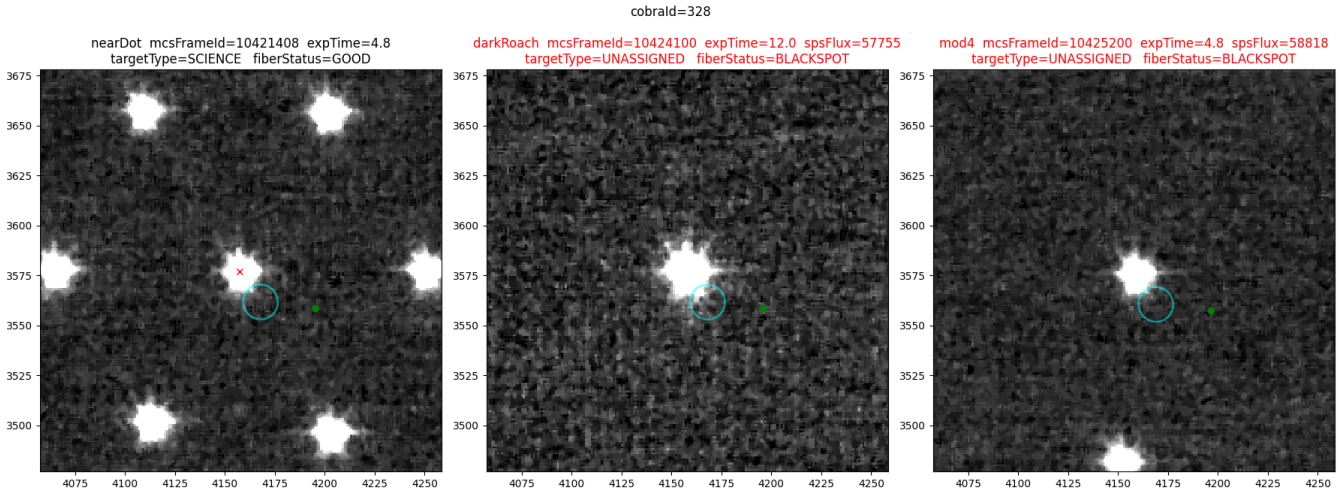
Cobrald 328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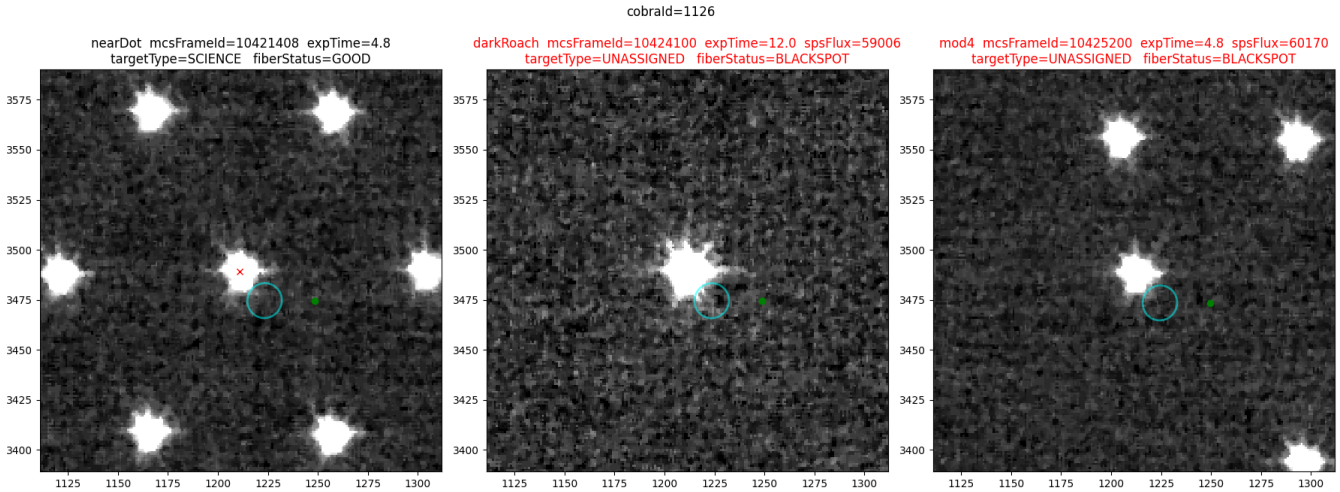
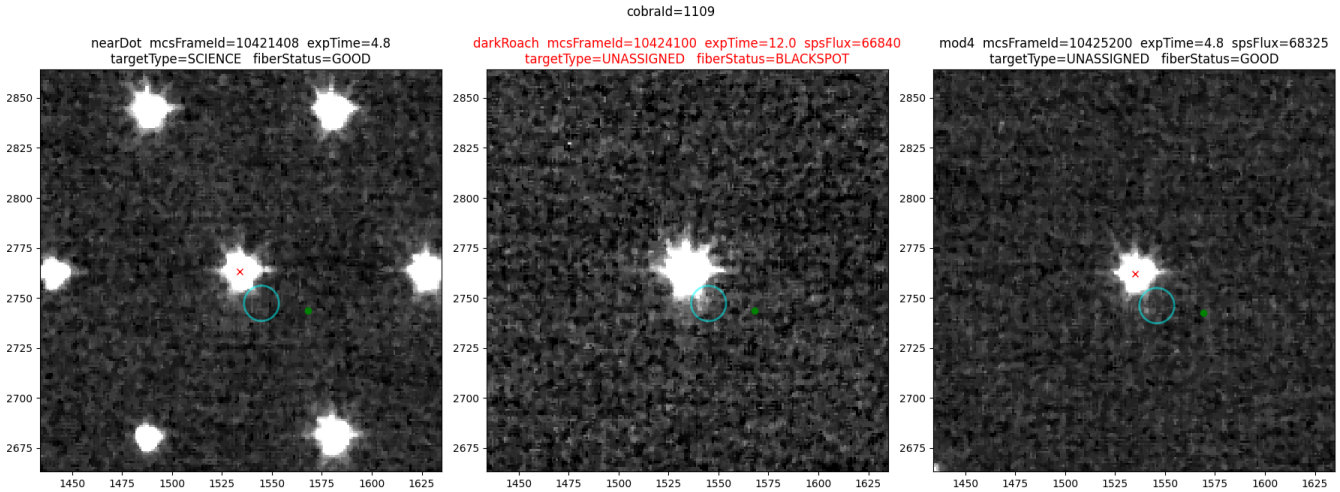
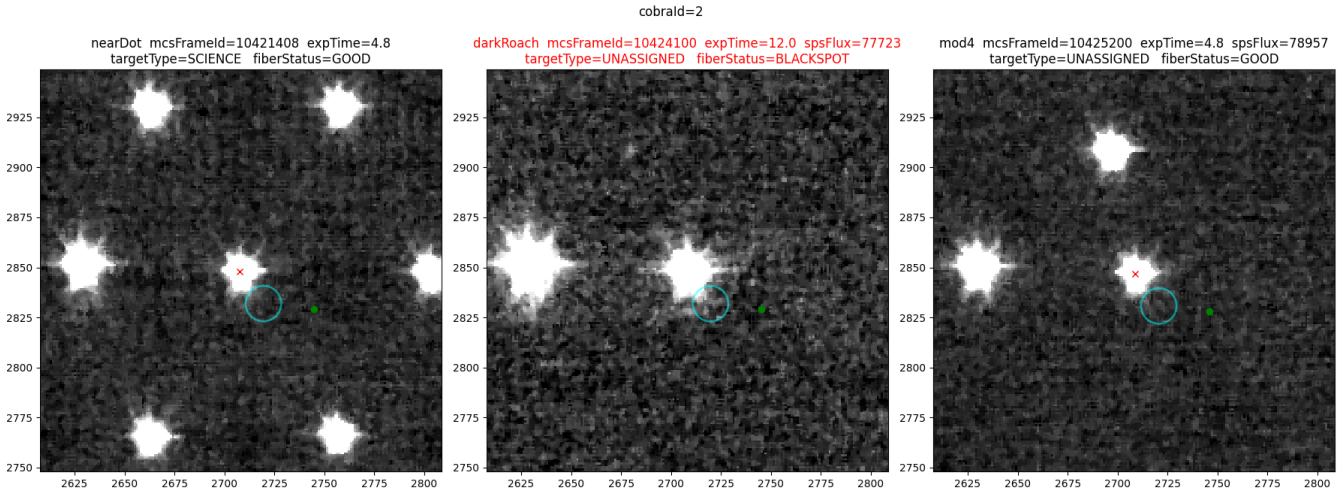
Cobrald 1126



Cobrald 1109



Cobrald 2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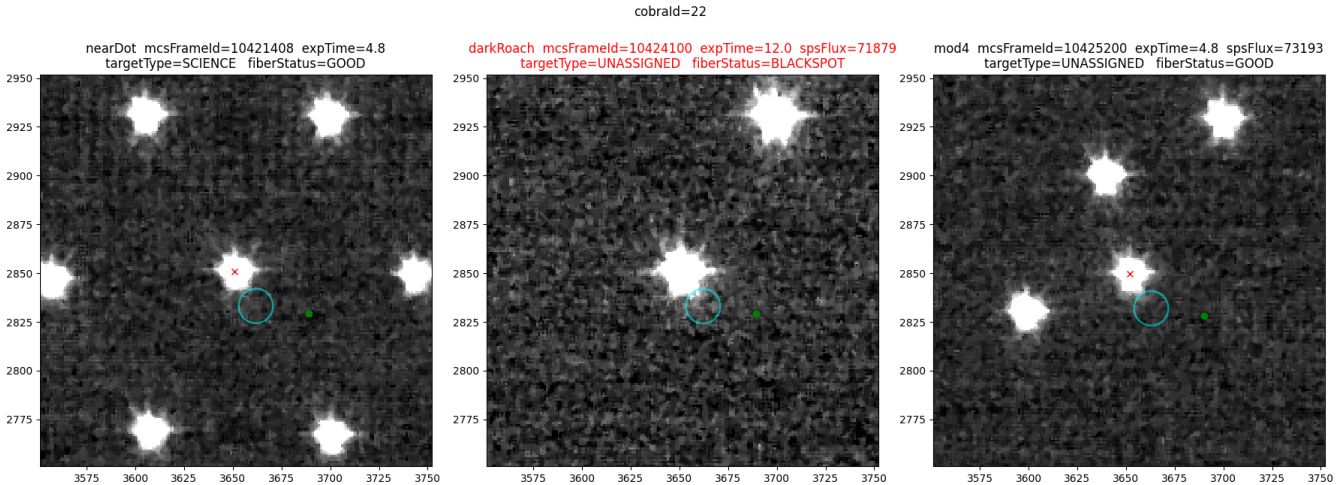
targetType=SCIENCE fiberStatus=GOOD
darkRoach mcsFrameId=10424100 expTime=12.0 spsFlux=77723
targetType=UNASSIGNED fiberStatus=BLACKSPOT
mod4 mcsFrameId=10425200 expTime=4.8 spsFlux=78957
targetType=UNASSIGNED fiberStatus=GOOD
2925
2900
2875
2850
2825
2800
2775
2750
2625
2650
2675
2700
2725
2750
2775
2800

Cobrald 22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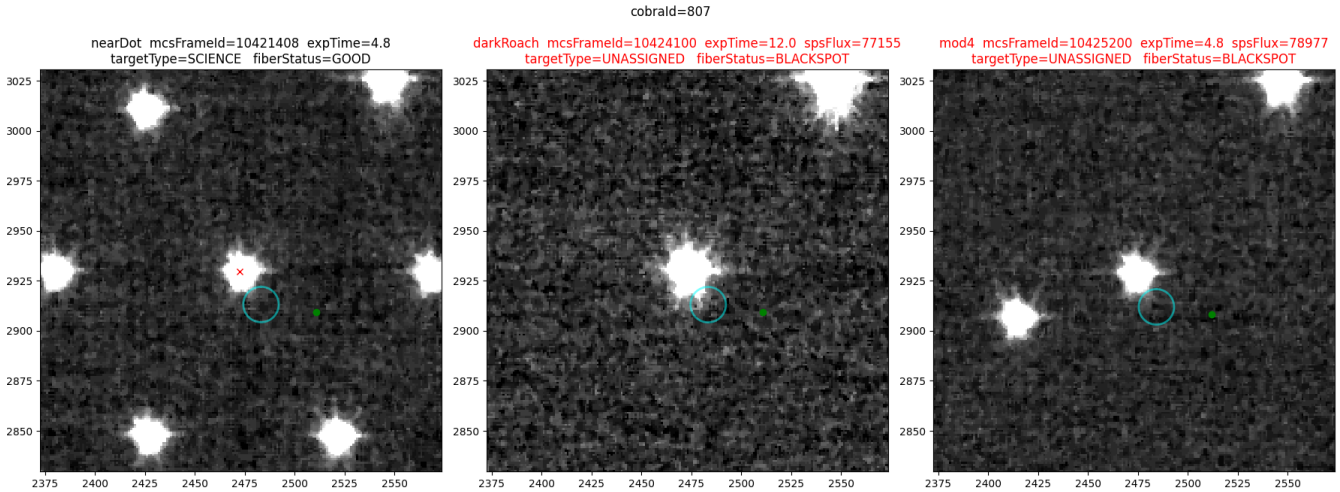
nearDot mcsFrameId=10421408 expTime=4.8
targetType=SCIENCE fiberStatus=GOOD
darkRoach mcsFrameId=10424100 expTime=12.0 spsFlux=71879
targetType=UNASSIGNED fiberStatus=BLACKSPOT
mod4 mcsFrameId=10425200 expTime=4.8 spsFlux=73193
targetType=UNASSIGNED fiberStatus=GOOD
2950
2925
2900
2875
2850
2825
2800
2775
3575
3600
3625
3650
3675
3700
3725
3750

Cobrald 807


cobrald=807
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darkRoach mcsFrameId=10424100 expTime=12.0 spsFlux=77155
targetType=UNASSIGNED fiberStatus=BLACKSPOT
mod4 mcsFrameId=10425200 expTime=4.8 spsFlux=78977
targetType=UNASSIGNED fiberStatus=BLACKSPOT
3025
3000
2975
2950
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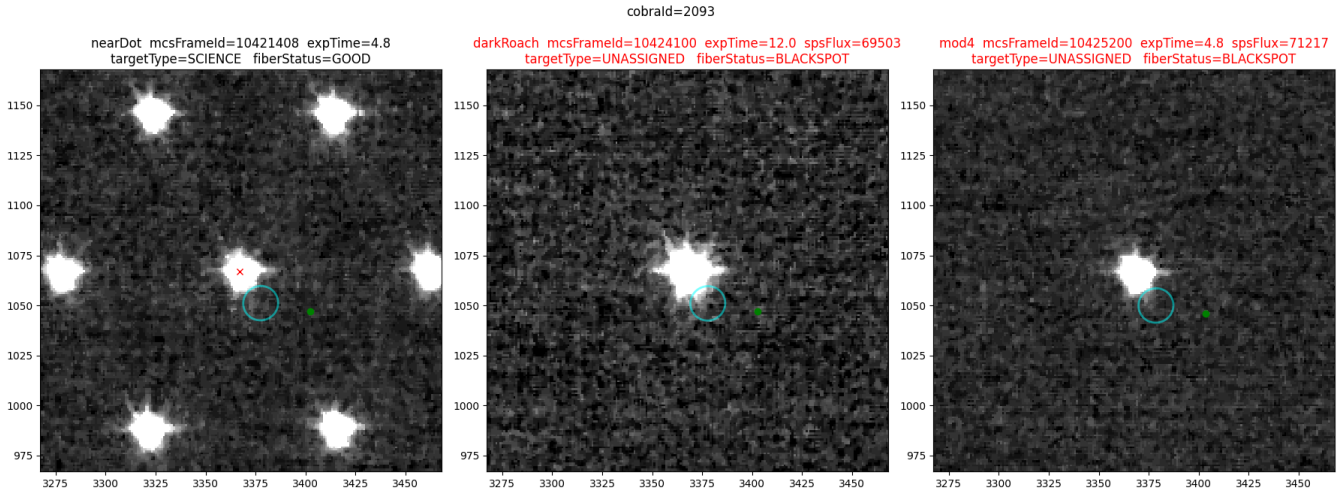
2900
2875
2850
2375
2400
2425
2450
2475
2500
2525
2550

Cobraid 2093



Cobrald 1846