

Fluorite Apochromat

FC-76DC

OBJECTIVE UNIT

INSTRUCTION MANUAL

TAKAHASHI

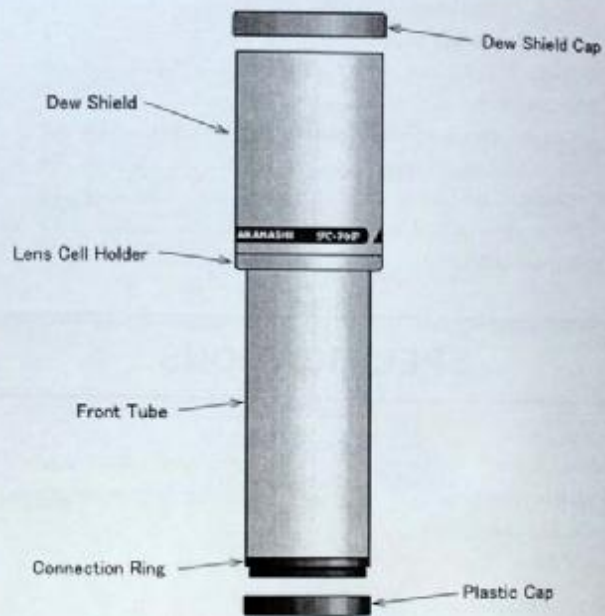
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SPECIFICATIONS

Configuration	Fluorite Apochromat Doublet
Effective Aperture	76mm all planes multi-coated
Focal Length	570mm
Focal Ratio	1: 7.5
<With 76D Flattener>	
Focal Length	594mm
Focal Ratio	1:7.8
Image Circle	40mm
<With 76D Reducer>	
Focal Length	417mm
Focal Ratio	1:5.5
Image Circle	36mm
<With Extender-Q 1.6X>	
Focal Length	916mm
Focal Ratio	1:12.0
(Note) Image Circle is illuminated 60%.	
Diameter of Main Tube	80mm
Total Length of Main Tube	660mm
Weight of Main Tube Assembly	1.8kg (about 3.6lbs)

Tube Assembly Layout



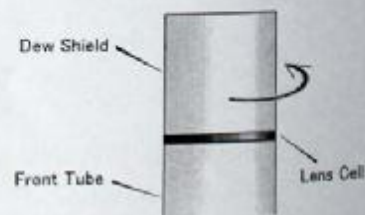
Some Procedures before using

■ Changing the objective lenses

The FC-76D Objective Unit can be used as FC-76DC by changing the objective unit with FS-60CB. The procedures are as follows.

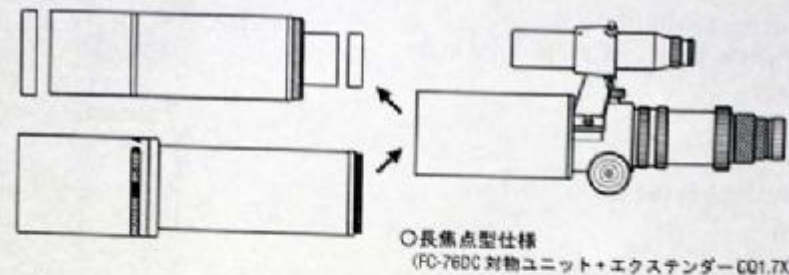
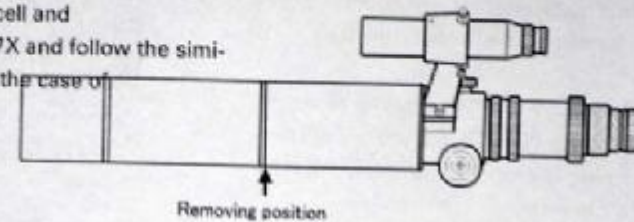
1. Removing the dew shield

At first, remove the dew shield of FS-60CB. Hold the main tube and turn the dew shield counter clockwise to remove it. If the dew shield came off with the cell, remove them from the tube assy.



■ Changing the objective lens (FS-60Q)

Basic Model: Remove the dew shield, the objective lens with cell and the Extender-CQ 1.7X and follow the similar procedures with the case of FS-60CB.

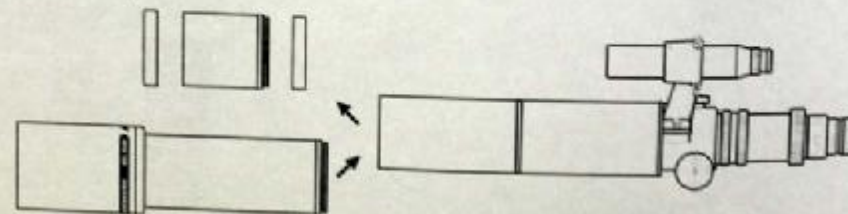


・ Long Focal Length Model:

Remove the dew shield and the objective lens with cell and leave the Extender-CQ 1.7X as it is. When the FC-76D Objective Unit is attached on the top of Extender Unit, it turns into an $f=954\text{mm}$ ($f/12.6$) telescope. The FC-60Q lens unit removed from the tube assy should be kept at dry place. Concerning the available accessories to be used with this telescope, please refer to the system chart at the p-19.

○ Specifications of Long Focal Length Model (FC-76D Objective Unit/Extender-CQ 1.7X)

Focal Length 954mm
 Focal Ratio $f/12.6$
 With Extender-Q 1.6X
 Focal Length 1530mm
 Focal Ratio $f/20.1$

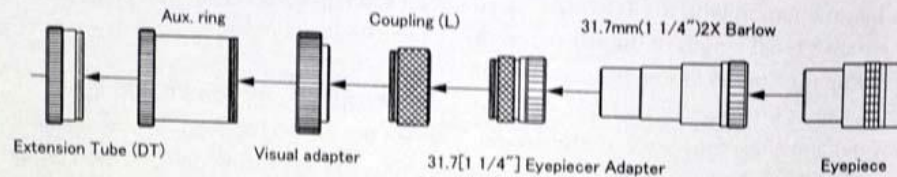


Accessories for Photo/Visual Application

Takahashi offers a wide range of dedicated system parts for imaging and visual applications.

■ 2X Barlow Lens

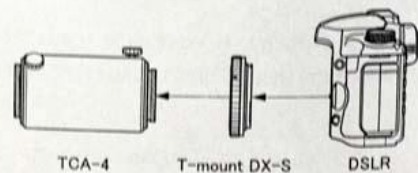
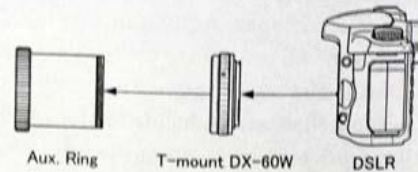
The Barlow lens doubles the focal length of the FC-76D to 1140mm for high magnification views using longer focal length eyepieces for better eye relief.



■ T-Adapters

The FC-76D uses two different T-mounts. The DX-S uses the standard female T-thread. This attaches directly to TCA-4 adapter for eyepiece projection imaging. On the other hand, the DX-60W camera mount uses a 52mm x .75 female thread to attach to the dedicated reducer, flattener and prime focus tube.

These adapter are available for Canon and Nikon.



■ Camera Angle Adjuster (CAA)

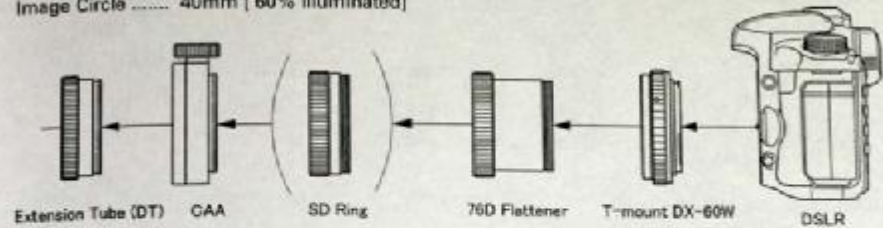
The CAA is a unique bearing device that is used on Takahashi telescope that allows for the 360 degree rotation of a camera to allow proper framing of an image without loss of focus. This is also a handy device for visual uses.

⚠ Cautions

Clean the T-adapter and brush it to make certain it is perfectly clean and free of debris that could cause the ring to jam on the camera.

Connections for imaging with 76D Flattener

Focal Length 594mm
Focal Ratio f/ 7.8
Image Circle 40mm [60% illuminated]



■ 76D Flattener

The dedicated FC-76D Flattener is designed to produce a 40mm flat circle increasing the focal length to 594mm at f/7.8. This is ideal for deep space, lunar and terrestrial imaging.

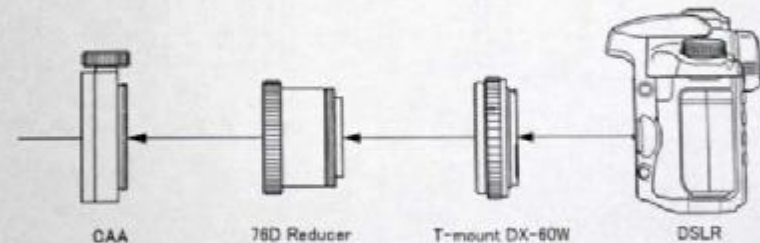
Adding the SD adapter (short distance imaging adapter) allows the telescope to focus down to 20 feet (6m).

■ 76D Reducer

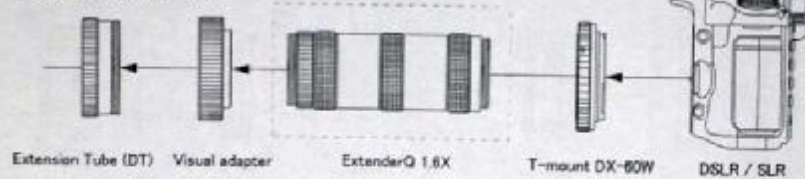
The 76D reducer is designed for deep sky imaging by reducing the focal length to f/ 5.5 and making 20 micron images across the field. The reducer provides a 36mm image circle.

Connections for imaging with 76D Reducer

Focal Length 417mm
Focal Ratio f/ 5.5
Image Circle 36mm [60% illuminated]



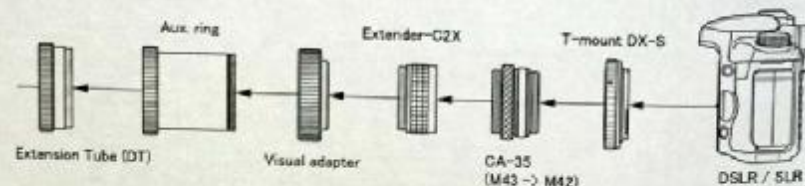
Connection for magnifying imaging with the Extender-Q 1.6X
 Focal Length 916mm
 Focal Ratio f/ 12.0



■ Extender-Q

The Extender-Q is designed to extend the focal length by 1.6x and produce a corrected field for visual and imaging applications. It can be used with either 2" (50.8mm) or 1 1/4" (31.7mm) diagonal and DSLR.

Connection for magnifying imaging with the Extender-C2X
 Focal Length 1140mm
 Focal Ratio f/ 15.0



■ Extender-C2X

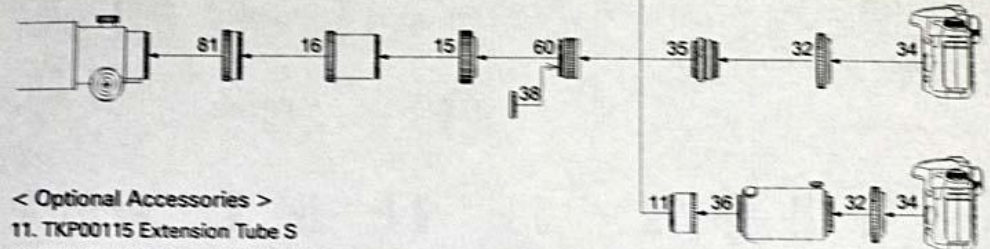
This extender can extend the focal length of FC-76D by 2X, which is useful for imaging the Moon at the moderate magnification, ground and bird. Refer to the system chart shown below.

With this system, you can take images across 35mm format with almost no vignette.

■ Extender-C 2X System Chart

< Standard Accessories >

- 14. TKP00104 Coupling L
- 15. TKP20005 Visual Adapter
- 16. TKP20001 Aux. Ring
- 46. TKP00101 31.7(1 1/4") Eyepiece Adapter
- 81. TKP20006B Extension Tube (DT)



< Optional Accessories >

- 11. TKP00115 Extension Tube S
- 32. TKA01250 T-Mount DX-S (EOS)
- TKA01254 T-Mount DX-S (Nikon)
- 34. DSLR camera
- 35. TKA00205 Camera Attachment (M43 ? M42)
- 36. TKA00210 TCA-4
- 38. 30.5mm Filter
- 47. LE Eyepiece
- 49. TKA00547 Diagonal prism (31.7/1 1/4")
- 60. TKA00594 Extender-C2X

Note: Some DSLR cannot be attached.

System Chart

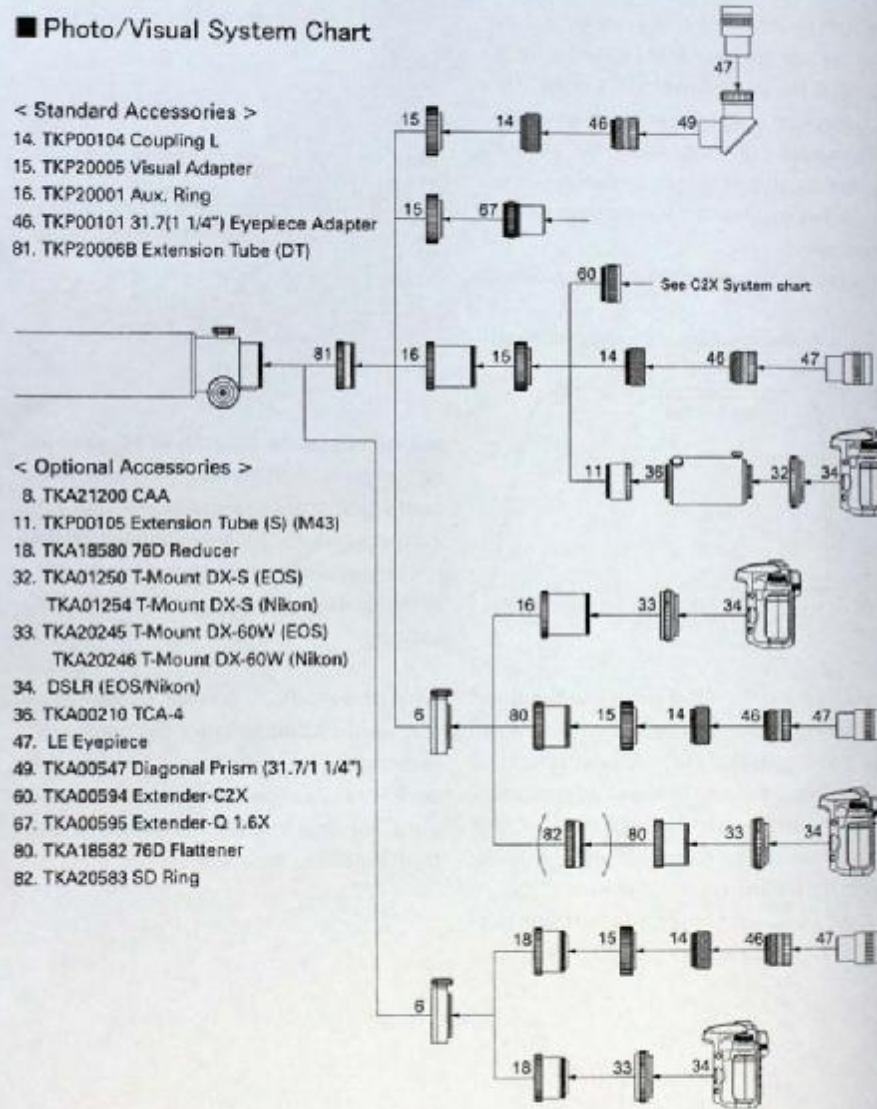
■ Photo/Visual System Chart

< Standard Accessories >

- 14. TKP00104 Coupling L
- 15. TKP20005 Visual Adapter
- 16. TKP20001 Aux. Ring
- 46. TKP00101 31.7(1 1/4") Eyepiece Adapter
- 81. TKP20006B Extension Tube (DT)

< Optional Accessories >

- 8. TKA21200 CAA
- 11. TKP00105 Extension Tube (S) (M43)
- 18. TKA18580 76D Reducer
- 32. TKA01250 T-Mount DX-S (EOS)
TKA01254 T-Mount DX-S (Nikon)
- 33. TKA20245 T-Mount DX-60W (EOS)
TKA20246 T-Mount DX-60W (Nikon)
- 34. DSLR (EOS/Nikon)
- 36. TKA00210 TCA-4
- 47. LE Eyepiece
- 49. TKA00547 Diagonal Prism (31.7/1 1/4")
- 60. TKA00594 Extender-C2X
- 67. TKA00595 Extender-Q 1.6X
- 80. TKA18582 76D Flattener
- 82. TKA20583 SD Ring



Note: Some DSLRs cannot be attached.

SD Ring is used for focusing an object as near as 6 meter off.

■ Extender-Q 1.6X System Chart

< Standard Accessories >

- 15. TKP20005 Visual Adapter
- 46. TKP00101 31.7(1 1/4") Eyepiece Adapter
- 81. TKP20006B Extension Tube (DT)

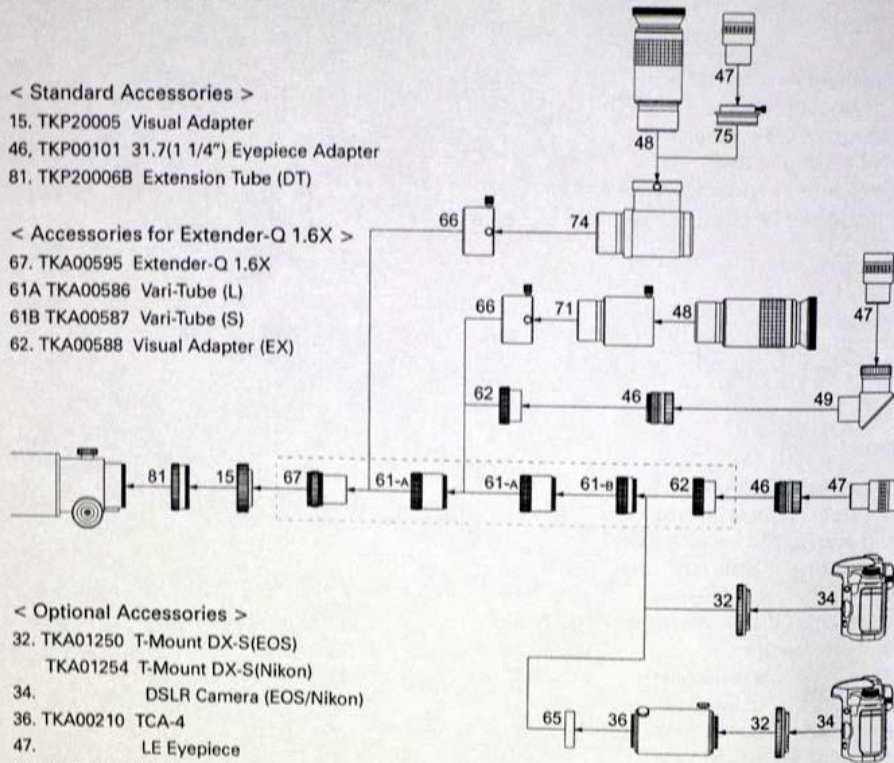
< Accessories for Extender-Q 1.6X >

- 67. TKA00595 Extender-Q 1.6X
- 61A TKA00586 Vari-Tube (L)
- 61B TKA00587 Vari-Tube (S)
- 62. TKA00588 Visual Adapter (EX)

< Optional Accessories >

- 32. TKA01250 T-Mount DX-S(EOS)
TKA01254 T-Mount DX-S(Nikon)
- 34. DSLR Camera (EOS/Nikon)
- 36. TKA00210 TCA-4
- 47. LE Eyepiece
- 48. TKA00530 LE-50mm (50.8/2")
- 49. TKA00547 Diagonal Prism (31.7/1 1/4")
- 65. TKA00590 EC Ring
- 66. TKA00596 50.8(2") Adapter (EX-Q 1.6X)
- 74. TKA00543 Diagonal Mirror (50.8/2")
- 75. TKA00111 Adapter (DM)

Note: Some DSLR cameras can not be attached.
EC ring connects Extender-Q 1.6X and TCA-4.



■ Long Focal Length Mode System Chart

< Standard Accessories >

- 10. TKP20005 Visual adapter
- 14. TKP00104 Coupling L
- 16. TKP20001 Aux. Ring
- 46. TKP00101 31.7(1 1/4") Eyepiece Adapter
- 81. TKP20006B Extension Tube (DT)

< Optional Accessories >

- 6. TKA21200 CCA
- 32. TKA01250 T-Mount DX-S(EOS)
TKA01254 T-Mount DX-S(Nikon)
- 33. TKA20245 T-Mount DX-60W (EOS)
TKA20246 T-Mount DX-60W (Nikon)
- 34. DSLR (EOS/Nikon)
- 36. TKA00210 TCA-4
- 47. LE Eyepiece
- 67. TKA00595 Extender-Q 1.6X

Note: Some DSLR cameras can not be attached.

