



10621 - ACS Zero Point Verification

Cycle: 14, Proposal Category: GO

(Calibration)

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Dr. Andrew Dolphin (PI)	University of Arizona	adolphin@as.arizona.edu

VISITS

<i>Visit</i>	<i>Targets</i>	<i>Configurations</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) OMEGA-CEN	ACS/WFC	3	26-Jul-2005 21:21:47.0	yes

3 Total Orbits Used

ABSTRACT

The uncertainties in the photometric zero points create a fundamental limit to the accuracy of photometry. The current state of the ACS calibration is surprisingly poor, with zero point uncertainties of 0.03 magnitudes. The reason for this is that the ACS calibrations are based primarily on semi-empirical synthetic zero points and observations of fields too crowded for accurate ground-based photometry.

I propose to remedy this problem by obtaining ACS images of the omega Cen standard field with all nine broadband ACS/WFC filters. This will permit the direct determination of the ACS zero points by comparison with excellent ground-based photometry, and should reduce their uncertainties to less than 0.01 magnitudes. A second benefit is that it will facilitate the comparison of the WFPC2 and ACS photometric systems, which will be important as WFPC2 is phased out and ACS becomes HST's primary imager. Finally, three of the filters will be repeated from my Cycle 12

observations, allowing for a measurement of any change in sensitivity.

OBSERVING DESCRIPTION

The goal of the proposed observations is to obtain accurate photometry of the omega Cen standard stars in the WFC in all nine broadband filters. For the optimal comparisons with WFPC2 observations, the exposure times will be 25 seconds, which is the median exposure time of the WFPC2 omega Cen observations. (This will also ensure signal-to-noise exceeding that of the ground-based standard data.)

Based on my Cycle 12 observations of this field, I do not expect cosmic rays to be a significant problem. Thus I will again be obtaining two images per filter, one with the field centered on each chip. The resulting 18 exposures will fit into the three orbit allocation.

Proposal 10621 - Visit 01 - ACS Zero Point Verification

Wed Jul 27 01:21:53 GMT 2005

Visit	Proposal 10621, Visit 01									
	Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: (none)									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	OMEGA-CEN	RA: 13 25 37.0000 (201.4041667d) Dec: -47 35 38.00 (-47.59389d) Equinox: J2000 Plate Id: (?)	Proper Motion RA: 0.0s/yr Proper Motion Dec: 0.0"/yr Epoch of Position:	V=4.0	Coordinate Source: HST_IMAGE				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC1	F435W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[1]
	2	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC1	F475W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[1]
	3	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC1	F550M	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[1]
	4	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC1	F555W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[1]
	5	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC1	F606W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[1]
	6	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC1	F625W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[1]
	7	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC1	F775W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[2]
	8	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC1	F814W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[2]
	9	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC1	F850LP	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[2]
	10	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC2	F435W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[2]
	11	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC2	F475W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[2]
	12	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC2	F550M	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[2]
	13	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC2	F555W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[3]
14	(1) OMEGA-CEN	(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC2	F606W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[3]	

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Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	15		(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC2	F625W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[3]
	16		(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC2	F775W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[3]
	17		(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC2	F814W	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[3]
	18		(1) OMEGA-CEN	ACS/WFC, ACCUM, WFC2	F850LP	GAIN=2; CR-SPLIT=NO			25.0 Secs [==>]	[3]



