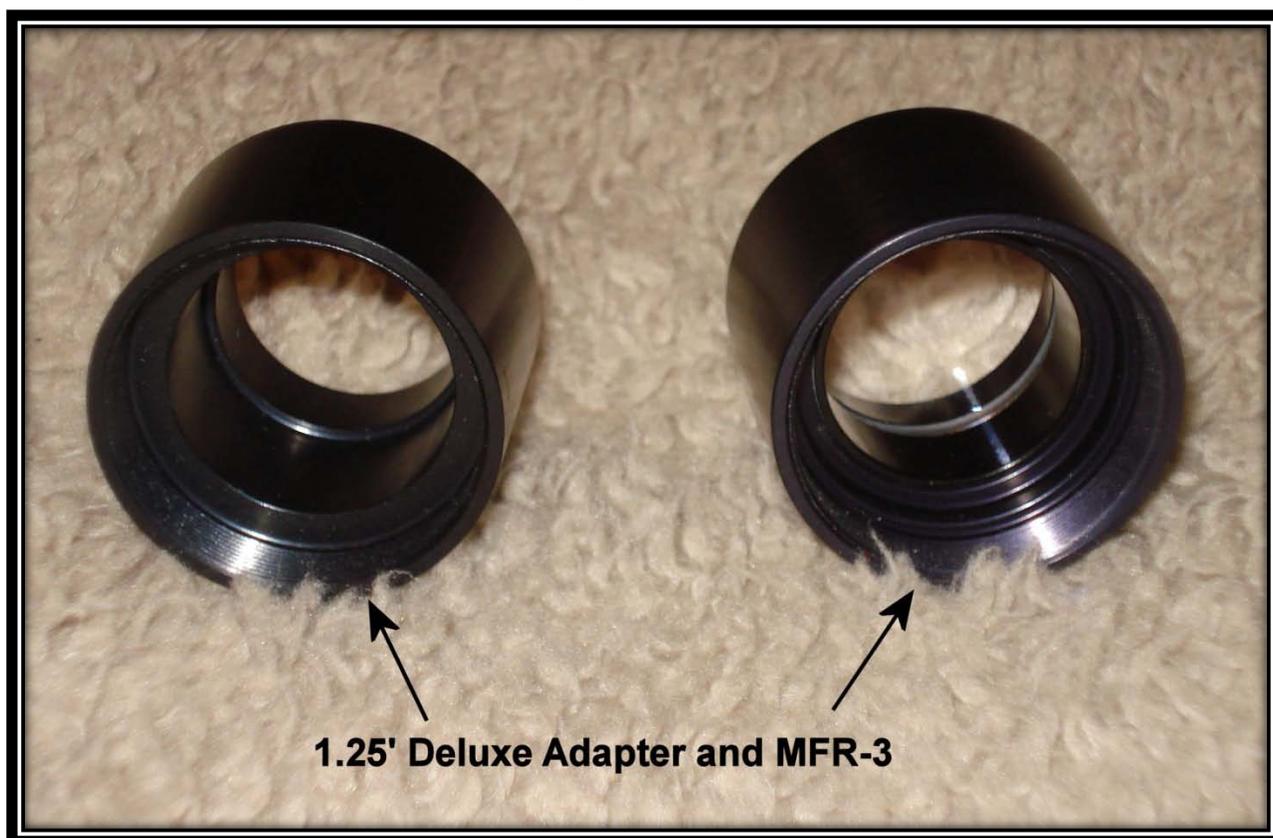


# Focal Reduction *for Dummies*

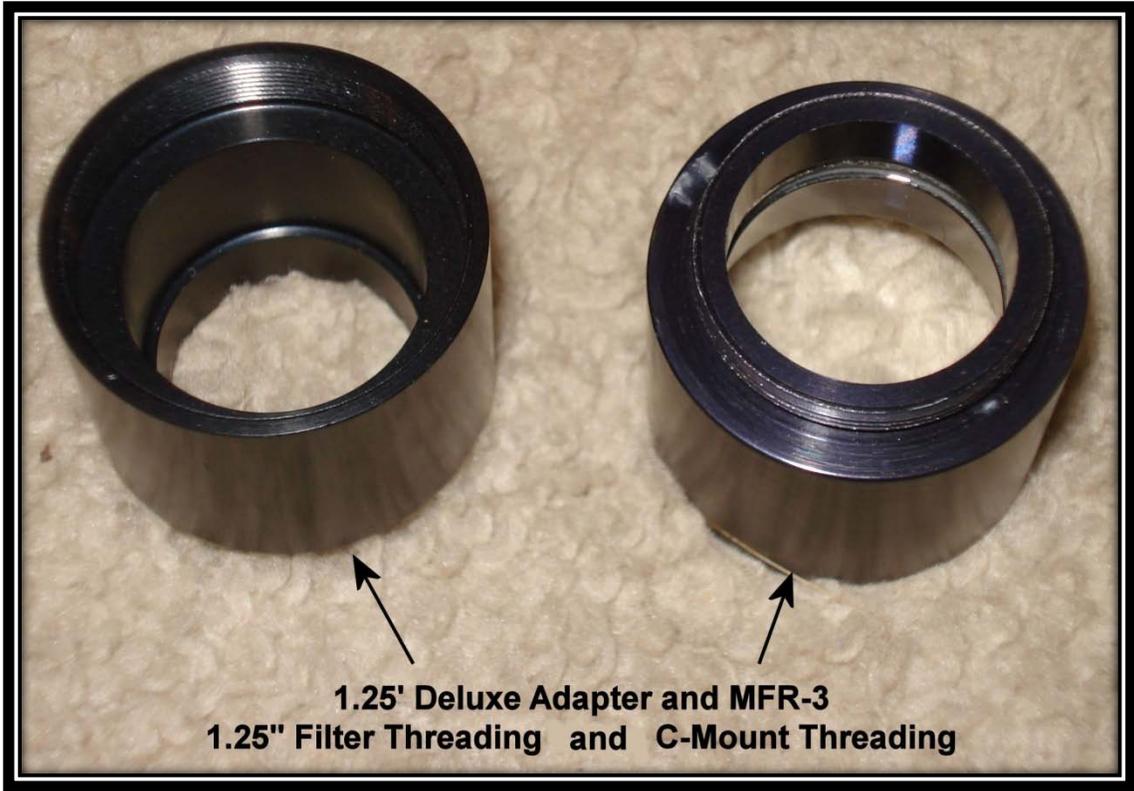
Many people have contacted me about how to use the MallinCam MFR-3 Focal Reducer, 10MM extension Rings and the 1.25" Deluxe Adapter that comes with every MallinCam. Most questions involve two issues:

1. What parts connect to each other?
2. What focal reduction is achieved?

I hope this document helps clear up these questions. Below is a photo showing a comparison of the 1.25" Deluxe Adapter and the MFR-3 Focal Reducer. They use the same machined aluminum barrel. The only difference is the lens assembly in the MFR-3.



The machined aluminum barrel has 1.25" filter threading on one end and C-mount threading on the other. They CANNOT be connected together in series.



Here is a photo of the MallinCam with the 1.25" Deluxe Adapter installed.  
Using the 1.25" Deluxe Adapter by itself provides **NO FOCAL REDUCTION**.



Here is a photo of the MallinCam with the MFR-3 installed.  
This provides **0.75 FOCAL REDUCTION**.



They look the same. The only way to tell them apart is to look into the front of the machined aluminum barrel to see if there is a lens present. Adding a 10MM Extension Ring between the MallinCam and the MFR-3 provides a **0.65 FOCAL REDUCTION**.



If additional focal reduction is needed, a second 10MM Extension Ring can be inserted between the MallinCam and the first 10MM Extension Ring.



When two 10MM Extension Rings are inserted between the MallinCam and the MFR-3, the provided **FOCAL REDUCTION is 0.55.**



**Adding additional 10MM Extension Rings is not recommended as vignetting can occur.**

**In summary**

<b>MallinCam with 1.25" Deluxe Adapter</b>	<b>No Focal Reduction</b>
<b>MallinCam with MFR-3 and No 10MM Extension Rings</b>	<b>0.75 Focal Reduction</b>
<b>MallinCam with MFR-3 and One 10MM Extension Rings</b>	<b>0.65 Focal Reduction</b>
<b>MallinCam with MFR-3 and Two 10MM Extension Rings</b>	<b>0.55 Focal Reduction</b>

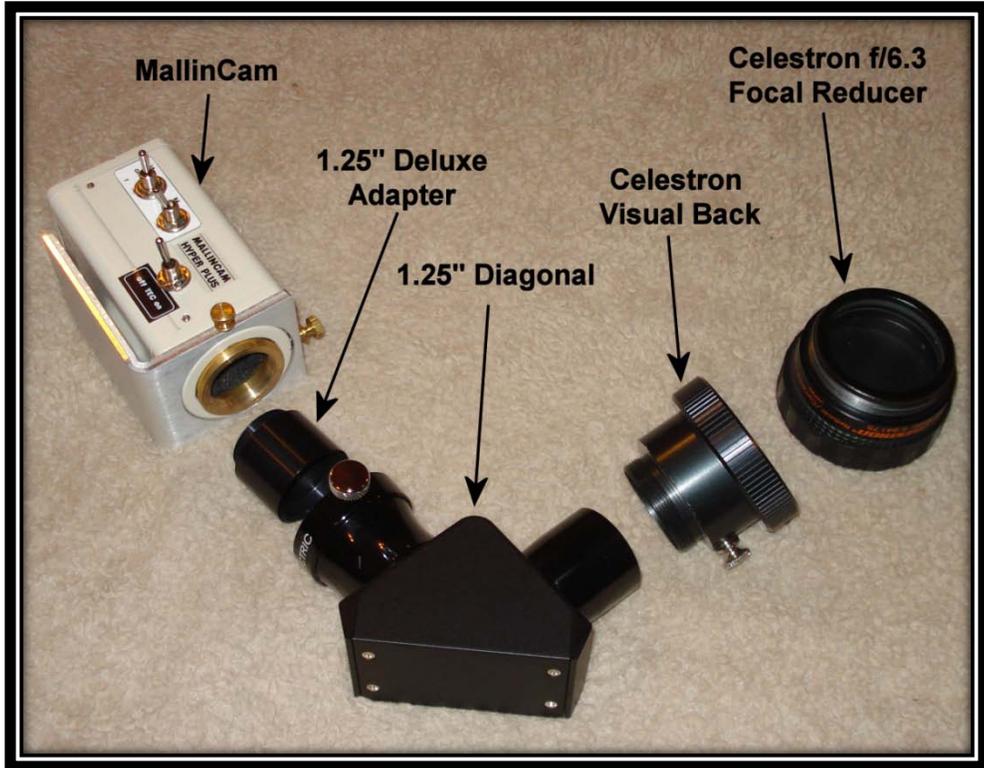
**Assume that the telescope to be used with the MallinCam is an f/5**

<b>MallinCam with 1.25" Deluxe Adapter</b>	<b>f/5</b>
<b>MallinCam with MFR-3 and No 10MM Extension Rings</b>	<b>f/3.75</b>
<b>MallinCam with MFR-3 and One 10MM Extension Rings</b>	<b>f/3.23</b>
<b>MallinCam with MFR-3 and Two 10MM Extension Rings</b>	<b>f/2.75</b>

**Assume that the telescope to be used with the MallinCam is an f/10**

<b>MallinCam with 1.25" Deluxe Adapter</b>	<b>f/10</b>
<b>MallinCam with MFR-3 and No 10MM Extension Rings</b>	<b>f/7.5</b>
<b>MallinCam with MFR-3 and One 10MM Extension Rings</b>	<b>f/6.5</b>
<b>MallinCam with MFR-3 and Two 10MM Extension Rings</b>	<b>f/5.5</b>

**For an f/10 SCT telescope user, it is possible to achieve f/4 through the use of a combination of focal reducers. Using a Celestron or Meade f/6.3 Focal Reducer, as shown below, an f/10 SCT acts at f/6.3.**



For those wanting to get to f/4 and still be able to use a diagonal, the 1.25" Deluxe Adapter is replaced with the MFR-3 Focal Reducer and one 10MM Extension Ring.



The assembly is screwed directly to the back of the SCT Optical Tube Assembly and the system speed will be f/4.

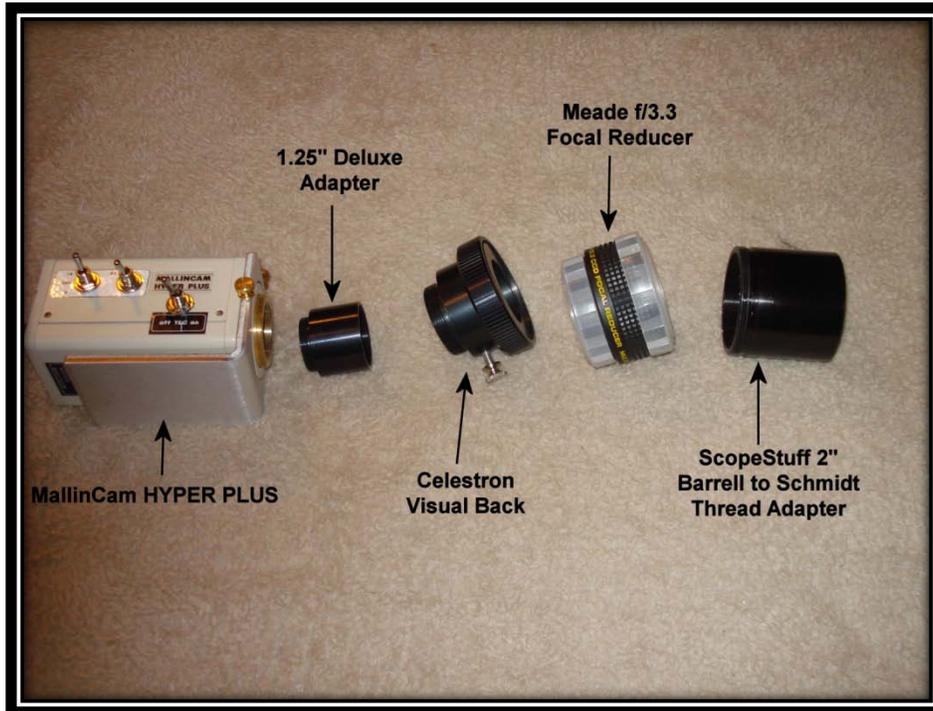


If someone wants to use their Celestron or Meade f/6.3 Focal Reducer on a refractor, a ScopeStuff 2" Eyepiece Barrel to Schmidt Thread Adapter (Part # TAEP) can be screwed into the focal reducer. The 2" barrel can then be inserted into a 2" focuser. The scope will see a FOCAL REDUCTION of 0.63. For example, an f/8 refractor will function as an f/5 and an f/5 will function like an f/3.2.



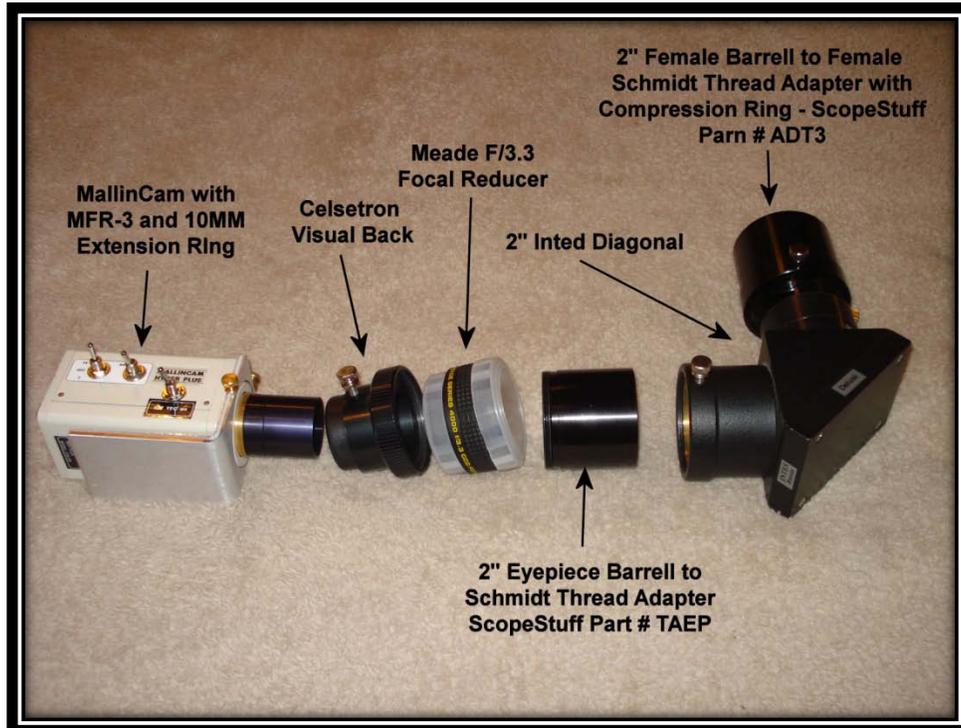
For those wanting to use their Meade f/3.3 focal reducer with either their SCT or refractor, they will not be able to use a diagonal due to a lack of focus travel if the focal reducer is installed before the diagonal. Below are images showing how to use the Meade f/3.3 Focal Reducer without a diagonal in a refractor with a 2" focuser. For use on a SCT, the ScopeStuff Adapter would be eliminated and

the f/3.3 Focal Reducer screwed directly to the threads on the rear of the  
Optical Tube Assembly.



For those wanting to use their Meade f/3.3 focal reducer with either their SCT or refractor and 2" diagonal, follow the steps below. An additional part will be

needed from ScopeStuff – a 2" Female Barrell to Female Schmidt Thread Adapter with Compression Ring (Part Number ADT3).



By placing the Meade f/3.3 Focal Reducer after the 2" Diagonal, it is still possible to attain focus and an f/10 SCT will be operating at f/3.3.



**If the ScopeStuff 2" Female Barrell to Female Schmidt Thread Adapter with Compression Ring is removed, then the assembly can be placed into a 2" focuser on a refractor for wide field viewing**



**For questions on this document, focal reduction, or any other aspect of the use of your MallinCam, please contact me at:**  
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**Jack Huerkamp**