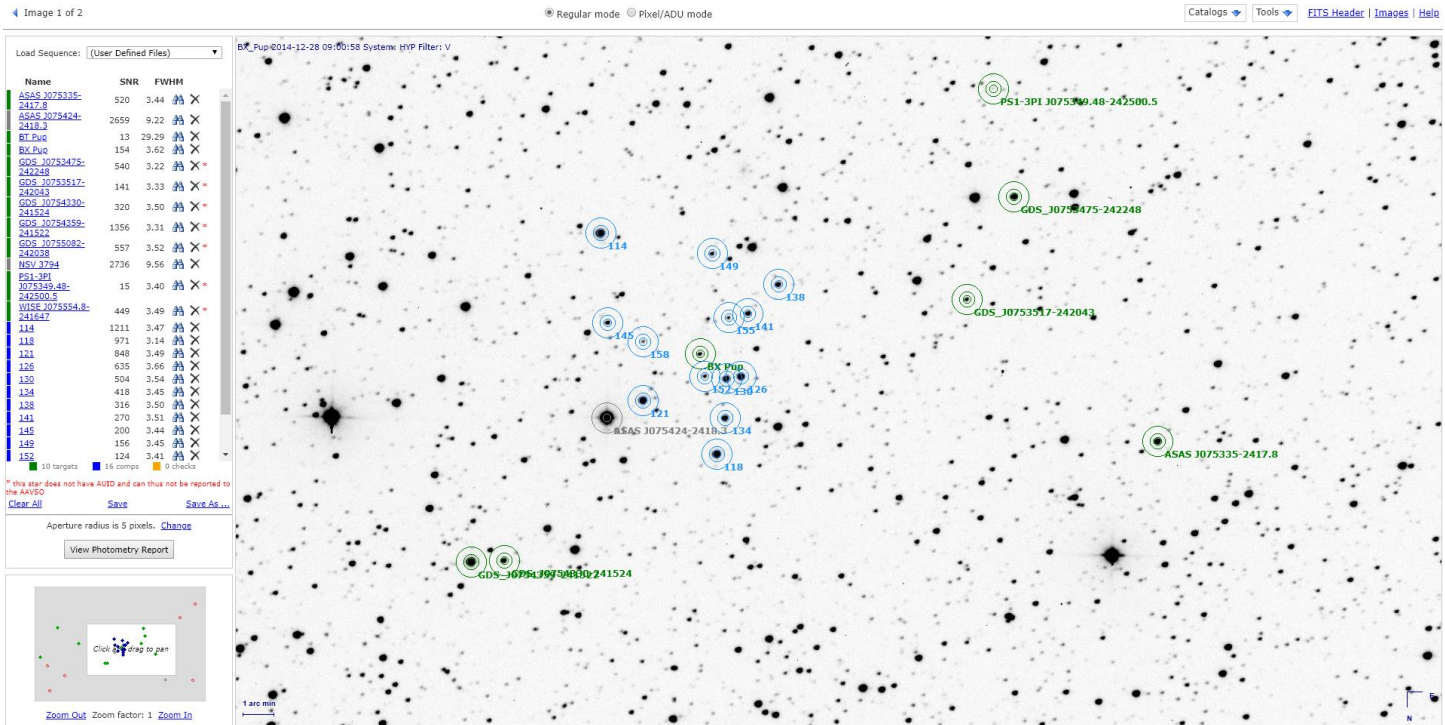


VPhot X Choice Course - Week 2 Quiz

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Sep 24, 2019

1a. Open BX_Pup V 141228 090058. Load AAVSO comps and VSX targets. Provide a photo (jpeg or other, embedded or attached) of the image window including table to left.



1b. How many targets are present? How many comps? Look carefully, how many targets are actually there? Why are some not counted? (Note: I decided this was too tricky and gave you a hint.)

12 targets are listed, but two are overexposed and marked grey so not counted at bottom of the list it where it shows 10 targets (green) and 16 comps (blue). Of the remaining 10 targets, 7 do not have AUIDs.

1c. How many comps will you use for photometry? Which ones? Why? (No single best answer expected. Think before answering.)

I removed 91, 114, 118, 121, 126, 130, 134, 155, 158. Since there are plenty of comp stars in this range, I removed all with extremely low SNR and many of the higher SNR leaving 5 comp stars.

1d. Which check star will you use? Why?

I decided to use 141 as the check star since it was closest to the FWHM of the target.

1e. What aperture and annulus settings will you use? Why? Provide a photo that shows some information that helped you make your decision rather than just using a “rule of thumb”.

I first selected the 2 x FWHM rule of thumb then examined the image using an aperture radius of 7. On further inspection, I refined this down to 6.

1f. What Magnitude and Err did you get for BX Pup and your check?

Target	Mag	Err	Std	Err(SNR)	SNR	Sky	^*
141 (14.099)	14.099	0.005	0.003	0.004	254	103	
BX Pup	14.973	0.008	0.003	0.008	143	102	<input type="checkbox"/>

1g. What is the difference between the known and calculated check magnitudes?

14.099 known and measured, so zero

1h. Provide a photo of the bottom half of the Single Photometry page. How was this image calibrated? How long was the exposure? What telescope was used?

Bias/Dark /Flat

180 seconds

Telescope HYP

Object:	BX_Pup	Date/Time:	2014-12-28 09:00:58
JD:	2457019.87567	Decimal Date:	2014-12-28.37567
R.A.:	07:54:15.80	Dec:	-24:20:10.87
Exp.time:	180 s	Filter:	V
Airmass:	1.7877	Calibration:	BDF
Telescope:	HYP		
Filename:	637033700982870954.fts		

[View full FITS header](#)

1i. Of the comps you used, which gave the poorest BX Pup target estimate? What color indicates this?

145 and 152 were the worse indicated by the pink highlight.

Star	IM	SNR	X	Y	Sky	Air	B-V	V-mag	Target estimate	Active
138	-6.486	303	1 642.552	968.201	102	1.788	0.551	13.848	14.974	<input checked="" type="checkbox"/>
145	-5.795	186	1 416.180	1 018.855	103	1.788	0.454	14.542	14.977	<input checked="" type="checkbox"/>
149	-5.433	143	1 554.507	927.470	102	1.788	0.437	14.899	14.973	<input checked="" type="checkbox"/>
152	-5.167	115	1 545.067	1 089.743	104	1.788	0.353	15.163	14.970	<input checked="" type="checkbox"/>

1j. Why do you think these comps yielded the poorest target estimate? (Hint: Look at the data AND the image. No perfect answer.)

Looking at the data and image, I am not clear on why these are worst.

Bonus Question:

How would you ignore these comps and recalculate the magnitudes? What revised BX Pup magnitude did you get?

I selected Back to Image, then removed 145 and 152, leaving 138 and 149 comps and recalculated with no real change:

Aperture radius: <input type="text" value="6"/> <input type="checkbox"/> Transform Refresh							
Target	Mag	Err	Std	Err(SNR)	SNR	Sky	<*
<u>141 (14.099)</u>	14.099	0.004	0.001	0.004	254	103	
BX Pup	14.973	0.008	0.001	0.008	143	102	<input type="checkbox"/>

Of these two comps, 138 had a slightly darker red background compared to 149. So I decided to remove 138 and recalculate with a single comp which resulted in higher errors but no change of the calculated mag of 14.973 for BX Pup.:

Aperture radius: <input type="text" value="6"/> <input type="checkbox"/> Transform Refresh							
Target	Mag	Err	Std	Err(SNR)	SNR	Sky	<*
<u>141 (14.099)</u>	14.098	0.009	-	0.004	254	103	
BX Pup	14.973	0.011	-	0.008	143	102	<input type="checkbox"/>