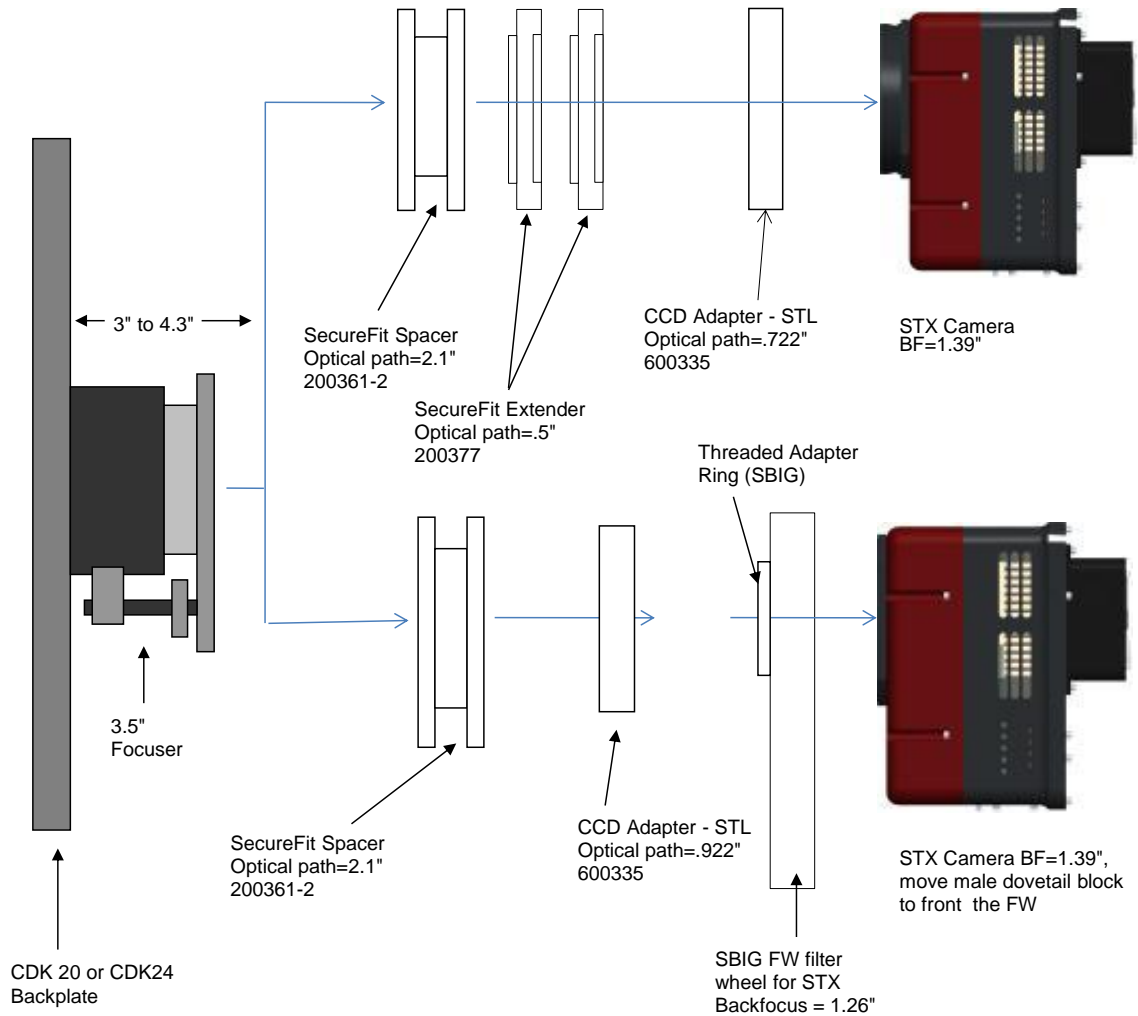


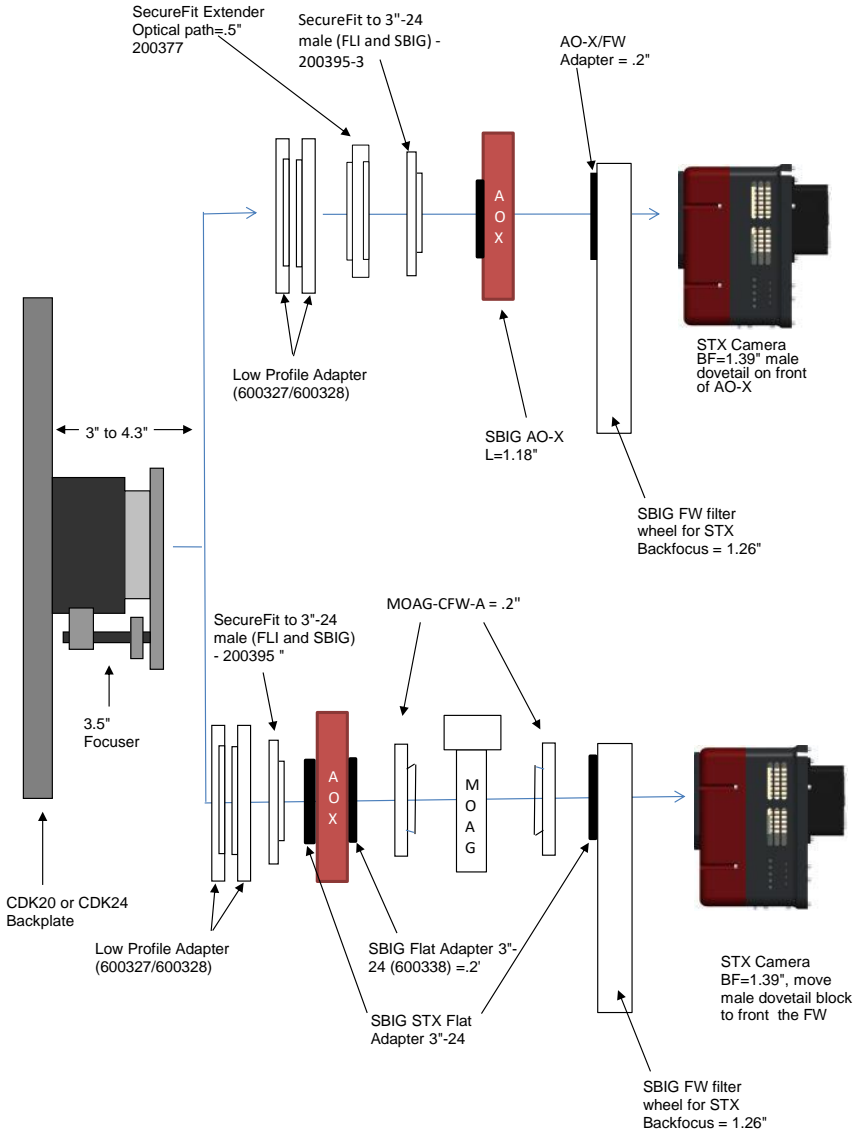
**PLANEWAVE INSTRUMENTS**  
CDK 20 and 24 SPACERS FOR STX CAMERAS



STX	8.81 remaining BF	
Focuser racked in	3	5.81
Focuser position (0-1.3")	<b>0.598</b>	5.212
CCD Spacer 2.1 - 200361-2	2.1	3.112
CCD SecureFit Extender - 200377	0.5	2.612
CCD SecureFit Extender - 200377	0.5	2.112
CCD Adapter STX - 600335	0.722	1.39
STX Back Focus w/threaded adapter ring attached	1.39	0

STX w/ FW	8.81 remaining BF	
Focuser racked in	3	5.81
Focuser position (0-1.3")	<b>0.138</b>	5.672
CCD Spacer 2.1 - 200361-2	2.1	3.572
CCD Adapter STX - 600335	0.922	2.65
Filter Wheel w/threaded adapter ring attached	1.26	1.39
STX Camera	1.39	0

**PLANEWAVE INSTRUMENTS**  
CDK20 SPACERS FOR STX CAMERAS

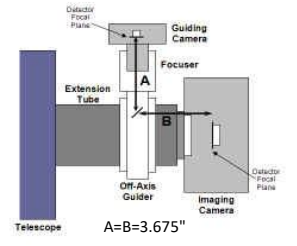


STX camera, AO-X, CFW		8.81 remaining BF
IRF90 Focuser racked in	3	5.81
Focuser position (0-1.3")	0.33	5.48
Low Profile Adapters = .5" (600327/328)	0.5	4.98
SecureFit Extender .5" (200377)	0.5	4.48
SecureFit to 3"-24 male (FLI and SBIG) - 200395-3	0.25	4.23
STX Flat adapter 3"-24 Female -600337	0.2	4.03
AO-X	1.18	2.85
AO-X to FW adapter (SBIG)	0.2	2.65
SBIG Filter Wheel (w/.2" adapter)	1.26	1.39
STX Back Focus	1.39	0

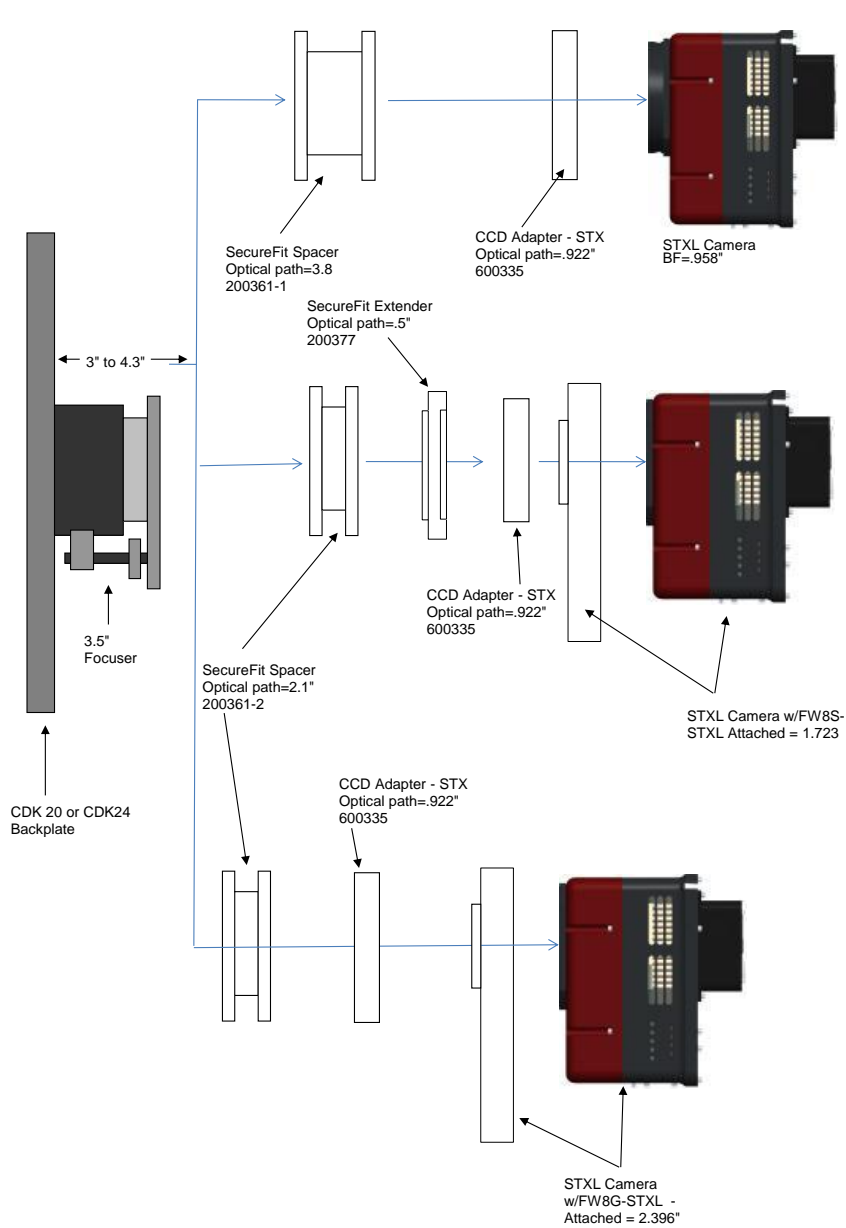
STX camera, AO-X, CFW, IRF90		8.81 remaining BF
IRF90 Focuser racked in	3.5	5.31
Focuser position (0-1.3")	0.33	4.98
Low Profile Adapters = .5" (600327/328)	0.5	4.48
SecureFit to 3"-24 male (FLI and SBIG) - 200395-3	0.25	4.23
STX Flat adapter 3"-24 Female -600337	0.2	4.03
AO-X	1.18	2.85
AO-X to FW adapter (SBIG)	0.2	2.65
SBIG Filter Wheel (w/.2" adapter)	1.26	1.39
STX Back Focus	1.39	0

*\*This configuration will not reach focus with the CDK20 but can work on the CDK24 with custom adapter*

STX camera and MMOAG		8.81 remaining BF
Focuser racked in	3	5.81
Focuser position (0-1.3")	0	5.81
Low profile adapters- 600327/328	0.5	5.31
SecureFit to 3"-24 male (FLI and SBIG) - 200395-3	0.25	5.06
STX Flat adapter 3"-24 Female -600337	0.2	4.86
AO-X	1.18	3.68
STX Flat adapter 3"-24 Female -600338	0.2	3.48
MOAG-CWF-A	0.2	3.28
AstroDon part - MMOAG	1.25	2.03
MOAG-CWF-A	0.2	1.83
STX Flat adapter 3"-24 Female -600337	0.2	1.63
Filter Wheel, FW8	1.26	0.37
SLX Back Focus	1.39	-1.02



**PLANEWAVE INSTRUMENTS**  
CDK 20 & 24 SPACERS FOR STXL CAMERAS



STXL		8.81 remaining BF
Focuser (200340) racked in	3	5.81
Focuser position (0-1.3")	0.33	5.48
CCD Spacer 2.1 - 200361-1	3.8	1.68
CCD Adapter STX - 600335	0.722	0.958
STXL Camera	0.958	0

STXL w/IRF90		8.81 remaining BF
Focuser (600180) racked in	3.5	5.31
Focuser position (0-1.3")	0.33	4.98
CCD Spacer 2.1 - 200361-2	2.1	2.88
CCD SecureFit Extender - 200377	0.5	2.38
CCD SecureFit Extender - 200377	0.5	1.88
CCD Adapter STX - 600335	0.922	0.958
STXL Camera	0.958	0

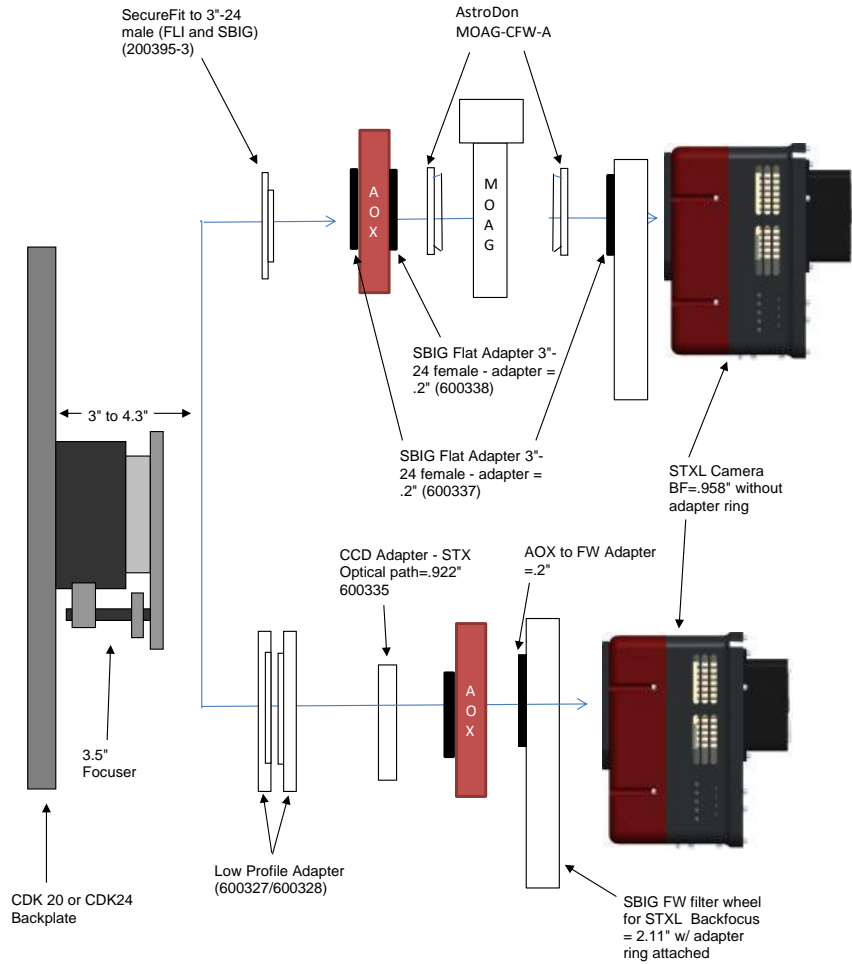
STXL w/ Standard FW		8.81 remaining BF
Focuser (200340) racked in	3	5.81
Focuser position (0-1.3")	0.565	5.245
CCD Spacer 2.1 - 200361-2	2.1	3.145
CCD SecureFit Extender - 200377	0.5	2.645
CCD Adapter STX - 600335	0.922	1.723
STXL Camera w/FW8S-STXL Attached	1.723	0

STXL w/ Standard FW & IRF90		8.81 remaining BF
Focuser (600180) racked in	3.5	5.31
Focuser position (0-1.3")	0.565	4.745
CCD Spacer 2.1 - 200361-2	2.1	2.645
CCD Adapter STX - 600335	0.922	1.723
STXL Camera w/FW8S-STXL Attached	1.723	0

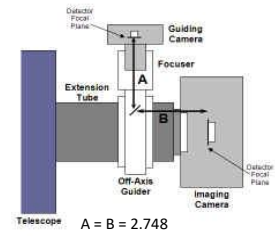
STXL w/ Self Guiding FW		8.81 remaining BF
Focuser (200340) racked in	3	5.81
Focuser position (0-1.3")	0.392	5.418
SecureFit CCD Spacer - 200361-2	2.1	3.318
CCD Adapter STX - 600335	0.922	2.396
STXL Camera w/FW8G-STXL Attached	2.396	0

STXL w/ Self Guiding FW & IRF90		8.81 remaining BF
Focuser (600180) racked in	3.5	5.31
Focuser position (0-1.3")	0.492	4.818
Low Profile SecureFit adapters (600327/600328)	0.5	4.318
CCD SecureFit Extender - 200377	0.5	3.818
CCD SecureFit Extender - 200377	0.5	3.318
CCD Adapter STX - 600335	0.922	2.396
STXL Camera w/FW8G-STXL Attached	2.396	0

**PLANEWAVE INSTRUMENTS**  
CDK20/24 SPACERS FOR STXL CAMERAS & AO-X

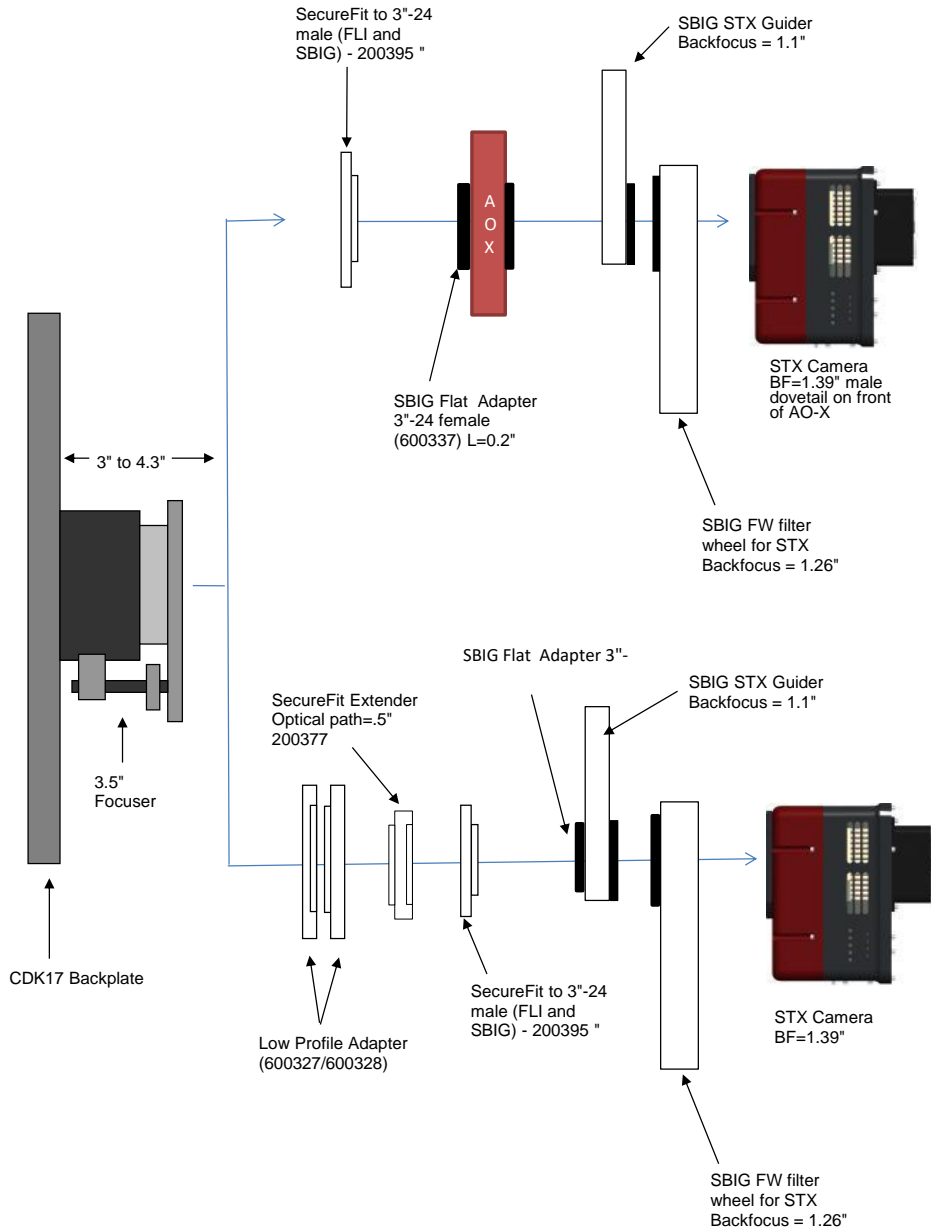


STXL camera and MMOAG &FW8S-STXL		8.81 remaining BF
Focuser racked in	3	5.81
Focuser position (0-1.3")	0.407	5.403
SecureFit to 3"-24 male (FLI and SBIG) - 200395-3	0.25	5.153
SBIG Flat Adapter - 3"-24 female - 600337	0.2	4.953
AO-X	1.18	3.773
SBIG Flat Adapter -600338	0.2	3.573
AstroDon MOAG-CFW-A	0.2	3.373
AstroDon- MMOAG	1.25	2.123
AstroDon MOAG-CFW-A	0.2	1.923
SBIG Flat Adapter - 600337	0.2	1.723
STXL w/filter wheel FW8S-STXL	1.723	0



STXL w/ Self Guiding FW		8.81 remaining BF
Focuser racked in	3	5.81
Focuser position (0-1.3")	0.41	5.4
Low Profile Adapters = .5" (600327/328)	0.5	4.9
CCD Adapter STX - 600335	0.922	3.978
AOX w/SBIG Threaded Adapter attached	1.38	2.598
AOX to FW Adapter (SBIG)	0.2	2.398
Filter Wheel w/threaded adapter ring attached	1.44	0.958
STXL Back Focus	0.958	0

**PLANEWAVE INSTRUMENTS**  
CDK20 SPACERS FOR STX CAMERAS with STX Guider

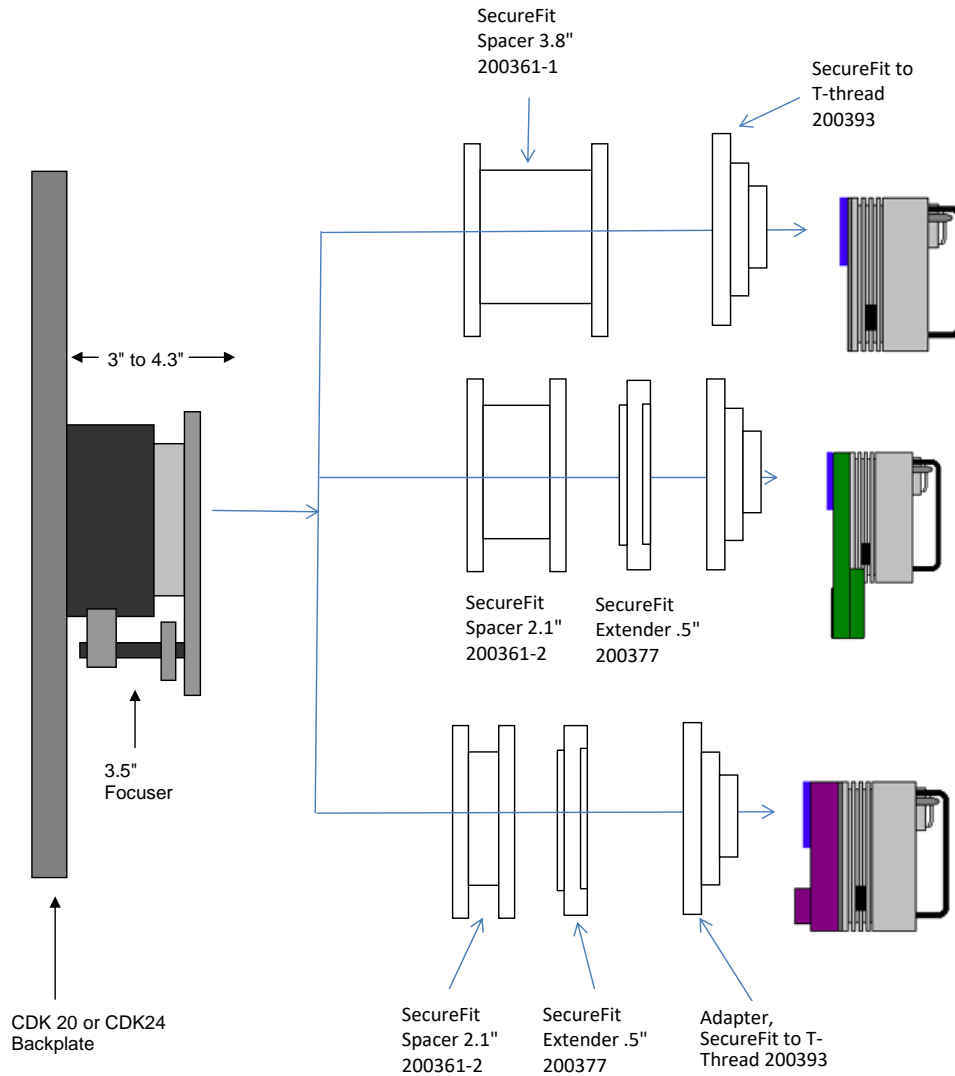


STX camera, AO-X, CFW, STX Guider		8.81 remaining BF
Focuser racked in	3	5.81
Focuser position (0-1.3")	0.23	5.58
CCD SecureFit 3-24 - 200395-3	0.25	5.33
SBIG Flat adaptet 3"-24 - 600337	0.2	5.13
AO-X	1.18	3.95
AO-X to FW adapter (SBIG)	0.2	3.75
STX Guider	1.1	2.65
SBIG Filter Wheel	1.26	1.39
STX Back Focus	1.39	0

STX camera, CFW, STX Guider		8.81 remaining BF
Focuser racked in	3	5.81
Focuser position (0-1.3")	0.56	5.25
Low Profile Adapters = .5" (600327/328)	0.5	4.75
CCD SecureFit Extender - 200377	0.5	4.25
SecureFit to 3"-24 male (FLI and SBIG) - 200395-3	0.25	4
SBIG Flat Adapter (3"-24 female) - 600337	0.25	3.75
STX Guider	1.1	2.65
SBIG Filter Wheel	1.26	1.39
STX Back Focus	1.39	0

STX camera, CFW, STX Guider w/ IRF90		8.81 remaining BF
IRF 90 racked in	3.5	5.31
Focuser position (0-1.3")	0.56	4.75
Low Profile Adapters = .5" (600327/328)	0.5	4.25
SecureFit to 3"-24 male (FLI and SBIG) - 200395-3	0.25	4
SBIG Flat Adapter (3"-24 female) - 600337	0.25	3.75
STX Guider	1.1	2.65
SBIG Filter Wheel	1.26	1.39
STX Back Focus	1.39	0

**PLANEWAVE INSTRUMENTS**  
CDK20&24 SECUREFIT CCD SPACERS FOR ST CAMERAS



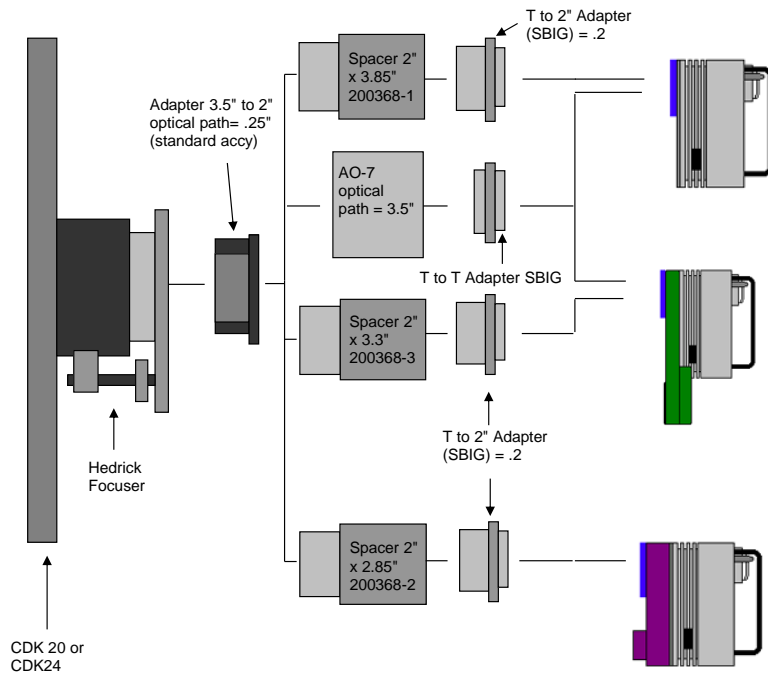
<b>SecureFit w/ ST</b>	8.81 remaining BF	
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0.45	5.36
SecureFit 3.8 - 200361-1	3.8	1.56
Adapter, SecureFit to T thread - 200393	0.55	1.01
ST Back Focus (with D-block)	1.012	0.00

<b>SecureFit with ST and CFW10</b>	8.81 remaining BF	
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	1.068	4.742
SecureFit Spacer - 200361-2	2.1	2.642
SecureFit Extender - 200377	0.5	2.142
Adapter, SecureFit to T thread - 200393	0.55	1.592
ST w/ CFW10 Back Focus (with D-block)	1.592	0

<b>SecureFit with ST and CFW10SA</b>	8.81 remaining BF	
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0.85	4.96
SecureFit Spacer - 200361-2	2.1	2.86
SecureFit Extender - 200377	0.5	2.36
Adapter, SecureFit to T thread - 200393	0.55	1.81
ST w/ CFW10 Back Focus, (w/ D-block)	1.81	0

<b>SecureFit with ST and CFW8</b>	8.81 remaining BF	
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0.648	5.162
SecureFit Spacer - 200361-2	2.1	3.062
SecureFit Extender - 200377	0.5	2.562
Adapter, SecureFit to T thread - 200393	0.55	2.012
ST w/ CFW8 Back Focus, (w/ D-block)	2.012	0

**PLANEWAVE INSTRUMENTS**  
CDK20 & 24 SECUREFIT CCD SPACERS FOR ST CAMERAS



<b>ST Camera, no filter wheel</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0.498	5.312
Adapter, 3 to 2 (standard accy)	0.25	5.062
CCD 2" Spacer x 3.85" - <b>200368-1</b>	3.85	1.212
T to 2 Adapter (SBIG)	0.2	1.012
ST Back Focus (with D-Block)	1.012	0

<b>ST Camera with CFW10 w/ D-Block</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0.468	5.342
Adapter, 3 to 2 (standard accy)	0.25	5.092
CCD 2" SPACER x 3.3" - <b>200368-3</b>	3.3	1.792
T to 2 Adapter (SBIG)	0.2	1.592
ST Back Focus (with D-Block)	1.592	0

<b>ST Camera with CFW8 w/ D-Block</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0.498	5.312
Adapter, 3 to 2 (standard accy)	0.25	5.062
CCD 2" SPACER x 2.85" - <b>200368-2</b>	2.85	2.212
T to 2 Adapter (SBIG)	0.2	2.012
ST Back Focus (with D-Block)	2.012	0

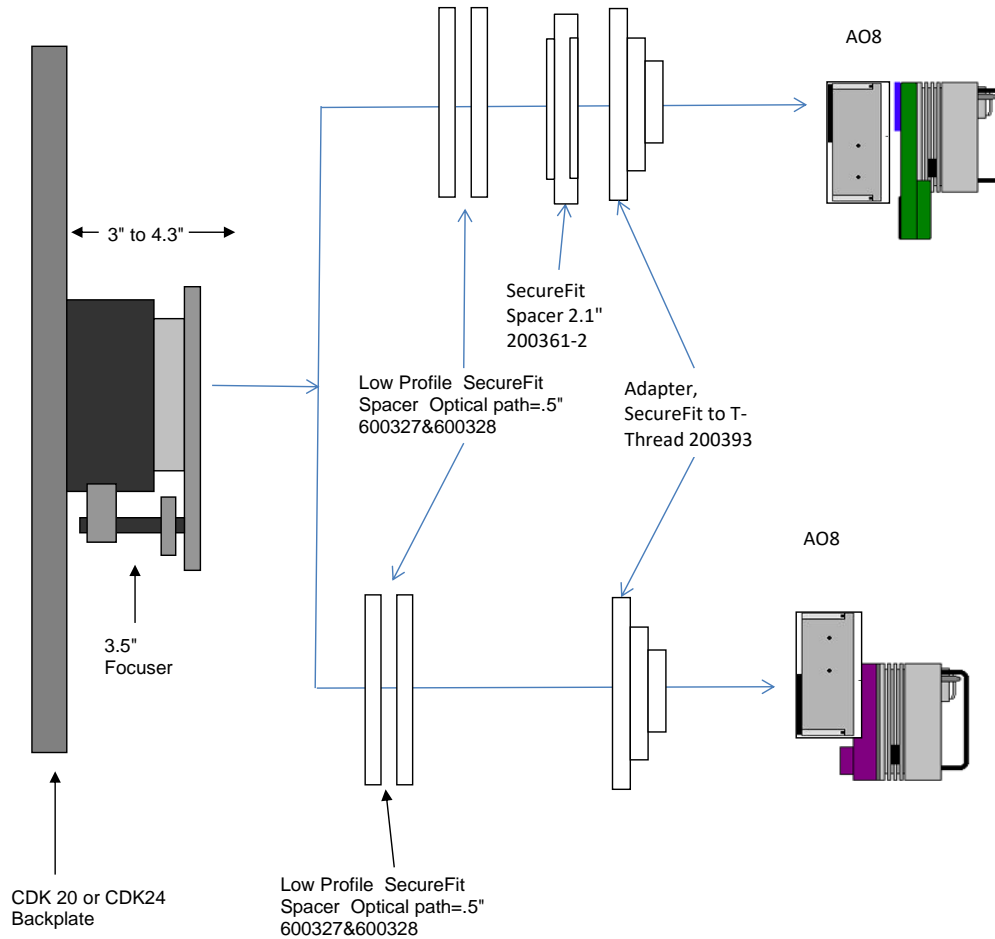
<b>ST Camera + AO-7</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0.85	4.96
Adapter, 3 to 2	0.25	4.71
T to T Adapter (SBIG)	0.2	4.51
ST + AO-7 backfocus	4.51	0

<b>ST + CFW10 + AO-7</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0.27	5.54
Adapter, 3 to 2	0.25	5.29
T to T Adapter (SBIG)	0.2	5.09
ST + AO-7 backfocus	5.09	0

**DOES NOT HAVE ENOUGH BACK FOCUS**

<b>ST + CFW8 + AO-7</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0	5.81
Adapter, 3 to 2	0.25	5.56
T to 2 Adapter (SBIG)	0.2	5.36
ST + AO-7 backfocus	5.51	-0.15

**PLANEWAVE INSTRUMENTS**  
**CDK20&24 SECUREFIT CCD SPACERS FOR ST CAMERAS**



<b>SecureFit with ST, CFW10, &amp; AO-8</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0.768	5.042
SecureFit Low Profile - 600327, 600328	0.5	4.542
SecureFit Extender - 200377	0.5	4.042
Adapter, SecureFit to T thread - 200393	0.55	3.492
AO-8, 1.9" of backfocus + .27 for D-block	2.17	1.322
ST w/ CFW10 Back Focus (w/o D-block)	1.322	0

<b>SecureFit with ST and CFW10SA</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0.85	4.96
SecureFit Spacer - 200361-2	2.1	2.86
SecureFit Extender - 200377	0.5	2.36
Adapter, SecureFit to T thread - 200393	0.55	1.81
ST w/ CFW10 Back Focus, (w/ D-block)	1.81	0

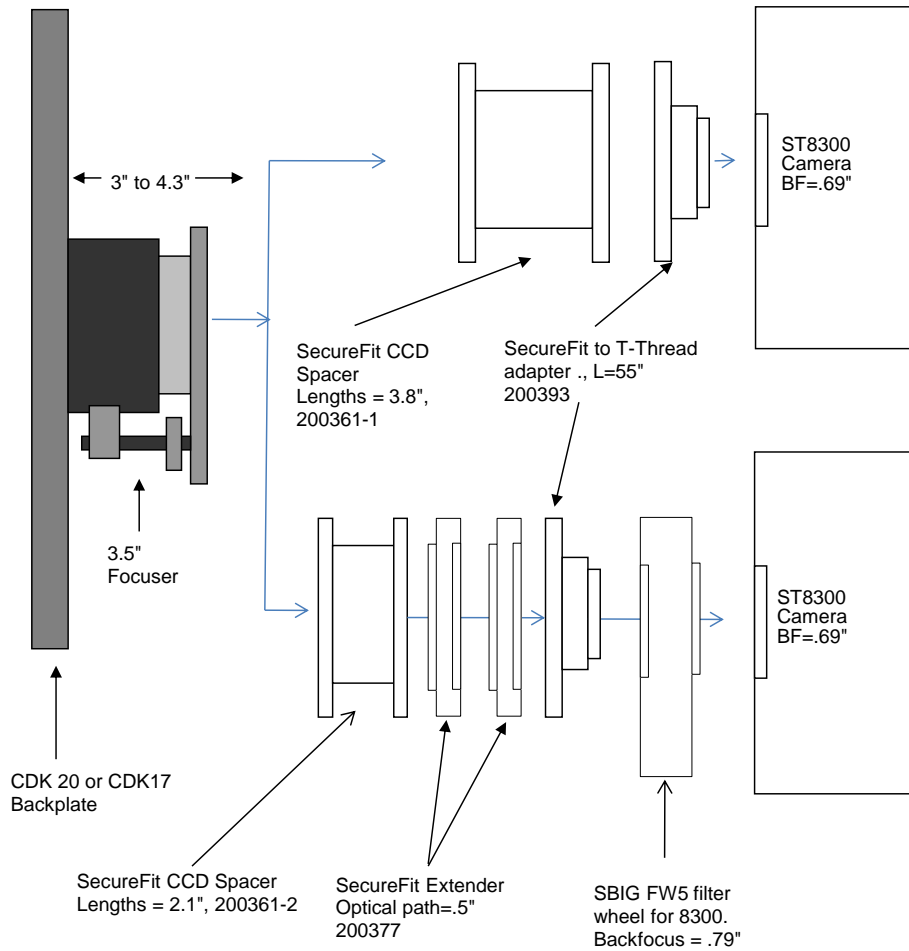
<b>SecureFit with ST, CFW8, &amp; AO-8</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser Position (0 - 1.3")	0.578	5.232
SecureFit Low Profile - 600327, 600328	0.5	4.732
Adapter, SecureFit to T thread - 200393	0.55	4.182
AO-8, 1.9" of backfocus + .27 for D-block	2.17	2.012
ST w/ CFW8 Back Focus, (w/ D-block)	2.012	0



**PLANEWAVE INSTRUMENTS**  
**CDK20 & 24 SECUREFIT SPACERS FOR STL CAMERAS**

Distance to Focuser Mounting Surface

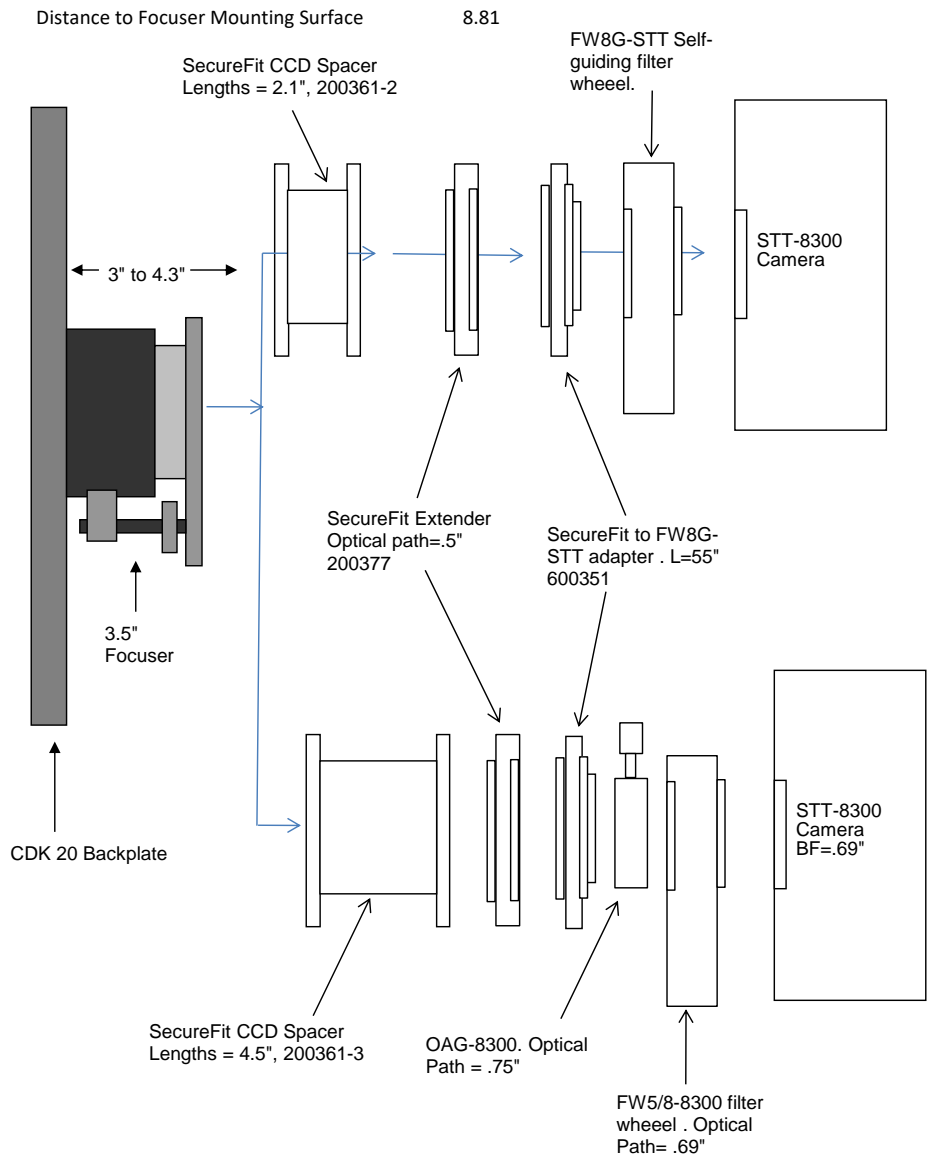
8.81



<b>ST8300 Camera Alone</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser position (0-1.3")	<b>0.77</b>	5.04
CCD Spacer 3.8 - <b>200361-1</b>	<b>3.8</b>	1.24
SecureFit to T-Thread - <b>200393</b>	0.55	0.69
SLT Back Focus	0.69	0.00

<b>ST8300 Camera FW8 or FW5 for 8300</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser position (0-1.3")	<b>0.68</b>	5.13
CCD Spacer 3.8 - <b>200361-2</b>	<b>2.1</b>	3.03
CCD SecureFit Extender - <b>200377</b>	0.5	2.53
CCD SecureFit Extender - <b>200377</b>	0.5	2.03
SecureFit to T-Thread - <b>200393</b>	0.55	1.48
FW5 or 8 for 8300, Back Focus=.79"	0.79	0.69
SLT Back Focus	0.69	0

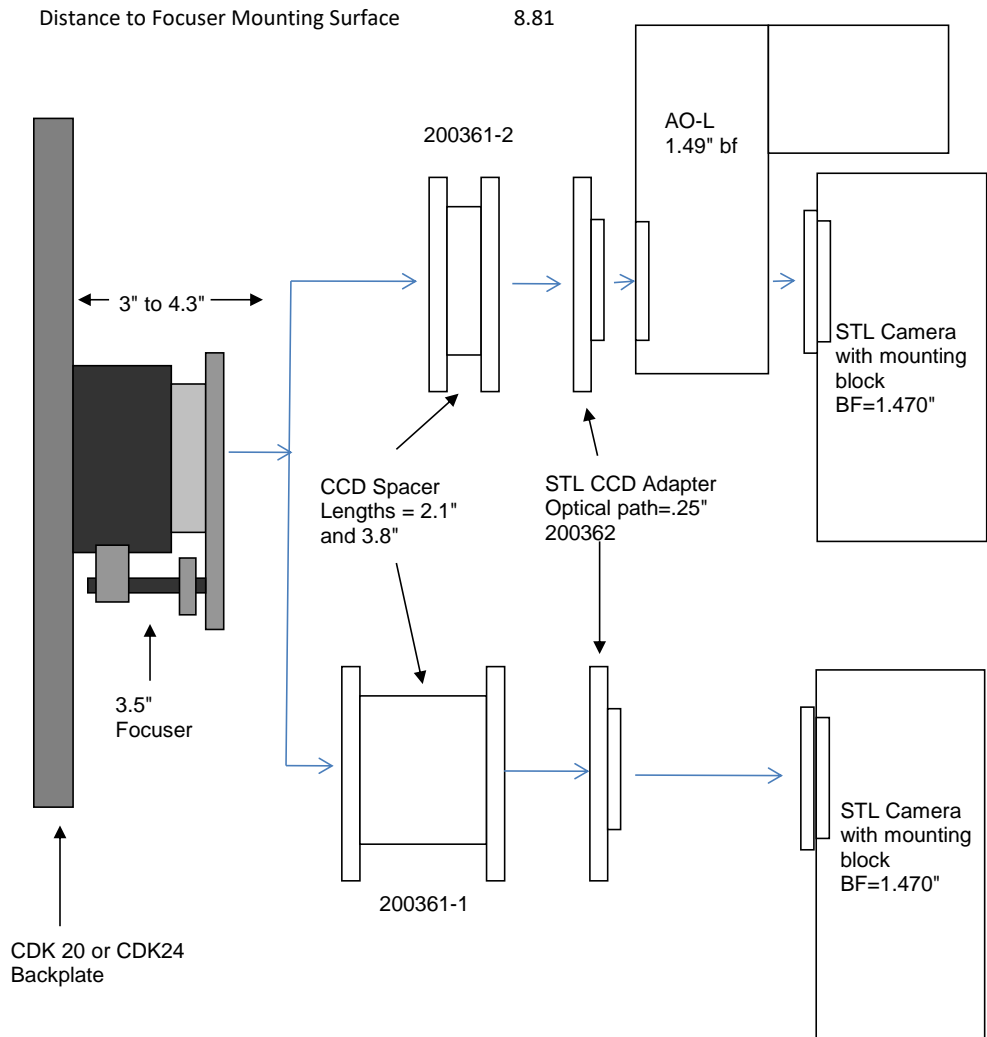
**PLANEWAVE INSTRUMENTS**  
CDK20/24 SECUREFIT SPACERS FOR STT CAMERAS



<b>STT8300 Camera w/ Self Guiding Filter Wheel</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser position (0-1.3")	0.532	5.278
SecureFit Spacer 2.1- <b>200361-2</b>	2.1	3.178
CCD SecureFit Extender - <b>200377</b>	0.5	2.678
SecureFit to FW8G-STT - <b>600351</b>	0.55	2.128
FW8G-SST attached to STT-8300 Camera	2.128	0

<b>STT8300 Camera w/Filter Wheel, OAG8300</b>		8.81 remaining BF
Focuser racked in	3	5.81
Focuser position (0-1.3")	0.43	5.38
SecureFit Spacer 3.8- <b>200361-1</b>	2.1	3.28
CCD SecureFit Extender - <b>200377</b>	0.5	2.78
SecureFit to FW8G-STT - <b>600351</b>	0.55	2.23
OAG-8300	0.75	1.48
FW5-8300 / FW8-8300	0.79	0.69
STT-8300 Camera	0.69	0

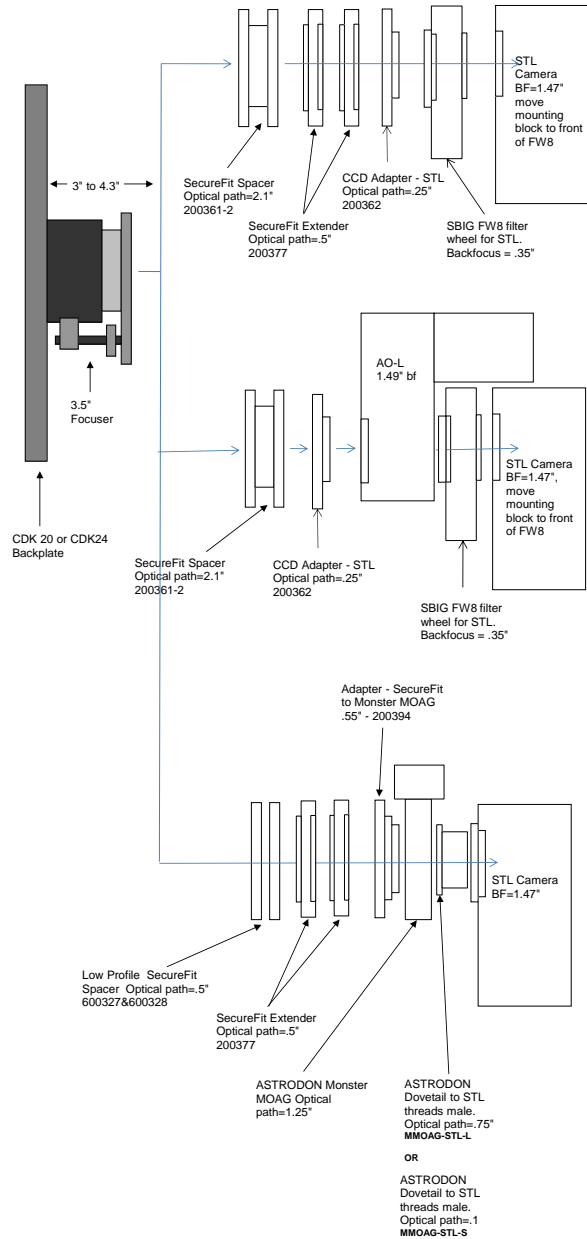
**PLANEWAVE INSTRUMENTS**  
**CDK20, 24 SECUREFIT SPACERS FOR STL CAMERAS**



<b>STL and AO-L</b>	8.81 remaining BF	
Focuser racked in	3	5.81
Focuser position (0-1.3")	<b>0.5</b>	5.31
CCD Spacer 2.1 - 200361-2	<b>2.1</b>	3.21
CCD Adapter STL - 200362	0.25	2.96
AO-L	1.49	1.47
STL Back Focus	1.47	0

<b>STL Camera Alone</b>	8.81 remaining BF	
Focuser racked in	3	5.81
Focuser position (0-1.3")	<b>0.29</b>	5.52
CCD Spacer 3.8 - 200361-1	<b>3.8</b>	1.72
CCD Adapter STL - 200362	0.25	1.47
SLT Back Focus	1.47	0

PLANEWAVE INSTRUMENTS  
CDK 20, AND 24 SPACERS FOR STL CAMERAS



STL w/ FW8		
8.81 remaining BF		
Focuser racked in	3	5.81
Focuser position (0-1.3")	0.64	5.17
CCD Spacer 2.1 - 200361-2	2.1	3.07
CCD SecureFit Extender - 200377	0.5	2.57
CCD SecureFit Extender - 200377	0.5	2.07
CCD Adapter STL - 200362	0.25	1.82
FW8	0.35	1.47
SLT Back Focus	1.47	0

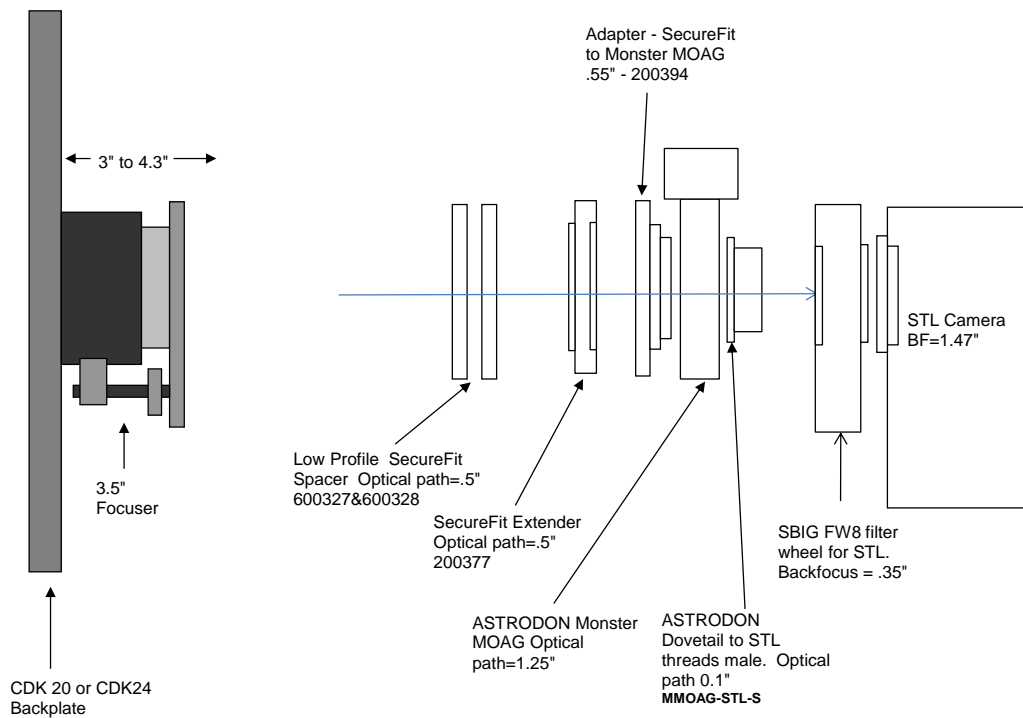
STL w/ FW8 and AO-L		
8.81 remaining BF		
Focuser racked in	3	5.81
Focuser position (0-1.3")	0.15	5.66
CCD Spacer 2.1 - 200361-2	2.1	3.56
CCD Adapter STL - 200362	0.25	3.31
AO-L	1.49	1.82
FW8	0.35	1.47
SLT Back Focus	1.47	0

STL camera and MMOAG		
8.81 remaining BF		
Focuser racked in	3	5.81
Focuser position (0-1.3")	0	5.81
LowProfile SecureFit Spacer - 0.5", 600327&328	0.5	5.31
SecureFit 1/2" Spacer - 200377	0.5	4.81
CCD SecureFit to MMOAG - 200394	0.55	4.26
Monster MOAG	1.25	3.01
AstroDon part - MMOAG-STL-L	0.75	2.26
SLT Back Focus	1.47	0.79

STL camera and MMOAG		
8.81 remaining BF		
Focuser racked in	3	5.81
Focuser position (0-1.3")	0.59	5.22
LowProfile SecureFit Spacer - 0.5", 600327&328	0.5	4.72
SecureFit 1/2" Spacer - 200377	0.5	4.22
SecureFit 1/2" Spacer - 200377	0.5	3.72
CCD SecureFit to MMOAG - 200394	0.55	3.17
Monster MOAG	1.25	1.92
AstroDon part - MMOAG-STL-S	0.1	1.82
FW8	0.35	1.47
SLT Back Focus	1.47	0

or  
ASTRODON  
Dovetail to STL  
threads male.  
Optical path=.1  
MMOAG-STL-S

PLANEWAVE INSTRUMENTS  
CDK 20 AND 24 SPACERS FOR STL CAMERAS



STL camera and MMOAG		8.81 remaining BF
Focuser racked in	3	5.81
Focuser position (0-1.3")	0.59	5.22
LowProfile SecureFit Spacer - 0.5", 600327&600328	0.5	4.72
SecureFit 1/2" Spacer - 200377	0.5	4.22
SecureFit 1/2" Spacer - 200377	0.5	3.72
CCD SecureFit to MMOAG - 200394	0.55	3.17
AstroDon part - MMOAG	1.25	1.92
AstroDon part - MMOAG-STL-S	0.1	1.82
Filter Wheel, FW8	0.35	1.47
SLT Back Focus	1.47	0