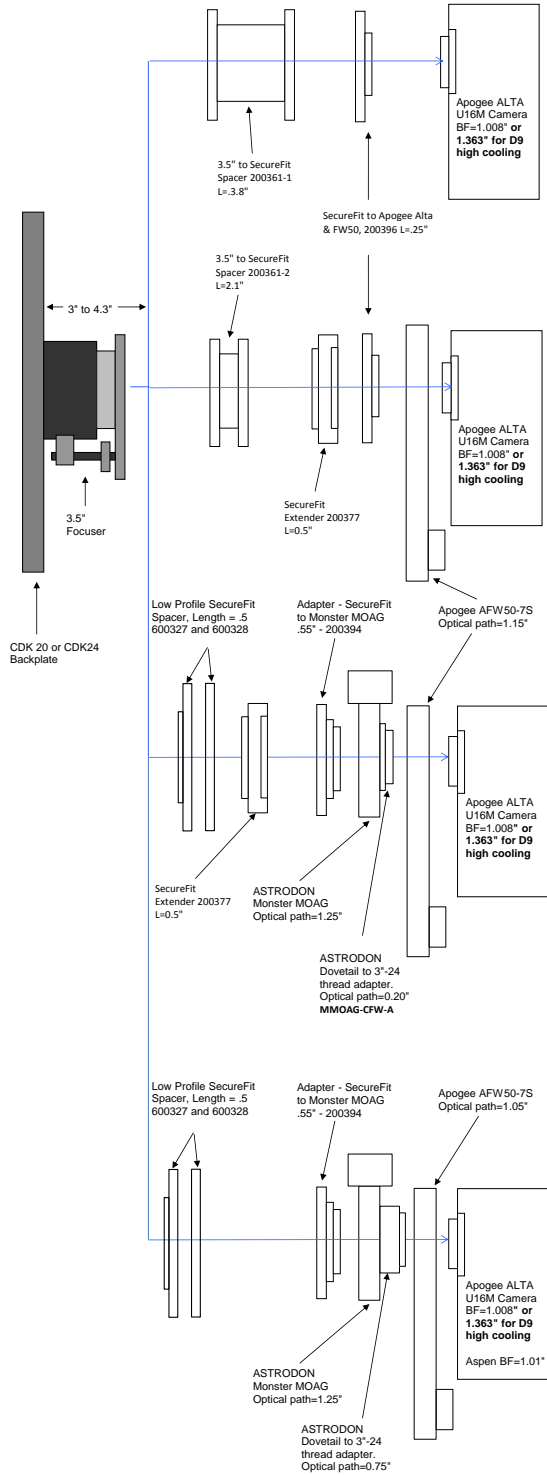


CDK20 and 24 - OPTICAL TRAIN: for Apogee Alta, FW50 and MMOAG



ALTA, CCD	8.81 remaining BF
3.5" Focuser (racked in)	3 5.81
Focus position (0 to 1.3")	0.752 5.058
3.5" to SecureFit, 3.8" - 200361-1	3.8 1.258
SecureFit to Apogee Alta & FW50 - 200396	0.25 1.008
Apogee Alta U16M CCD back focus	1.008 0

ALTA D9 High Cooling	8.81 remaining BF
3.5" Focuser (racked in)	3 5.81
Focus position (0 to 1.3")	0.397 5.413
3.5" to SecureFit, 3.8" - 200361-1	3.8 1.613
SecureFit to Apogee Alta & FW50 - 200396	0.25 1.363
Apogee Alta U16M High Cooling CCD back focus	1.363 0

ALTA, FW50	8.81 remaining BF
3.5" Focuser (racked in)	3 5.81
Focus position (0 to 1.3")	0.802 5.008
3.5" to SecureFit, 2.1" - 200361-2	2.1 2.908
SecureFit CCD Extender - 200377	0.5 2.408
SecureFit to Apogee Alta & FW50 - 200396	0.25 2.158
Apogee AFW50-7S	1.15 1.008
Apogee Alta U16M CCD back focus	1.008 0

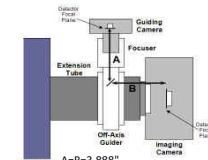
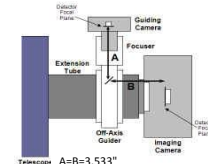
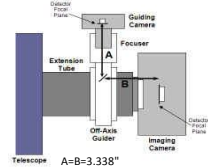
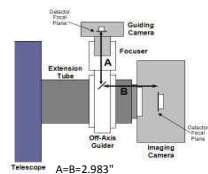
MonsterMOAG, FW50, ALTA D9 High Cooling	8.81 remaining BF
3.5" Focuser (racked in)	3 5.81
Focus position (0 to 1.3")	0.447 5.363
3.5" to SecureFit, 2.1" - 200361-2	2.1 3.263
SecureFit CCD Extender - 200377	0.5 2.763
SecureFit to Apogee Alta & FW50 - 200396	0.25 2.513
Apogee AFW50-7S	1.15 1.363
Apogee Alta U16M High Cooling CCD back focus	1.363 0

ALTA, MonsterMOAG, FW50	8.81 remaining BF
3.5" Focuser (racked in)	3 5.81
Focus position (0 to 1.3")	0.652 5.158
Low Profile SecureFit Spacer - 600327 and 600328	0.5 4.658
SecureFit CCD Extender - 200377	0.5 4.158
Adapter SecureFit to Monster MOAG - 200394	0.55 3.608
Monster MOAG - MMOAG	1.25 2.358
AstroDon Adapter - MMOAG-CFW-A	0.2 2.158
Apogee AFW50-7S	1.15 1.008
Apogee Alta U16M CCD back focus	1.008 0

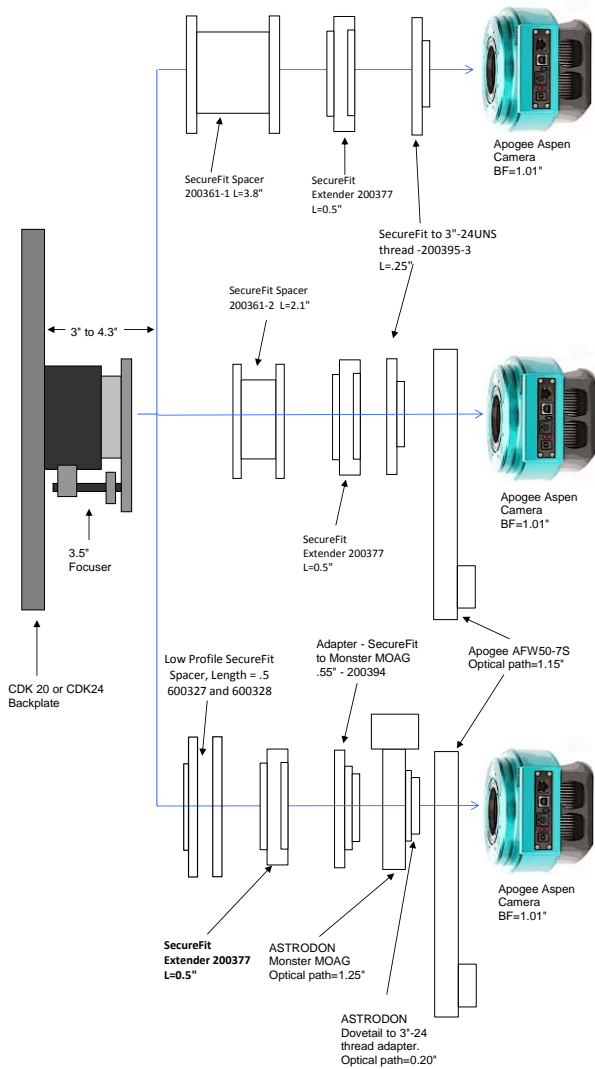
MonsterMOAG, FW50, ALTA D9 High Cooling	8.81 remaining BF
3.5" Focuser (racked in)	3 5.81
Focus position (0 to 1.3")	0.297 5.513
Low Profile SecureFit Spacer - 600327 and 600328	0.5 5.013
SecureFit CCD Extender - 200377	0.5 4.513
Adapter SecureFit to Monster MOAG - 200394	0.55 3.963
Monster MOAG - MMOAG	1.25 2.713
AstroDon Adapter - MMOAG-CFW-A	0.2 2.513
Apogee AFW50-7S	1.15 1.363
Apogee Alta U16M High Cooling CCD back focus	1.363 0

ALTA, MonsterMOAG, FW50	8.81 remaining BF
3.5" Focuser (racked in)	3 5.81
Focus position (0 to 1.3")	0.602 5.208
Low Profile SecureFit Spacer - 600327, 600328	0.5 4.708
Adapter SecureFit to Monster MOAG - 200394	0.55 4.158
Monster MOAG - MMOAG	1.25 2.908
Adapter, Astrodon dovetail to 3"-24 MMOAG-3-L	0.75 2.158
Apogee AFW50-7S	1.15 1.008
Apogee Alta U16M CCD back focus	1.008 0

MonsterMOAG, FW50, ALTA D9 High Cooling	8.81 remaining BF
3.5" Focuser (racked in)	3 5.81
Focus position (0 to 1.3")	0.247 5.563
Low Profile SecureFit Spacer - 600327, 600328	0.5 5.063
Adapter SecureFit to Monster MOAG - 200394	0.55 4.513
Monster MOAG - MMOAG	1.25 3.263
Adapter, Astrodon dovetail to 3"-24 MMOAG-3-L	0.75 2.513
Apogee AFW50-7S	1.15 1.363
Apogee Alta U16M High Cooling CCD back focus	1.363 0



CDK20/24 - OPTICAL TRAIN: for Aspen, FW50 and MMOAG

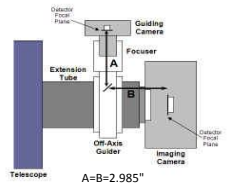


Apogee Aspen CCD	8.81 remaining BF
3.5" Focuser (racked in)	3
Focus position (0 to 1.3")	0.25
SecureFit, 3.8" - 200361-1	3.8
SecureFit Extender - 200377	0.5
SecureFit to 3"-24UNS - 200395-3	0.25
Apogee Aspen CCD back focus	1.01

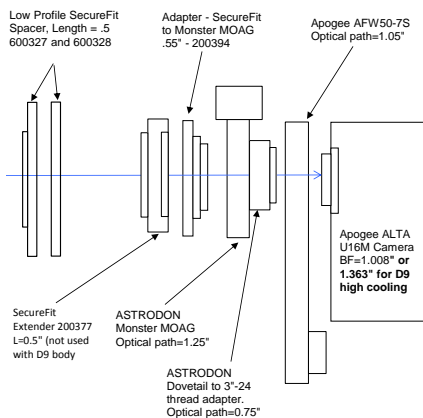
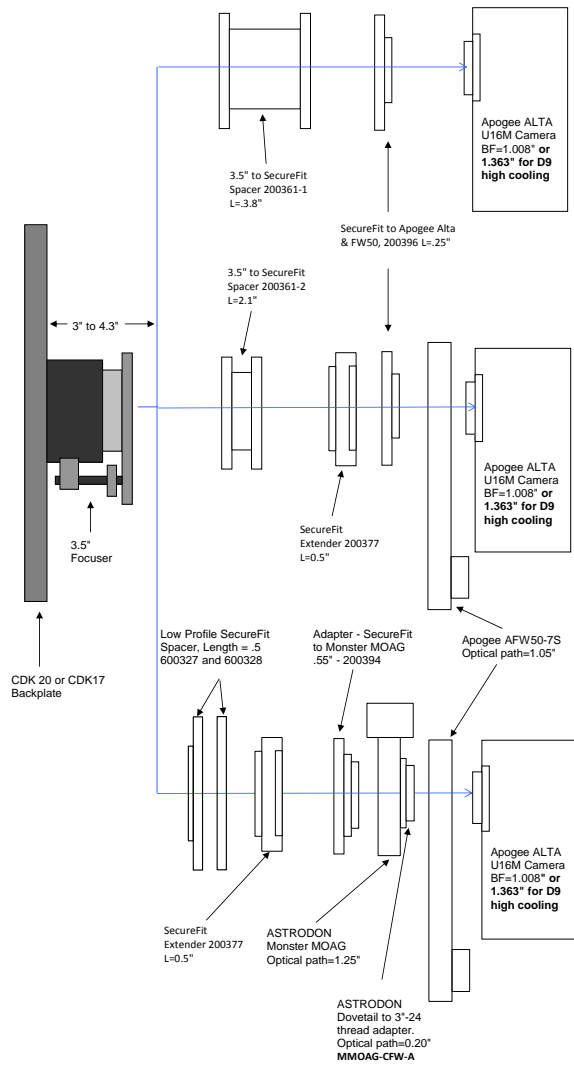
Apogee Aspen CCD & FW50	8.81 remaining BF
3.5" Focuser (racked in)	3
Focus position (0 to 1.3")	0.8
SecureFit, 2.1" - 200361-2	2.1
SecureFit CCD Extender - 200377	0.5
SecureFit to 3"-24UNS - 200395-3*	0.25
Apogee AFW50-75	1.15
Apogee Aspen CCD back focus	1.01

*200396 adapter can also be used to mount to AWF50 filter wheels

Apogee ASPEN CCD, MonsterMOAG, FW50	8.81 remaining BF
3.5" Focuser (racked in)	3
Focus position (0 to 1.3")	0.65
Low Profile SecureFit Spacer - 600327 and 600328	0.5
SecureFit CCD Extender - 200377	0.5
Adapter SecureFit to Monster MOAG - 200394	0.55
Monster MOAG - MMOAG	1.25
AstroDon Adapter - MMOAG-CFW-A	0.2
Apogee AFW50-75	1.15
Apogee Aspen CCD back focus	1.01



CDK 20, and 24 - OPTICAL TRAIN: for Apogee Alta, FW50 and MMOAG



MonsterMOAG, ALTA	8.81 remaining BF
Rotating Focuser (racked in)	3.5 5.31
Focus position (0 to 1.3")	0.252 5.058
3.5" to SecureFit, 3.8" - 200361-1	3.8 1.258
SecureFit to Apogee Alta & FW50 - 200396	0.25 1.008
Apogee Alta U16M CCD back focus	1.008 0

MonsterMOAG, ALTA D9 High Cooling	8.81 remaining BF
Rotating Focuser (racked in)	3.5 5.31
Focus position (0 to 1.3")	0.597 4.713
3.5" to SecureFit, 2.1" - 200361-2	2.1 2.613
SecureFit CCD Extender - 200377	0.5 2.113
SecureFit CCD Extender - 200377	0.5 1.613
SecureFit to Apogee Alta & FW50 - 200396	0.25 1.363
Apogee Alta U16M High Cooling CCD back focus	1.363 0

MonsterMOAG, FW50, ALTA	8.81 remaining BF
3.5" Focuser (racked in)	3.5 5.31
Focus position (0 to 1.3")	0.402 4.908
3.5" to SecureFit, 2.1" - 200361-2	2.1 2.808
SecureFit CCD Extender - 200377	0.5 2.308
SecureFit to Apogee Alta & FW50 - 200396	0.25 2.058
Apogee AFW50-7S	1.05 1.008
Apogee Alta U16M CCD back focus	1.008 0

MonsterMOAG, FW50, ALTA D9 High Cooling	8.81 remaining BF
3.5" Focuser (racked in)	3.5 5.31
Focus position (0 to 1.3")	0.547 4.763
3.5" to SecureFit, 2.1" - 200361-2	2.1 2.663
SecureFit CCD Extender - 200377	0 2.663
SecureFit to Apogee Alta & FW50 - 200396	0.25 2.413
Apogee AFW50-7S	1.05 1.363
Apogee Alta U16M High Cooling CCD back focus	1.363 0

MonsterMOAG, FW50, ALTA	8.81 remaining BF
3.5" Focuser (racked in)	3.5 5.31
Focus position (0 to 1.3")	0.252 5.058
Low Profile SecureFit Spacer - 600327 and 600328	0.5 4.558
SecureFit CCD Extender - 200377	0.5 4.058
Adapter SecureFit to Monster MOAG - 200394	0.55 3.508
Monster MOAG - MMOAG	1.25 2.258
AstroDon Adapter - MMOAG-CF-W-A	0.2 2.058
Apogee AFW50-7S	1.05 1.008
Apogee Alta U16M CCD back focus	1.008 0

MonsterMOAG, FW50, ALTA D9 High Cooling	8.81 remaining BF
3.5" Focuser (racked in)	3.5 5.31
Focus position (0 to 1.3")	0.397 4.913
Low Profile SecureFit Spacer - 600327 and 600328	0.5 4.413
SecureFit CCD Extender - 200377	0 4.413
Adapter SecureFit to Monster MOAG - 200394	0.55 3.863
Monster MOAG - MMOAG	1.25 2.613
AstroDon dovetail to 3"-24 thread adapter, Optical path=0.20" MMOAG-CF-W-A	0.2 2.413
Apogee AFW50-7S	1.05 1.363
Apogee Alta U16M High Cooling CCD back focus	1.363 0

MonsterMOAG, FW50, ALTA	8.81 remaining BF
3.5" Focuser (racked in)	3.5 5.31
Focus position (0 to 1.3")	0.202 5.108
Low Profile SecureFit Spacer - 200383	0.5 4.608
SecureFit CCD Extender - 200377	0.5 4.108
Adapter SecureFit to Monster MOAG - 200394	0.55 3.558
Monster MOAG - MMOAG	1.25 2.308
Adapter, AstroDon dovetail to 3"-24 MMOAG-3-L	0.75 1.558
Apogee AFW50-7S	1.05 0.508
Apogee Alta U16M CCD back focus	1.008 -0.5

MonsterMOAG, FW50, ALTA D9 High Cooling	8.81 remaining BF
3.5" Focuser (racked in)	3.5 5.31
Focus position (0 to 1.3")	0.347 4.963
Low Profile SecureFit Spacer - 600327, 600328	0.5 4.463
SecureFit CCD Extender - 200377	0 4.463
Adapter SecureFit to Monster MOAG - 200394	0.55 3.913
Monster MOAG - MMOAG	1.25 2.663
Adapter, AstroDon dovetail to 3"-24 MMOAG-3-L	0.75 1.913
Apogee AFW50-7S	1.05 0.863
Apogee Alta U16M High Cooling CCD back focus	1.363 -0.5

