

KIC 010515995

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
010515995-01	OBS	No	0.746596	132.214810	44.8	4.218	7.6	9.9	0.69	4656	0.45	964.17
010515995-02	OBS	No	185.381853	201.884027	851.4	7.780	12.5	7.9	0.69	4656	1.99	0.62
010515995-03	OBS	No	166.050100	180.414071	356.8	2.131	10.3	3.2	0.69	4656	1.66	0.72
010515995-04	OBS	No	63.683326	191.921712	643.6	1.982	7.6	7.3	0.69	4656	2.20	2.57
010515995-05	OBS	No	212.708629	262.124657	880.4	3.045	7.6	7.6	0.69	4656	2.43	0.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010515995-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
010515995-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010515995-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010515995-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
010515995-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

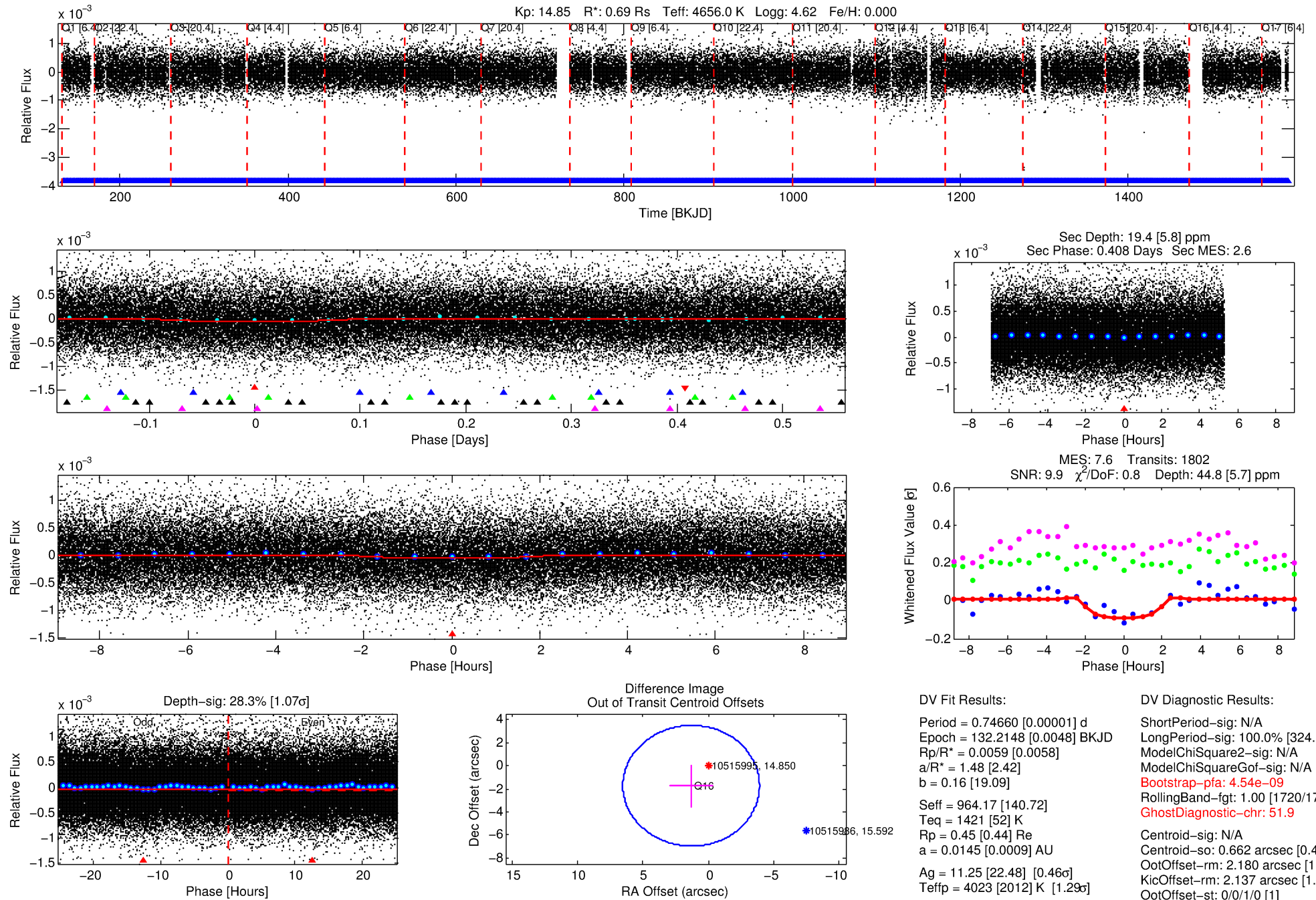
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010515995-01

No Significant Match Found

DV One-Page Summary

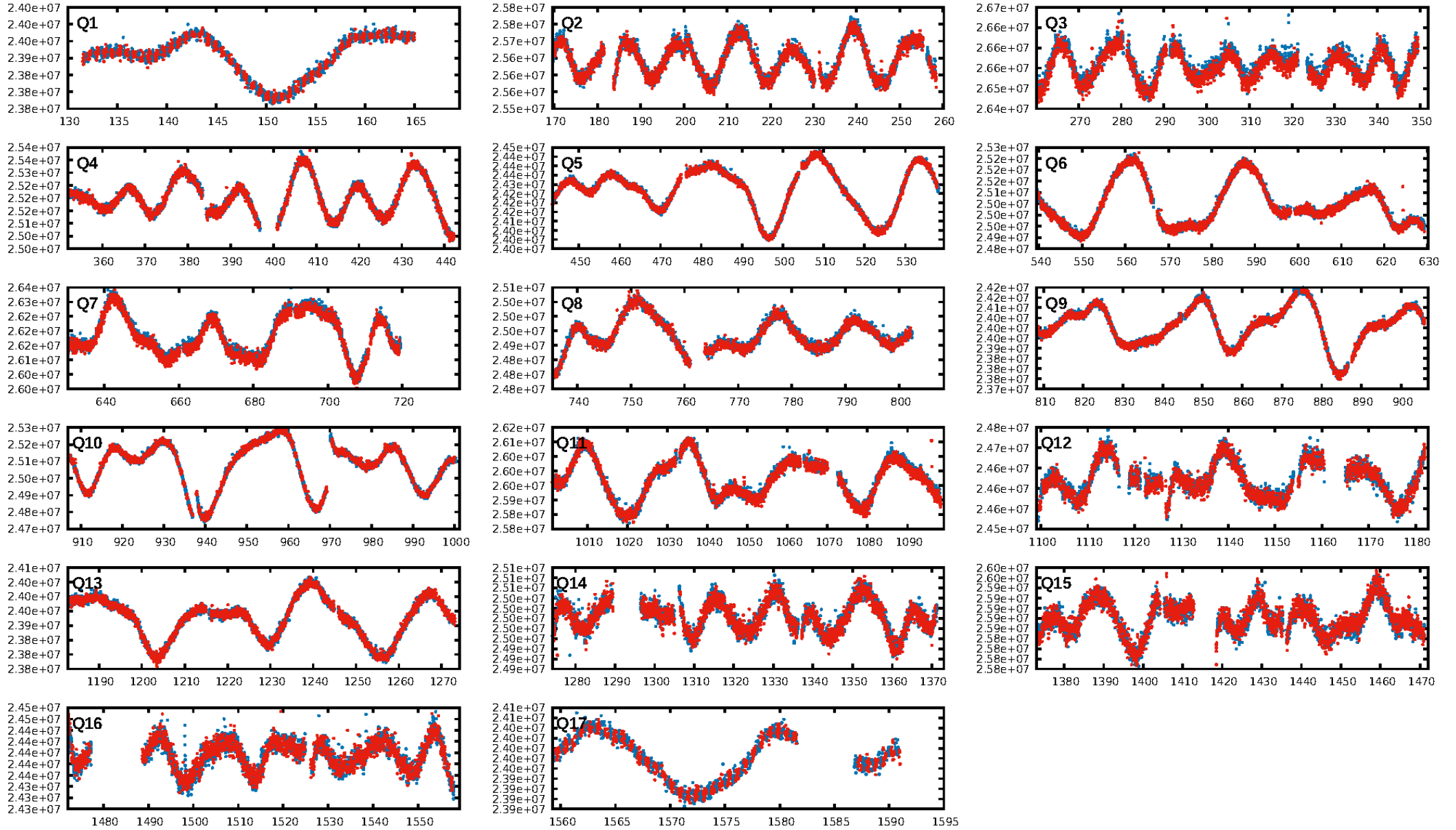
KIC: 10515995 Candidate: 1 of 5 Period: 0.747 d



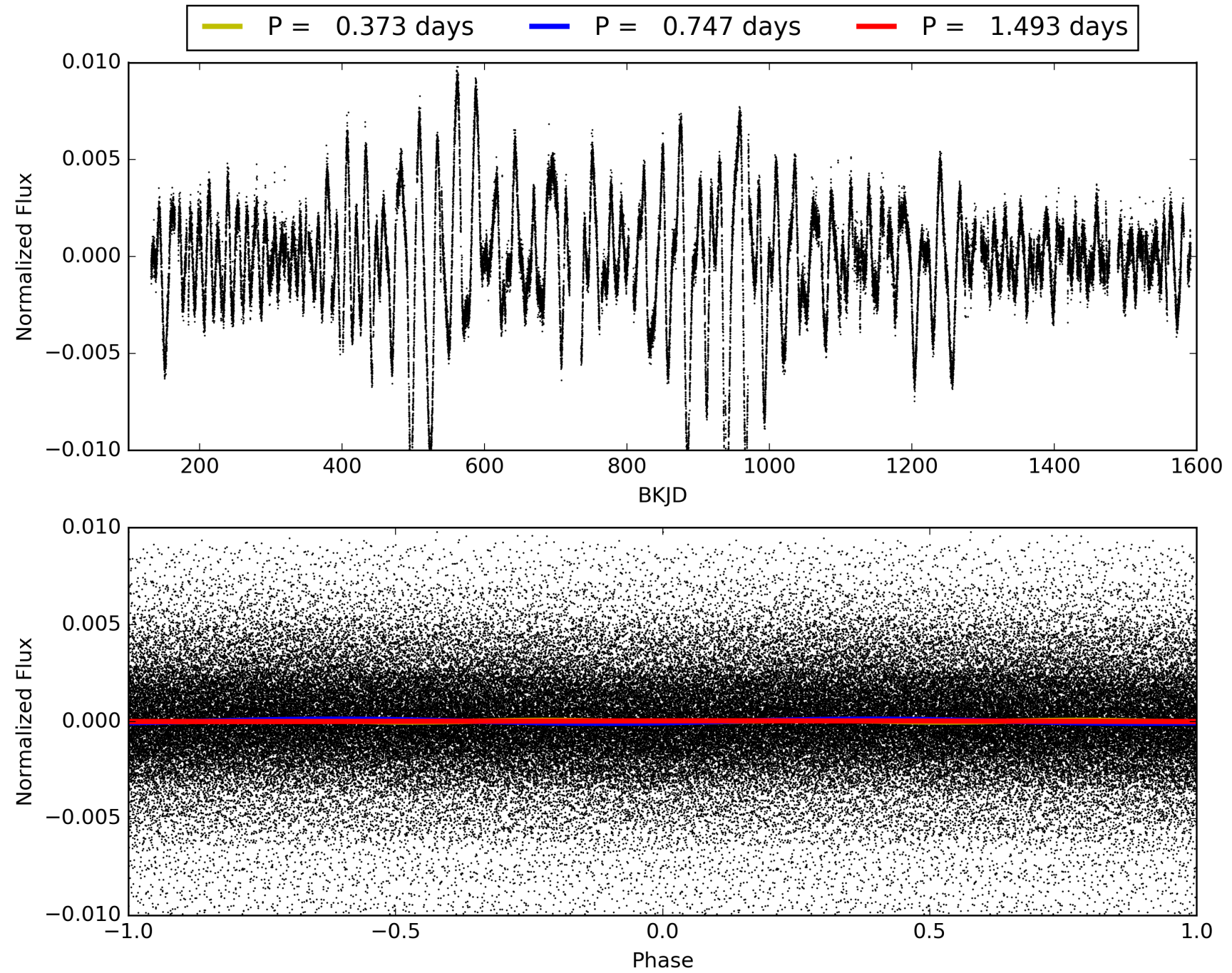
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:29:17 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010515995-01, PDC Light Curves

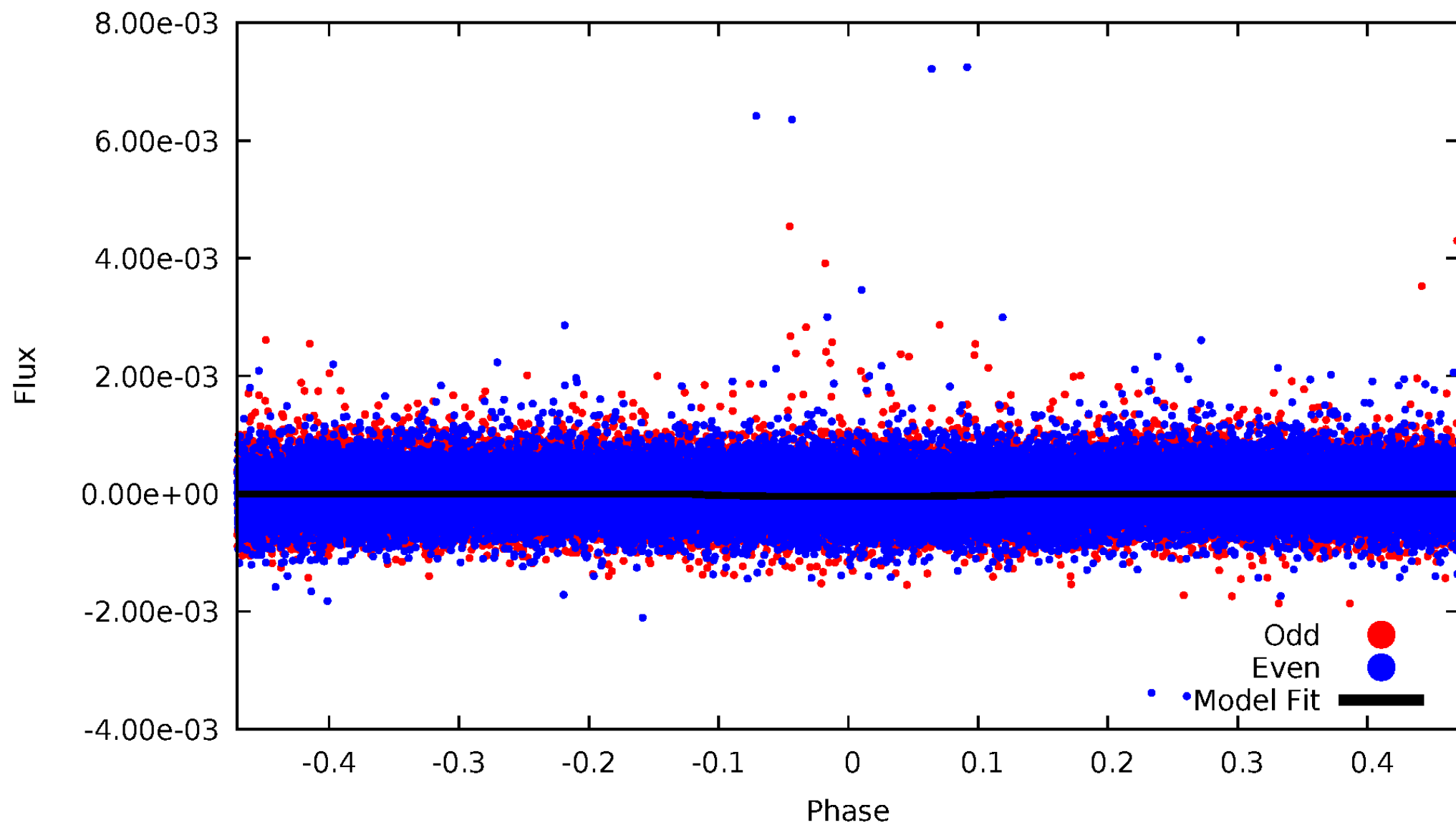


TCE 010515995-01



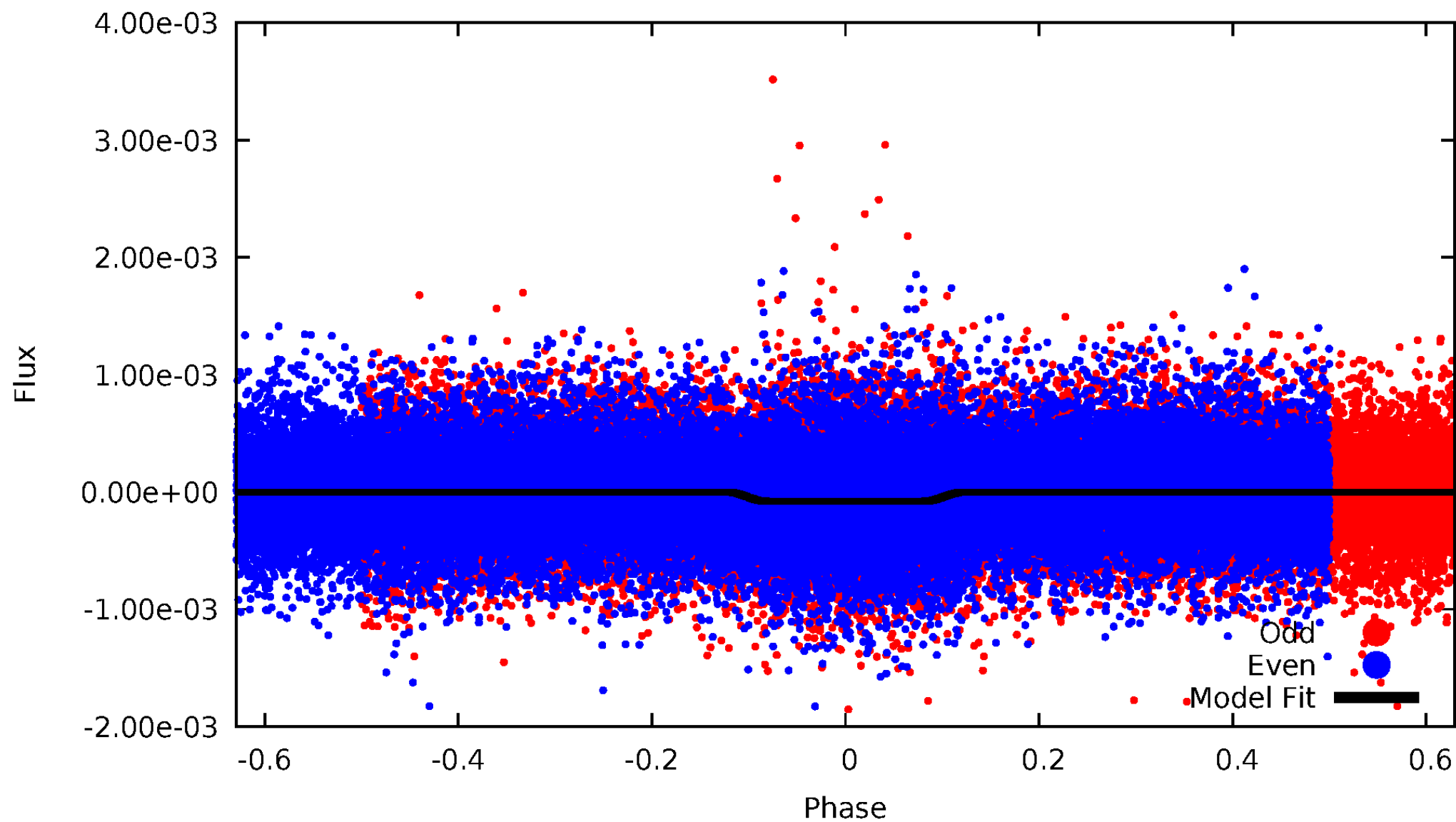
DV Odd/Even

TCE 010515995-01

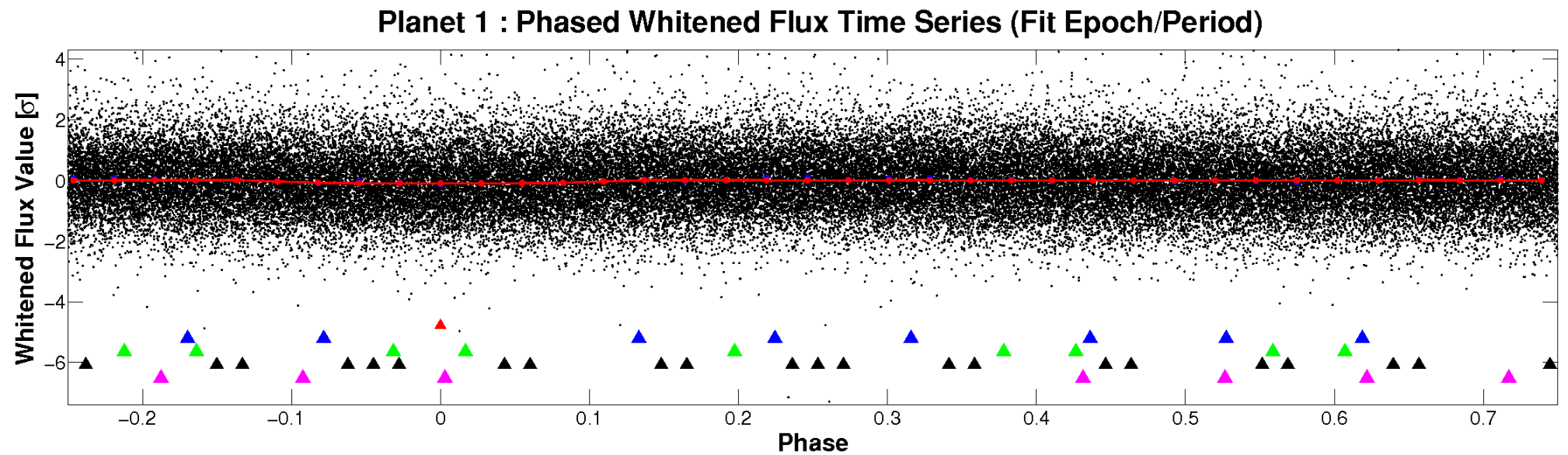
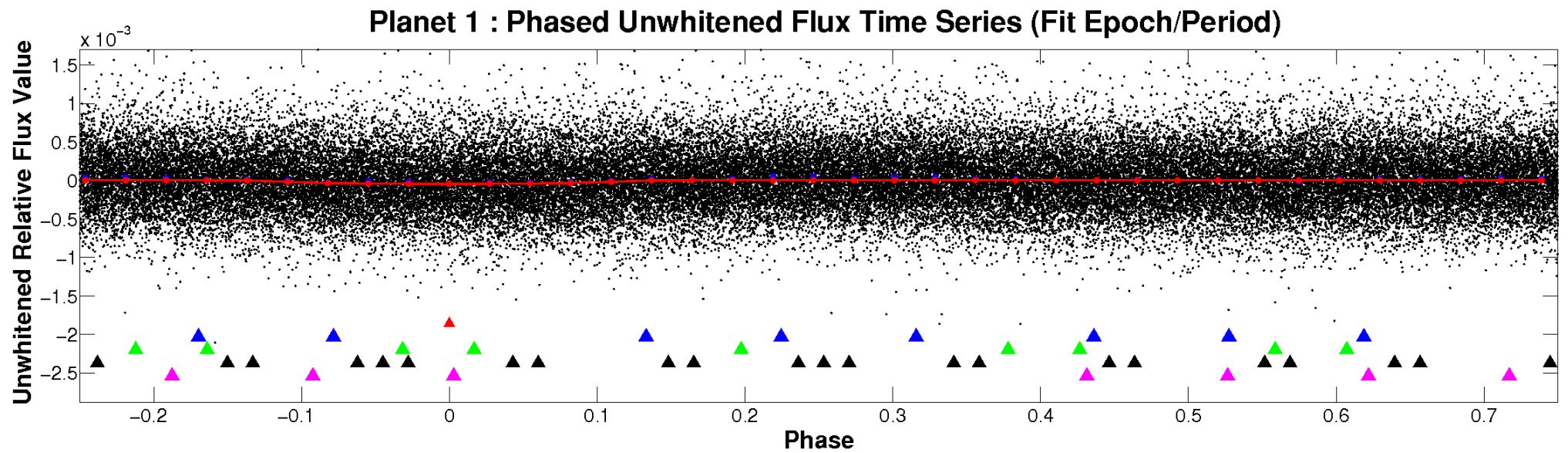


ALT Odd/Even

TCE 010515995-01

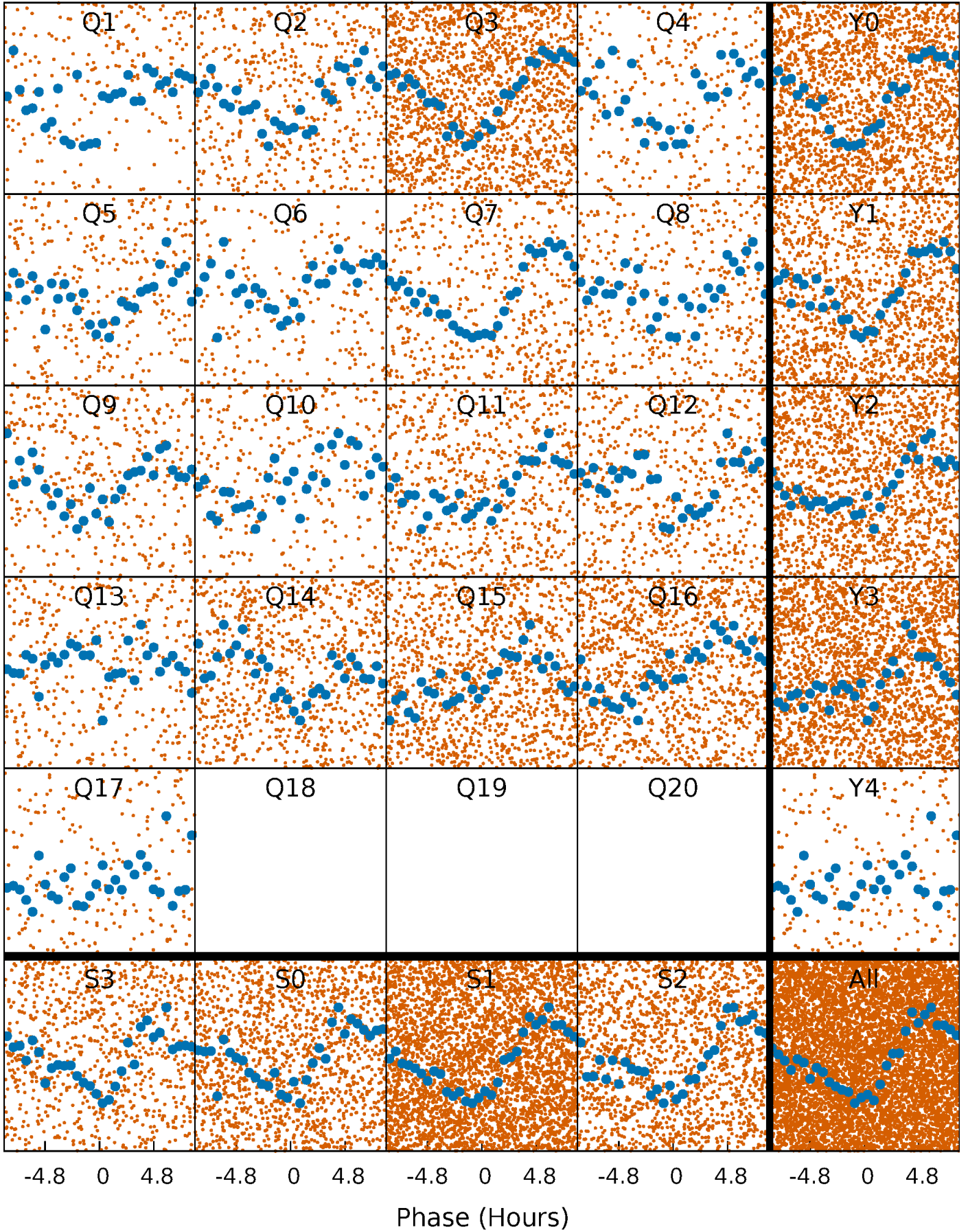


Non-Whitened Vs. Whitened Light Curve



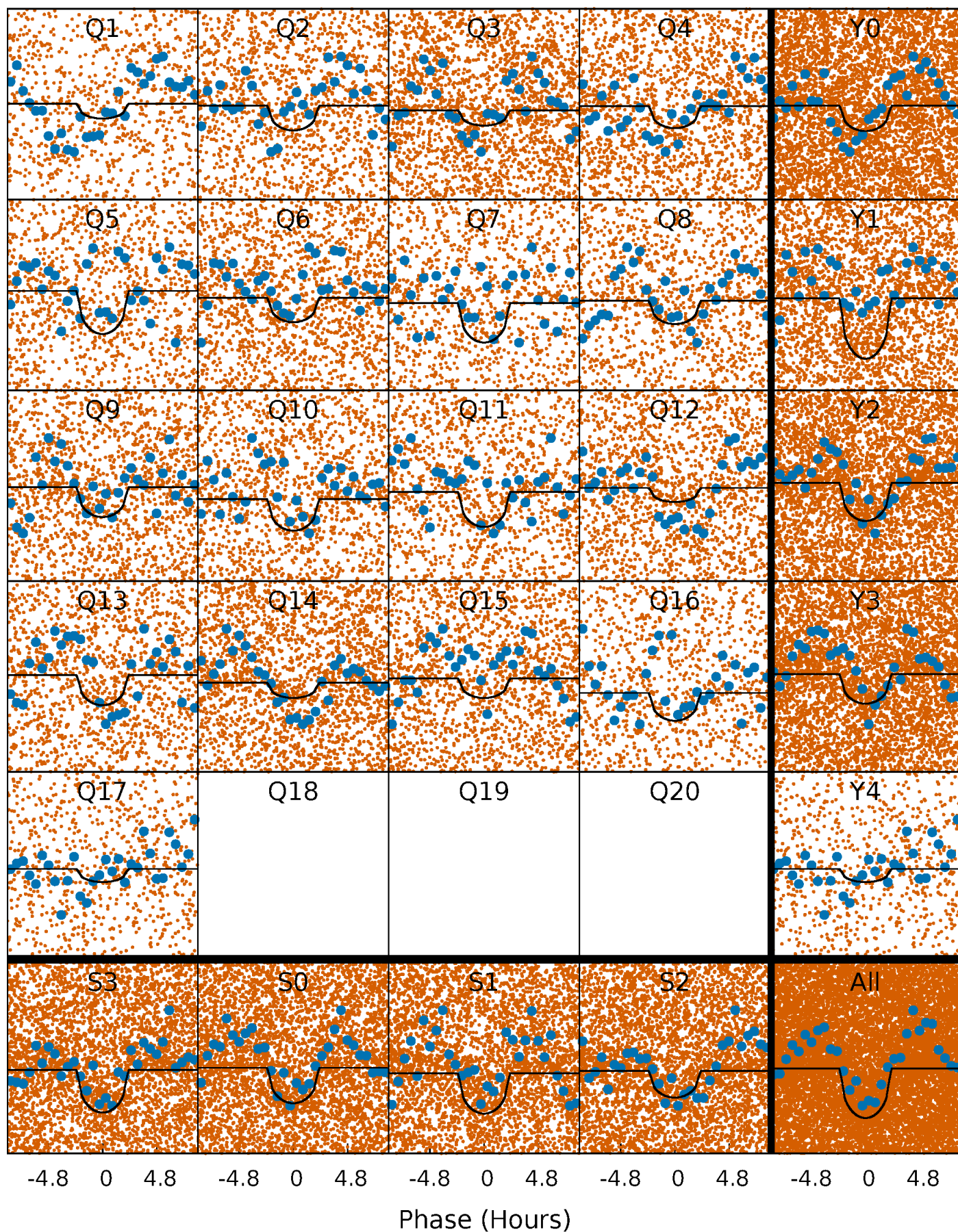
PDC Quarter-Phased Transit Curves

TCE 010515995-01 P= 0.746596 Days $T_0=132.214810$ (BKJD)



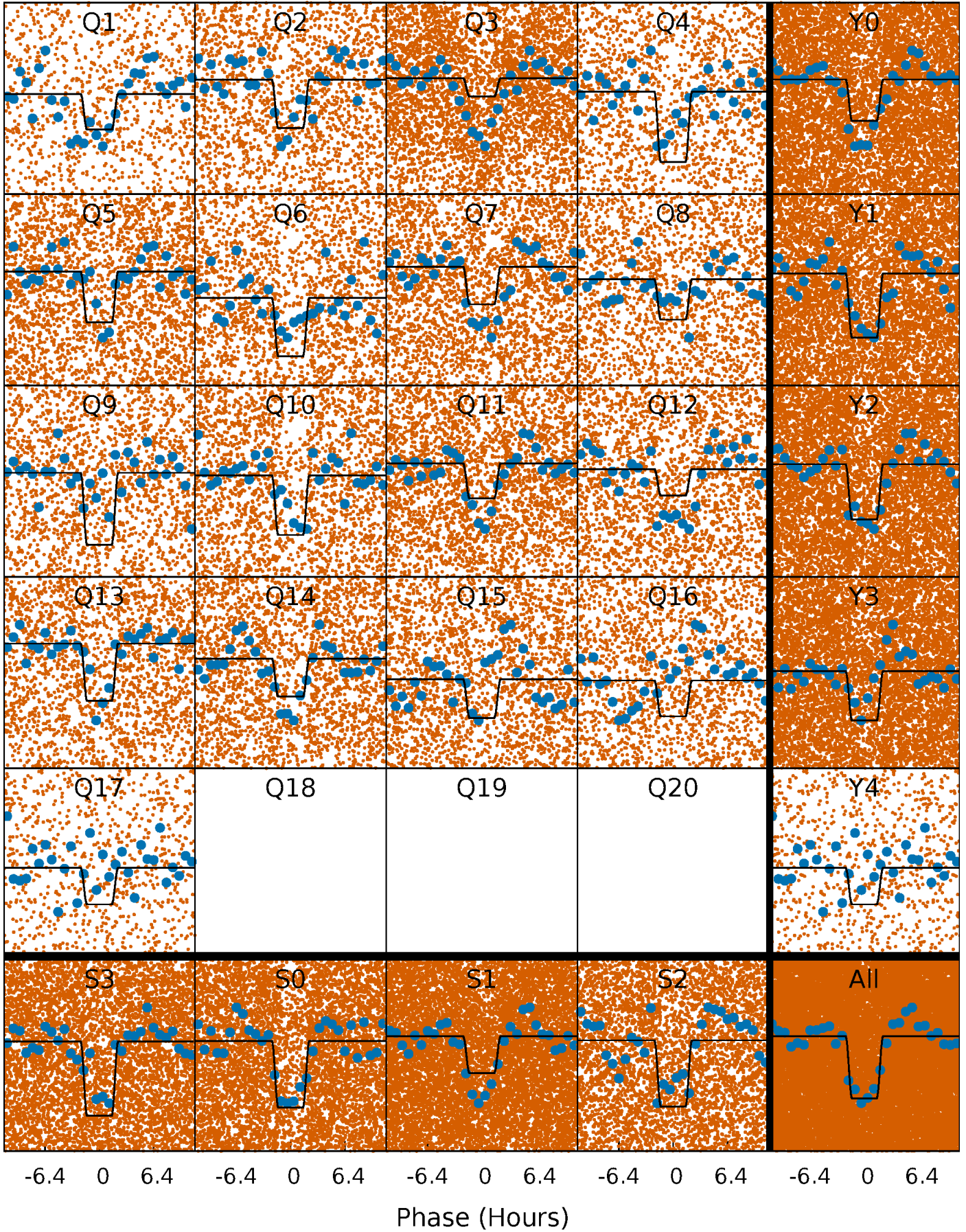
DV Quarter-Phased Transit Curves

TCE 010515995-01 P= 0.746596 Days $T_0=132.214810$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

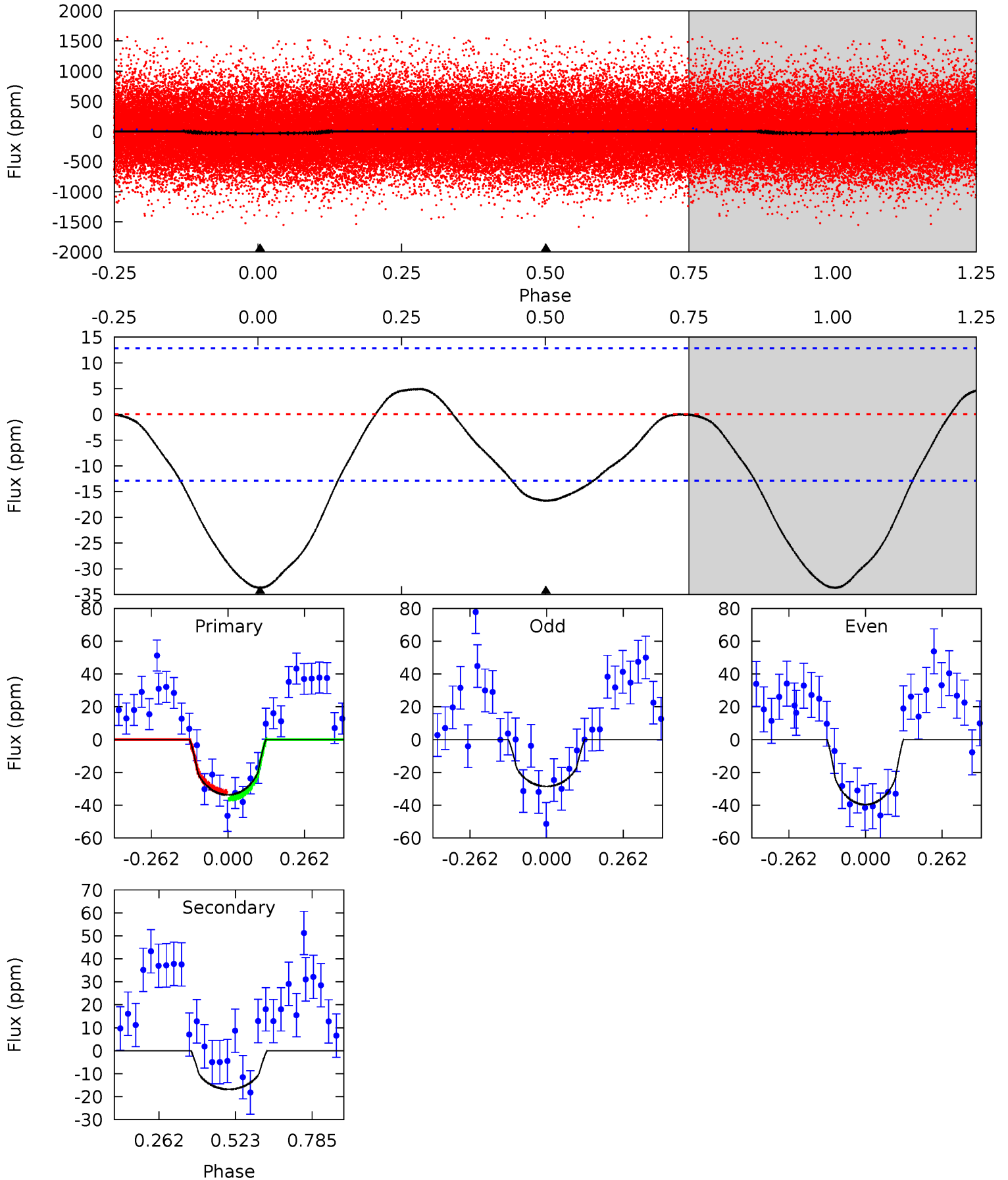
TCE 010515995-01 P= 0.746643 Days $T_0=132.174223$ (BKJD)



DV Model-Shift Uniqueness Test

010515995-01, P = 0.746596 Days, E = 131.468214 Days

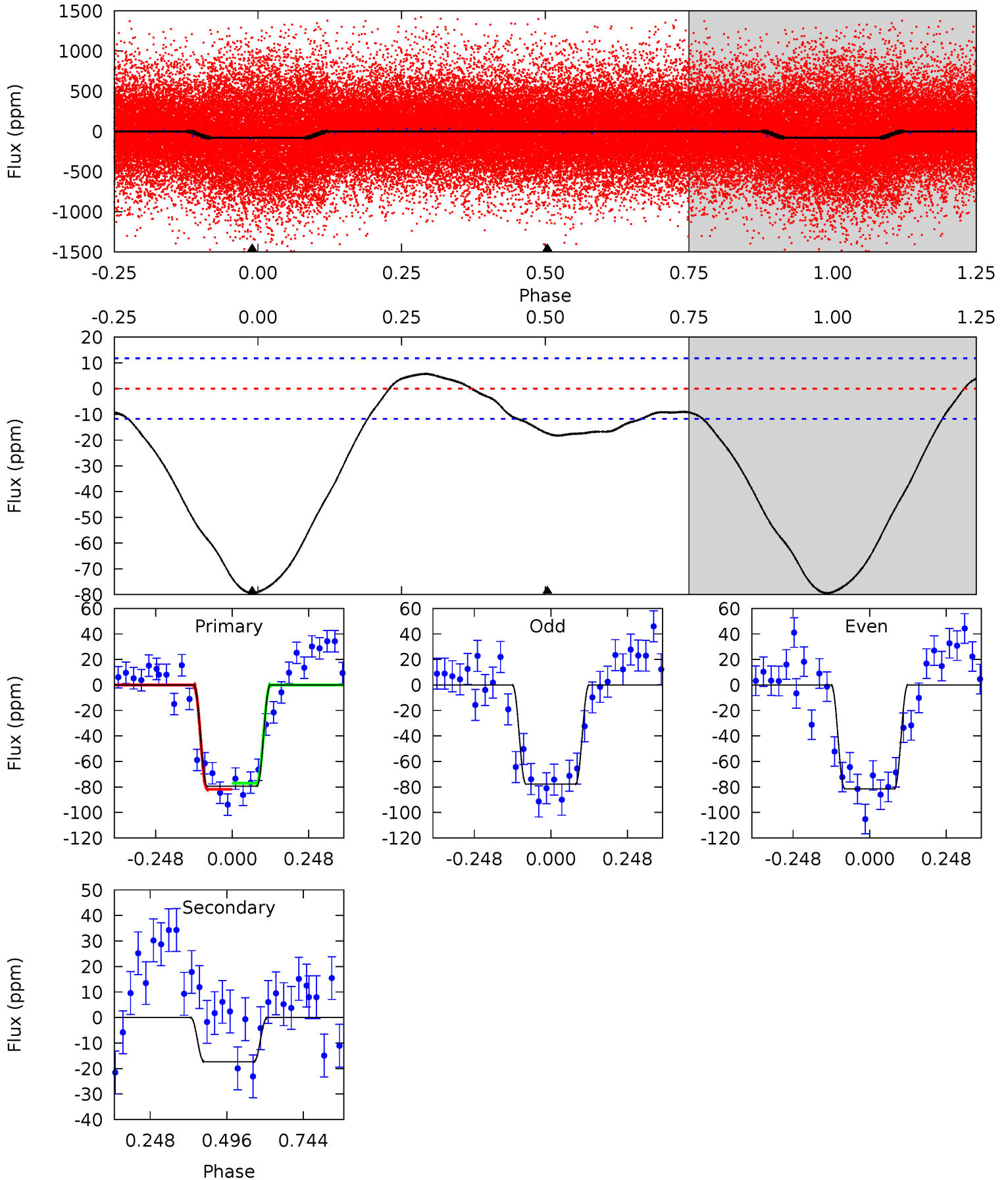
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	5.70	0	0	4.36	1.12	0.80	11.4	11.4	5.70	5.70	1.88	0.67	0.13	0.64



Alt Model-Shift Uniqueness Test

010515995-01, P = 0.746643 Days, E = 131.427580 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.5	6.45	0	0	4.37	1.15	2.26	29.5	29.5	6.45	6.45	0.70	0.94	0.07	0.88



Stellar Parameters For KIC 010515995

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4656^{+125}_{-139}	$4.619^{+0.032}_{-0.042}$	$0.000^{+0.250}_{-0.300}$	$0.695^{+0.056}_{-0.051}$	$0.732^{+0.051}_{-0.064}$	$3.072^{+0.483}_{-0.503}$
	+3%/-3%	+1%/-1%	+inf%/-inf%	+8%/-7%	+7%/-9%	+16%/-16%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010515995-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-17 ± 3	$0.52^{+0.40}_{-0.34}$	1986^{+64}_{-66}	3811^{+2056}_{-686}	$7.245^{+53.647}_{-4.976}$
Alt.	-17 ± 3	$0.72^{+0.45}_{-0.41}$	1990^{+63}_{-63}	3462^{+1209}_{-554}	$4.008^{+16.470}_{-2.532}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

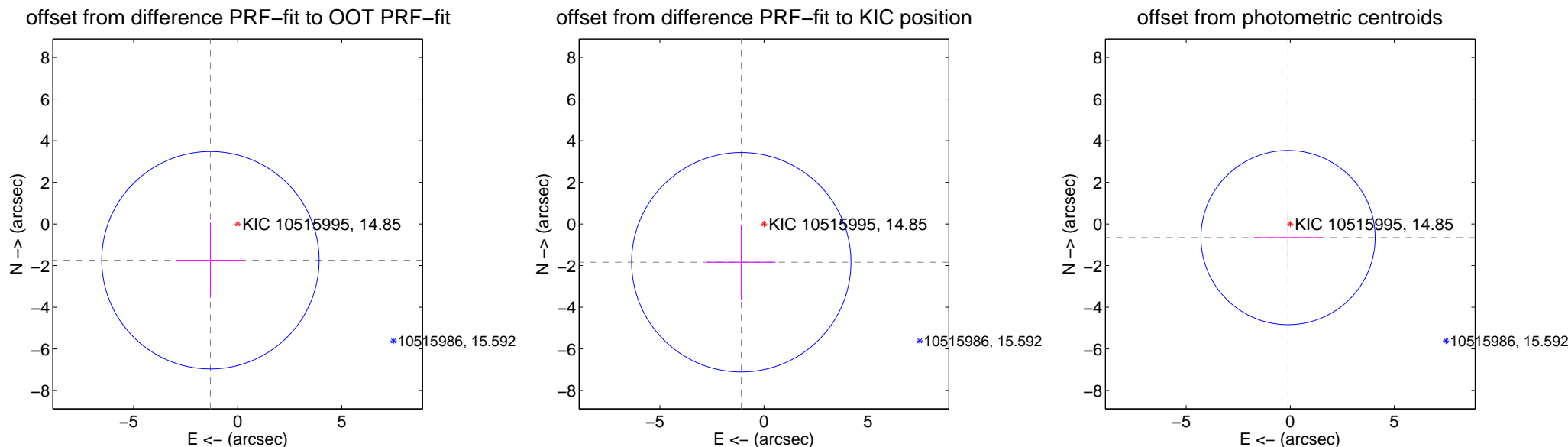
DV Centroid Data

Supplemental centroid analysis for 010515995-01. Kepler magnitude: 14.85. Transit SNR 9.92

There are 1 quarters with good PRF difference image offsets

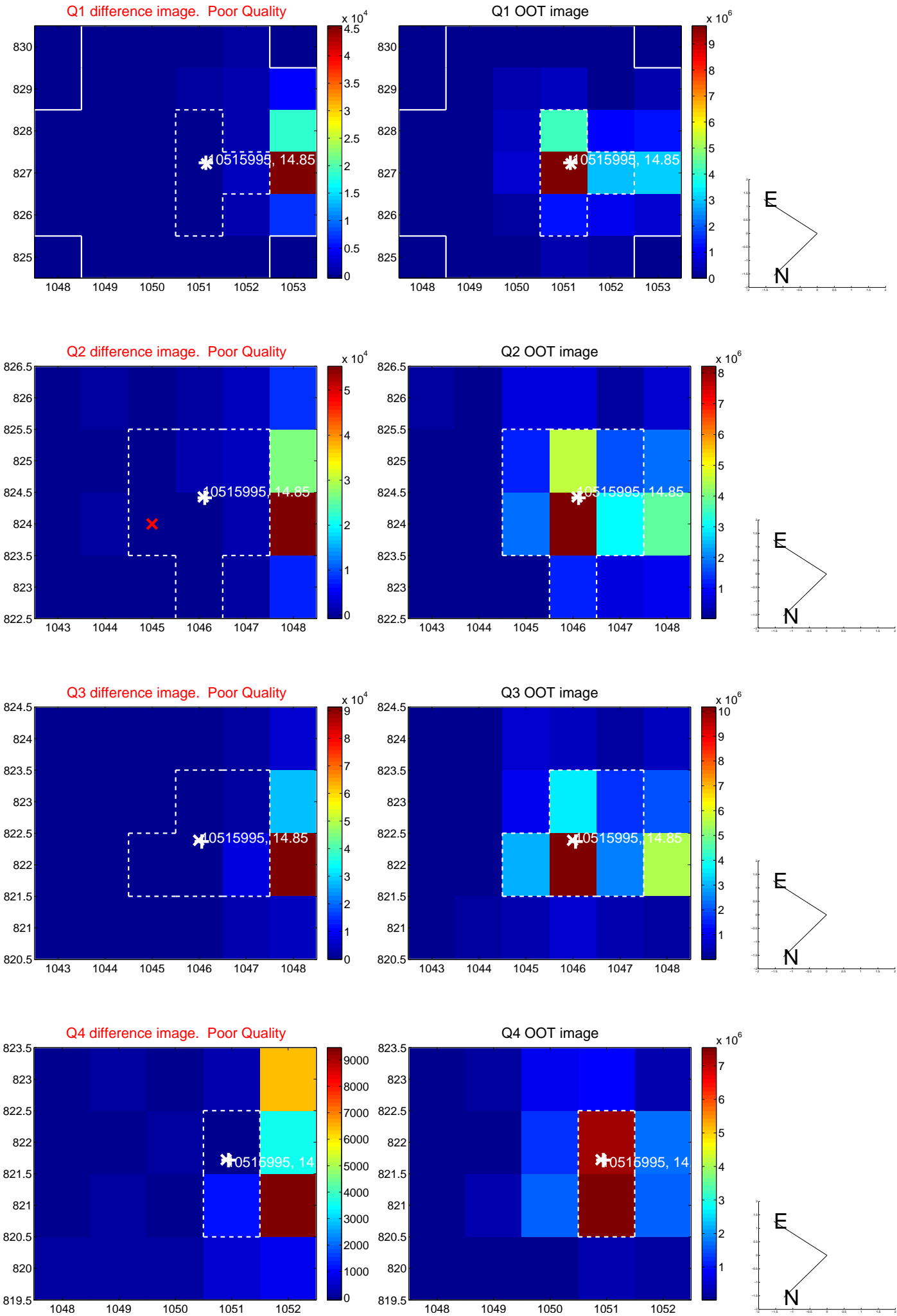
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.180 ± 1.741	1.25	1.312 ± 1.635	-1.741 ± 1.798
PRF-fit source offset from KIC position	2.137 ± 1.757	1.22	1.090 ± 1.635	-1.838 ± 1.798
photometric centroid source offset	0.66 ± 1.40	0.47	0.11 ± 1.65	-0.65 ± 1.39

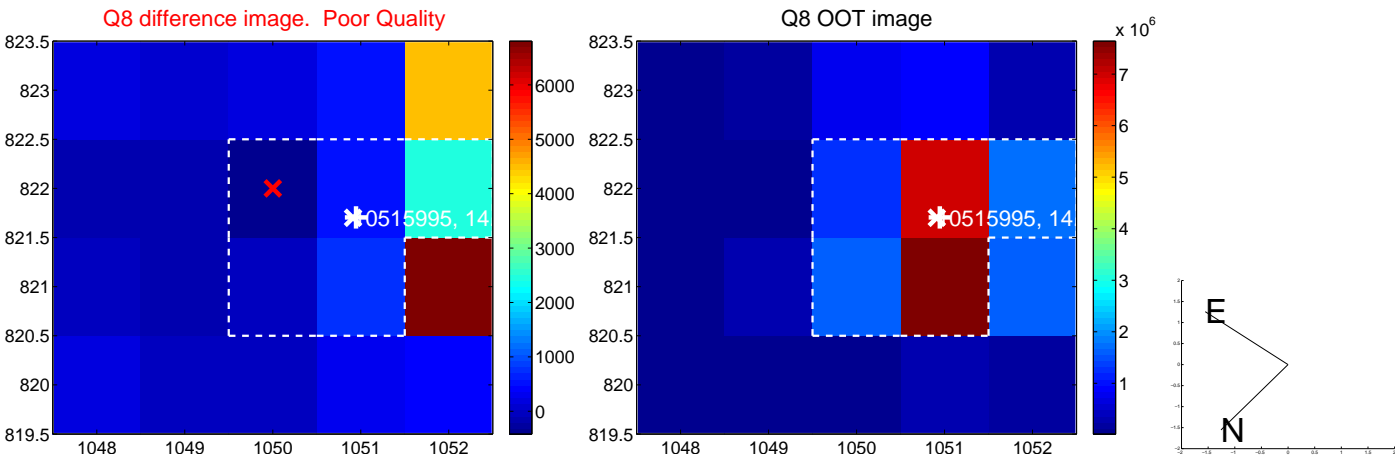
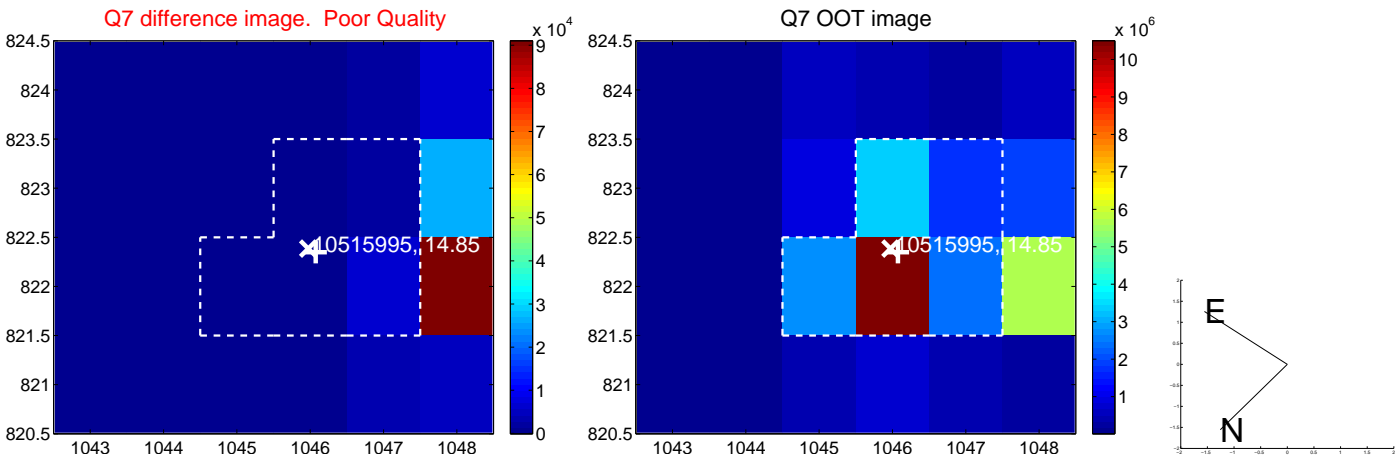
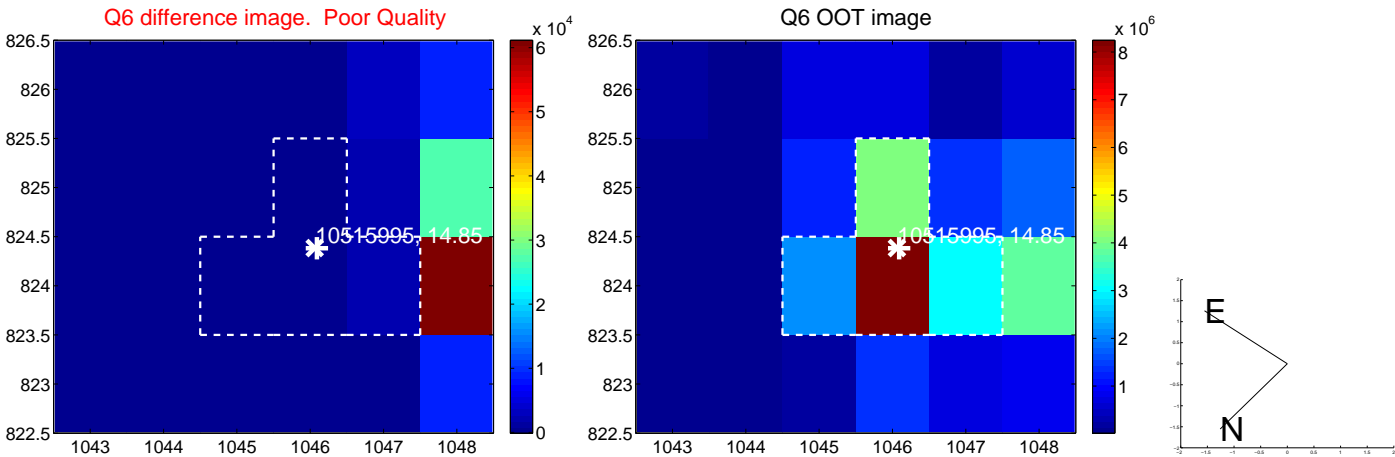
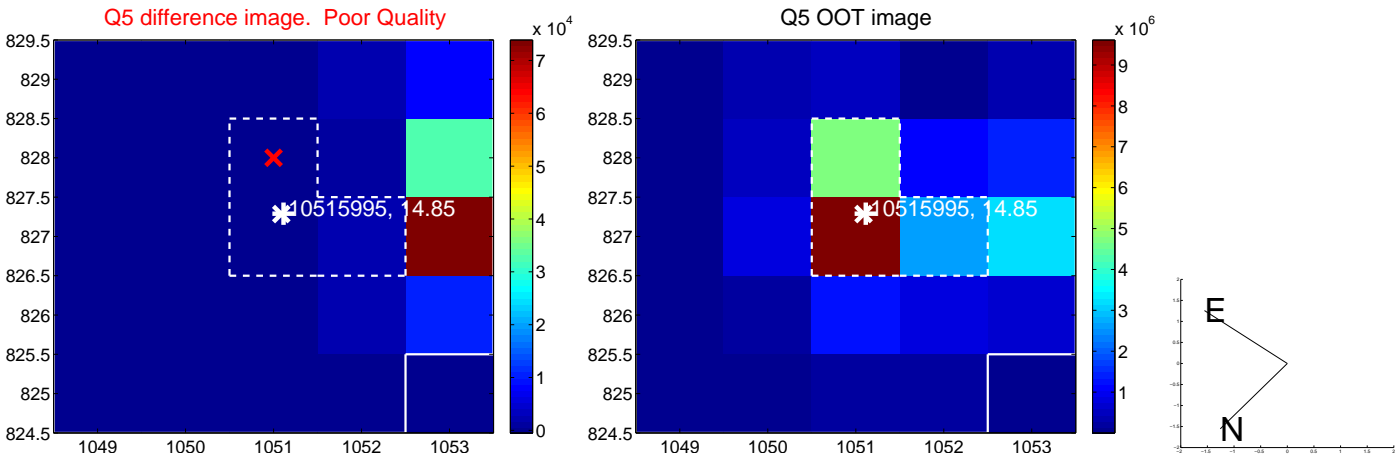


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

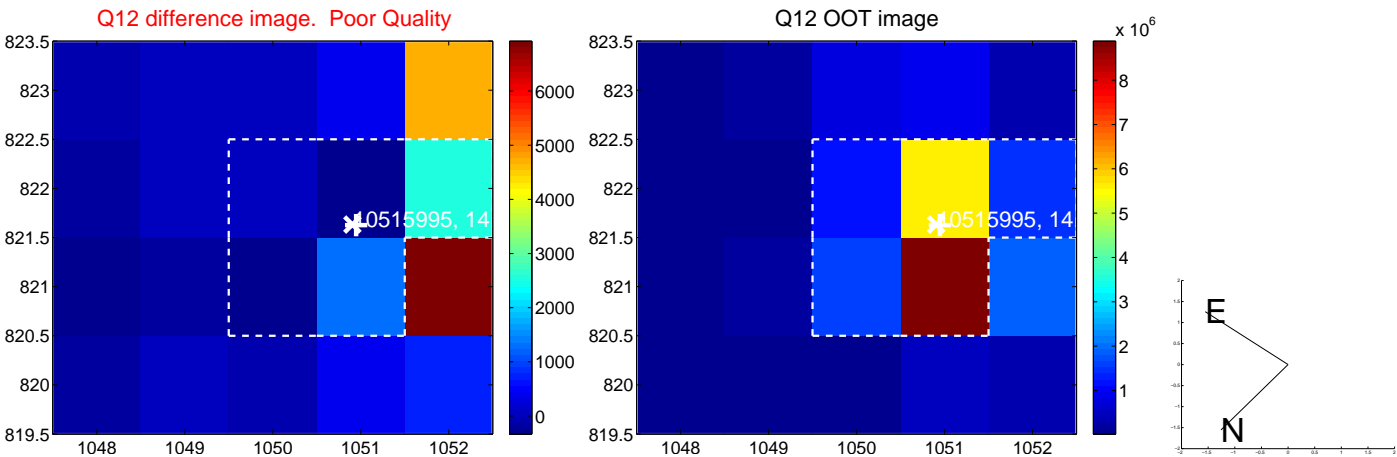
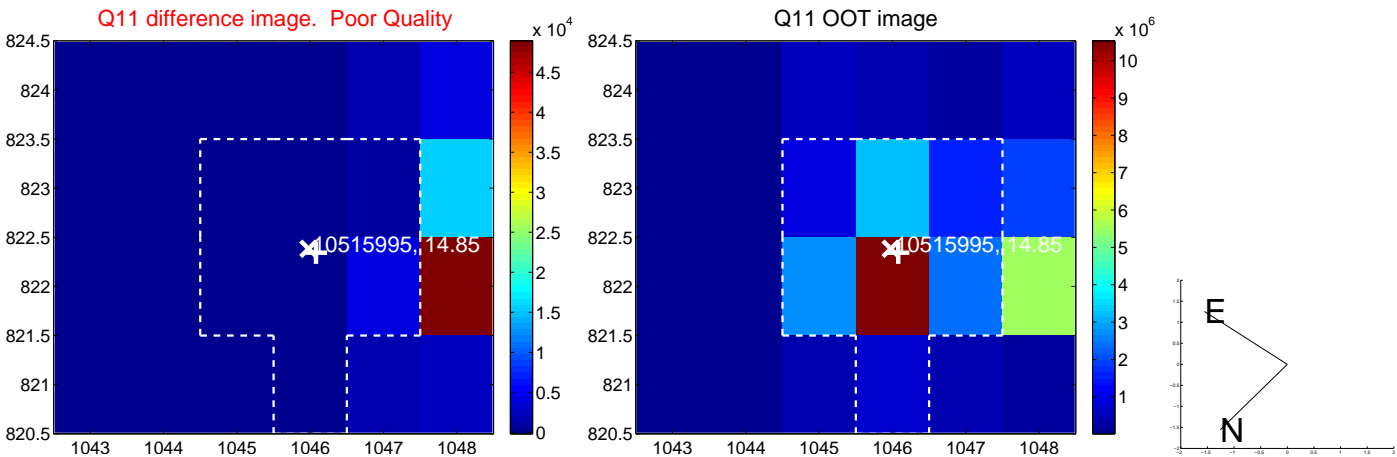
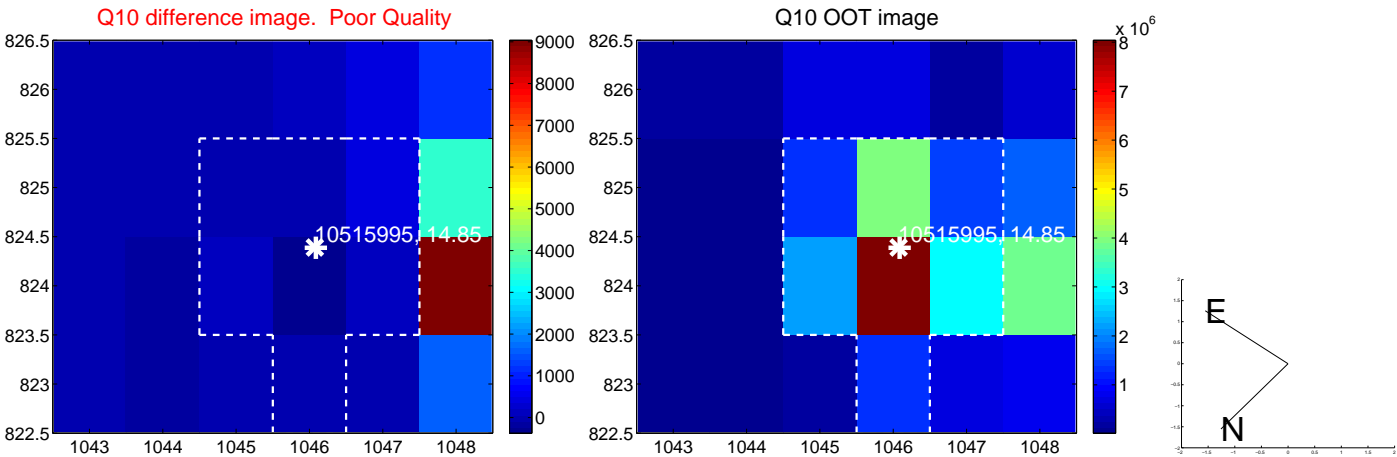
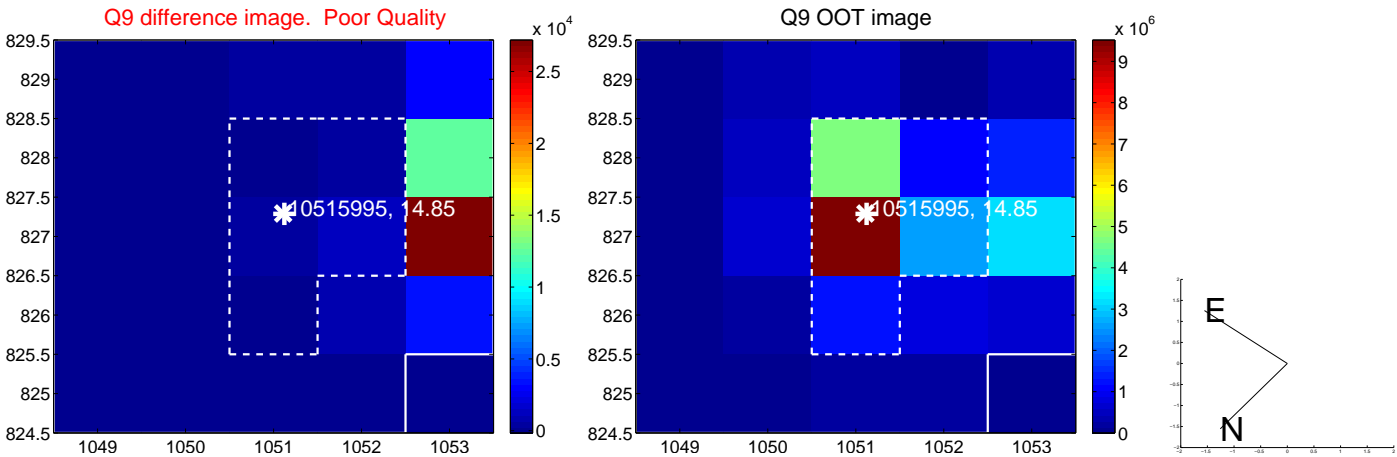
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



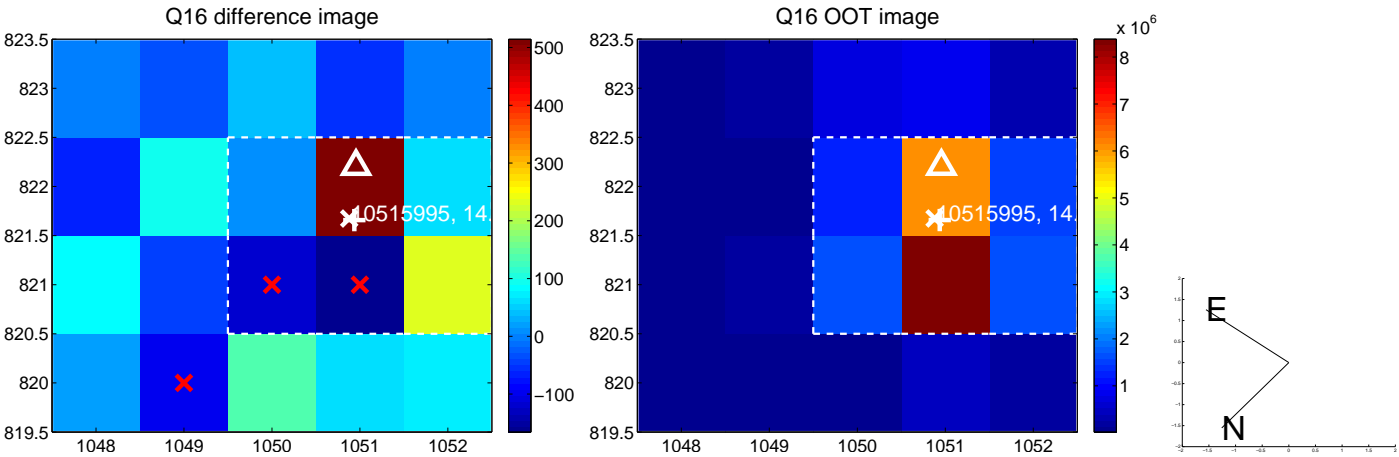
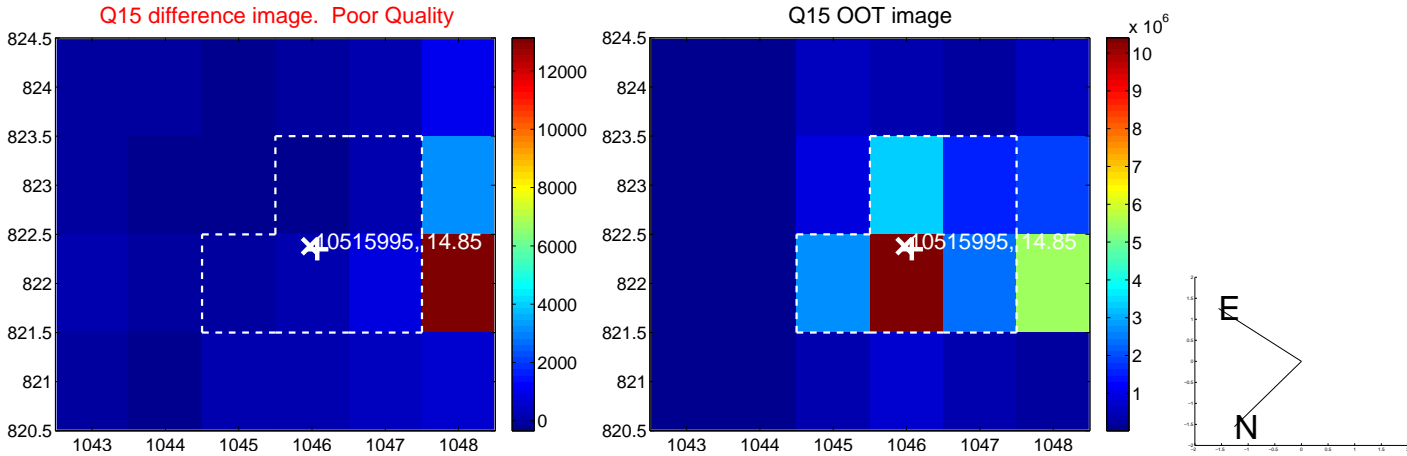
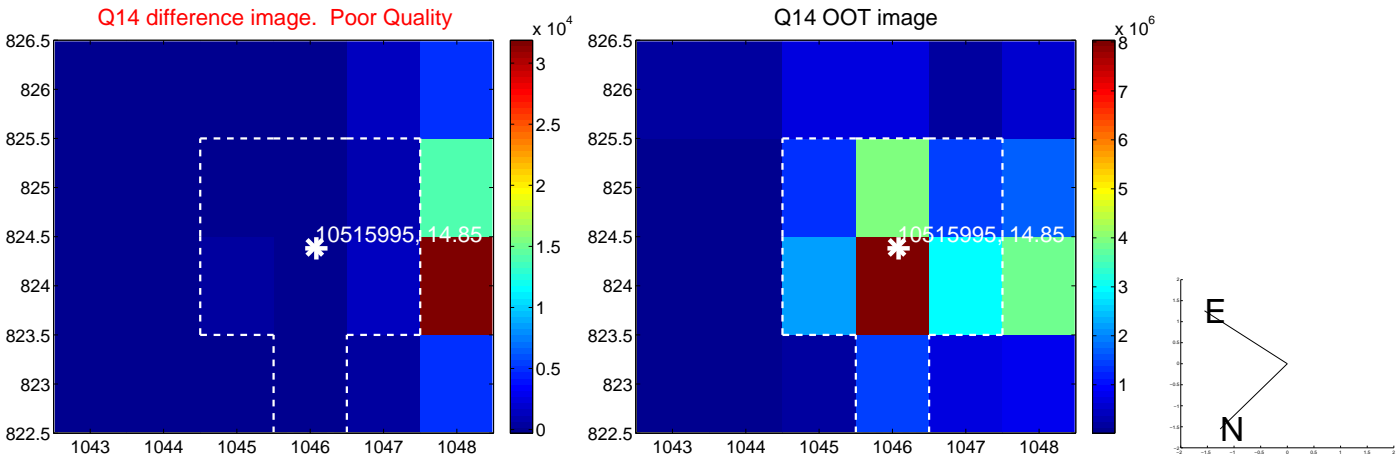
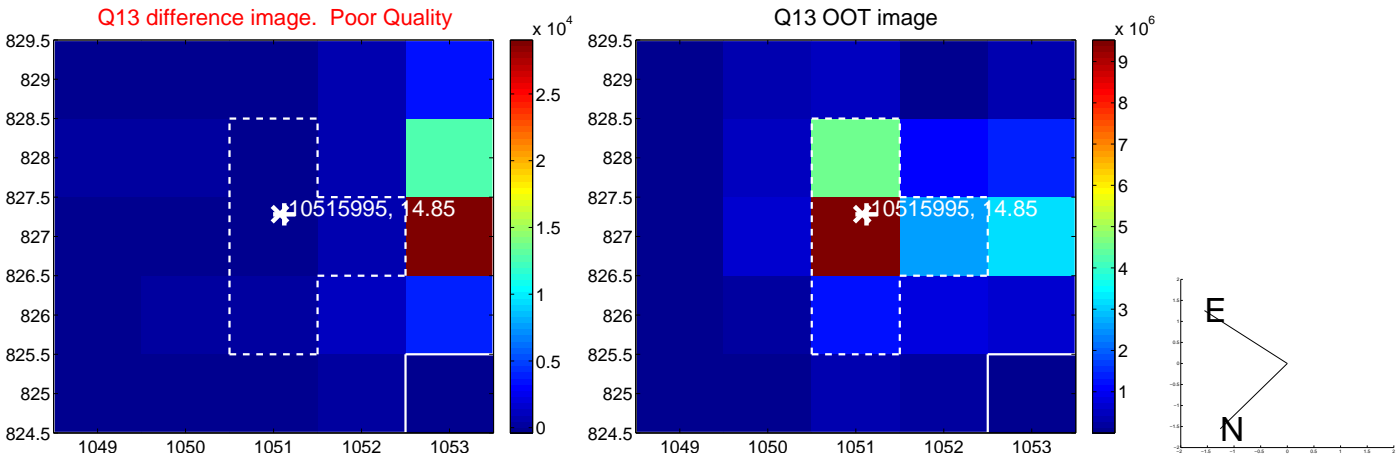
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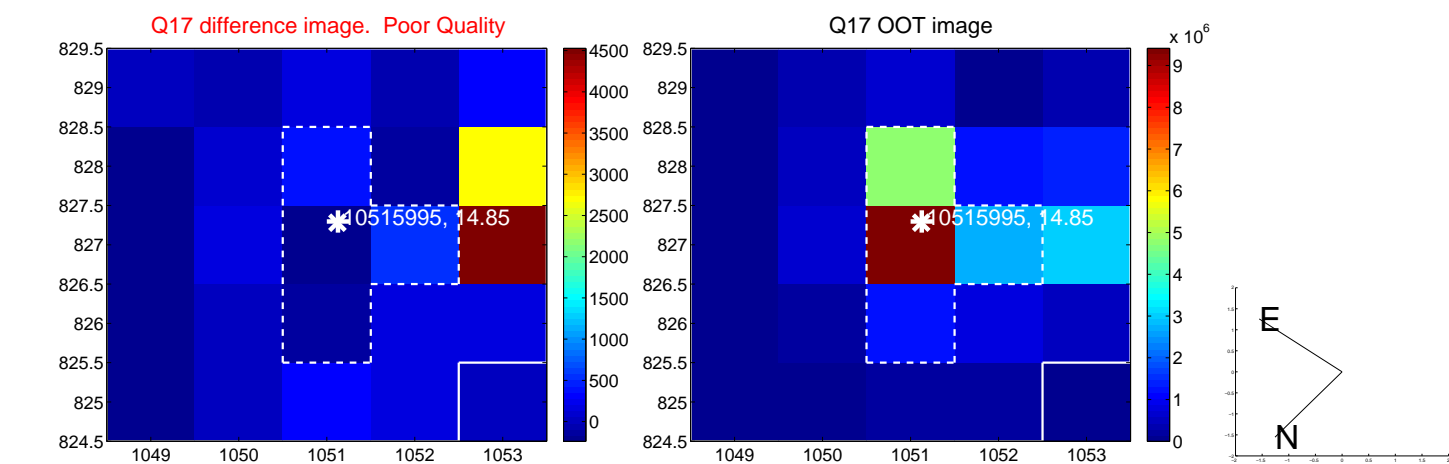
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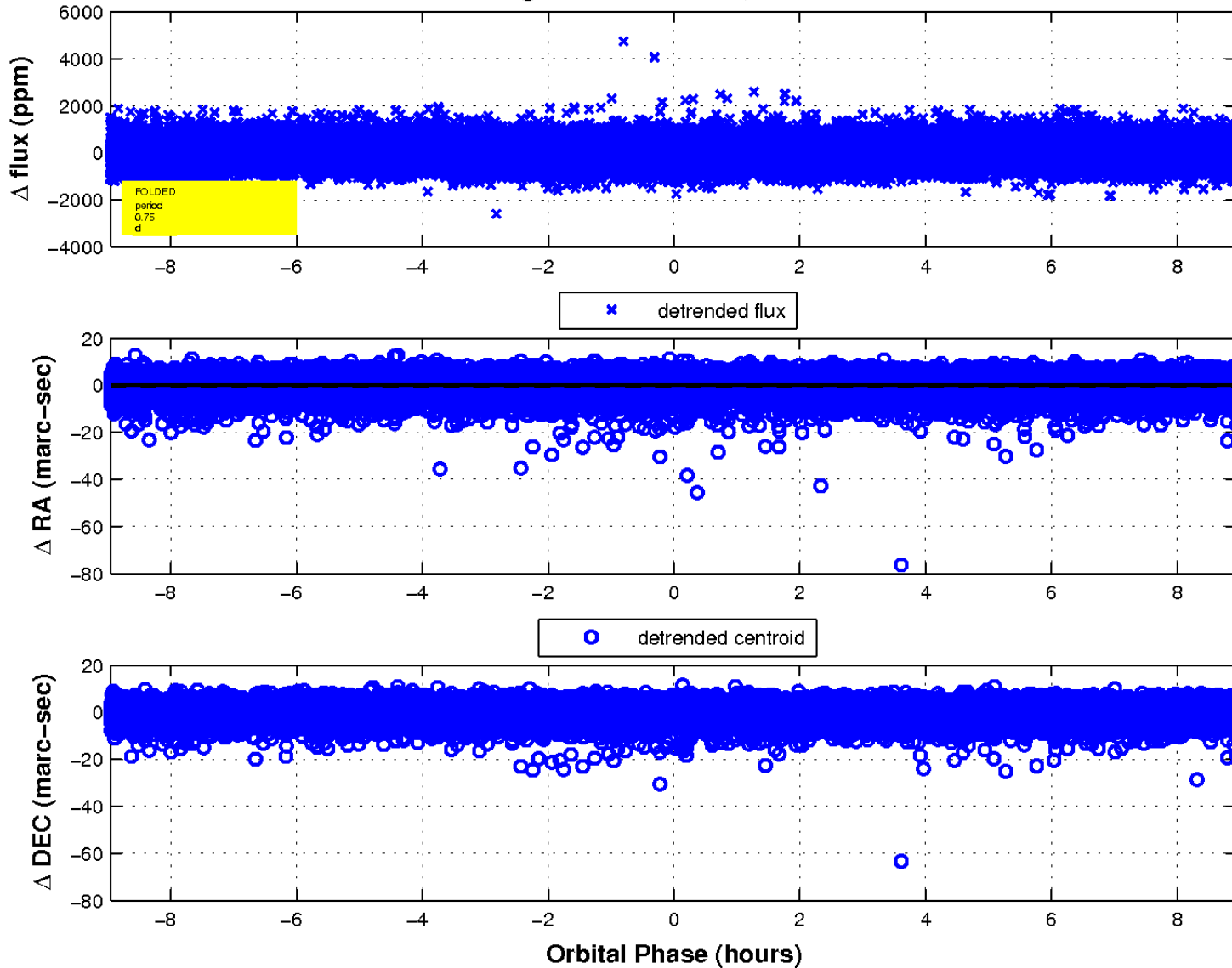
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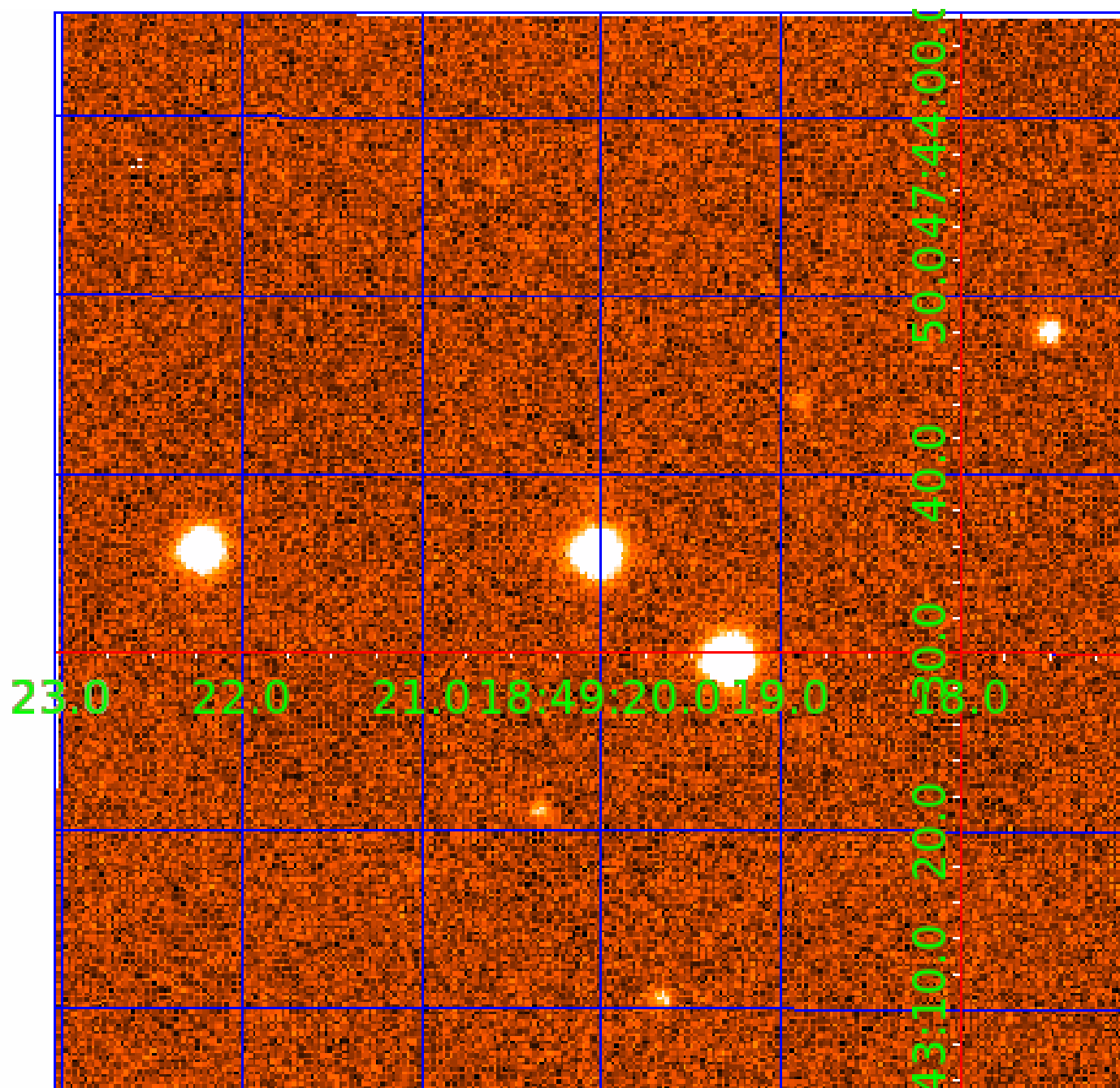


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 010515995

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
010515995-01	OBS	No	0.746596	132.214810	44.8	4.218	7.6	9.9	0.69	4656	0.45	964.17
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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010515995-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010515995-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010515995-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
010515995-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

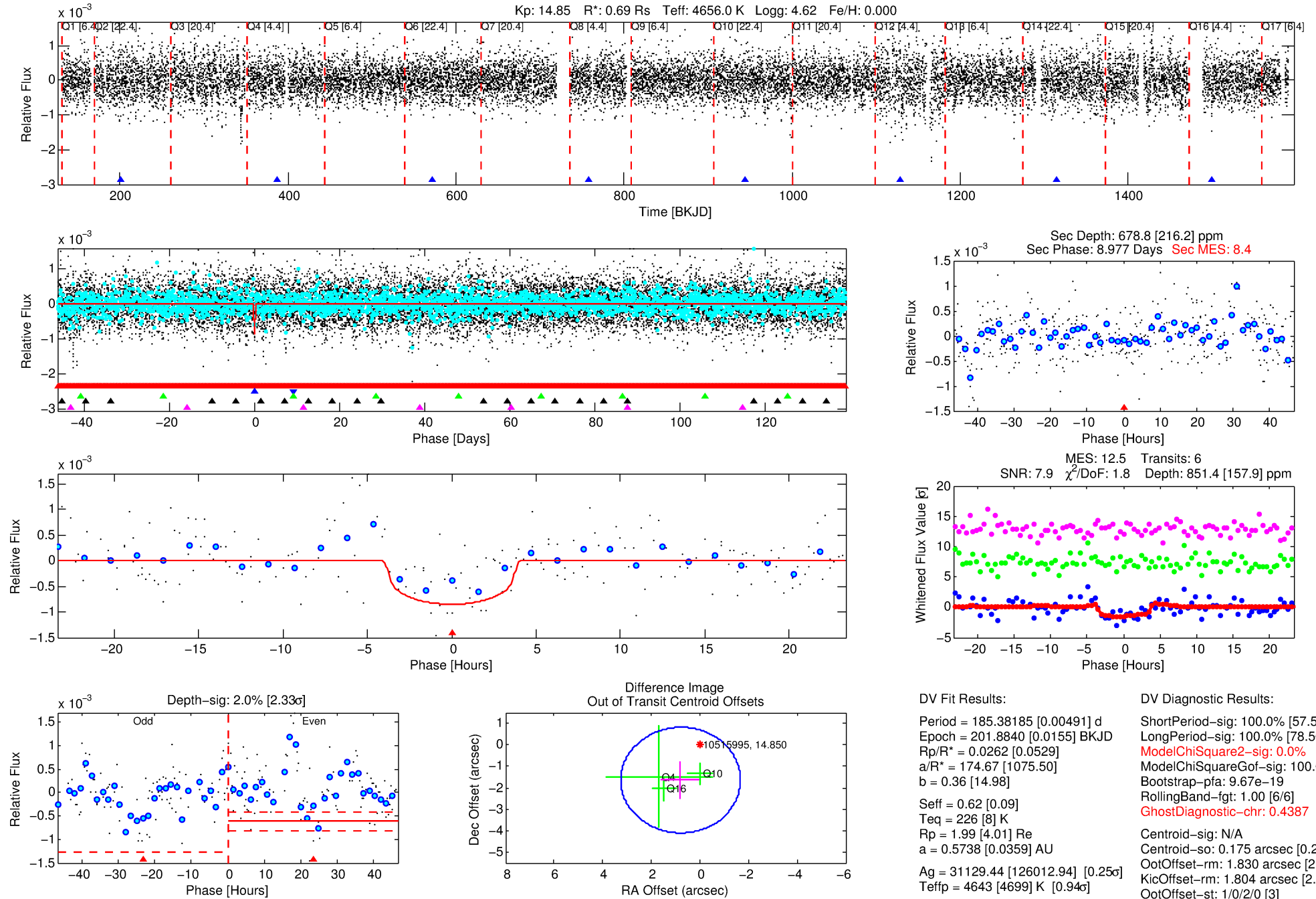
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010515995-02

No Significant Match Found

DV One-Page Summary

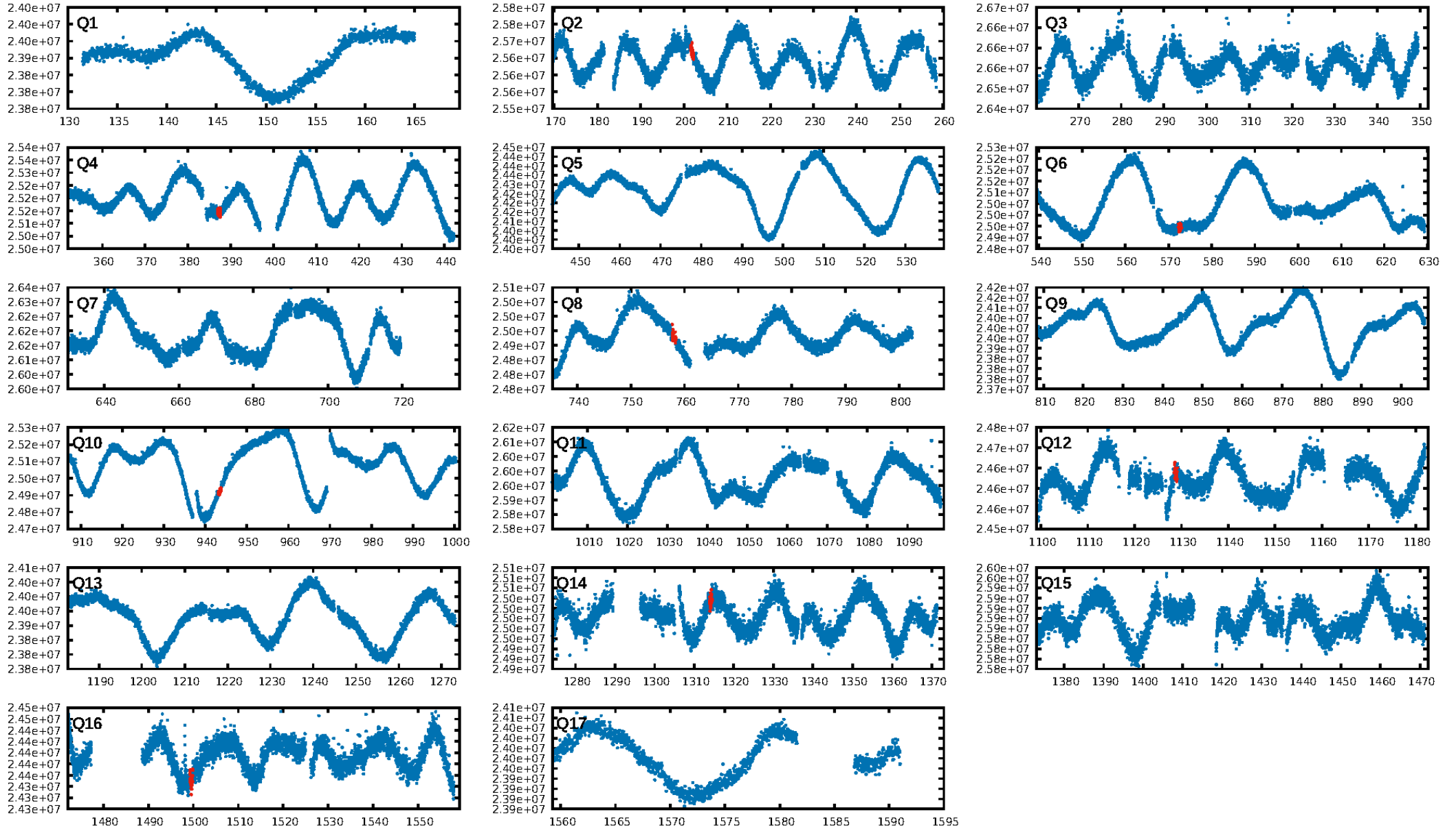
KIC: 10515995 Candidate: 2 of 5 Period: 185.382 d



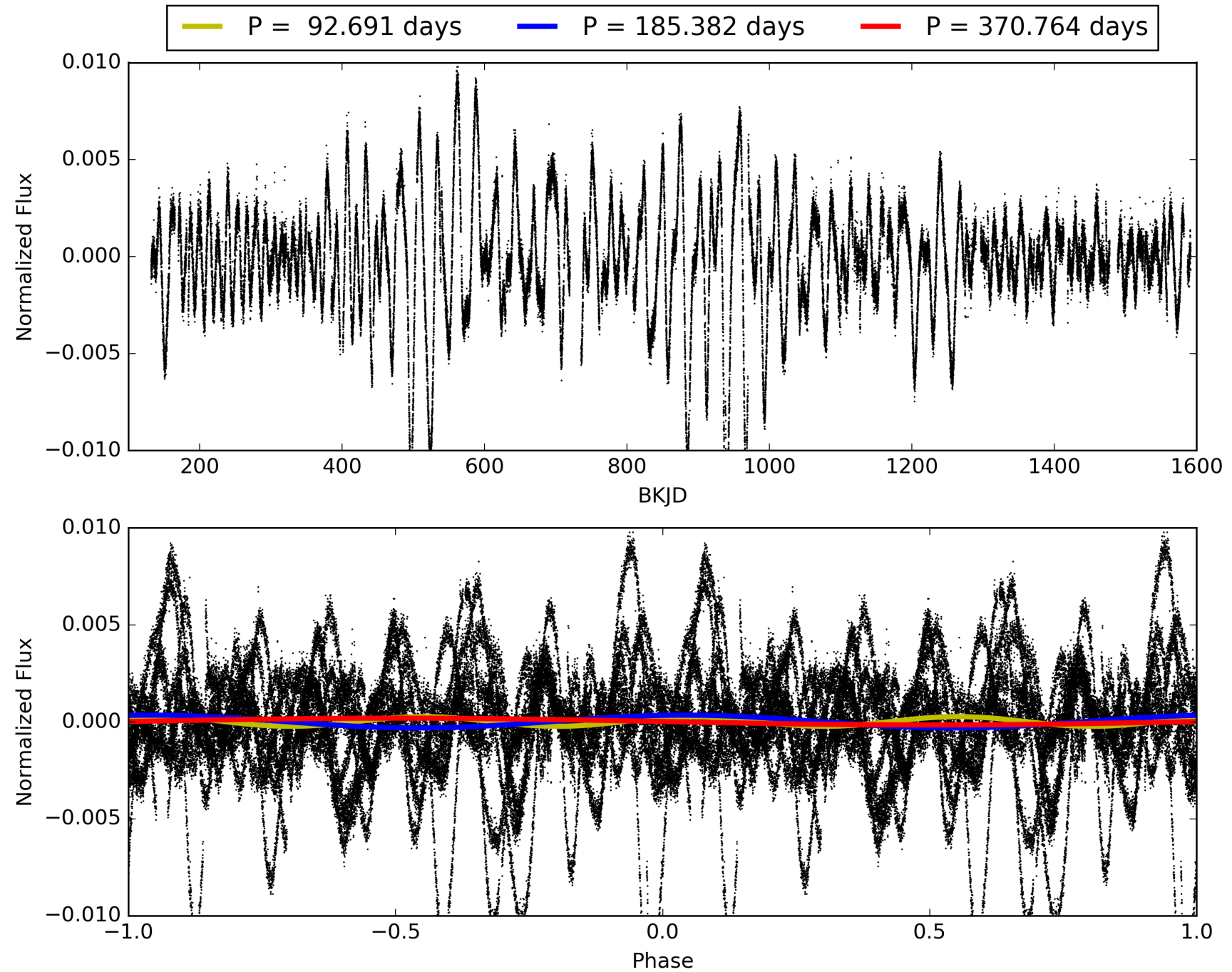
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:29:29 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010515995-02, PDC Light Curves

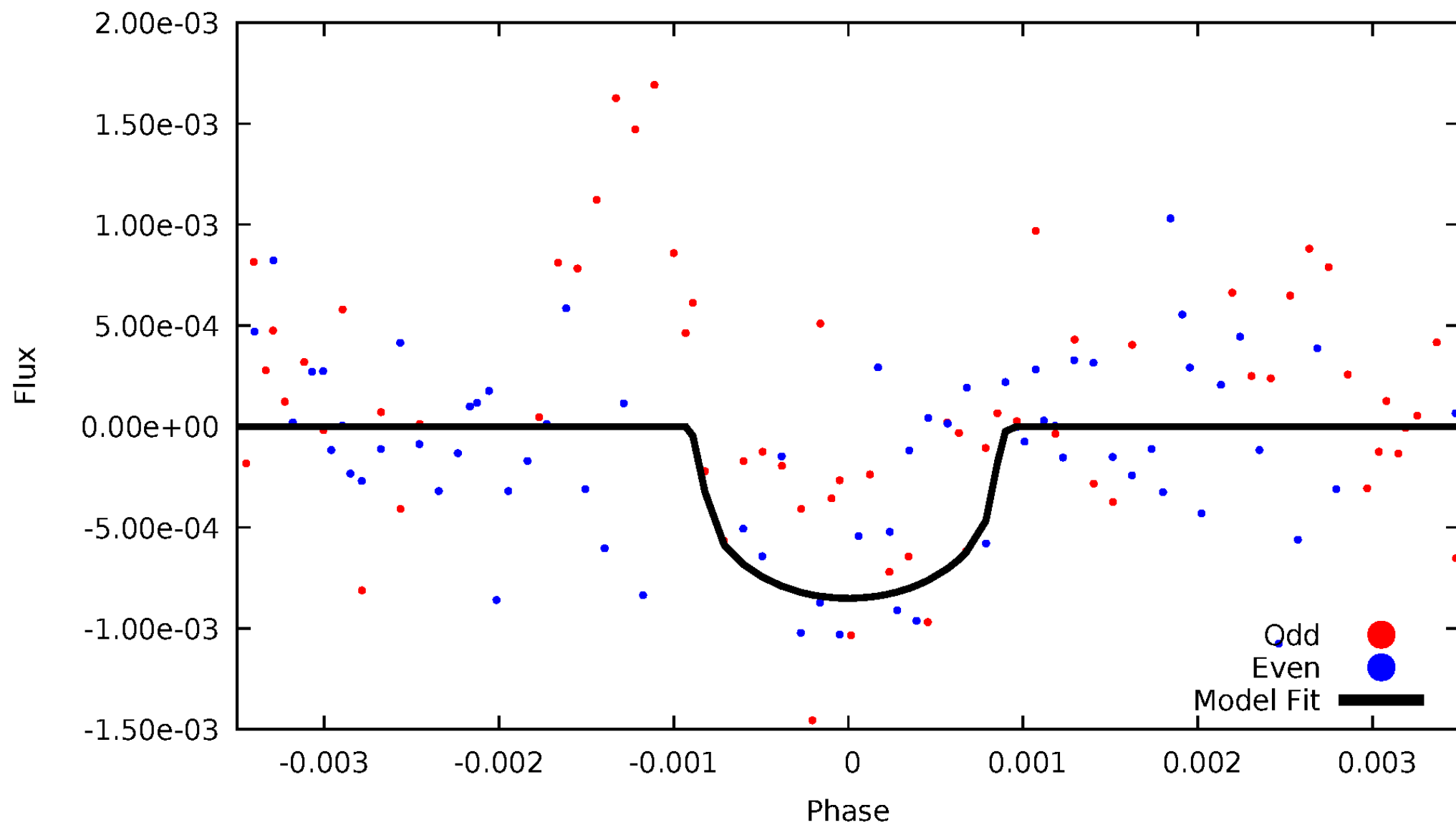


TCE 010515995-02



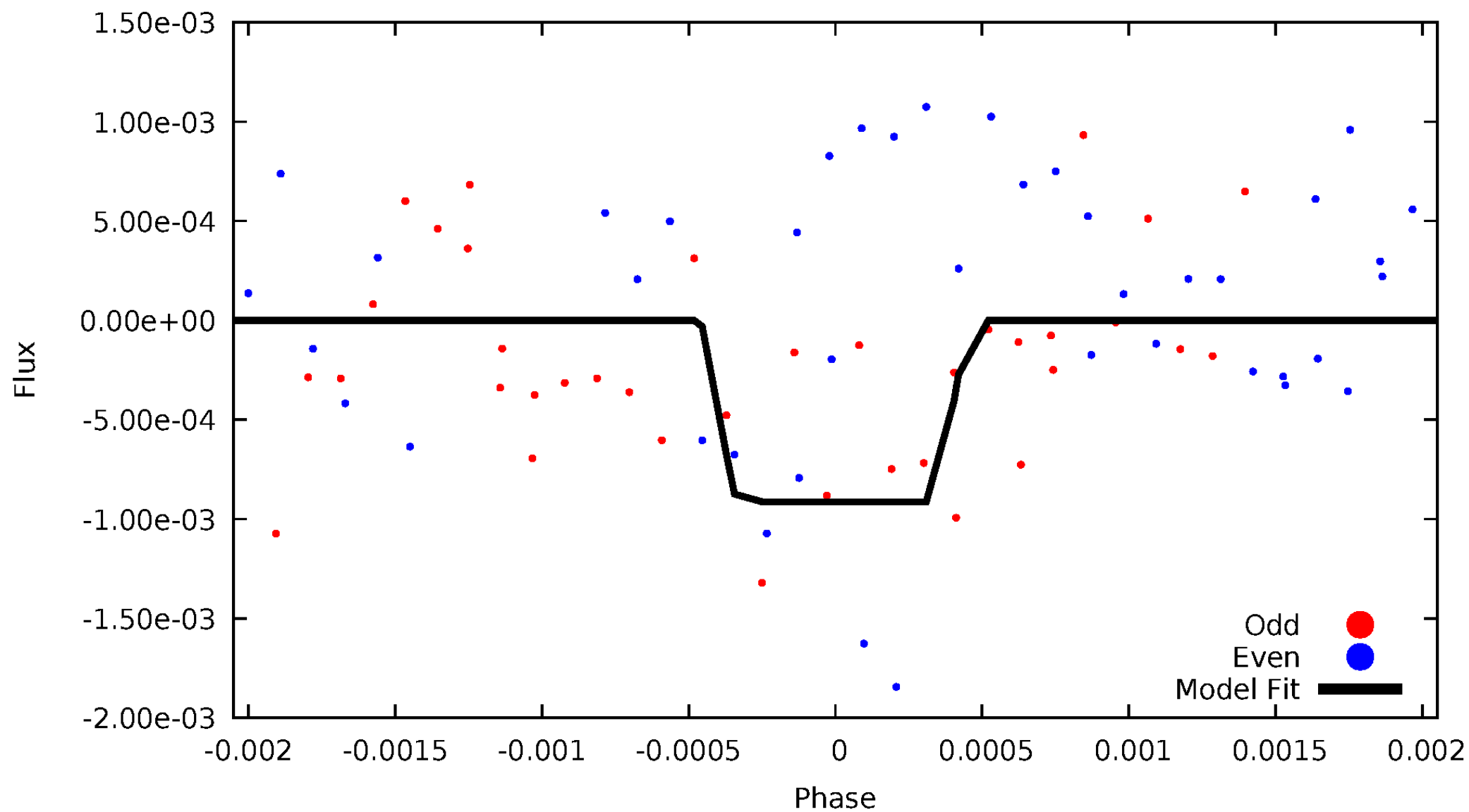
DV Odd/Even

TCE 010515995-02



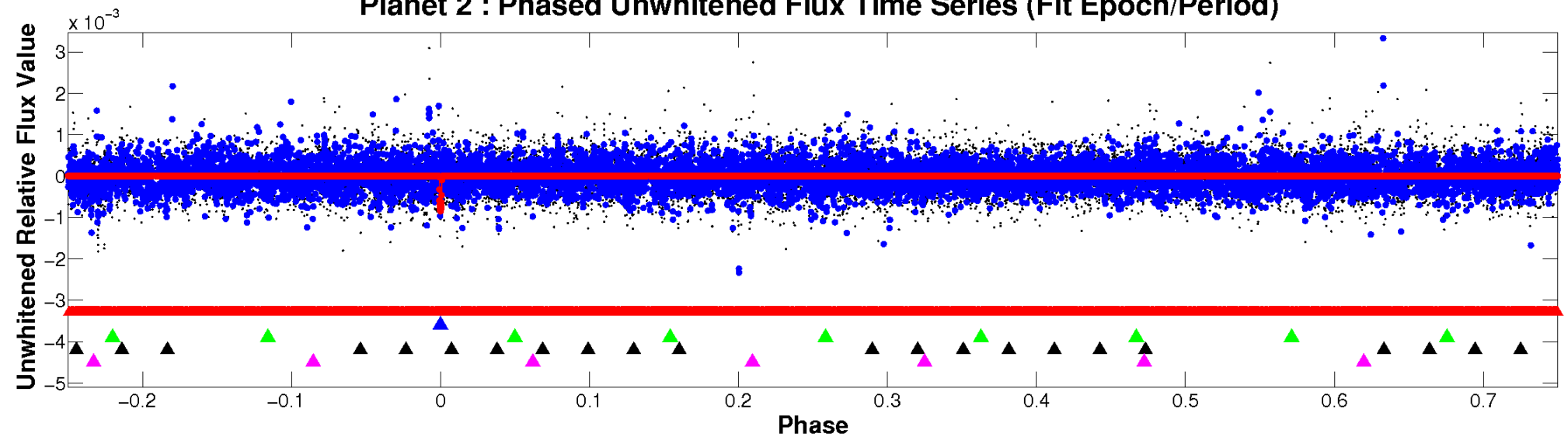
ALT Odd/Even

TCE 010515995-02

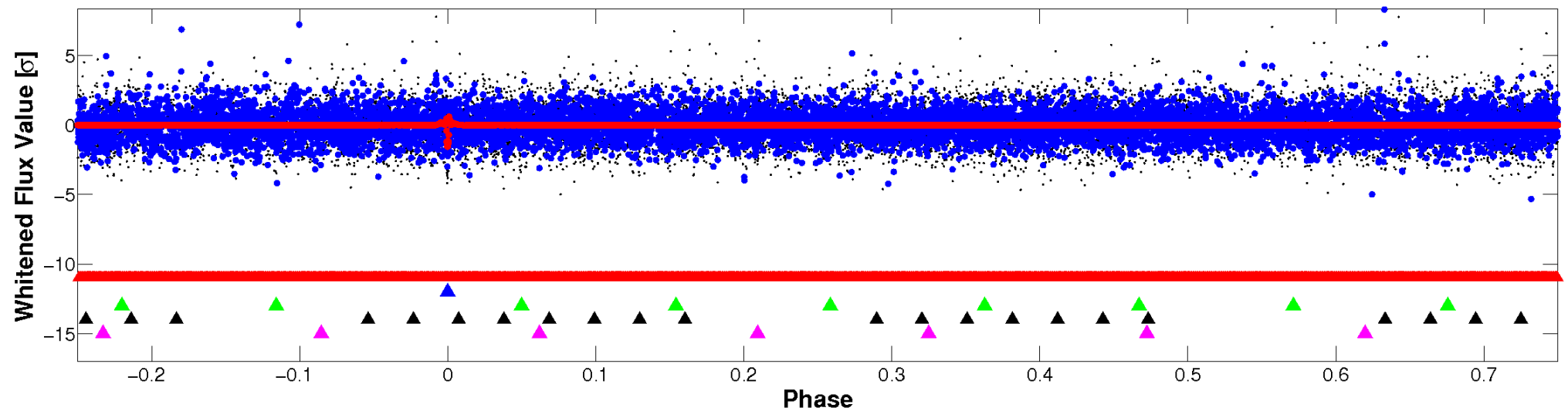


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

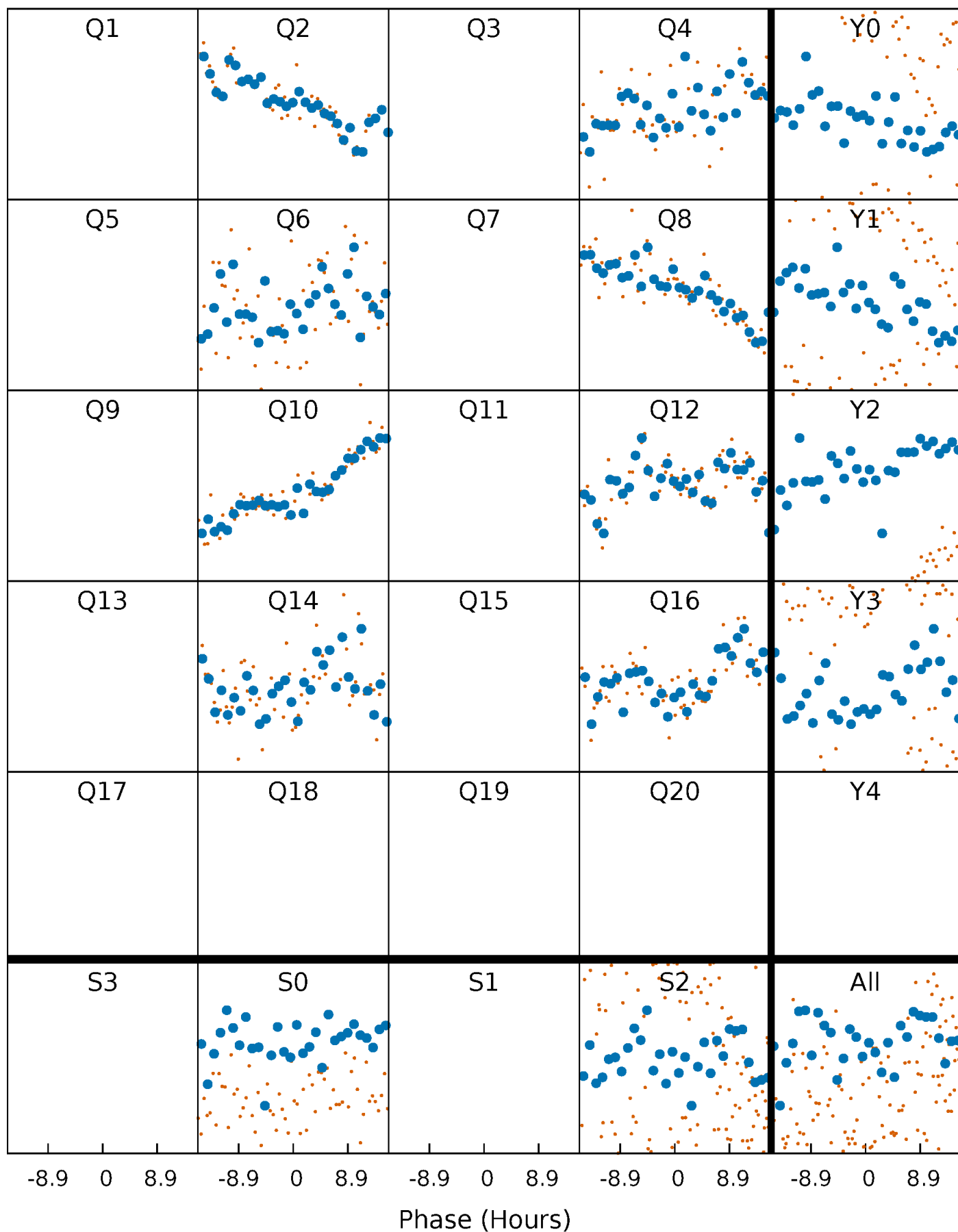


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



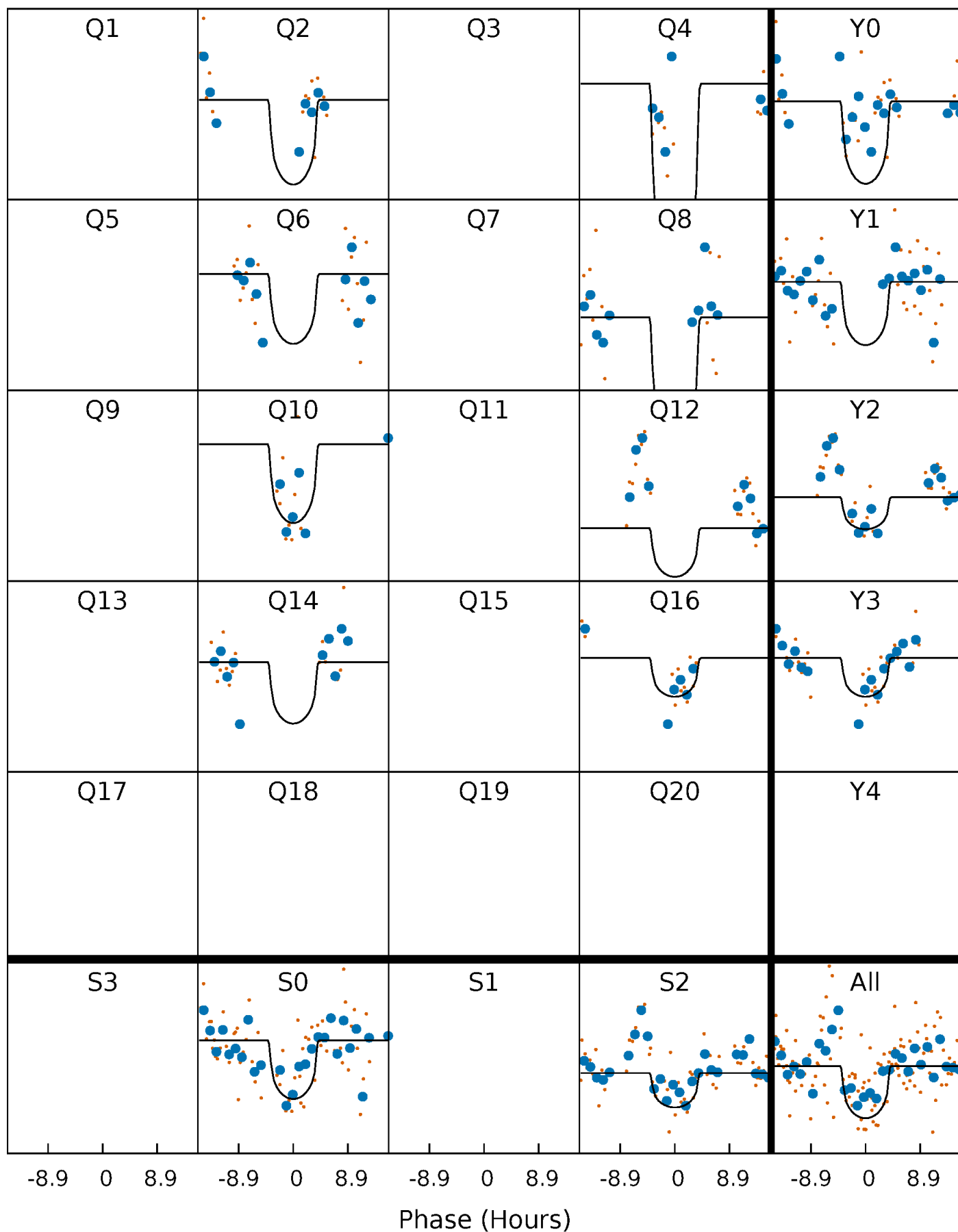
PDC Quarter-Phased Transit Curves

TCE 010515995-02 P=185.381853 Days $T_0=201.884027$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010515995-02 P=185.381853 Days $T_0=201.884027$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

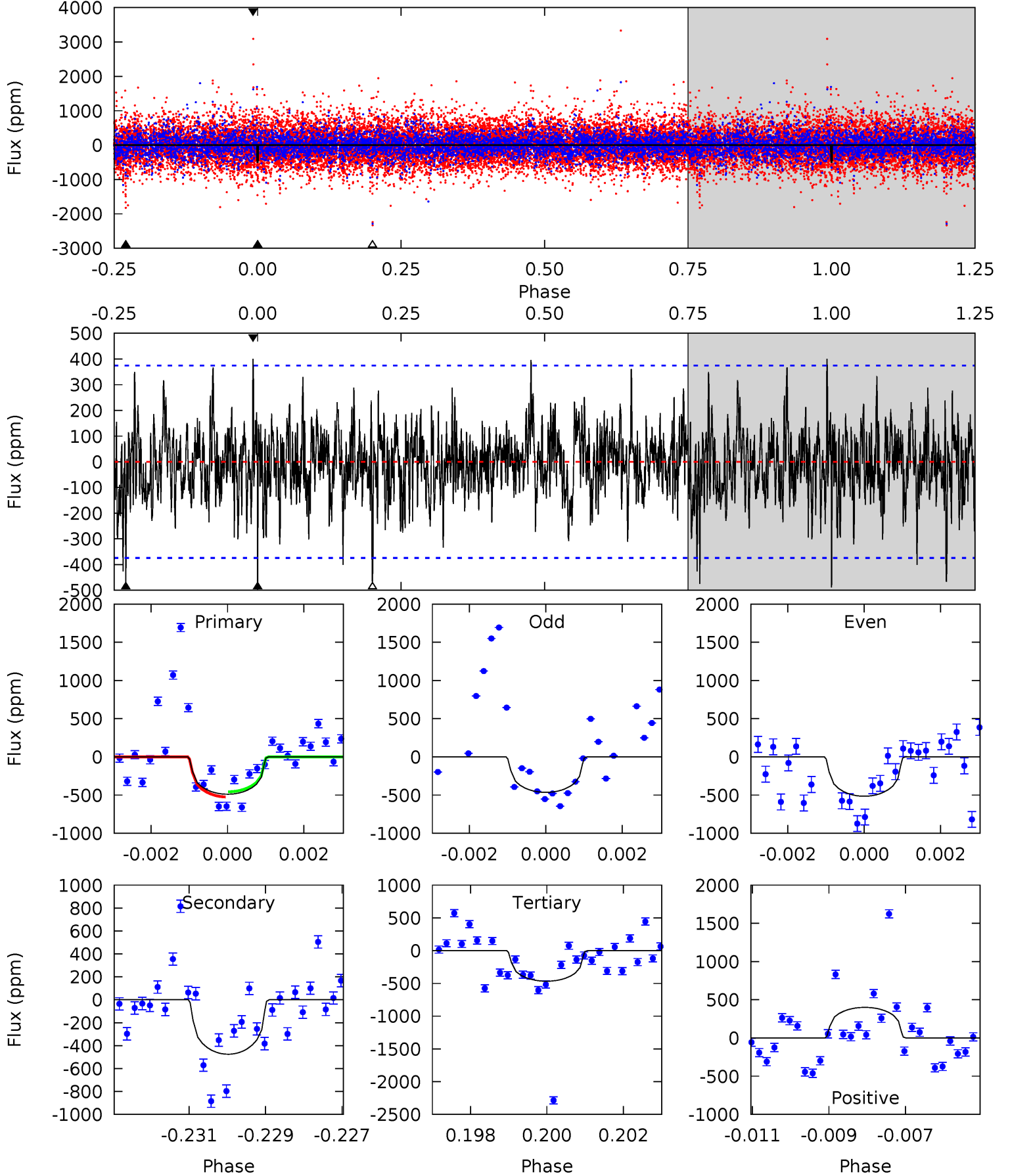
TCE 010515995-02 $P=185.373256$ Days $T_0=201.952239$ (BKJD)



DV Model-Shift Uniqueness Test

010515995-02, $P = 185.381853$ Days, $E = 16.502174$ Days

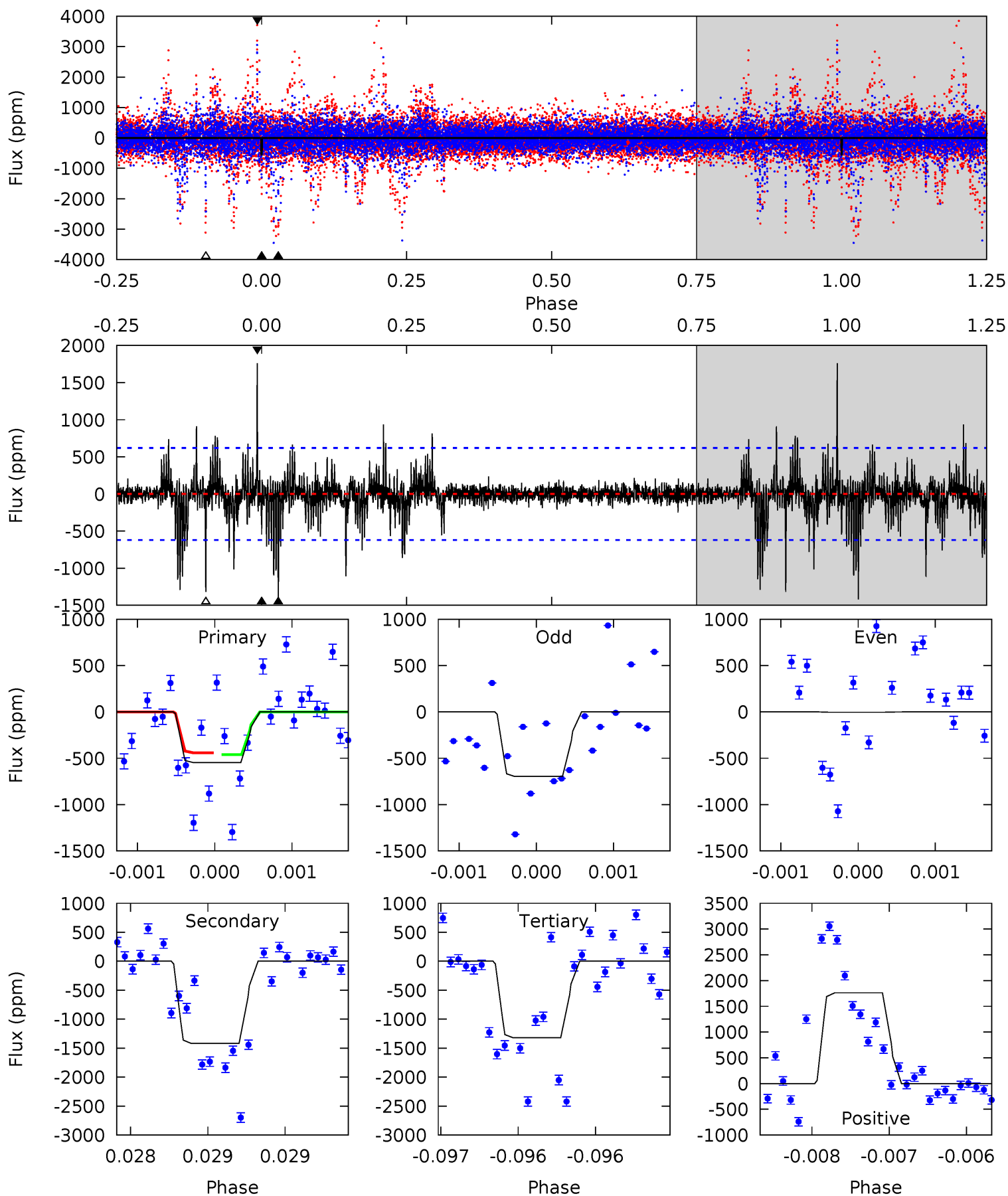
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.98	6.78	6.67	5.72	5.35	3.12	1.59	0.32	1.26	0.12	1.06	0.36	1.92	0.45	0.48



Alt Model-Shift Uniqueness Test

010515995-02, P = 185.373256 Days, E = 16.578983 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.82	12.5	11.6	15.5	5.47	3.32	1.62	-6.83	-10.7	0.87	-3.02	2.81	0.43	0.55	0.10



Stellar Parameters For KIC 010515995

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4656^{+125}_{-139}	$4.619^{+0.032}_{-0.042}$	$0.000^{+0.250}_{-0.300}$	$0.695^{+0.056}_{-0.051}$	$0.732^{+0.051}_{-0.064}$	$3.072^{+0.483}_{-0.503}$
	+3%/-3%	+1%/-1%	+inf%/-inf%	+8%/-7%	+7%/-9%	+16%/-16%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010515995-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-475 ± 70	$3.66^{+3.30}_{-2.46}$	317^{+11}_{-10}	3500^{+1942}_{-588}	6152^{+57156}_{-4389}
Alt.	-1419 ± 113	$3.78^{+3.63}_{-2.57}$	316^{+10}_{-11}	4171^{+2739}_{-825}	$17760^{+143981}_{-13078}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

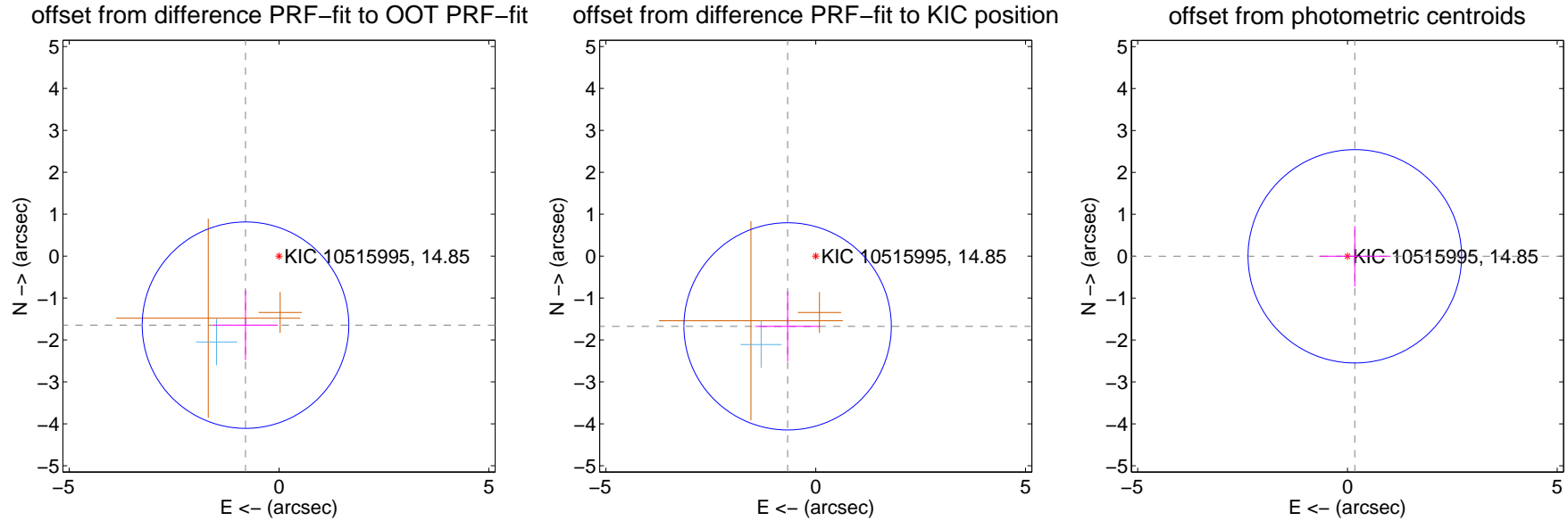
DV Centroid Data

Supplemental centroid analysis for 010515995-02. Kepler magnitude: 14.85. Transit SNR 7.86

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.830 ± 0.821	2.23	0.798 ± 0.771	-1.647 ± 0.832
PRF-fit source offset from KIC position	1.804 ± 0.824	2.19	0.670 ± 0.771	-1.675 ± 0.832
photometric centroid source offset	0.18 ± 0.85	0.21	-0.18 ± 0.85	-0.00 ± 0.72



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

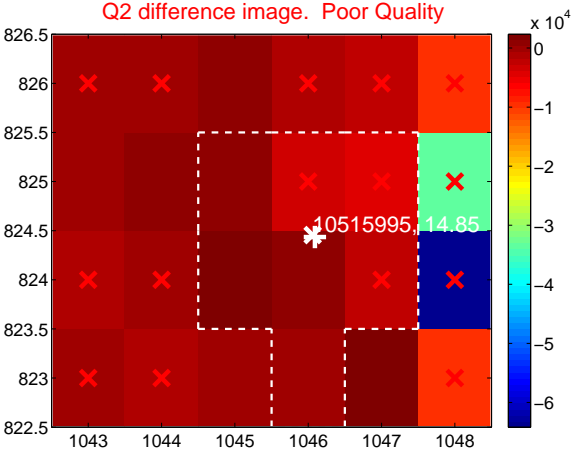
Q1 no difference image



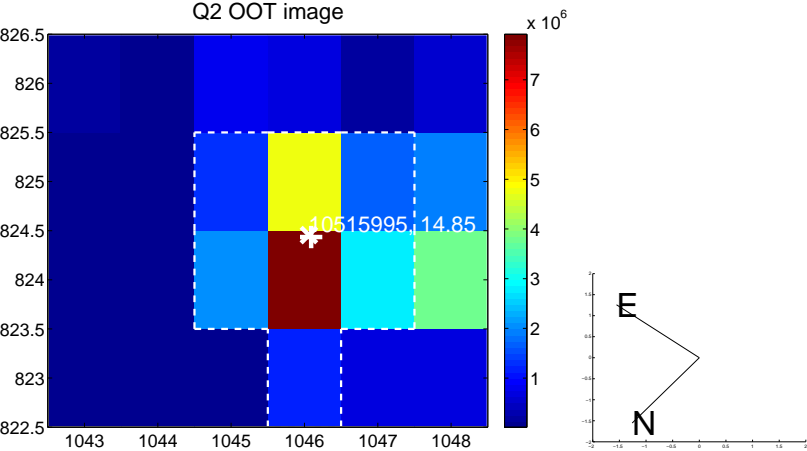
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



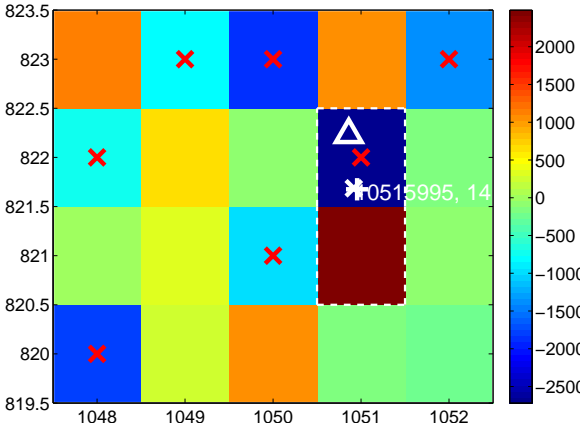
Q3 no difference image



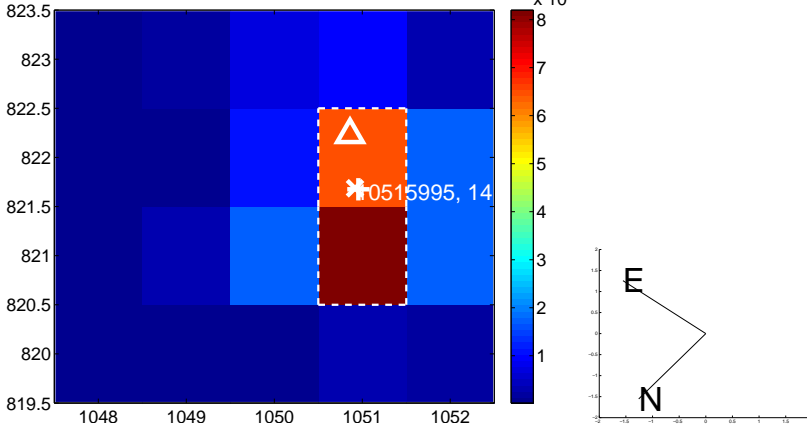
Q3 no OOT image



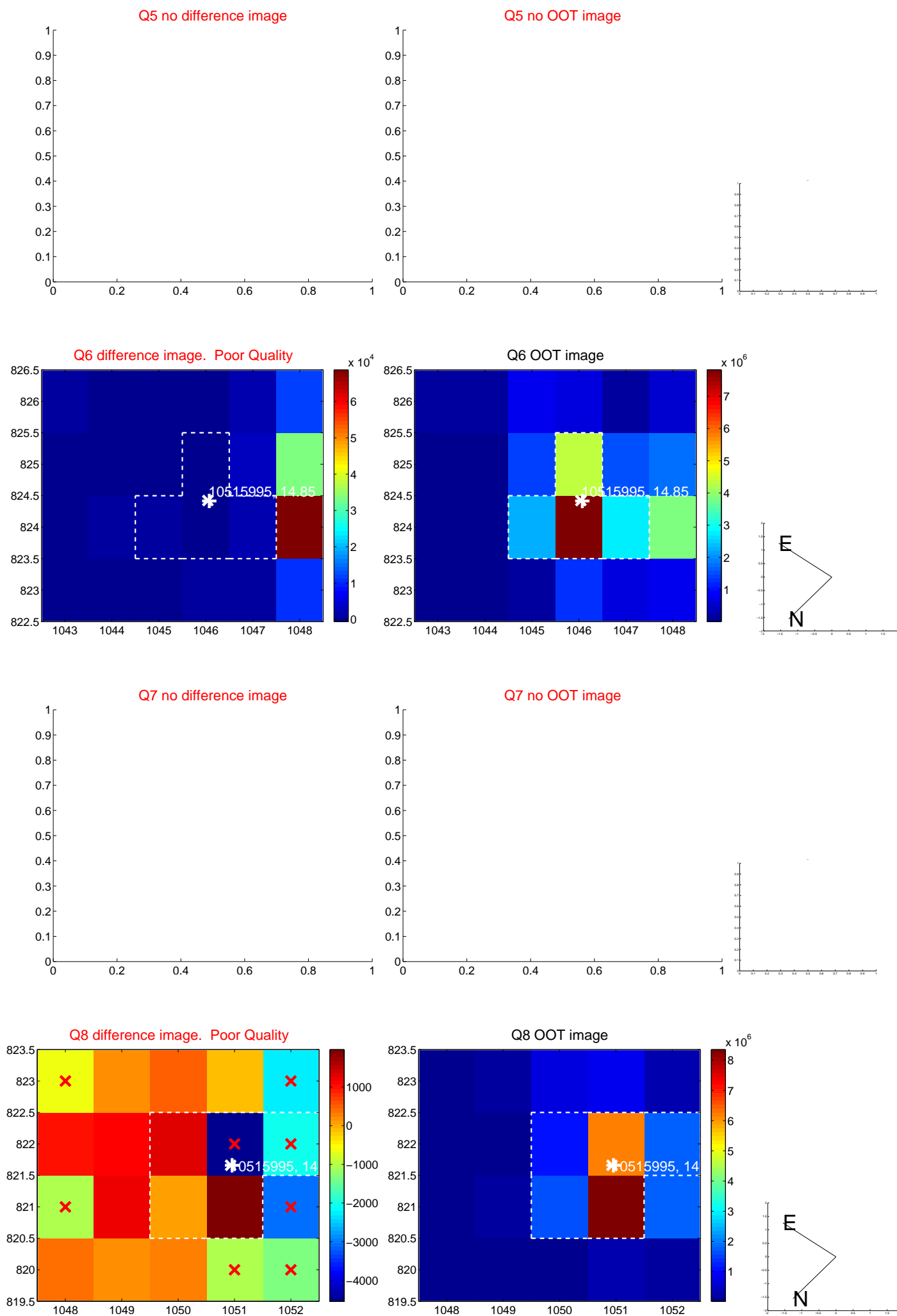
Q4 difference image. Poor Quality



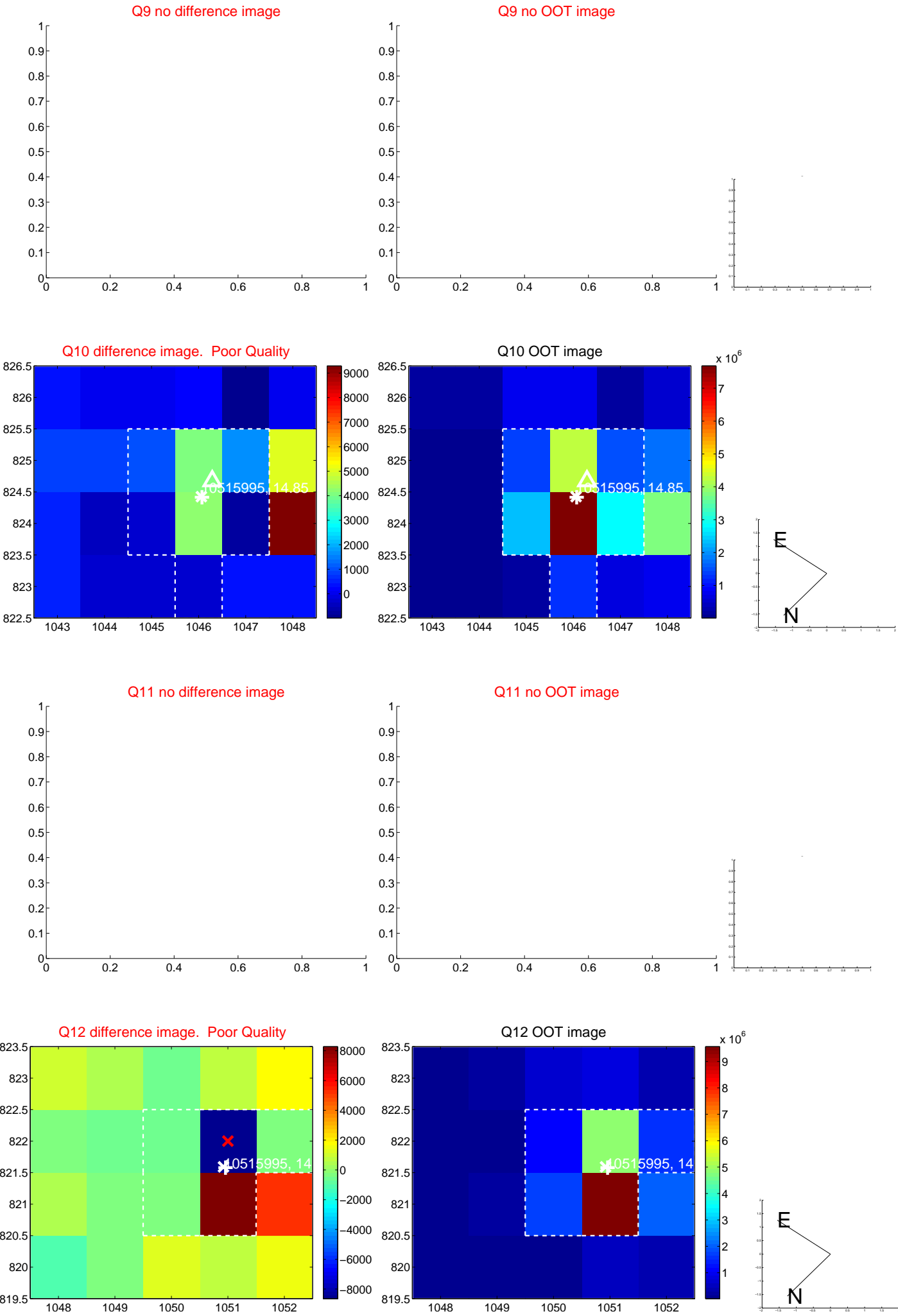
Q4 OOT image



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

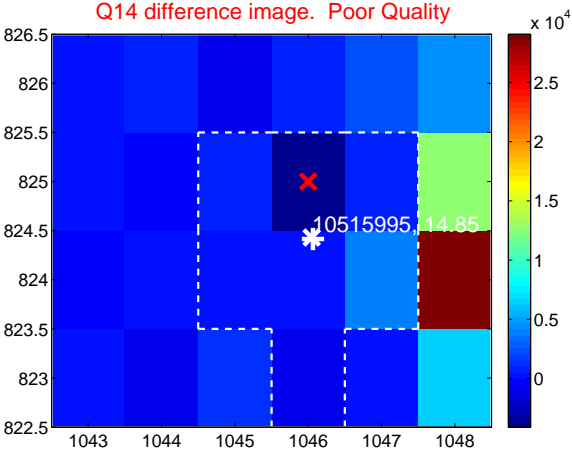
Q13 no difference image



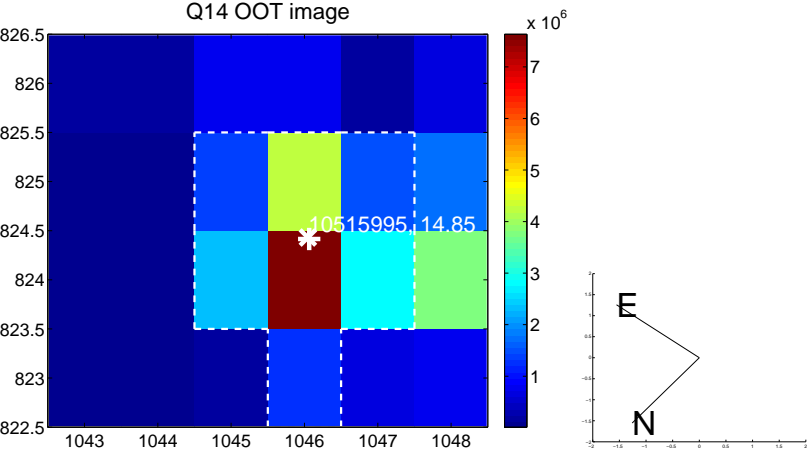
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



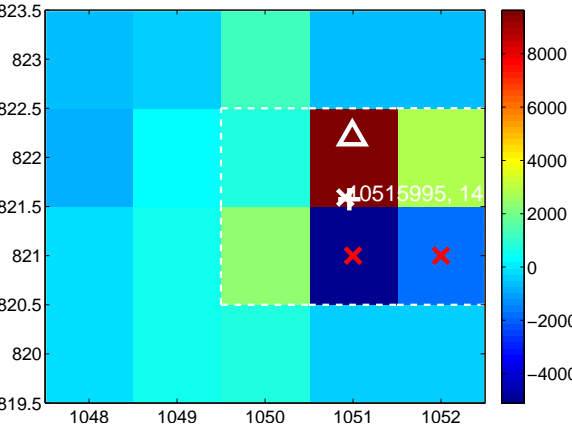
Q15 no difference image



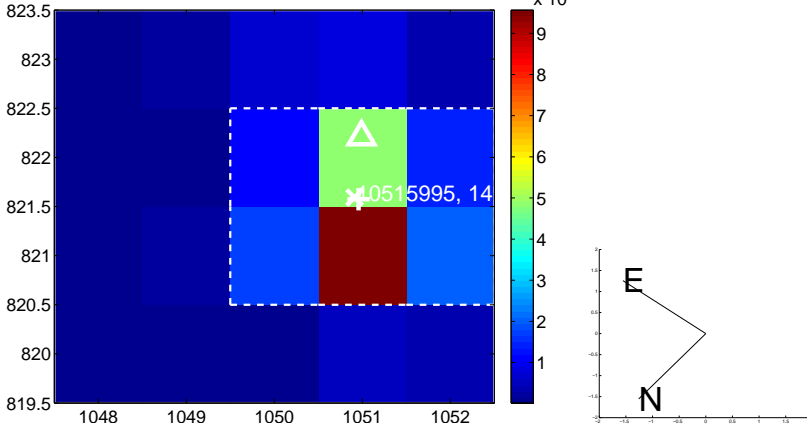
Q15 no OOT image



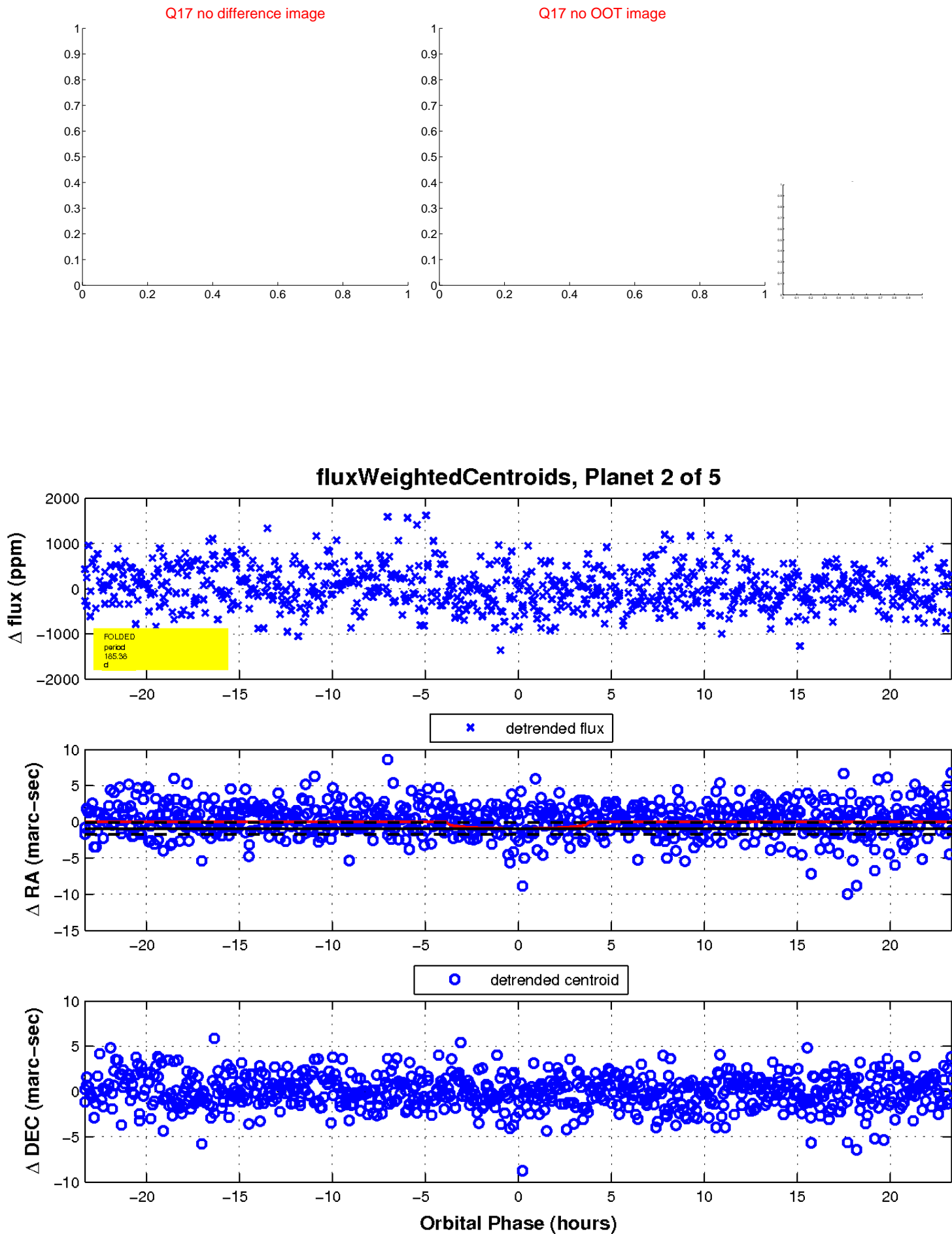
Q16 difference image



Q16 OOT image

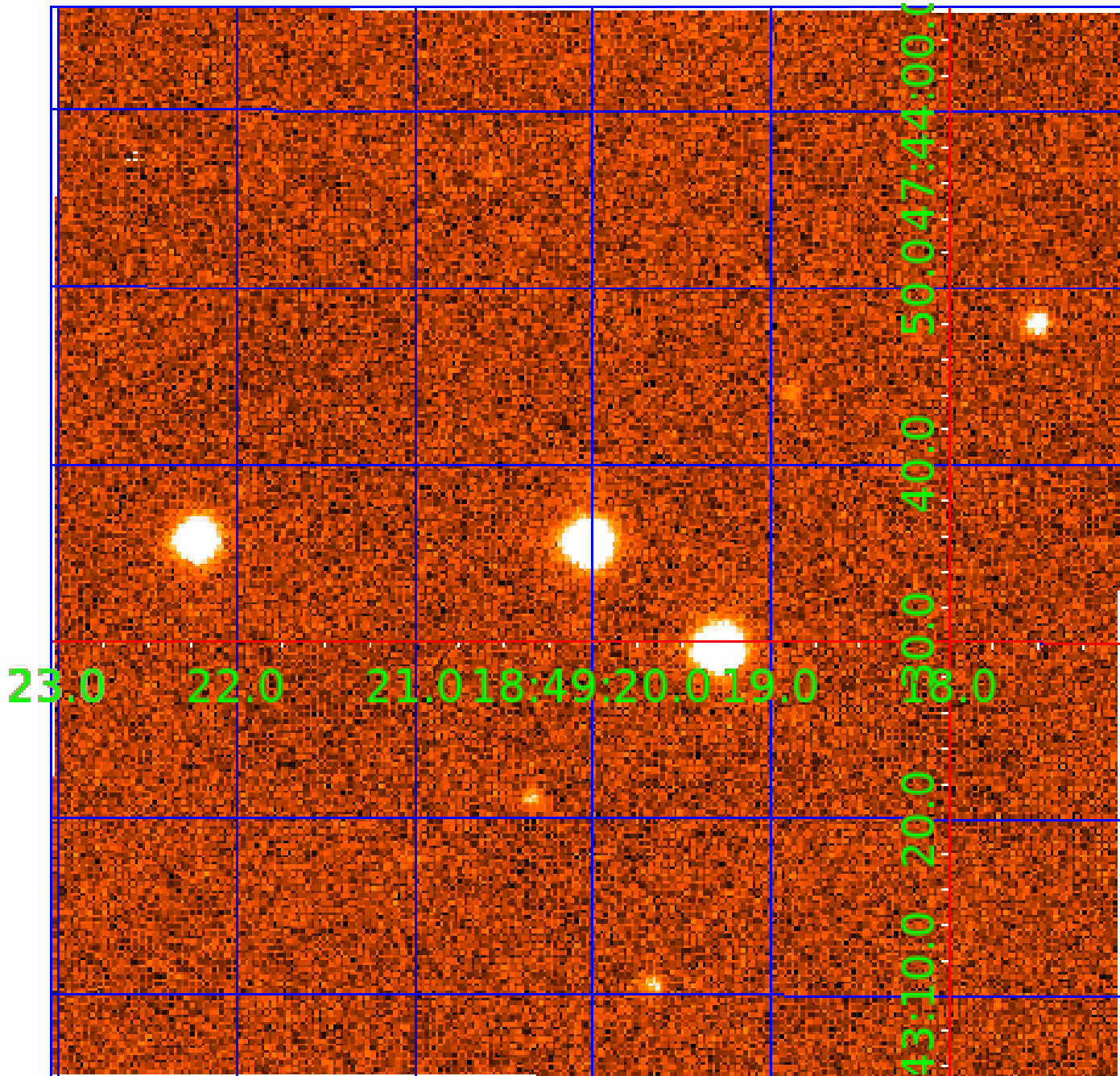


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010515995

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
010515995-01	OBS	No	0.746596	132.214810	44.8	4.218	7.6	9.9	0.69	4656	0.45	964.17
010515995-02	OBS	No	185.381853	201.884027	851.4	7.780	12.5	7.9	0.69	4656	1.99	0.62
010515995-03	OBS	No	166.050100	180.414071	356.8	2.131	10.3	3.2	0.69	4656	1.66	0.72
010515995-04	OBS	No	63.683326	191.921712	643.6	1.982	7.6	7.3	0.69	4656	2.20	2.57
010515995-05	OBS	No	212.708629	262.124657	880.4	3.045	7.6	7.6	0.69	4656	2.43	0.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010515995-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
010515995-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010515995-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010515995-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
010515995-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

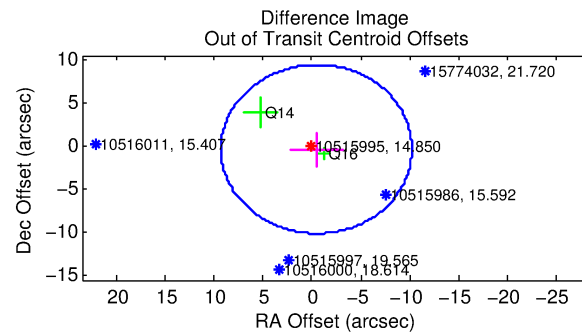
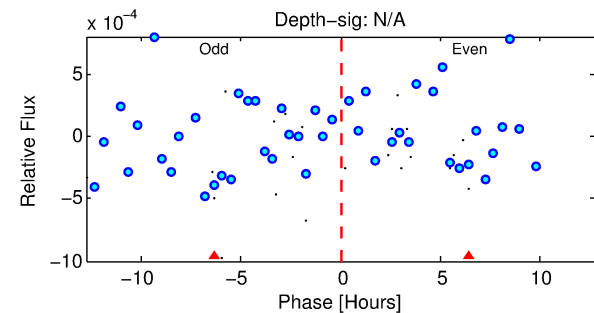
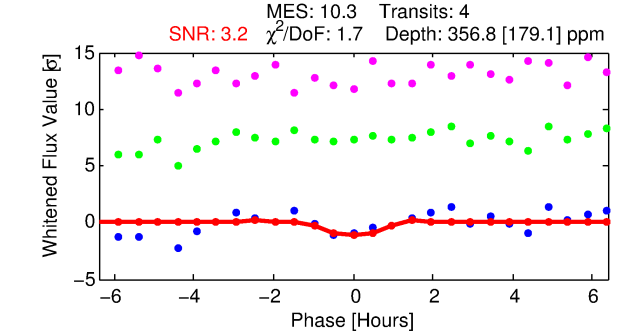
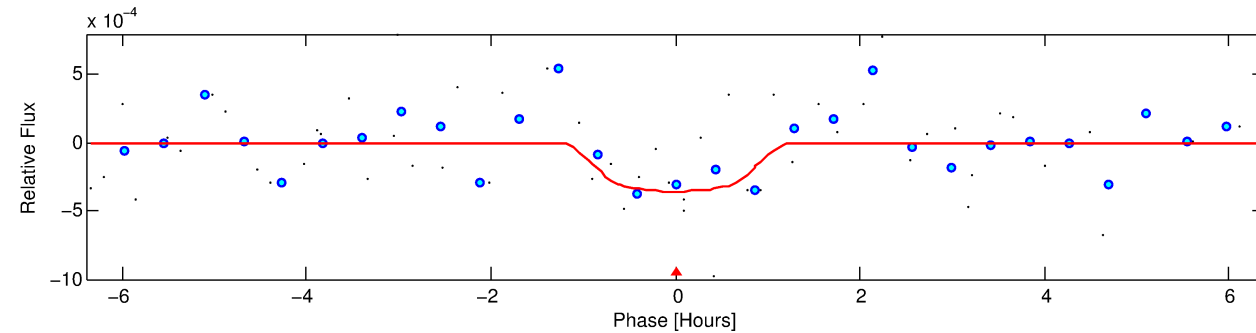
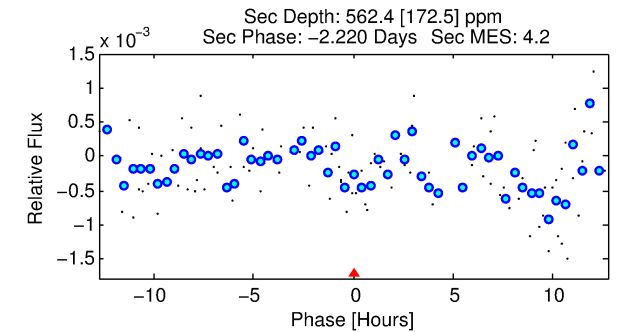
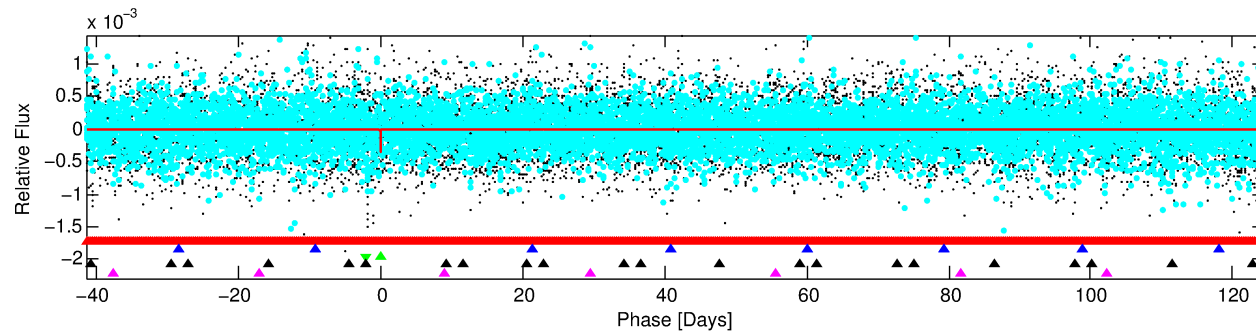
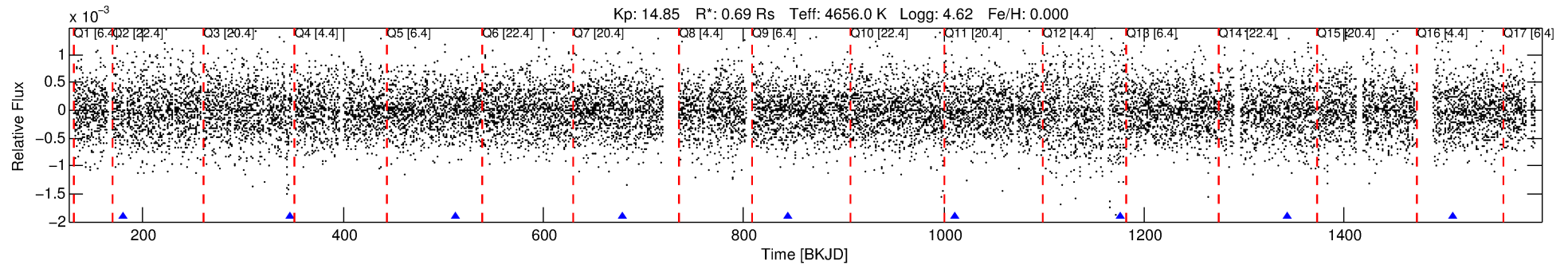
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010515995-03

No Significant Match Found

DV One-Page Summary

KIC: 10515995 Candidate: 3 of 5 Period: 166.050 d



DV Fit Results:

Period = 166.05010 [0.00403] d
Epoch = 180.4141 [0.0183] BKJD
Rp/R* = 0.0219 [0.0874]
a/R* = 264.41 [4094.28]
b = 0.92 [2.65]
Seff = 0.72 [0.10]
Teq = 235 [9] K
Rp = 1.66 [6.63] Re
a = 0.5331 [0.0334] AU
Ag = 31782.86 [253599.84] [0.13] σ
Teff = 4841 [9658] K [0.48] σ

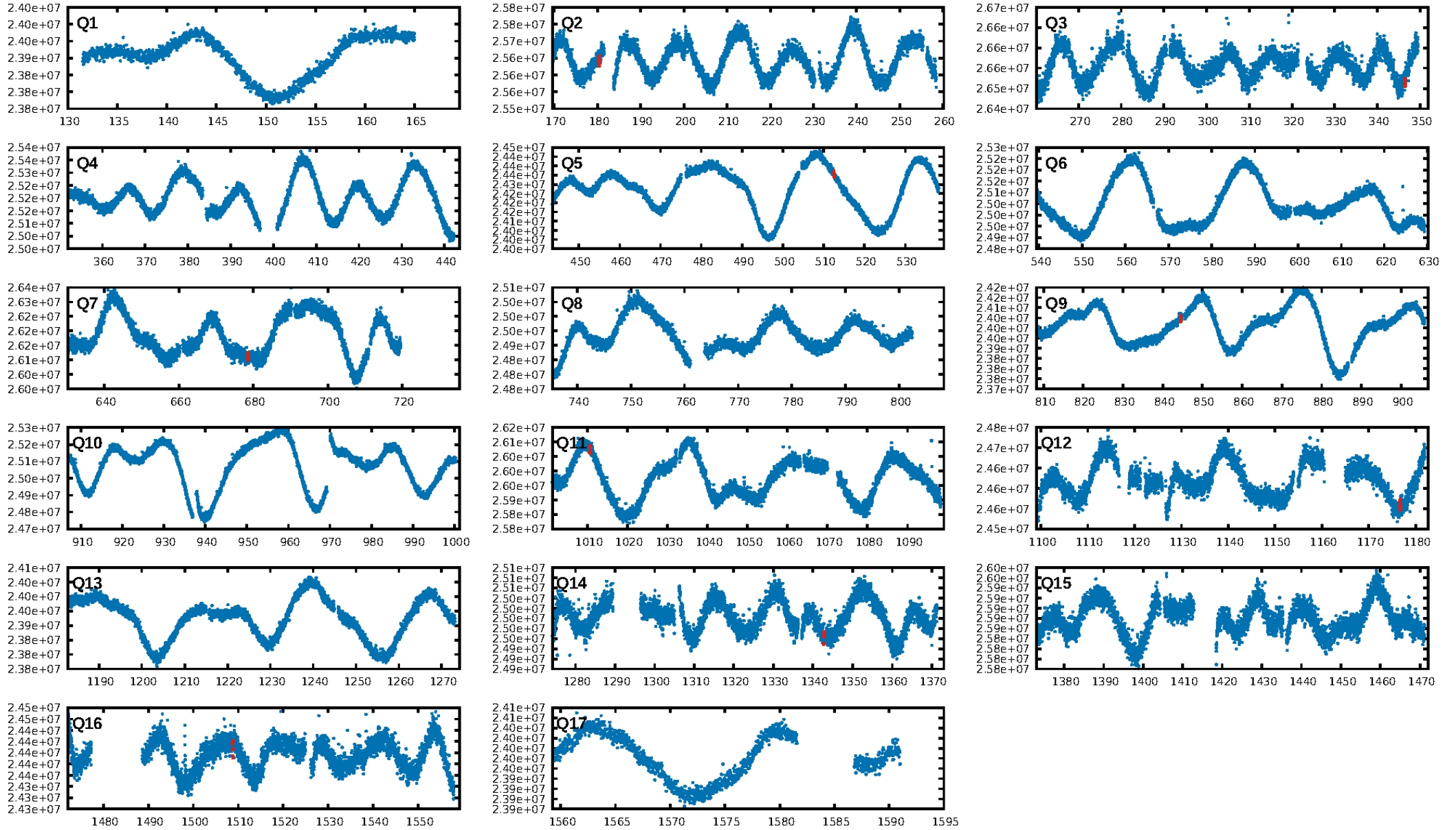
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [844.28] σ
LongPeriod-sig: 100.0% [57.52] σ
ModelChiSquare2-sig: 20.6%
ModelChiSquareGof-sig: 84.5%
Bootstrap-pfa: 5.00e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.9281
Centroid-sig: N/A
Centroid-so: 2.807 arcsec [0.87] σ
OotOffset-rm: 0.578 arcsec [0.18] σ
KicOffset-rm: 0.772 arcsec [0.17] σ
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/9]

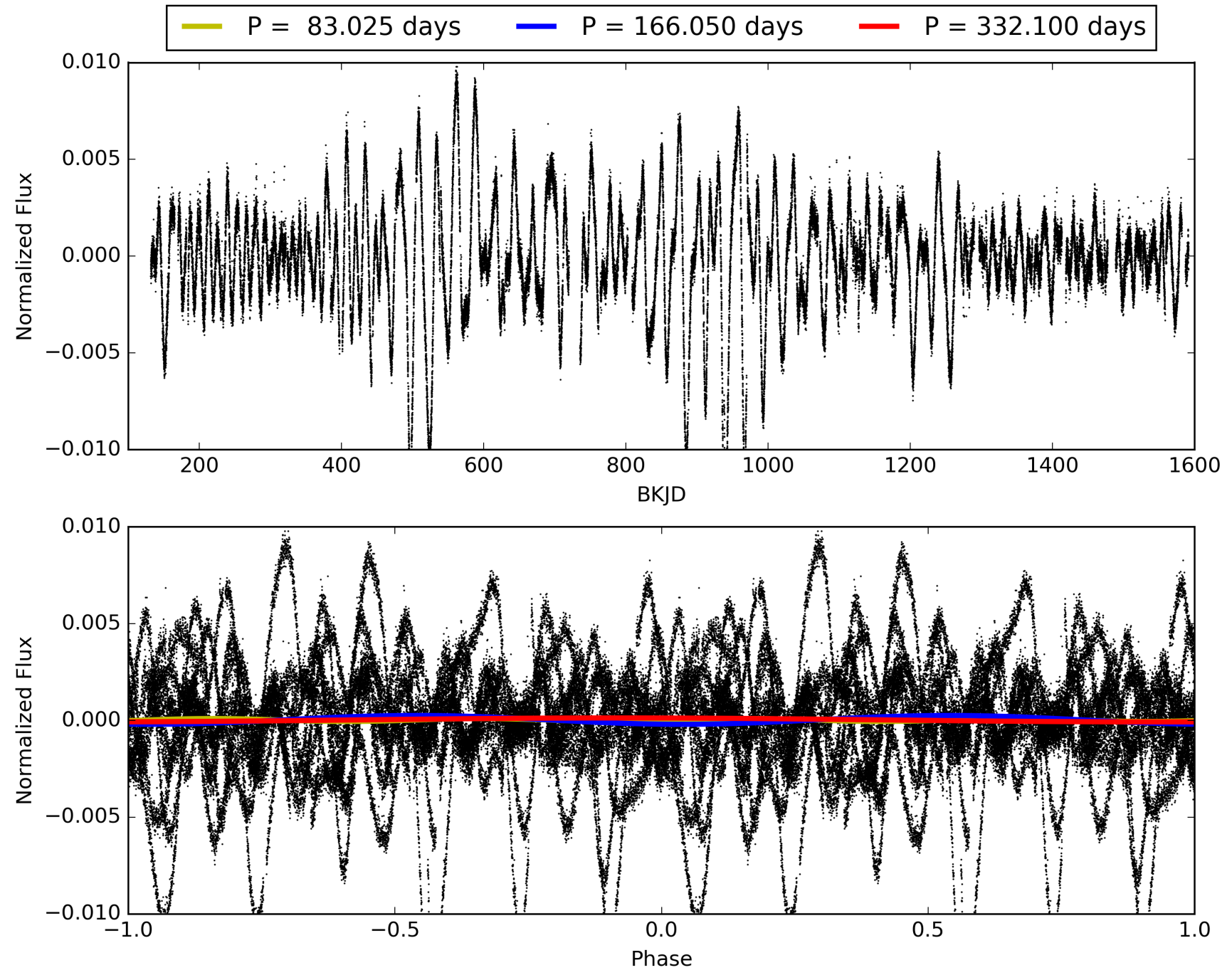
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:29:35 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010515995-03, PDC Light Curves

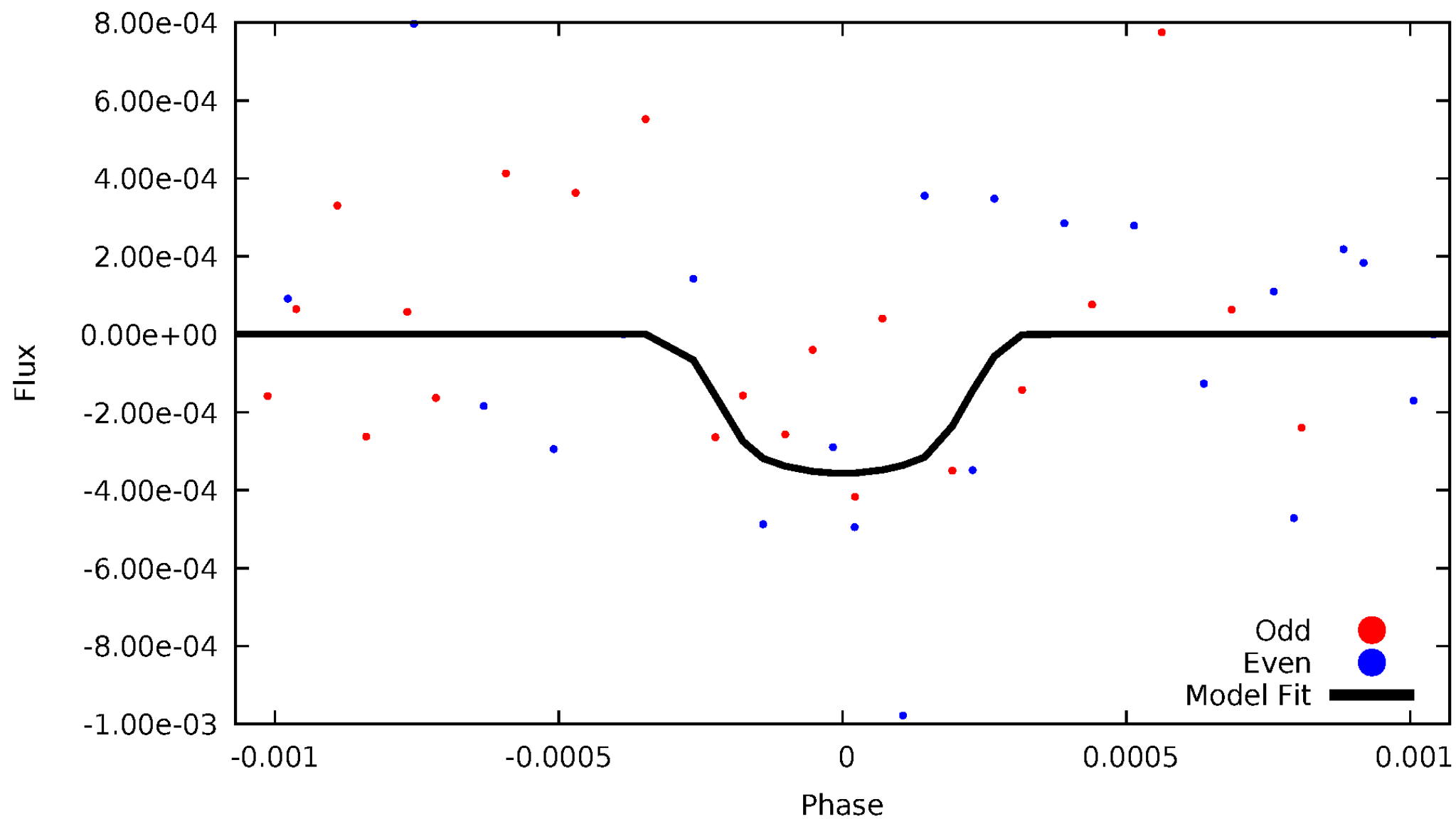


TCE 010515995-03



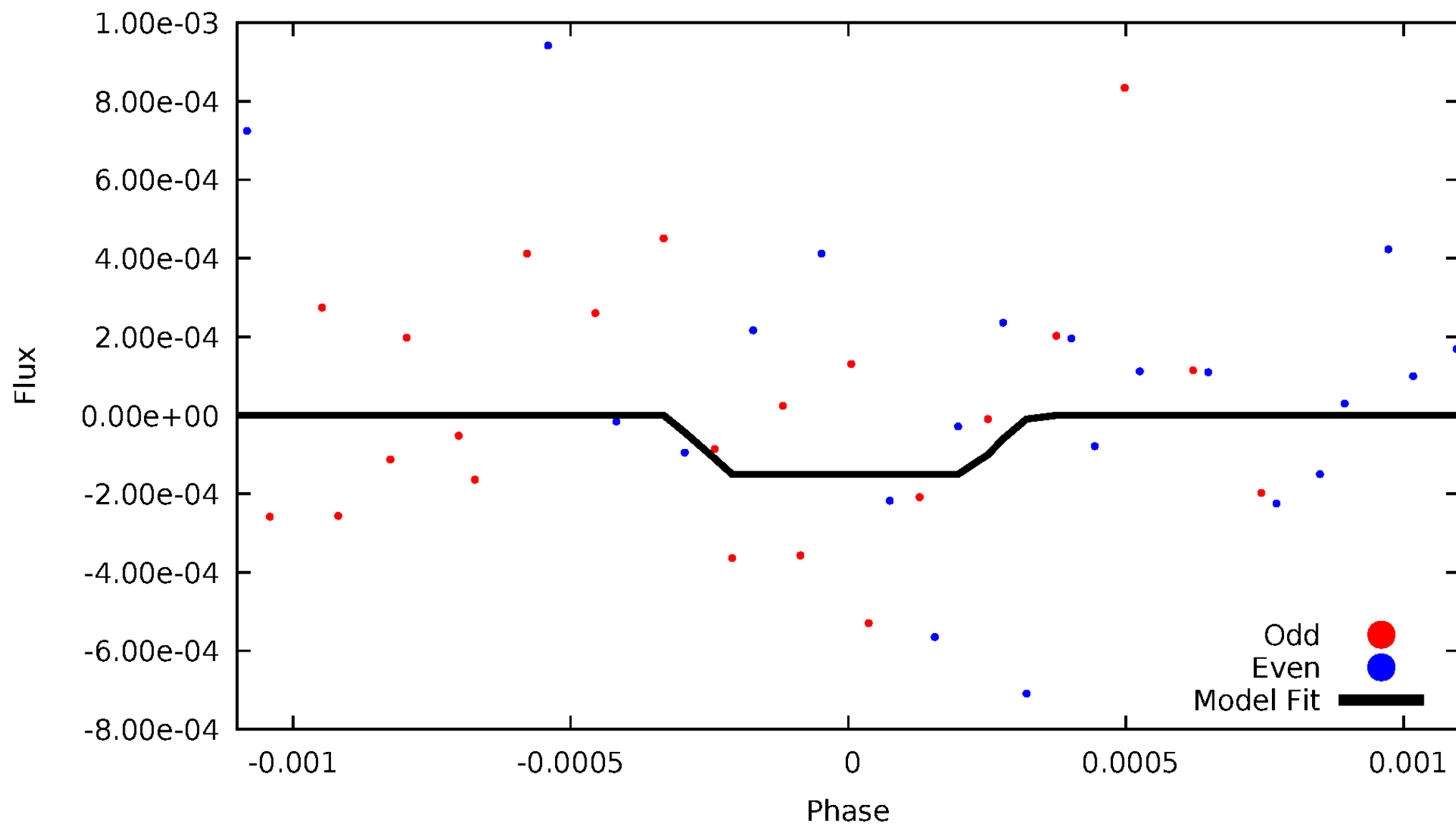
DV Odd/Even

TCE 010515995-03



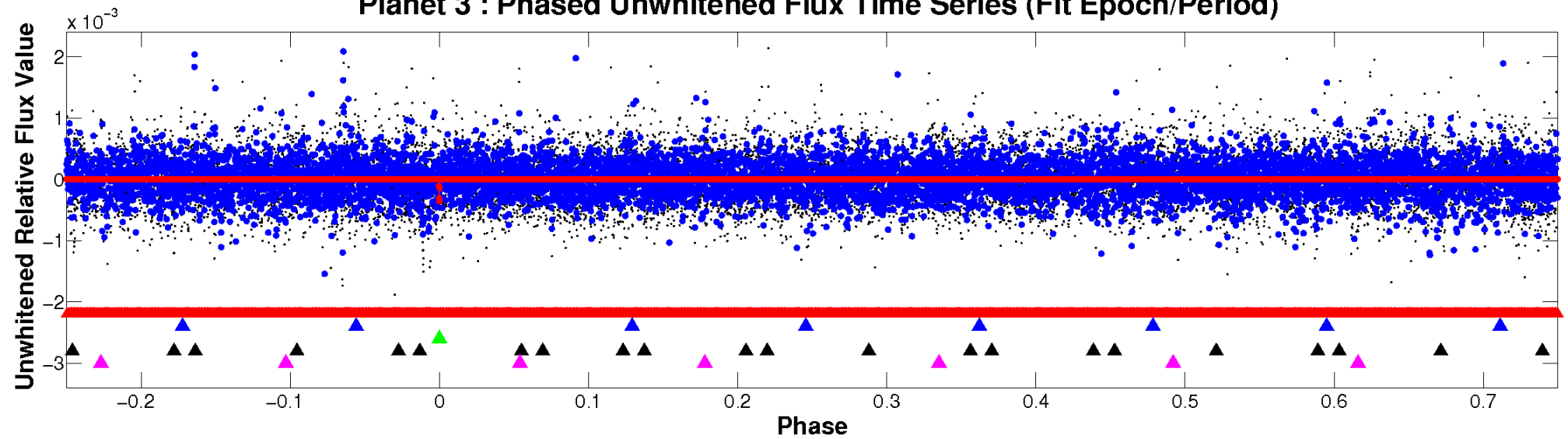
ALT Odd/Even

TCE 010515995-03

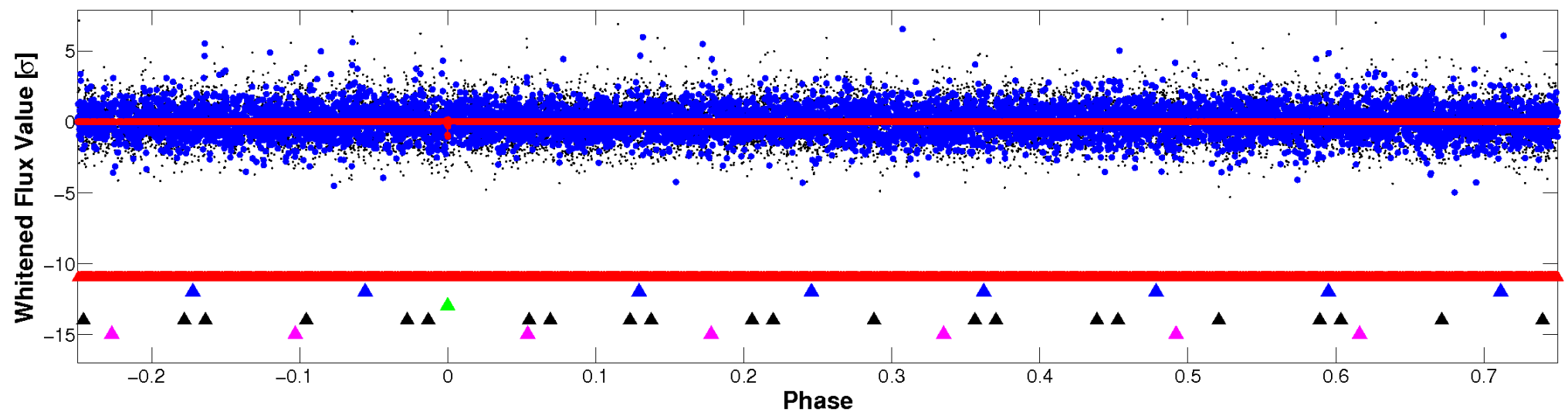


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

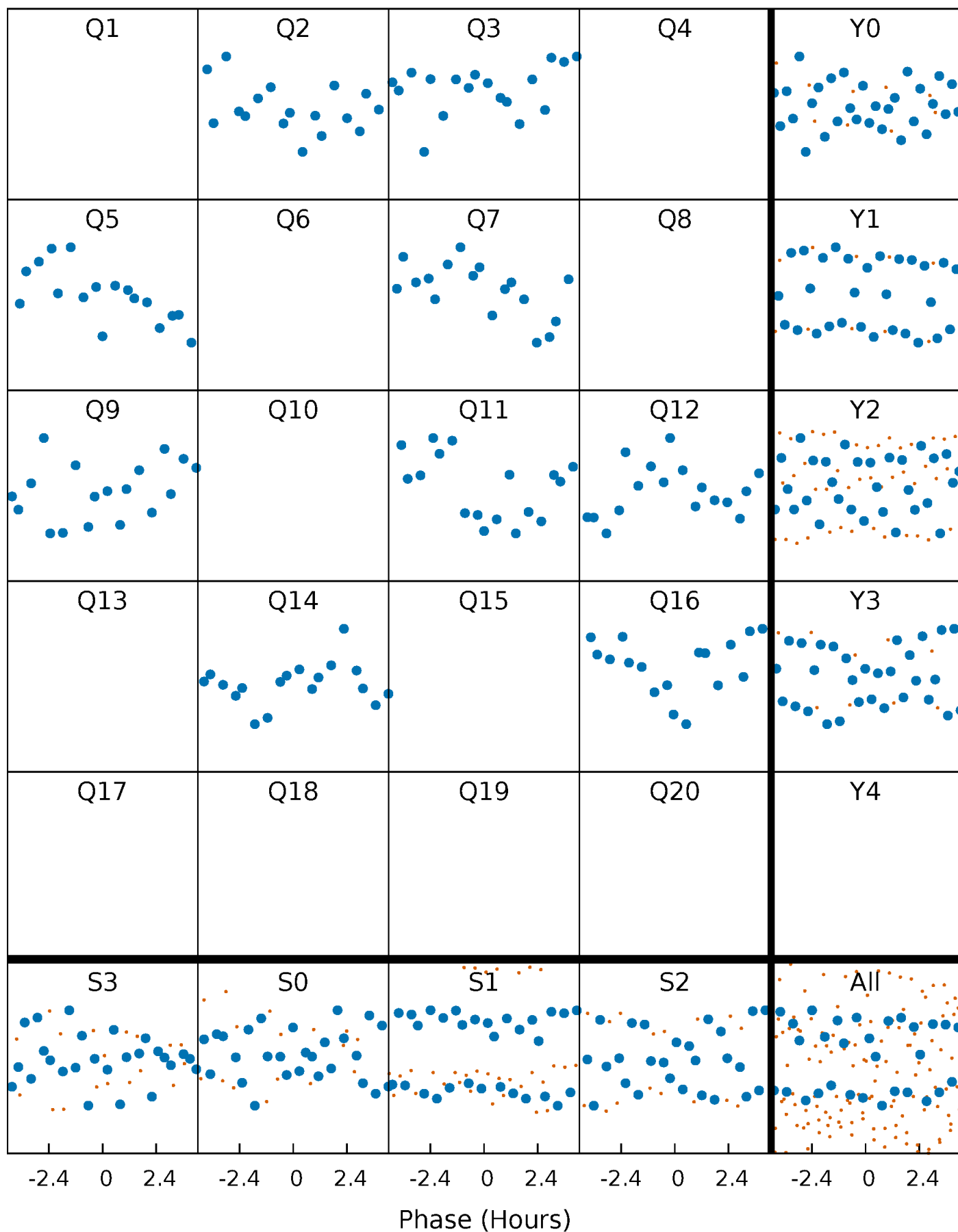


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



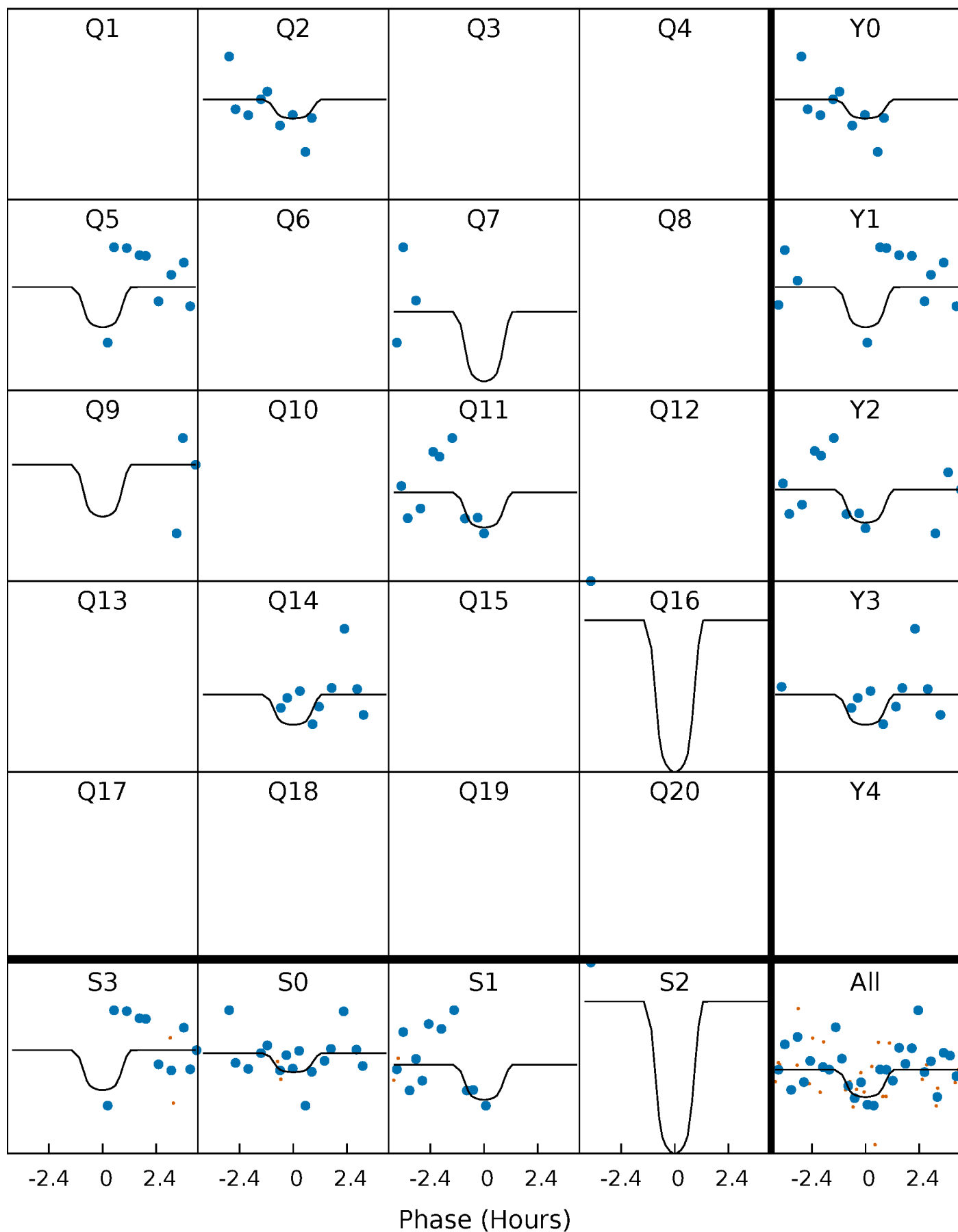
PDC Quarter-Phased Transit Curves

TCE 010515995-03 P=166.050100 Days $T_0=180.414071$ (BKJD)



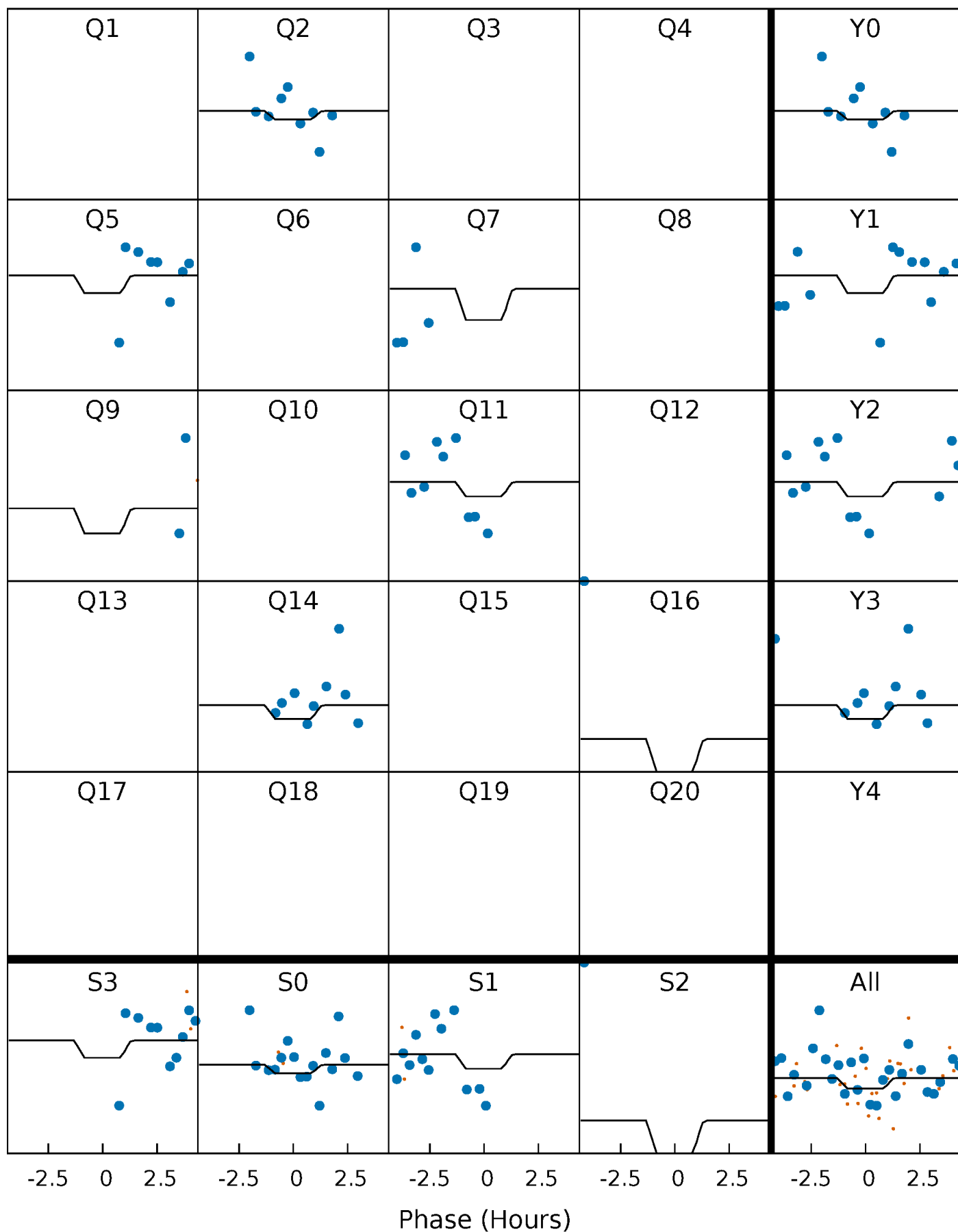
DV Quarter-Phased Transit Curves

TCE 010515995-03 P=166.050100 Days $T_0=180.414071$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

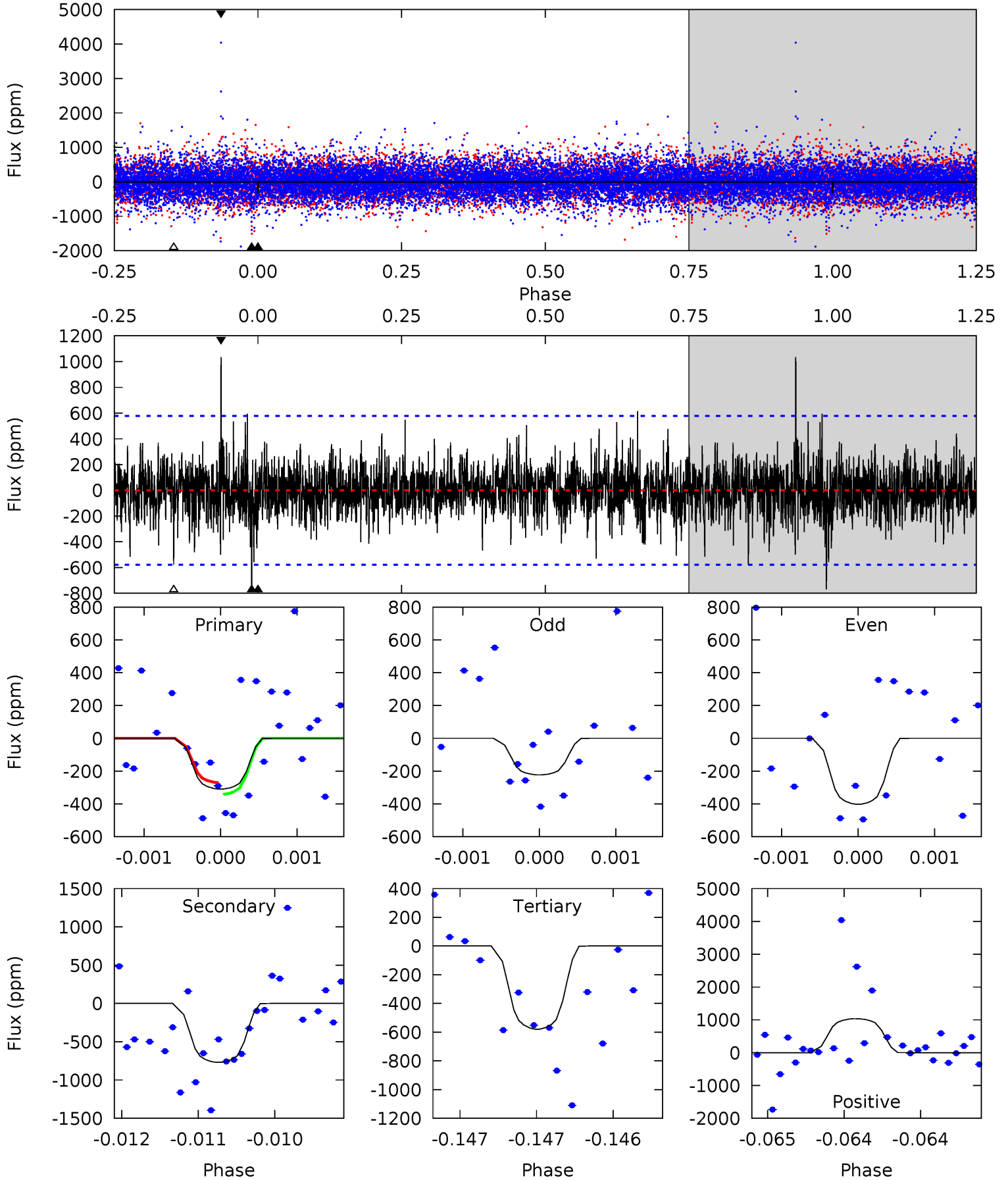
TCE 010515995-03 P=166.056731 Days $T_0=180.378497$ (BKJD)



DV Model-Shift Uniqueness Test

010515995-03, P = 166.050100 Days, E = 14.363971 Days

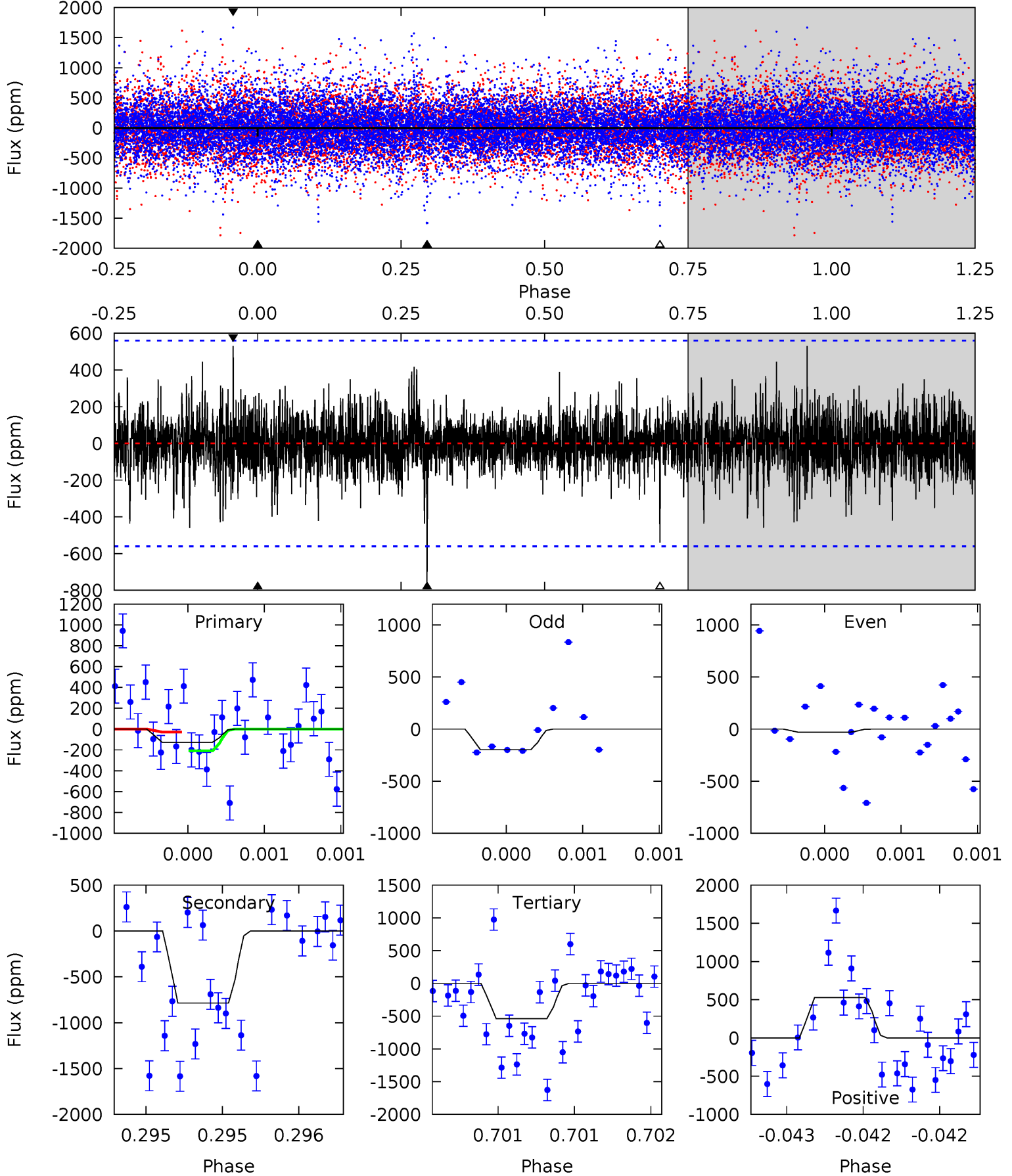
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.97	7.39	5.56	9.94	5.55	3.44	1.38	-2.59	-6.97	1.83	-2.55	0.88	1.19	0.57	0.34



Alt Model-Shift Uniqueness Test

010515995-03, $P = 166.056731$ Days, $E = 14.321766$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.24	7.76	5.33	5.24	5.54	3.42	1.09	-4.08	-3.99	2.44	2.53	0.82	0.89	0.40	0.85



Stellar Parameters For KIC 010515995

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4656^{+125}_{-139}	$4.619^{+0.032}_{-0.042}$	$0.000^{+0.250}_{-0.300}$	$0.695^{+0.056}_{-0.051}$	$0.732^{+0.051}_{-0.064}$	$3.072^{+0.483}_{-0.503}$
	+3%/-3%	+1%/-1%	+inf%/-inf%	+8%/-7%	+7%/-9%	+16%/-16%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010515995-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-769 ± 104	$5.16^{+5.38}_{-3.77}$	329^{+10}_{-11}	3408^{+2039}_{-650}	4572^{+54267}_{-3522}
Alt.	-786 ± 101	$4.68^{+5.17}_{-3.23}$	328^{+10}_{-11}	3494^{+1929}_{-660}	5463^{+51921}_{-4236}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

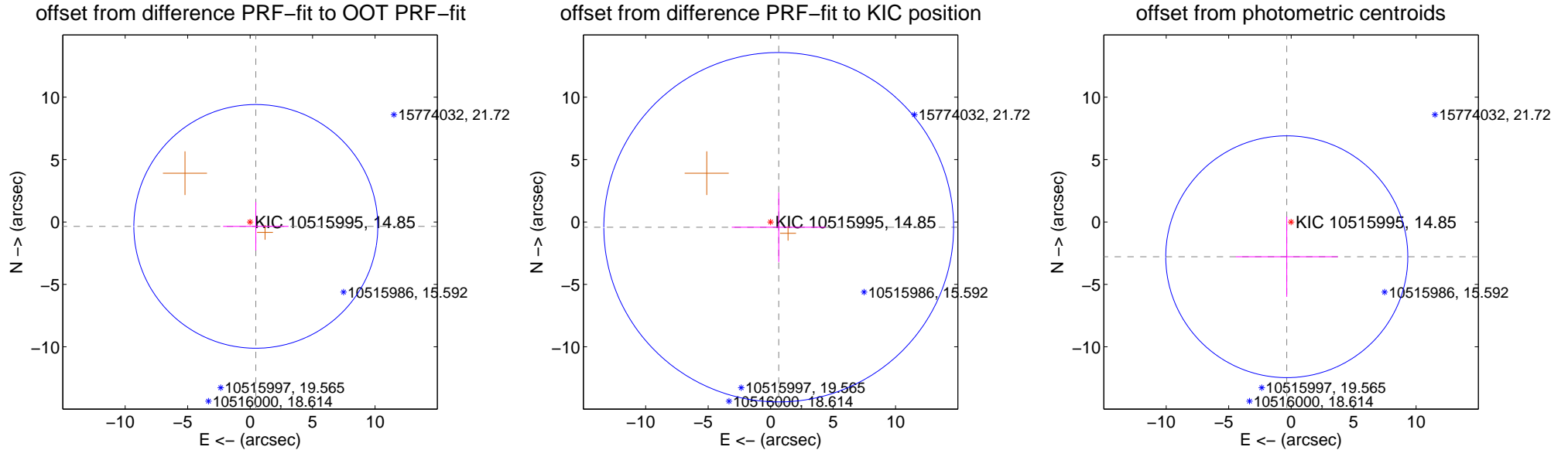
DV Centroid Data

Supplemental centroid analysis for 010515995-03. Kepler magnitude: 14.85. Transit SNR 3.19

There are 0 quarters with good PRF difference image offsets

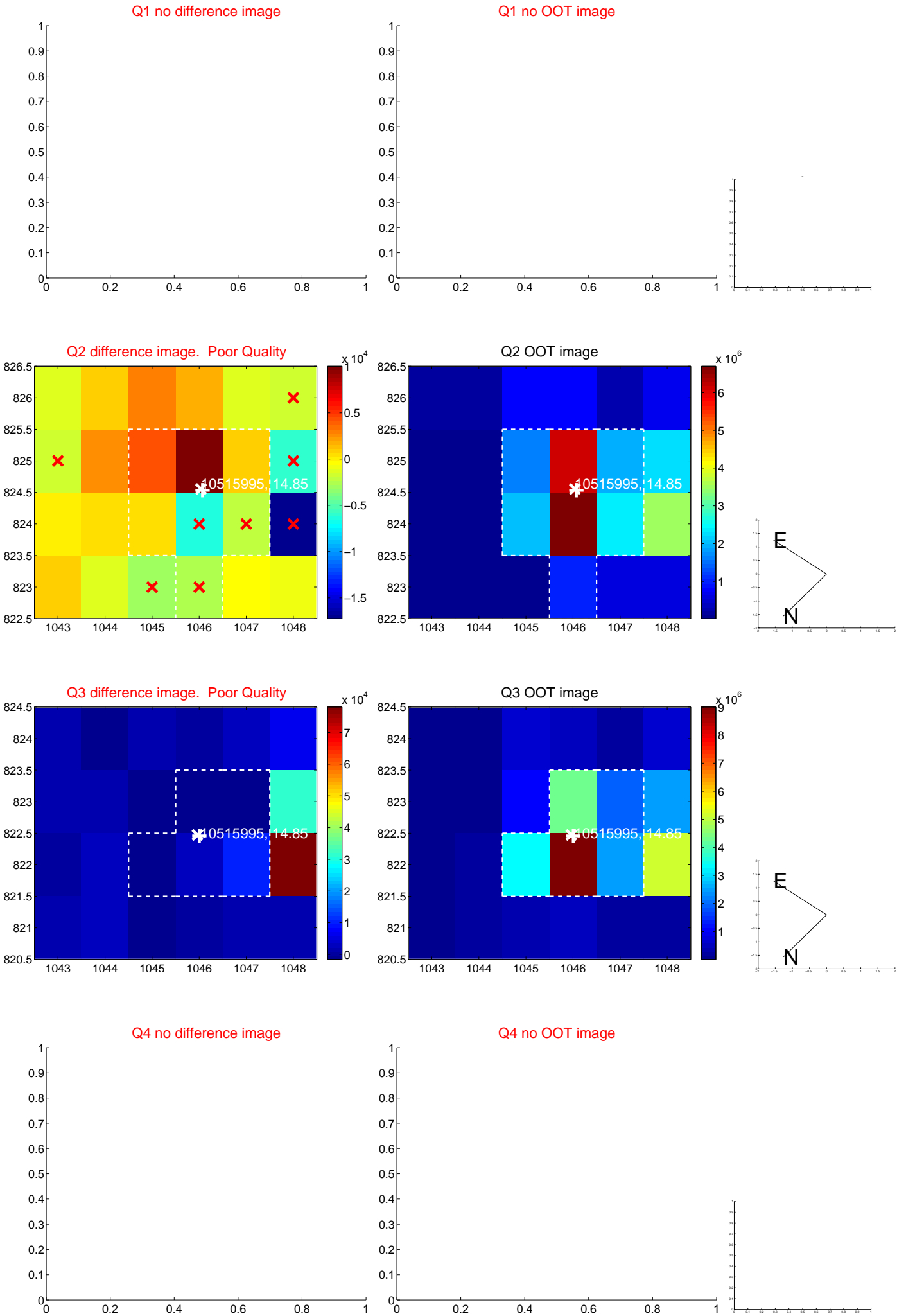
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.578 ± 3.255	0.18	-0.458 ± 2.617	-0.353 ± 1.937
PRF-fit source offset from KIC position	0.772 ± 4.667	0.17	-0.648 ± 3.759	-0.419 ± 2.782
photometric centroid source offset	2.81 ± 3.23	0.87	0.35 ± 4.08	-2.78 ± 3.21

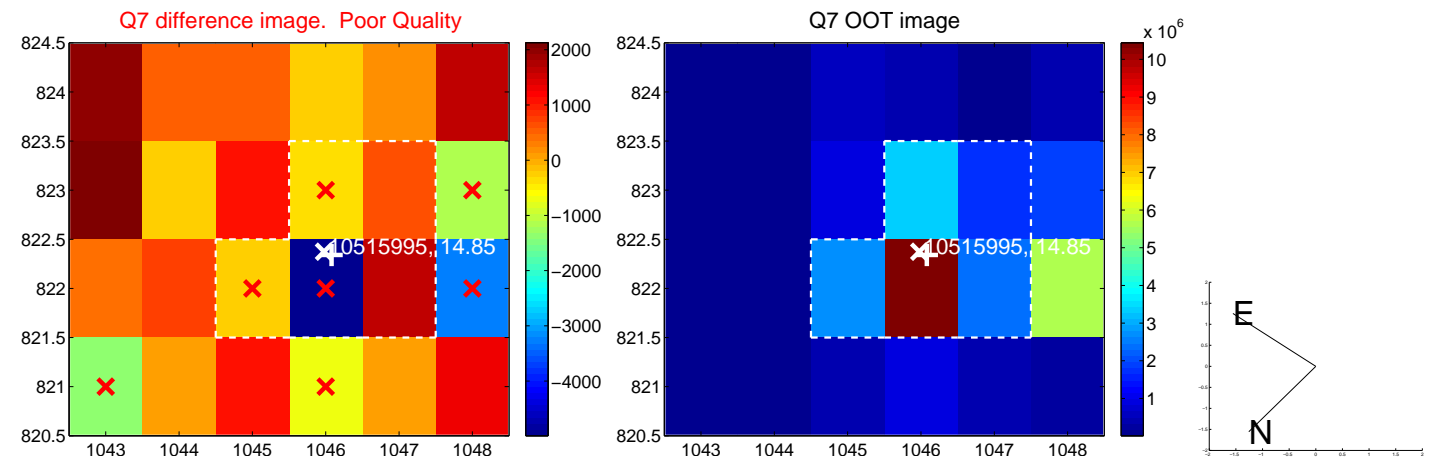
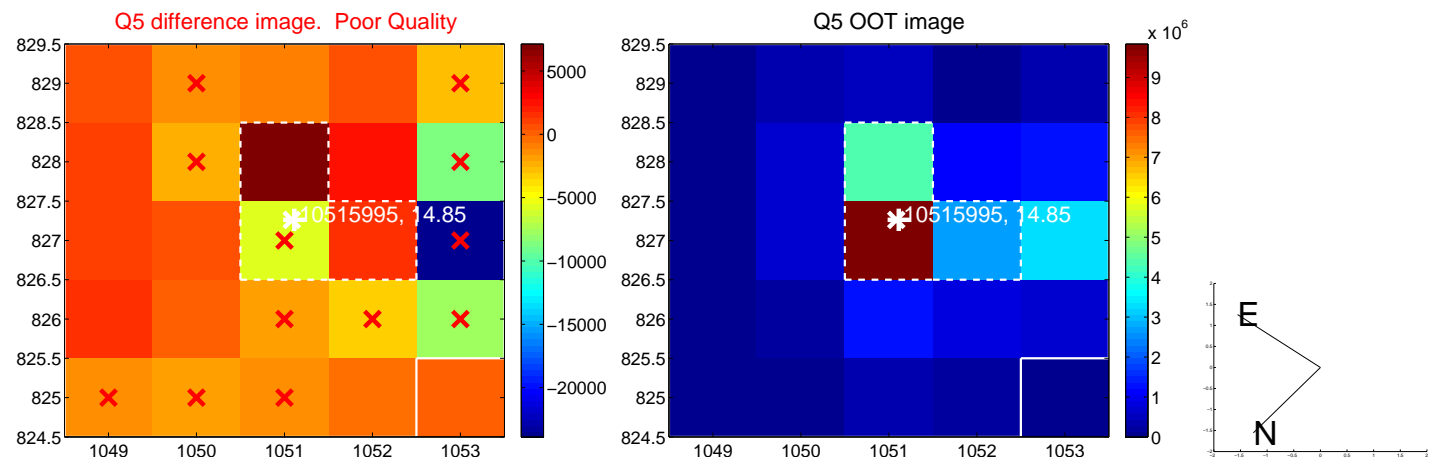


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

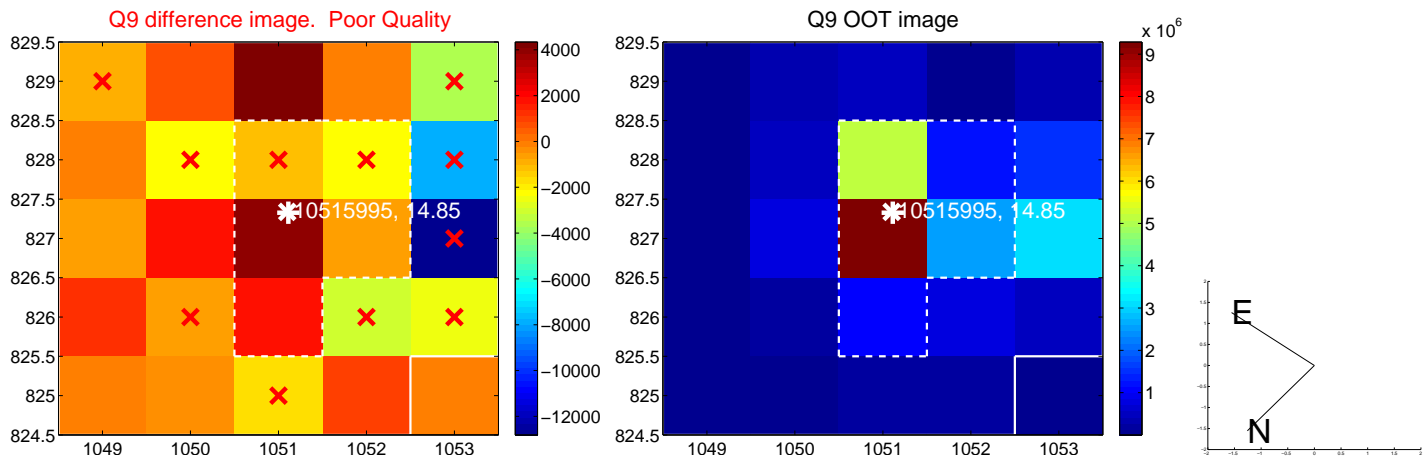
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



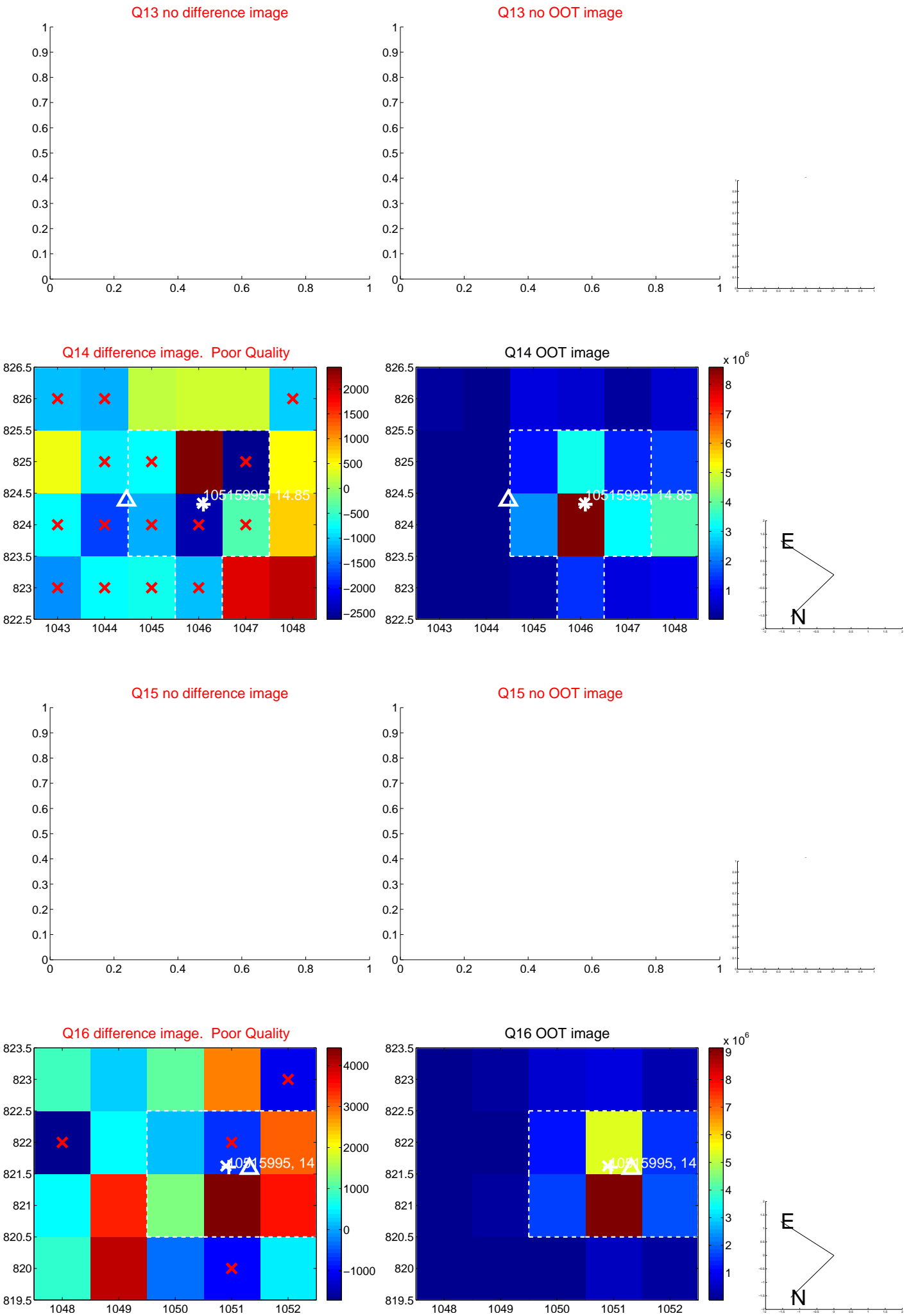
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



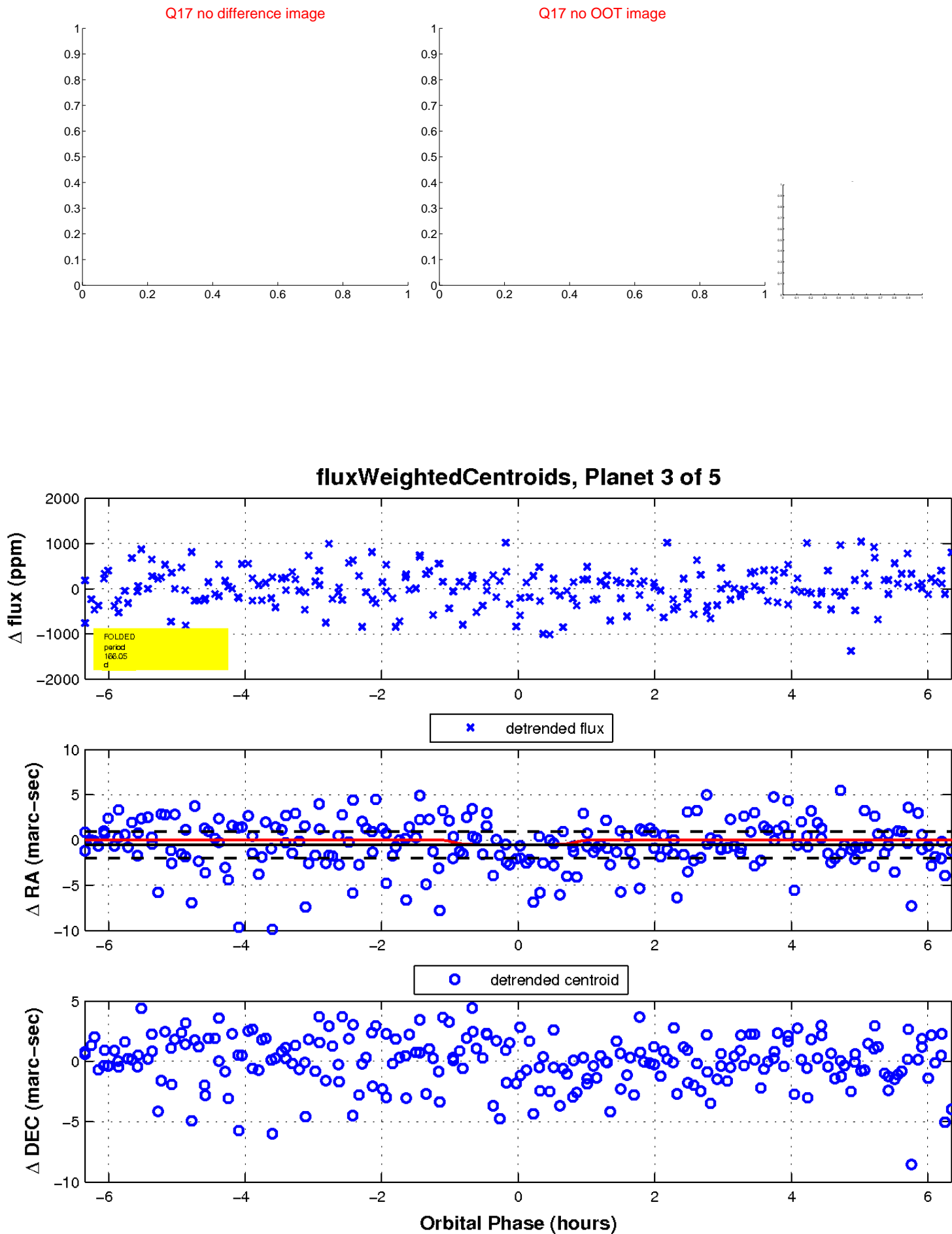
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

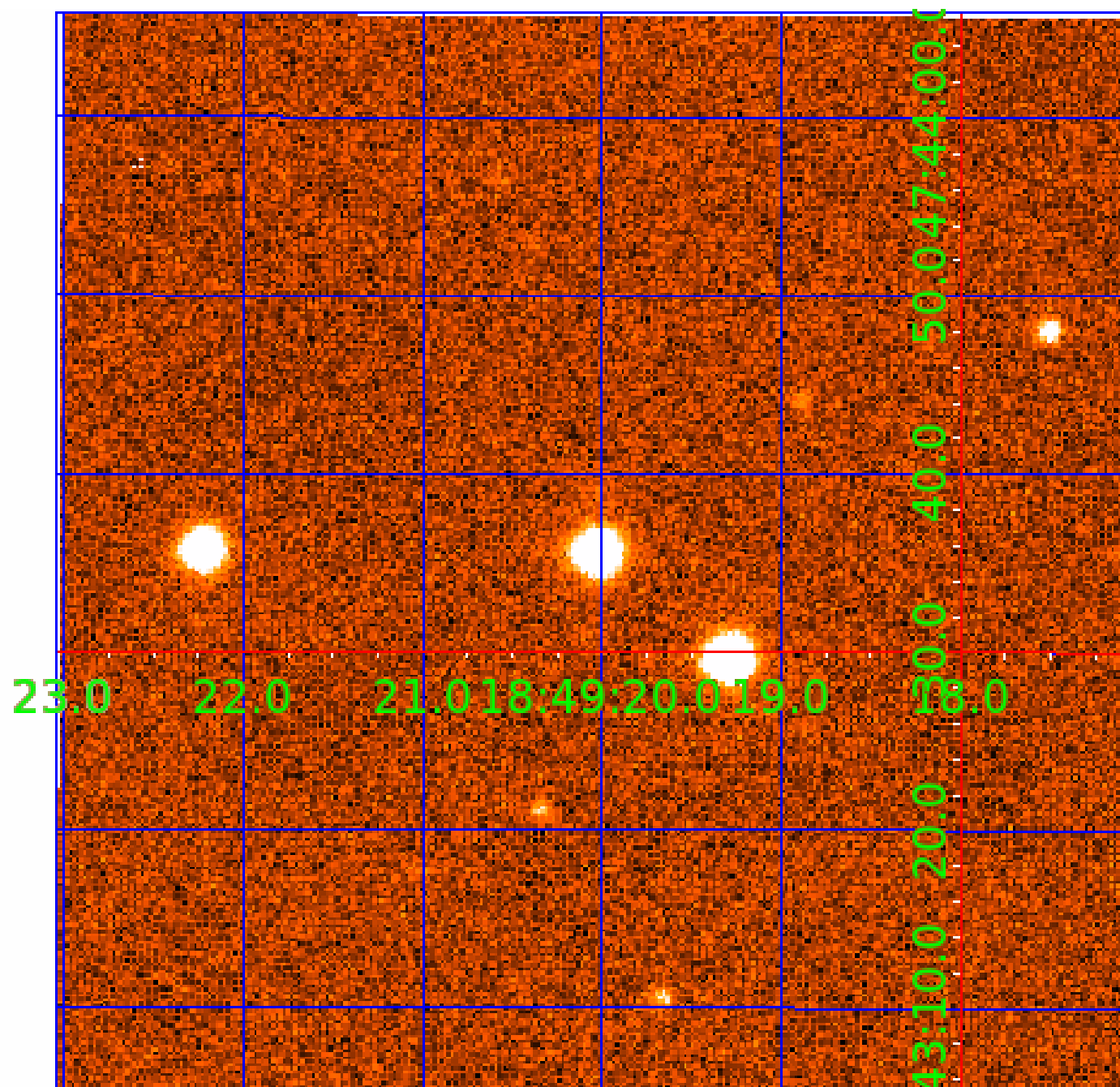


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010515995

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
010515995-01	OBS	No	0.746596	132.214810	44.8	4.218	7.6	9.9	0.69	4656	0.45	964.17
010515995-02	OBS	No	185.381853	201.884027	851.4	7.780	12.5	7.9	0.69	4656	1.99	0.62
010515995-03	OBS	No	166.050100	180.414071	356.8	2.131	10.3	3.2	0.69	4656	1.66	0.72
010515995-04	OBS	No	63.683326	191.921712	643.6	1.982	7.6	7.3	0.69	4656	2.20	2.57
010515995-05	OBS	No	212.708629	262.124657	880.4	3.045	7.6	7.6	0.69	4656	2.43	0.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010515995-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
010515995-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010515995-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010515995-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
010515995-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

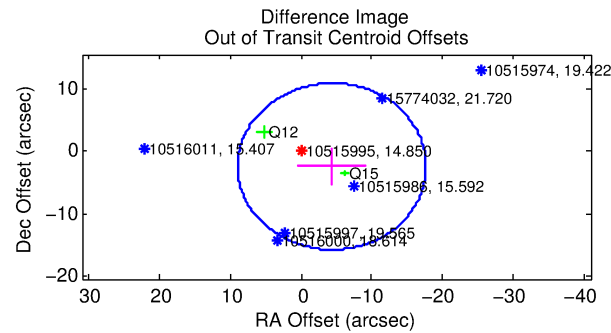
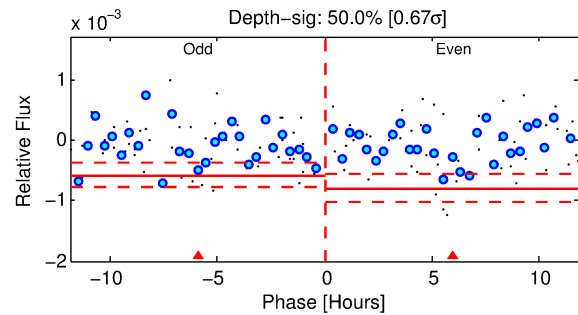
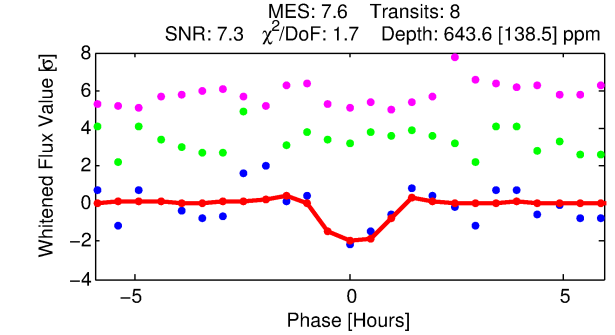
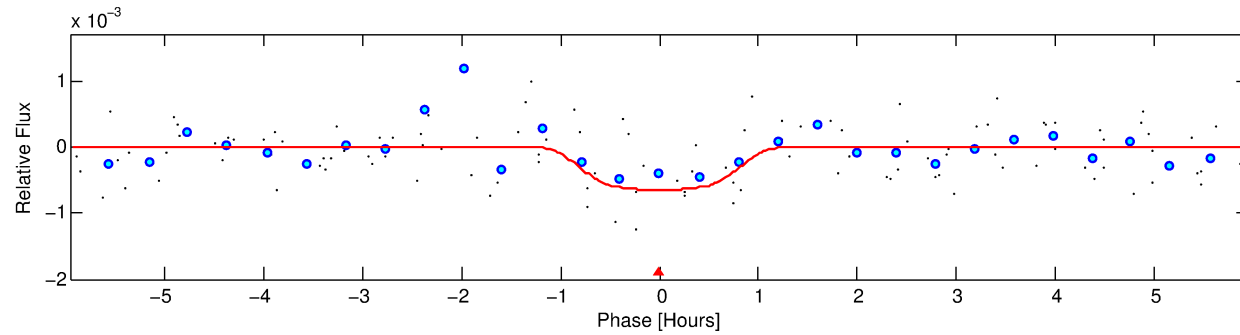
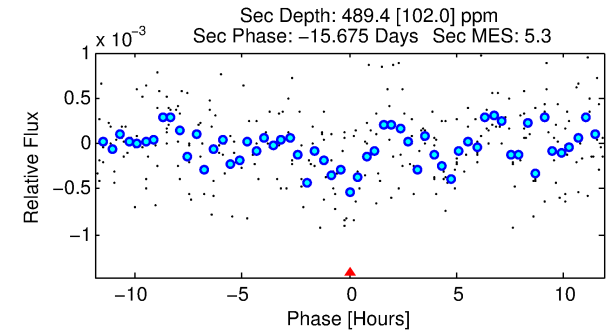
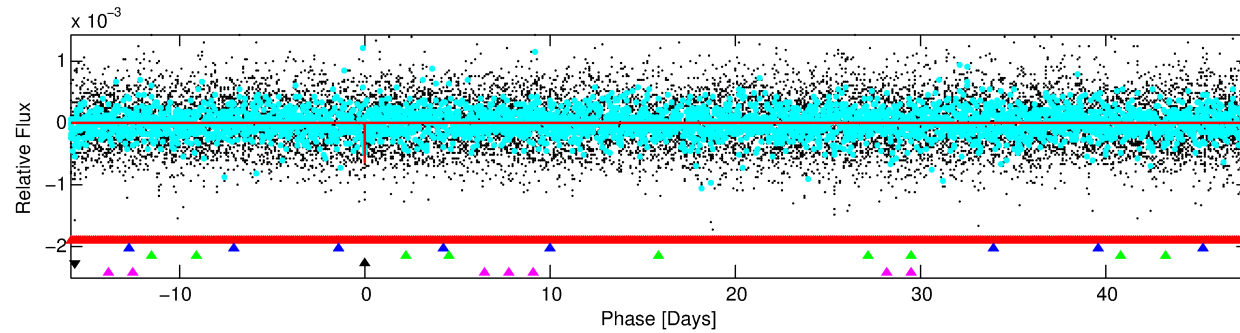
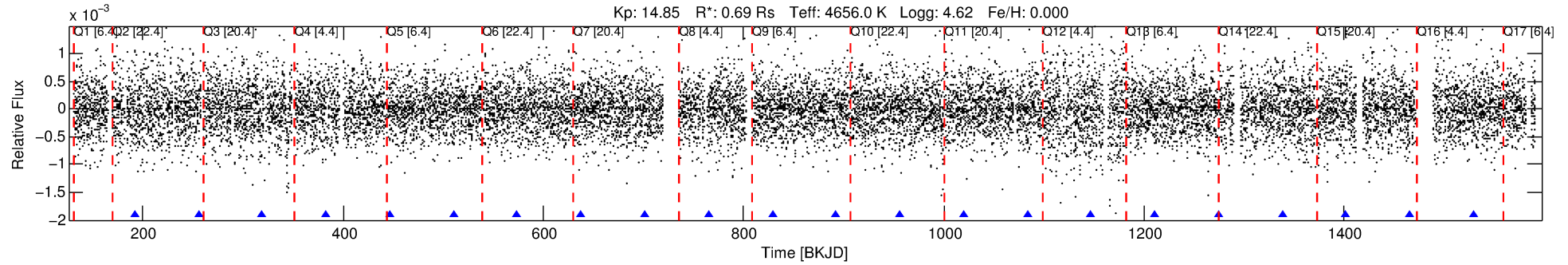
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010515995-04

No Significant Match Found

DV One-Page Summary

KIC: 10515995 Candidate: 4 of 5 Period: 63.683 d



DV Fit Results:

Period = 63.68333 [0.00087] d
Epoch = 191.9217 [0.0107] BKJD
Rp/R* = 0.0290 [0.0478]
a/R* = 118.77 [738.57]
b = 0.91 [1.24]
Seff = 2.57 [0.37]
Teq = 323 [12] K
Rp = 2.20 [3.63] Re
a = 0.2814 [0.0176] AU
Ag = 4415.81 [14616.60] [0.30 σ]
Teffp = 4068 [3368] K [1.11 σ]

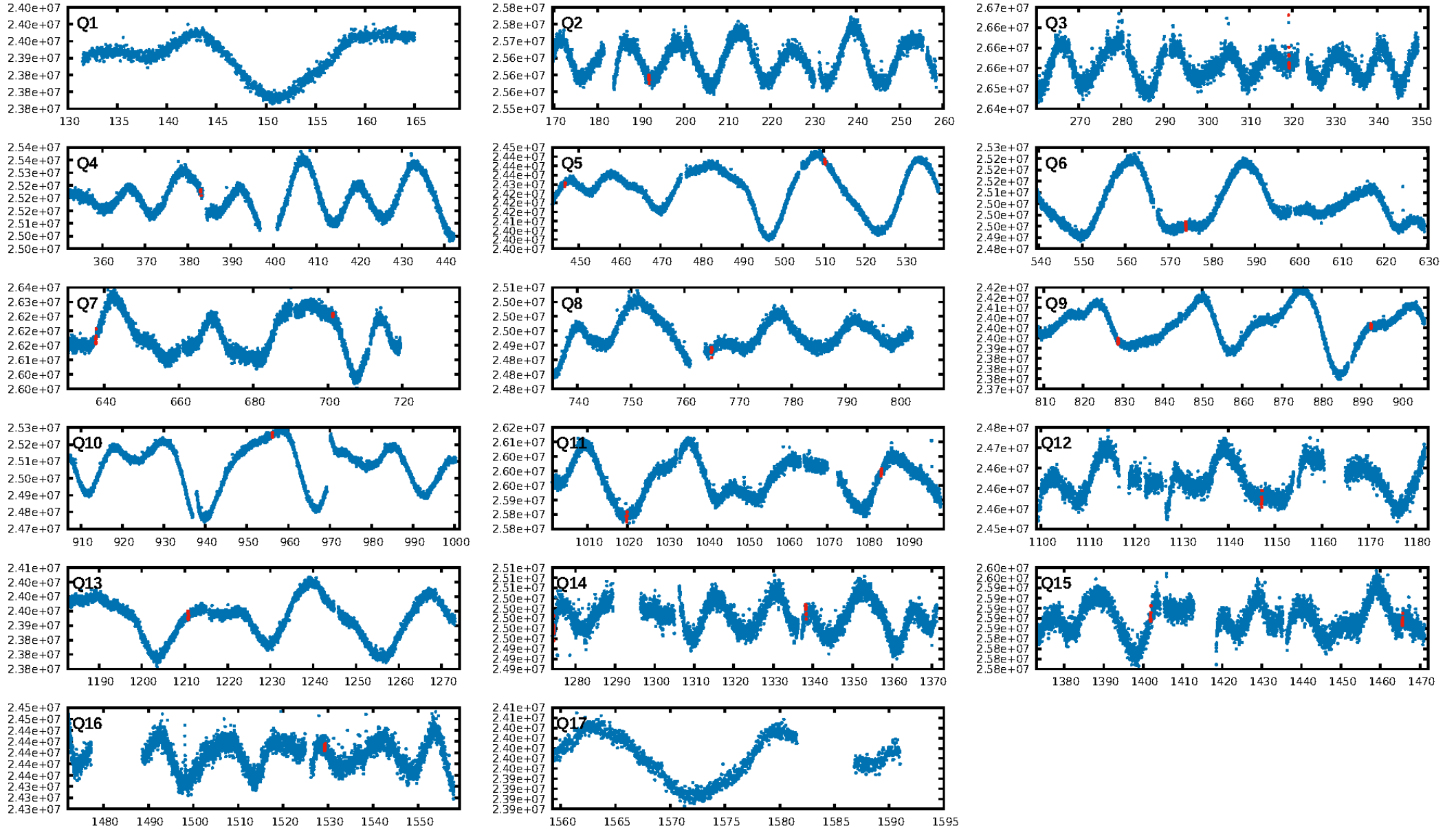
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [324.10 σ]
LongPeriod-sig: 100.0% [844.28 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 66.8%
Bootstrap-pfa: 2.53e-09
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 0.9347
Centroid-sig: N/A
Centroid-so: 1.400 arcsec [1.00 σ]
OotOffset-rm: 5.005 arcsec [1.13 σ]
KicOffset-rm: 5.349 arcsec [0.84 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/14]

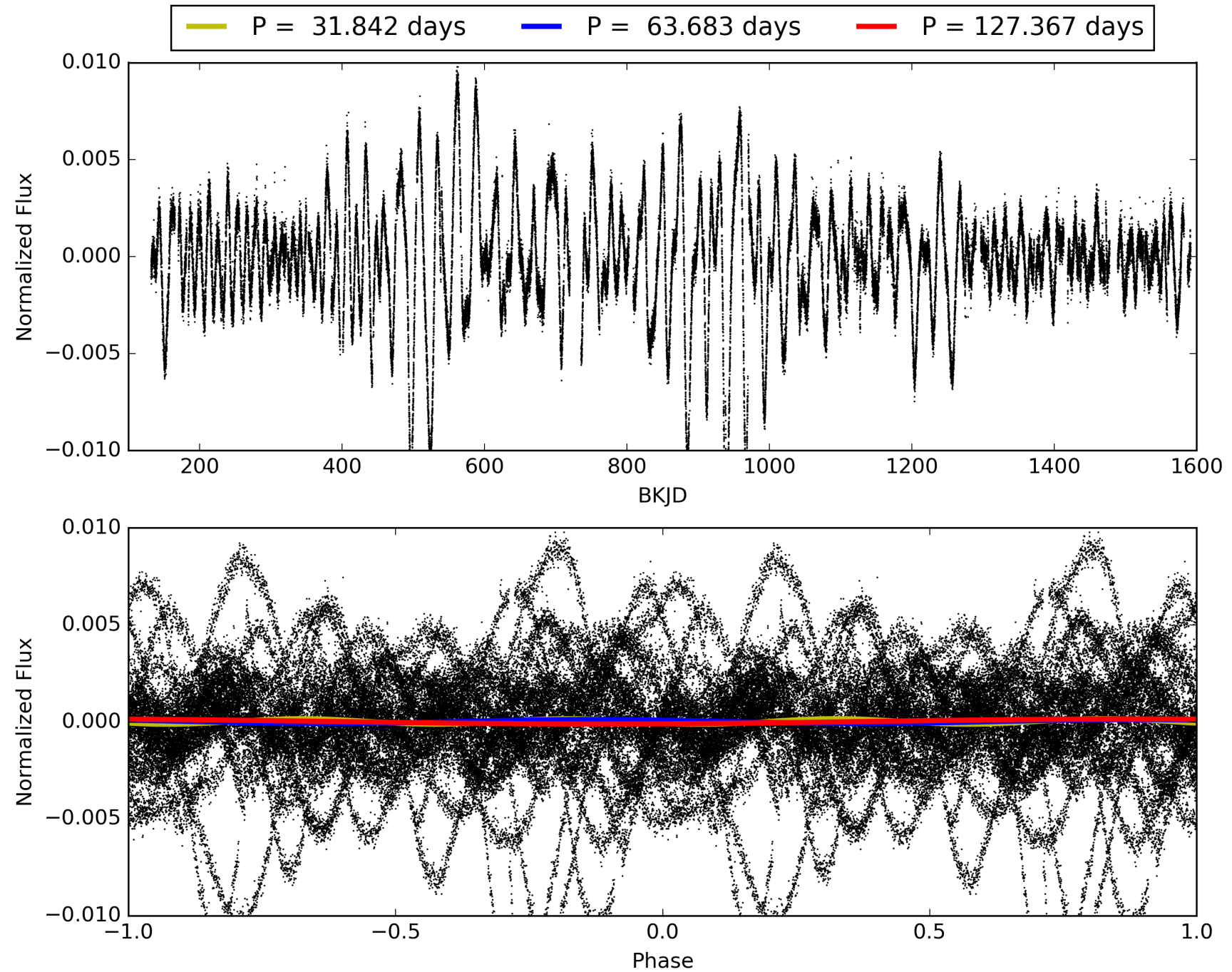
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:29:40 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010515995-04, PDC Light Curves

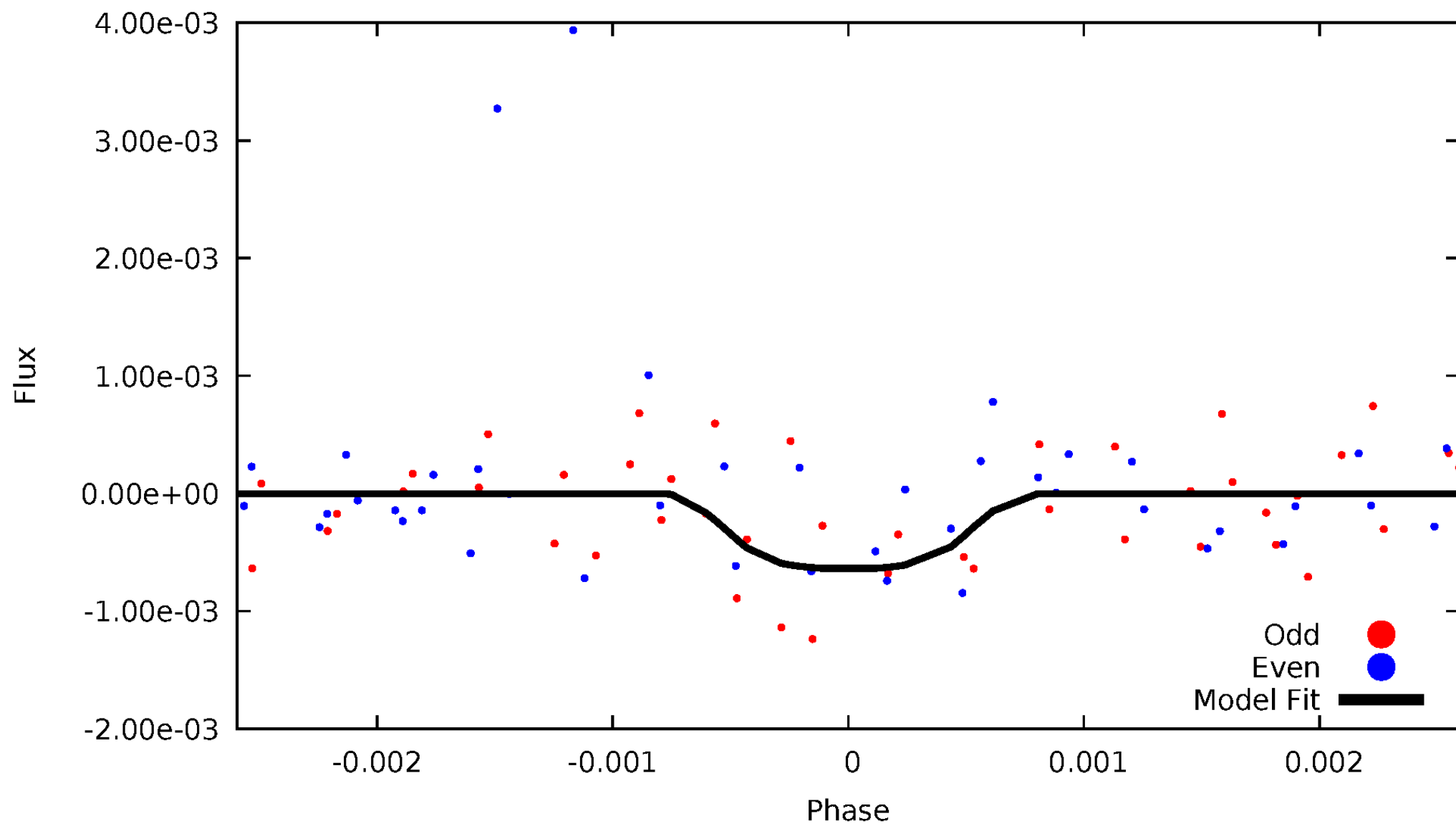


TCE 010515995-04



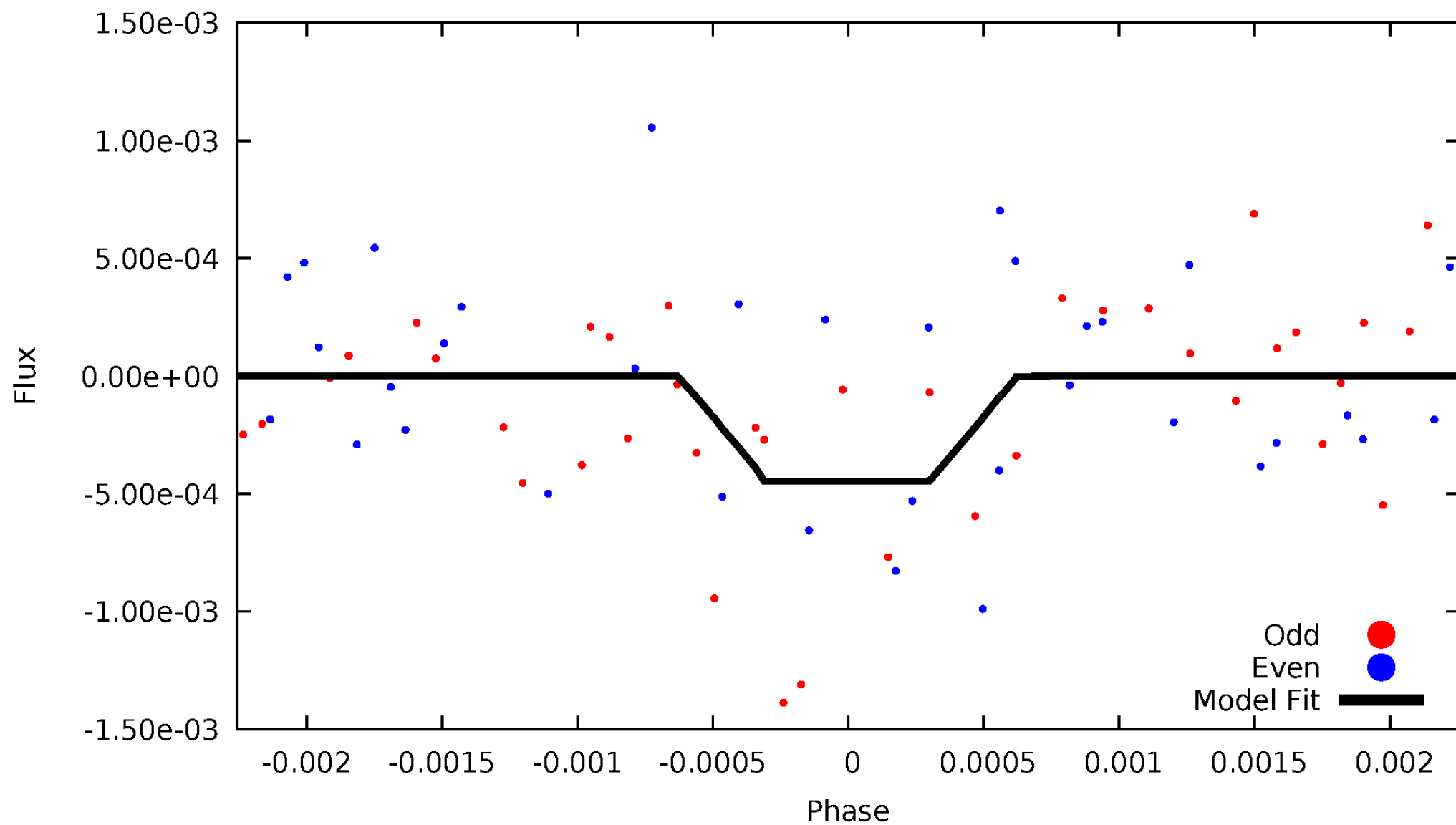
DV Odd/Even

TCE 010515995-04



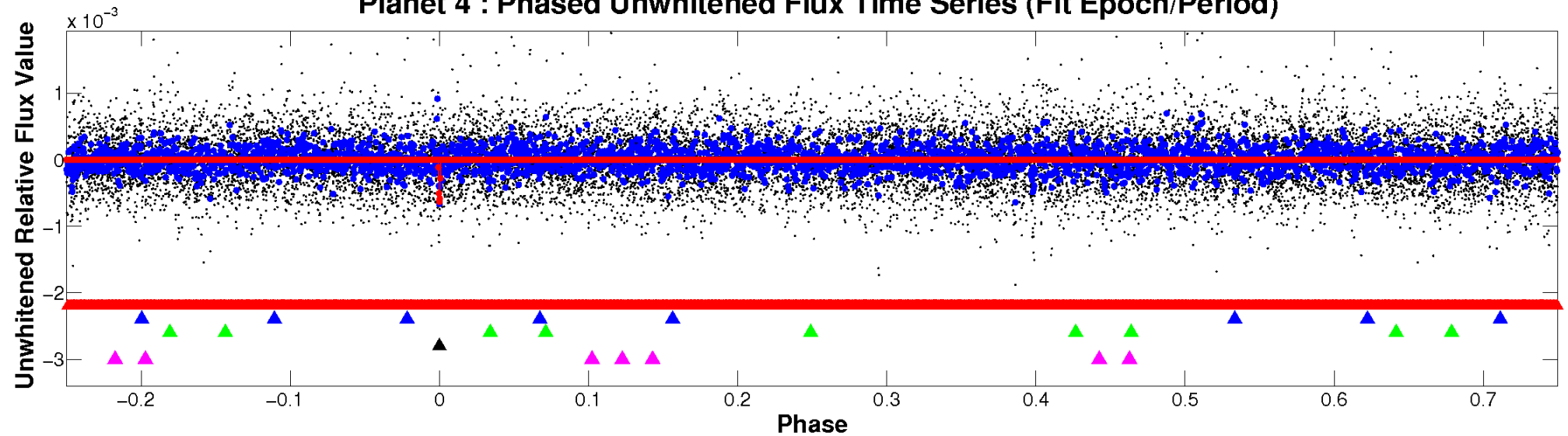
ALT Odd/Even

TCE 010515995-04

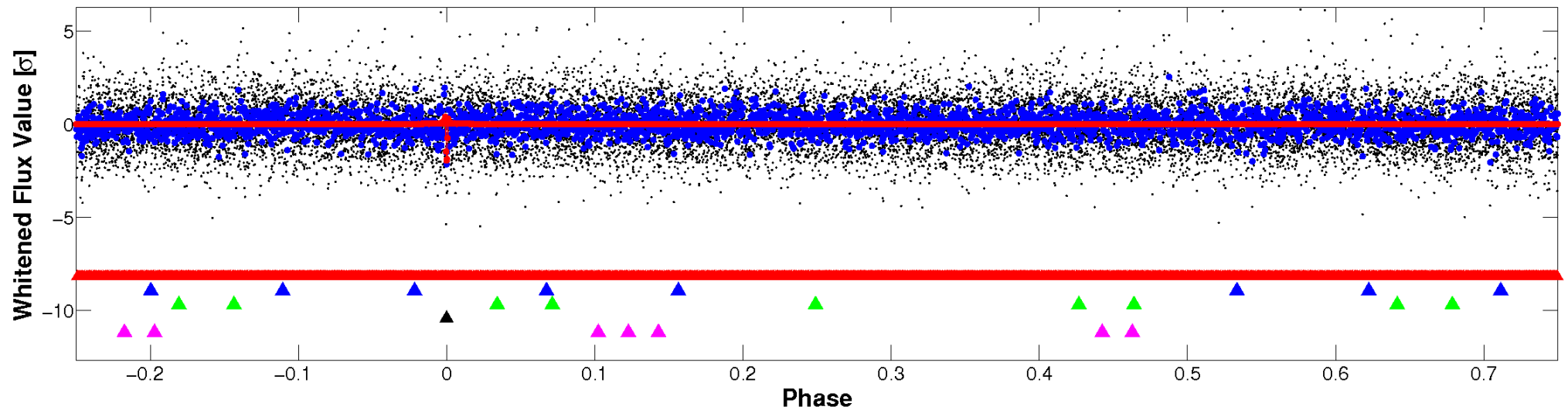


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

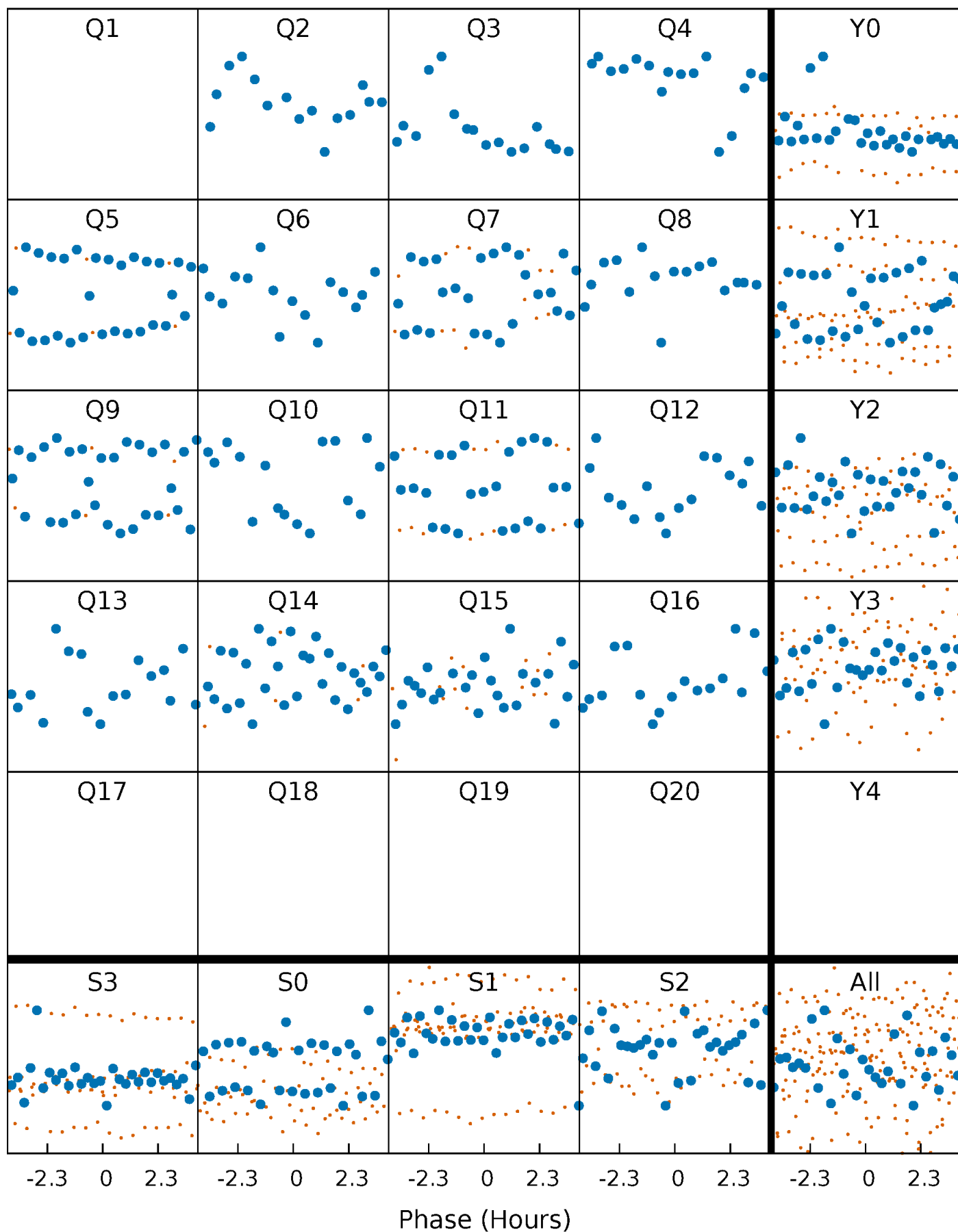


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



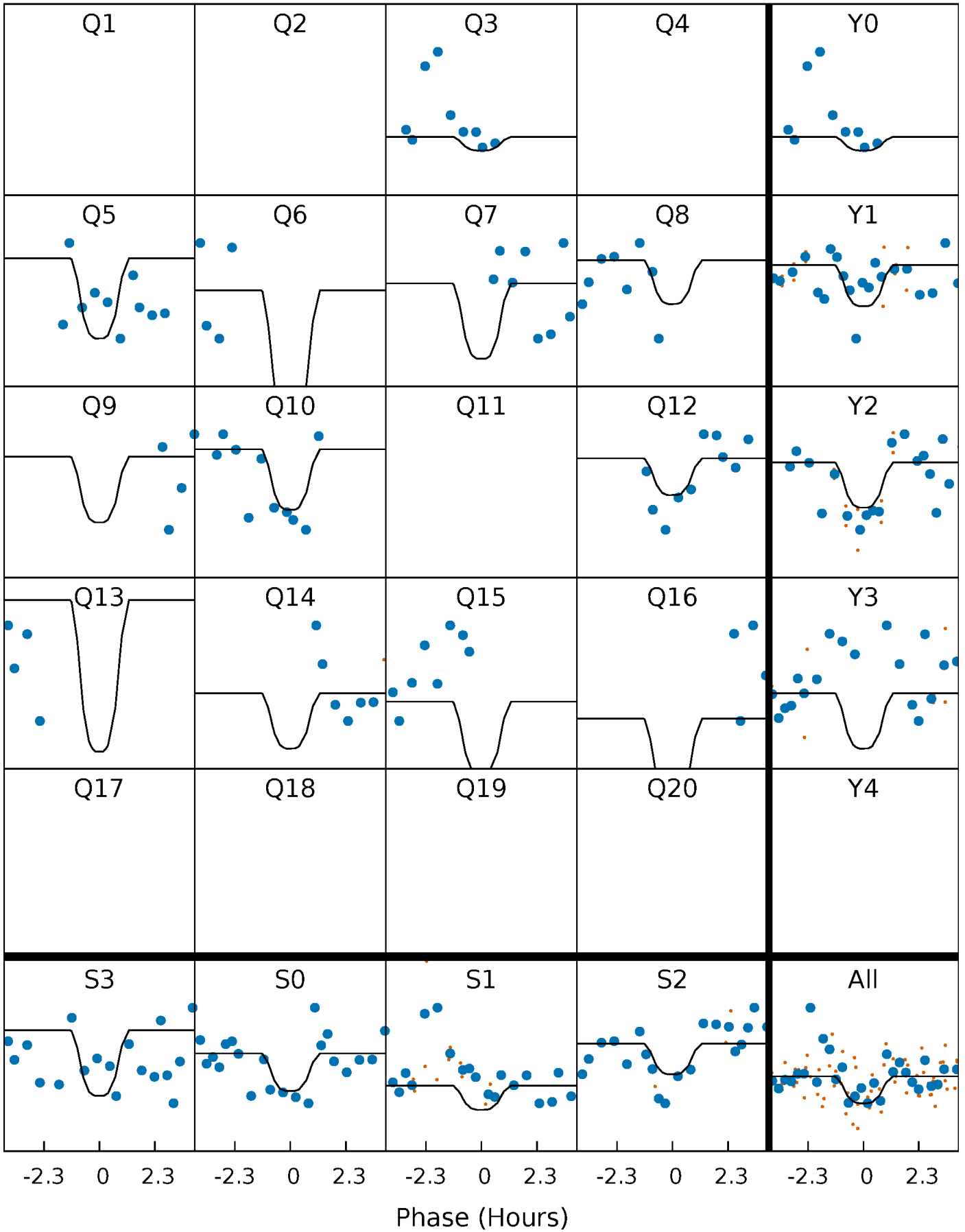
PDC Quarter-Phased Transit Curves

TCE 010515995-04 $P = 63.683326$ Days $T_0 = 191.921712$ (BKJD)



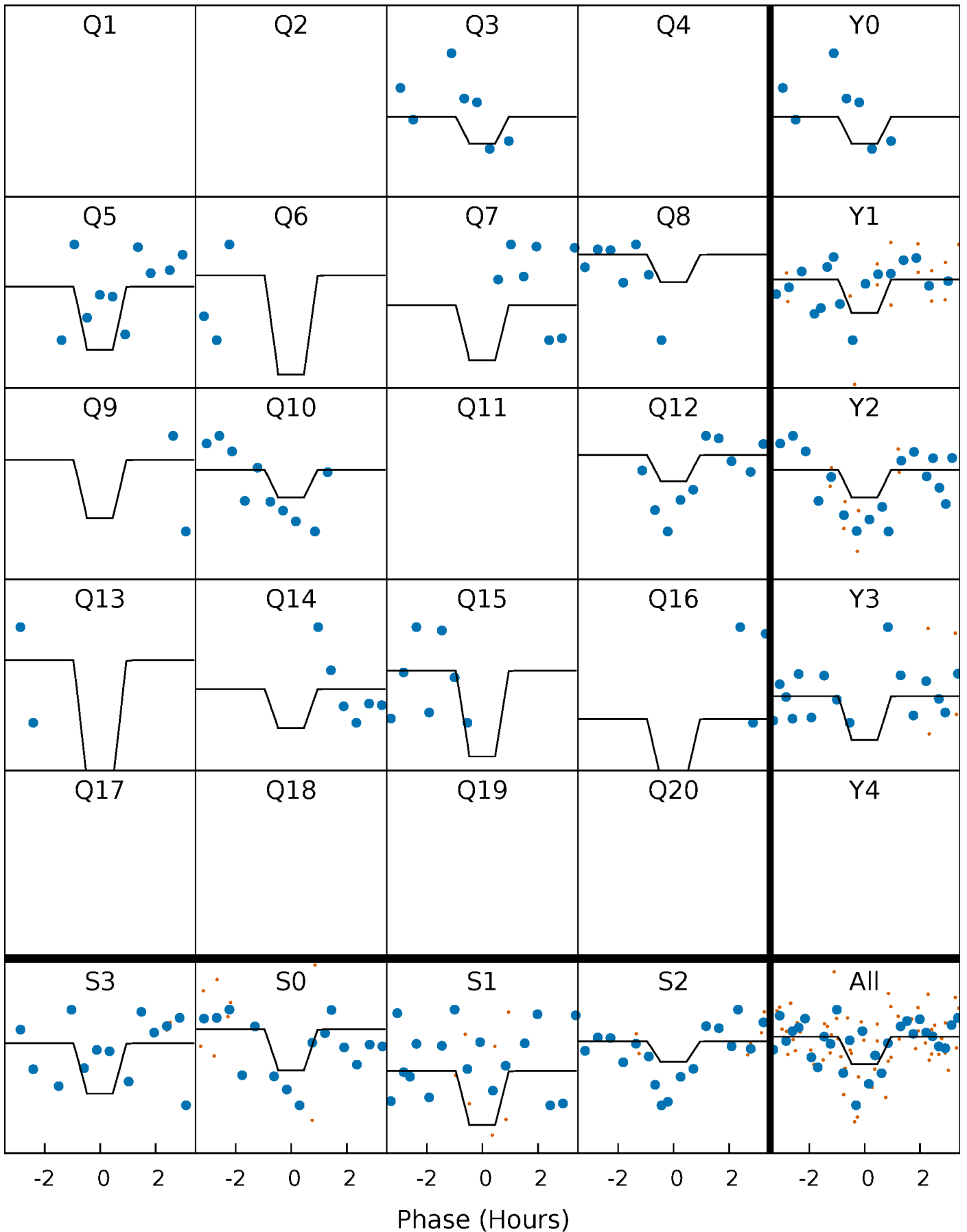
DV Quarter-Phased Transit Curves

TCE 010515995-04 $P = 63.683326$ Days $T_0 = 191.921712$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

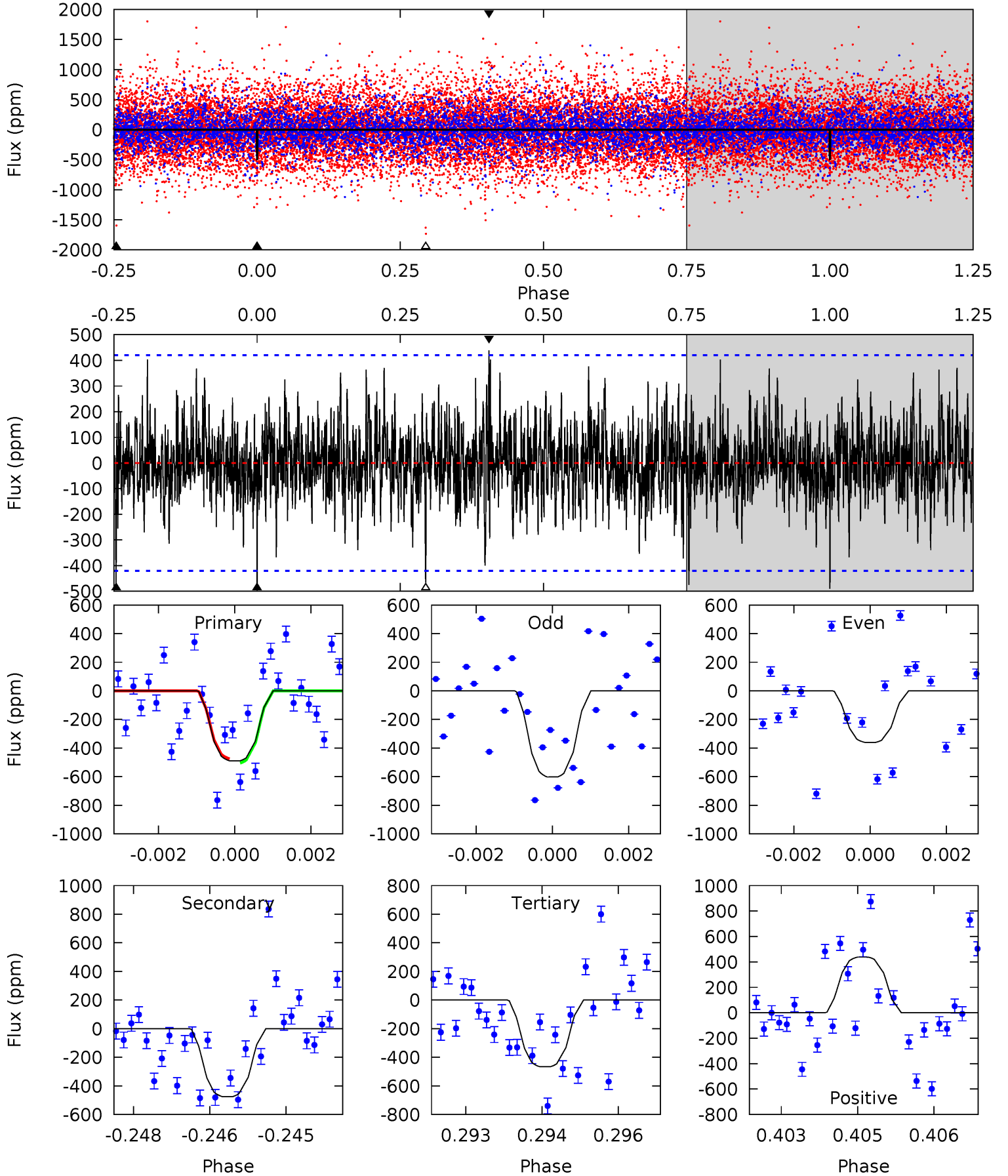
TCE 010515995-04 $P = 63.684026$ Days $T_0 = 191.912587$ (BKJD)



DV Model-Shift Uniqueness Test

010515995-04, P = 63.683326 Days, E = 128.238386 Days

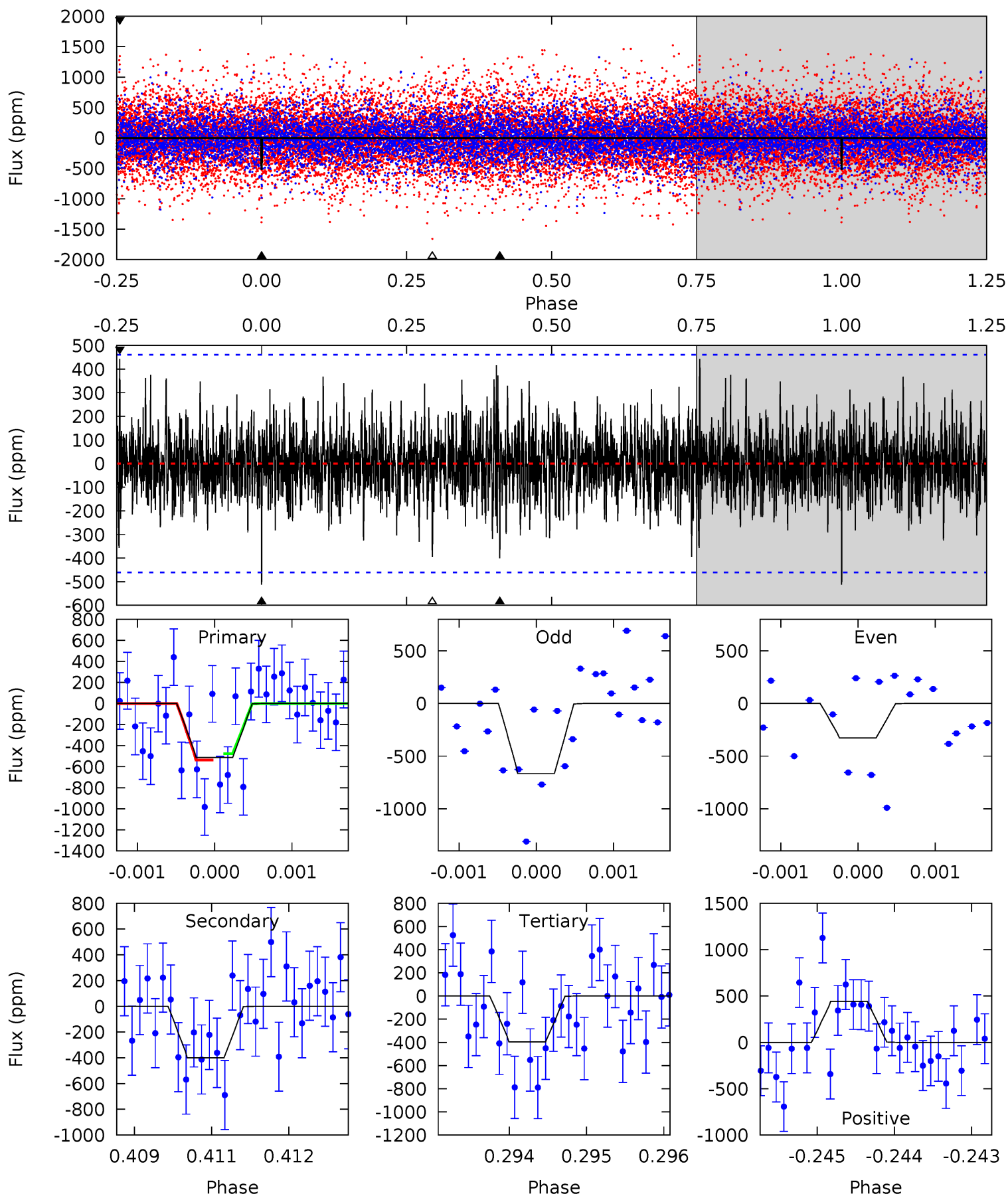
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.25	6.06	5.95	5.59	5.37	3.16	1.49	0.30	0.65	0.11	0.47	1.53	0.94	0.47	0.19



Alt Model-Shift Uniqueness Test

010515995-04, P = 63.684026 Days, E = 128.228561 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.00	4.70	4.64	5.18	5.41	3.22	1.29	1.37	0.82	0.06	-0.48	1.98	1.13	0.46	0.36



Stellar Parameters For KIC 010515995

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4656^{+125}_{-139}	$4.619^{+0.032}_{-0.042}$	$0.000^{+0.250}_{-0.300}$	$0.695^{+0.056}_{-0.051}$	$0.732^{+0.051}_{-0.064}$	$3.072^{+0.483}_{-0.503}$
	+3%/-3%	+1%/-1%	+inf%/-inf%	+8%/-7%	+7%/-9%	+16%/-16%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010515995-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-475 ± 78	$3.56^{+2.95}_{-2.46}$	452^{+15}_{-16}	3539^{+2150}_{-587}	1600^{+16096}_{-1125}
Alt.	-401 ± 85	$3.19^{+3.06}_{-2.17}$	451^{+15}_{-15}	3560^{+1973}_{-657}	1729^{+14679}_{-1302}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

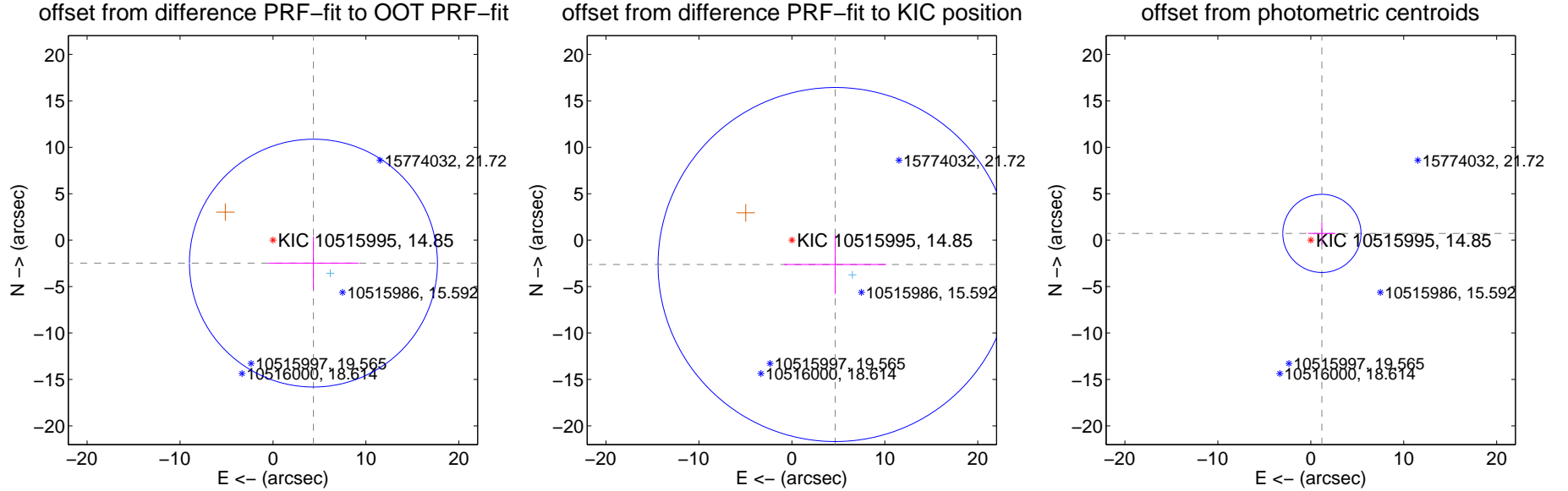
DV Centroid Data

Supplemental centroid analysis for 010515995-04. Kepler magnitude: 14.85. Transit SNR 7.25

There are 1 quarters with good PRF difference image offsets

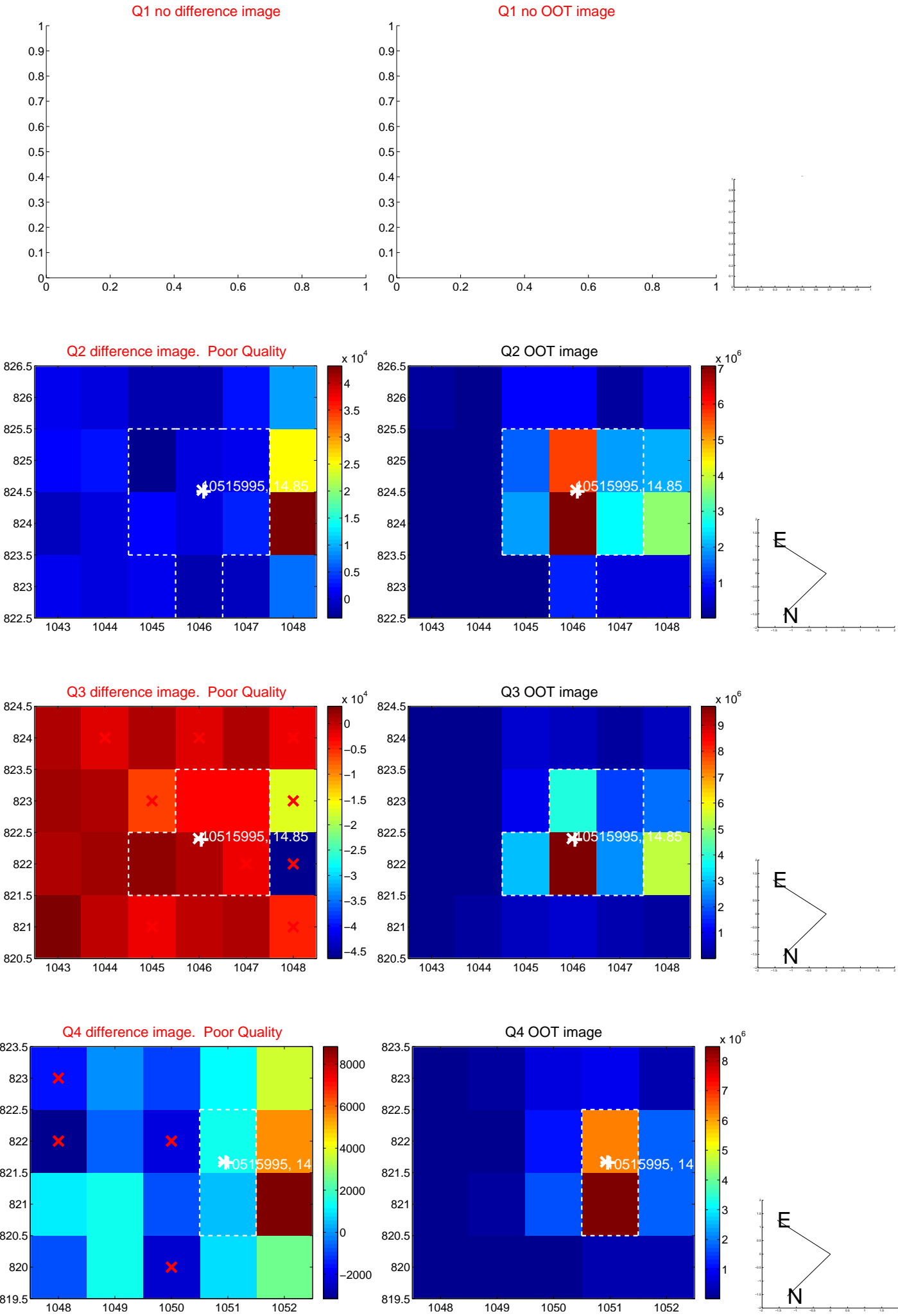
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.005 ± 4.447	1.13	-4.352 ± 4.848	-2.472 ± 2.865
PRF-fit source offset from KIC position	5.349 ± 6.353	0.84	-4.661 ± 5.493	-2.624 ± 3.194
photometric centroid source offset	1.40 ± 1.40	1.00	-1.20 ± 1.47	0.73 ± 1.21

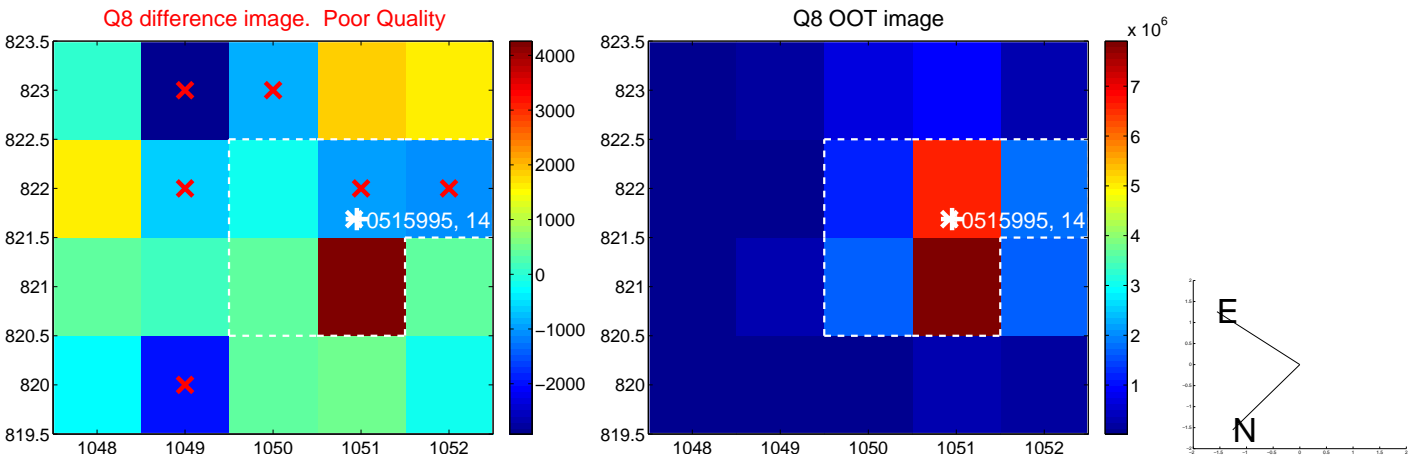
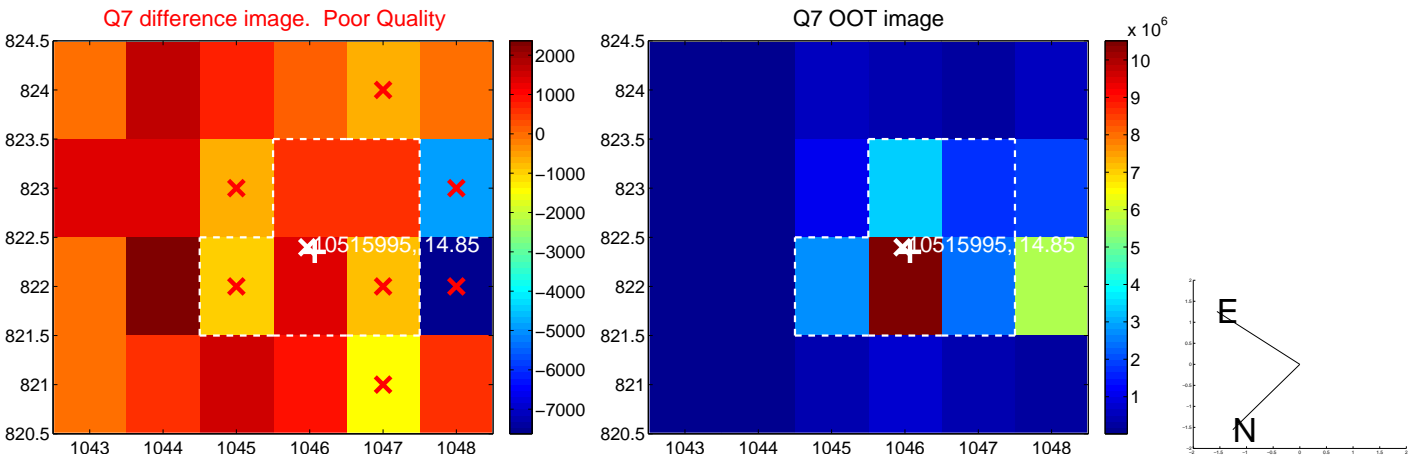
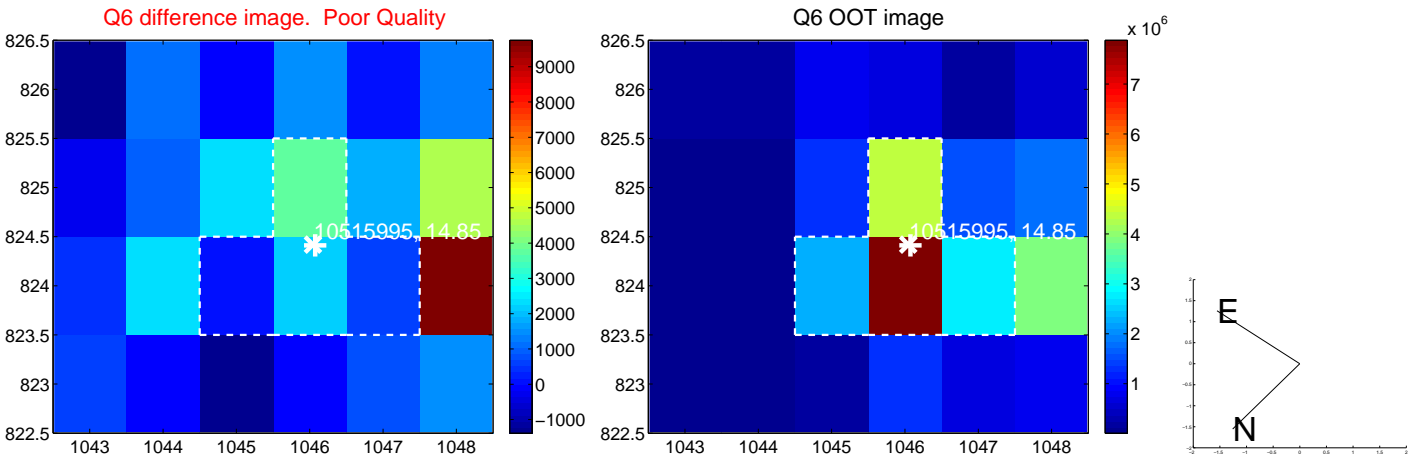
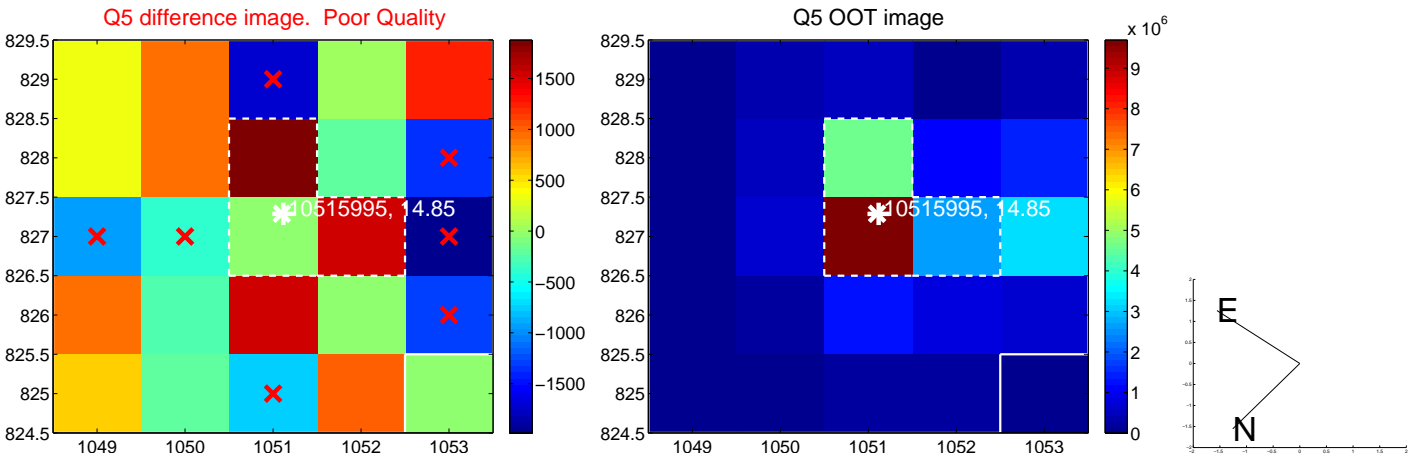


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

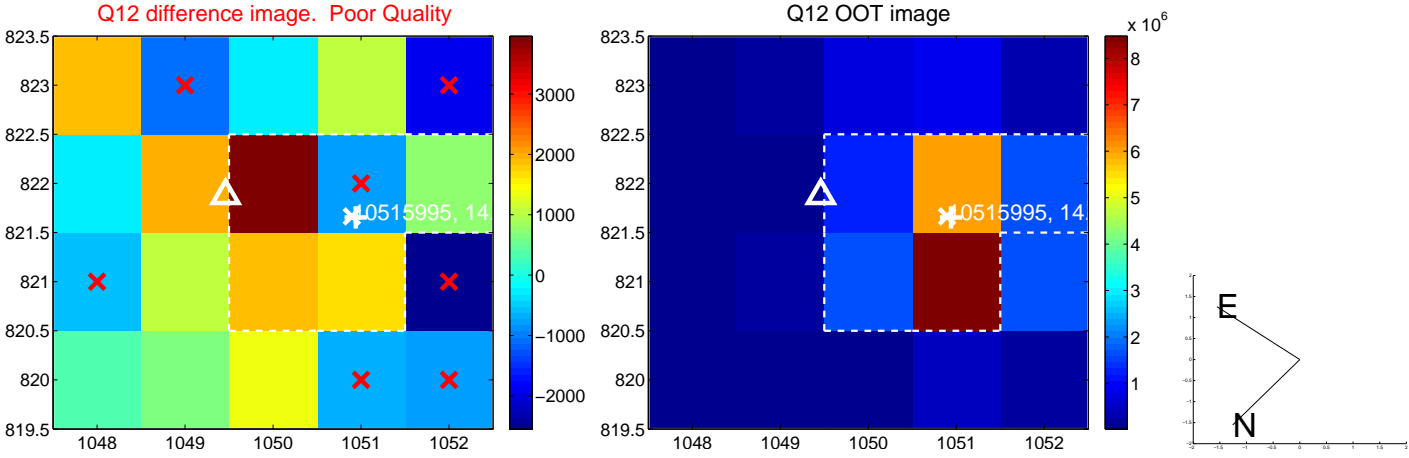
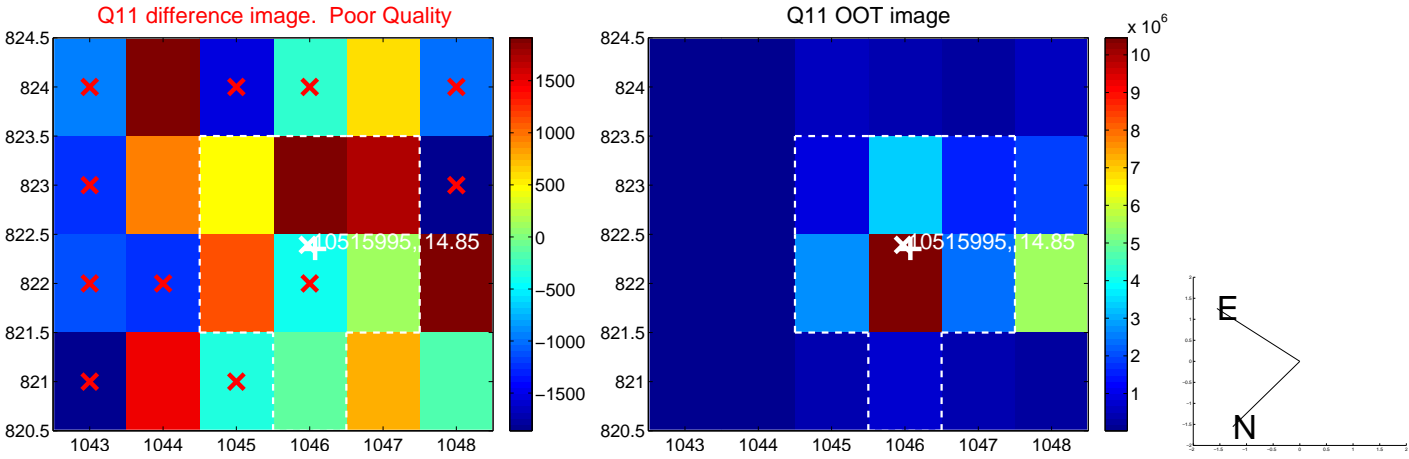
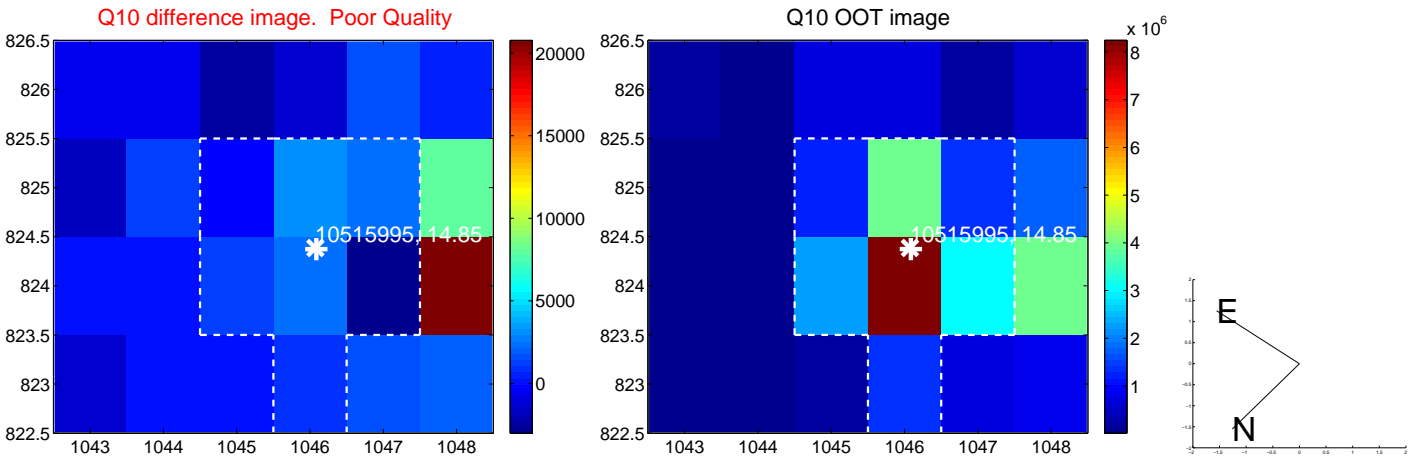
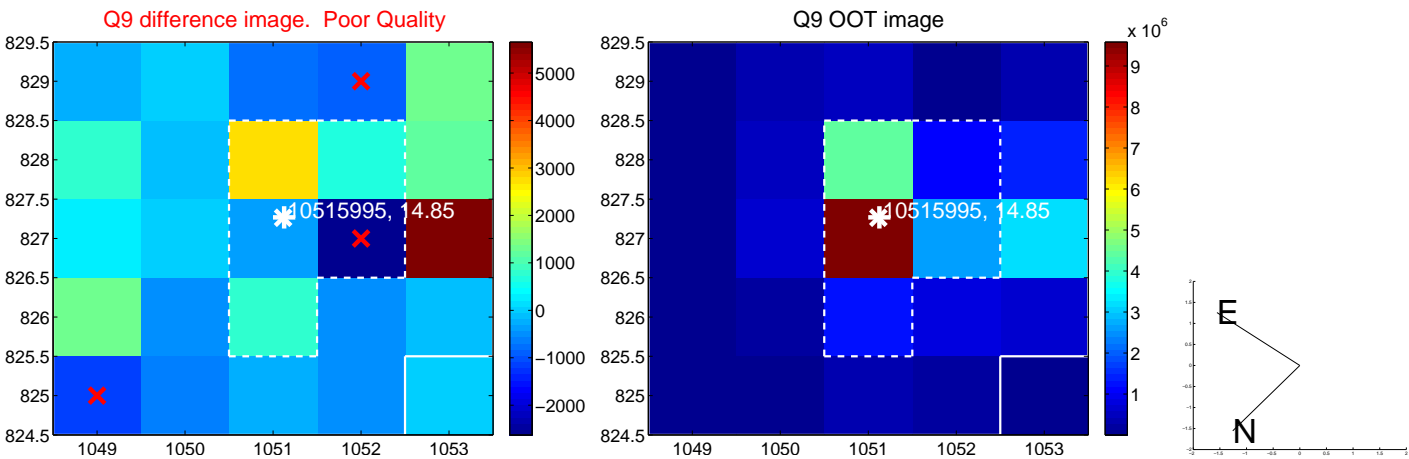
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



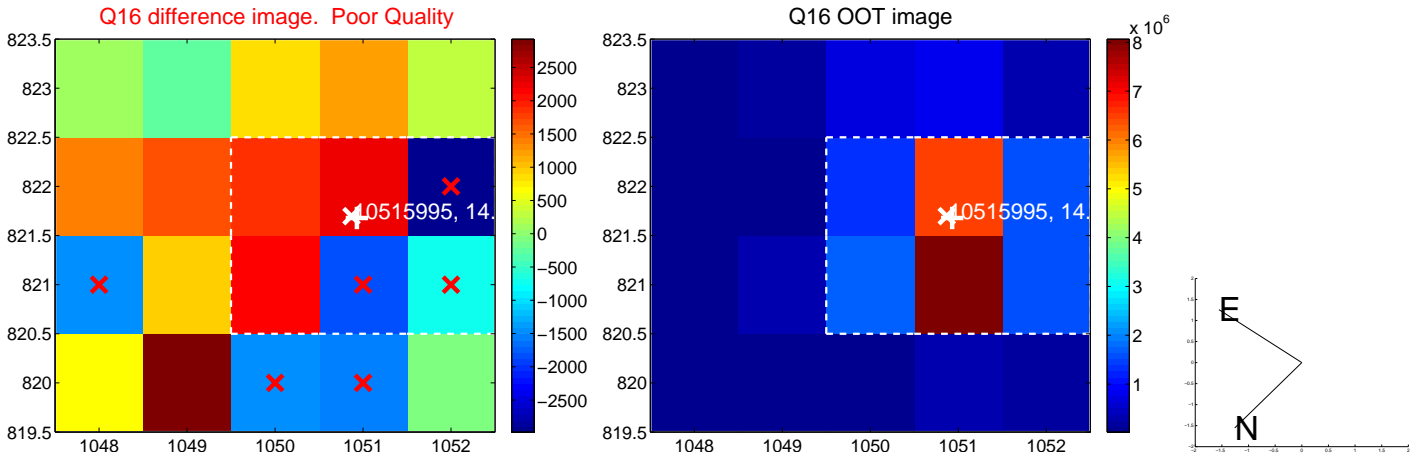
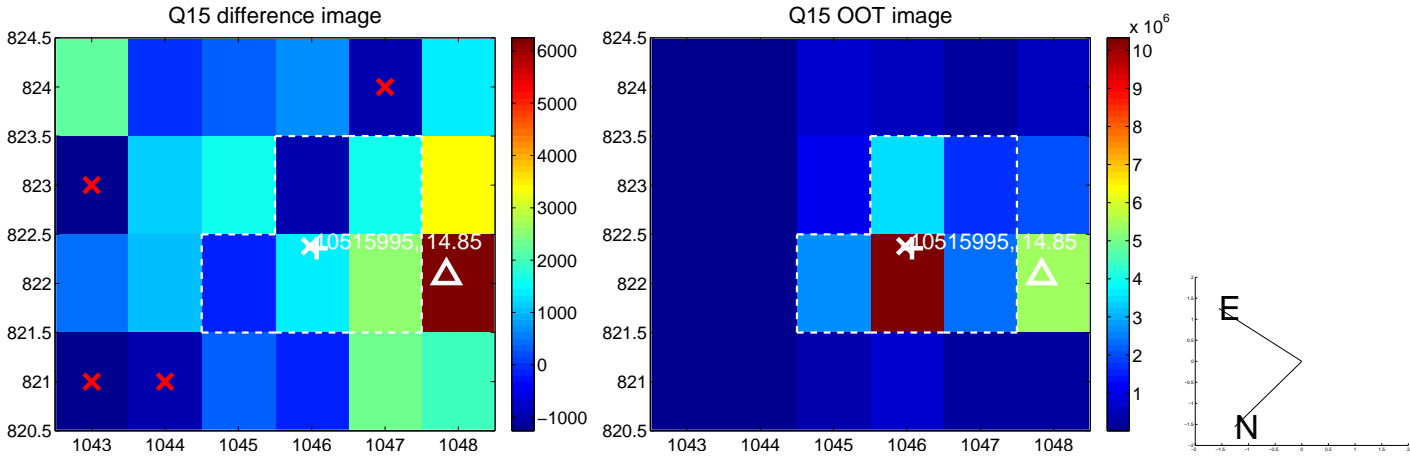
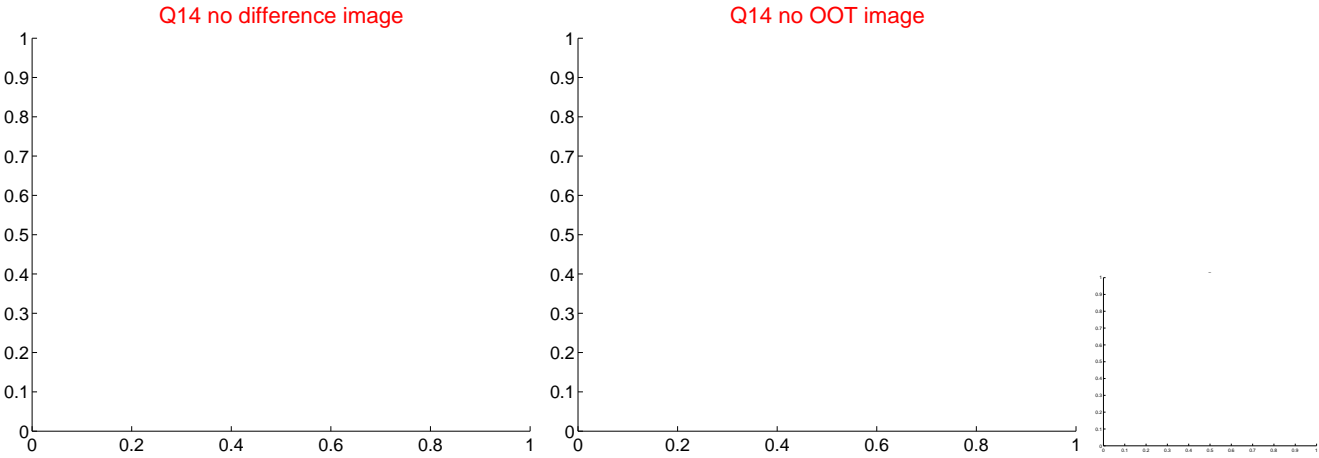
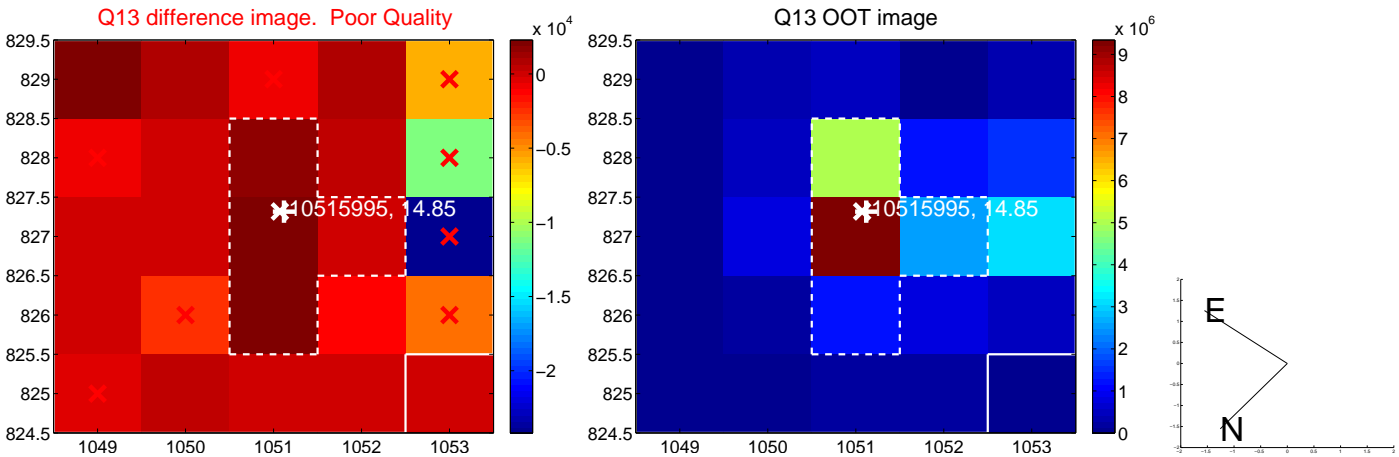
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



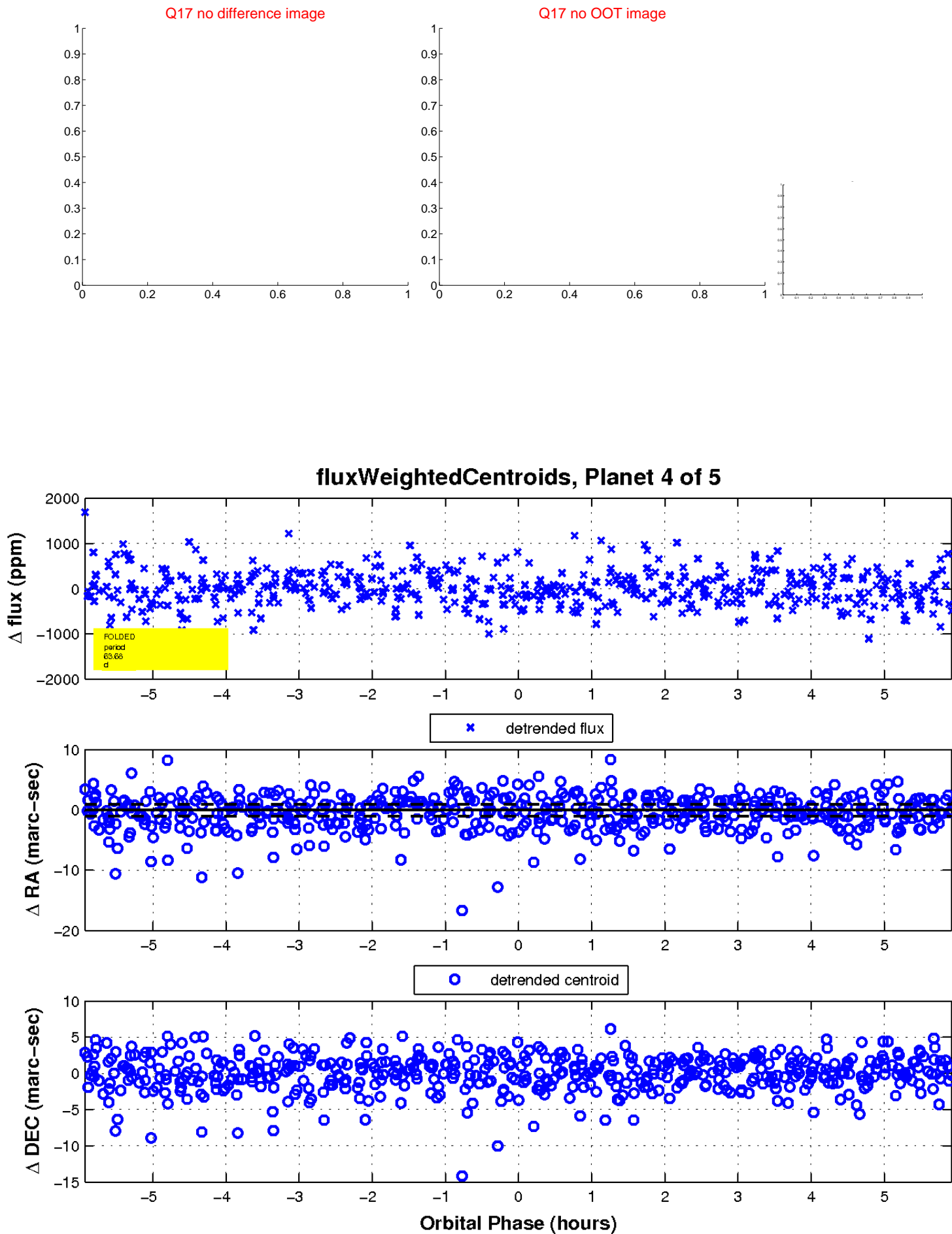
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

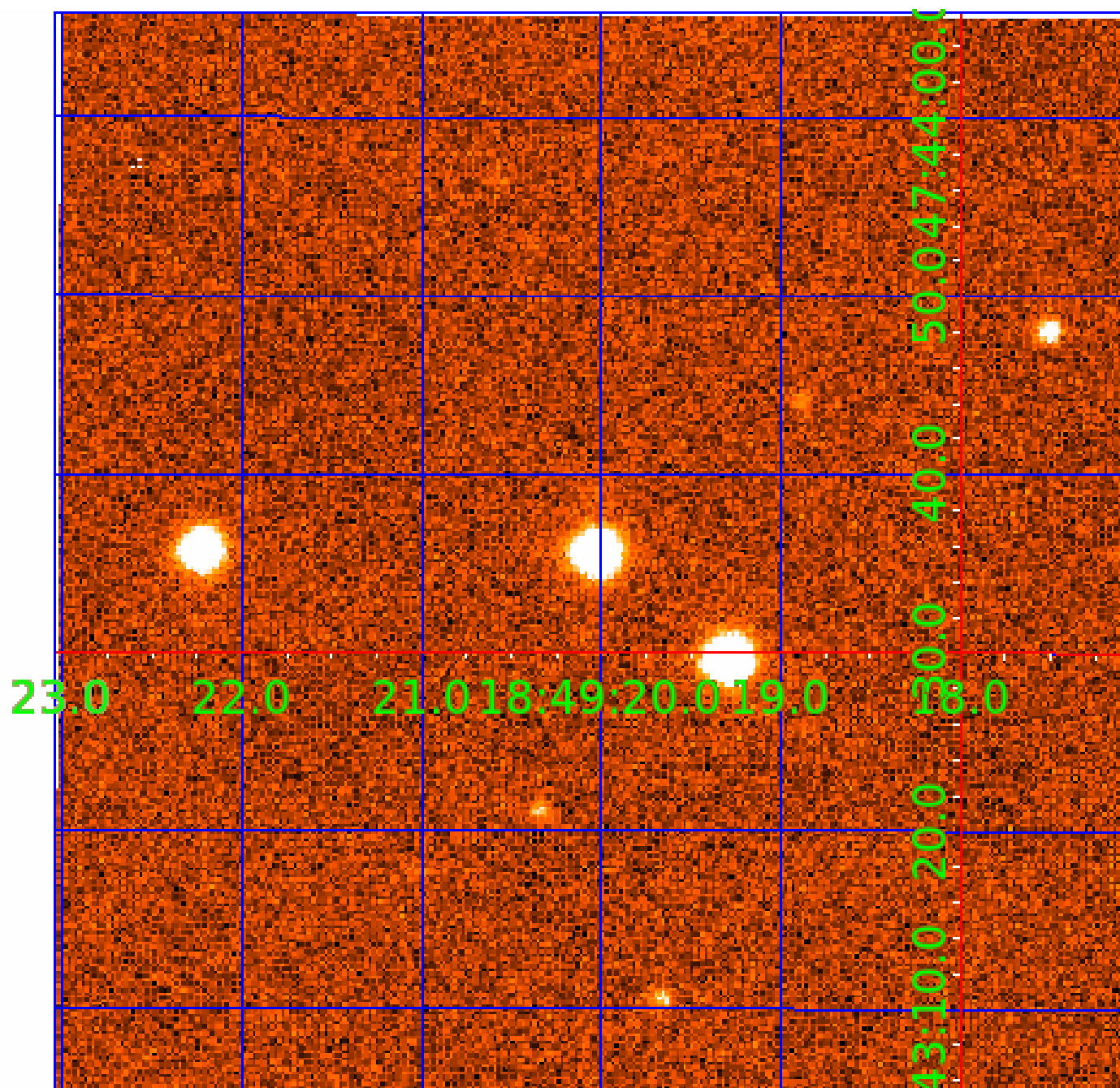


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010515995

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
010515995-01	OBS	No	0.746596	132.214810	44.8	4.218	7.6	9.9	0.69	4656	0.45	964.17
010515995-02	OBS	No	185.381853	201.884027	851.4	7.780	12.5	7.9	0.69	4656	1.99	0.62
010515995-03	OBS	No	166.050100	180.414071	356.8	2.131	10.3	3.2	0.69	4656	1.66	0.72
010515995-04	OBS	No	63.683326	191.921712	643.6	1.982	7.6	7.3	0.69	4656	2.20	2.57
010515995-05	OBS	No	212.708629	262.124657	880.4	3.045	7.6	7.6	0.69	4656	2.43	0.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010515995-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
010515995-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010515995-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010515995-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
010515995-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

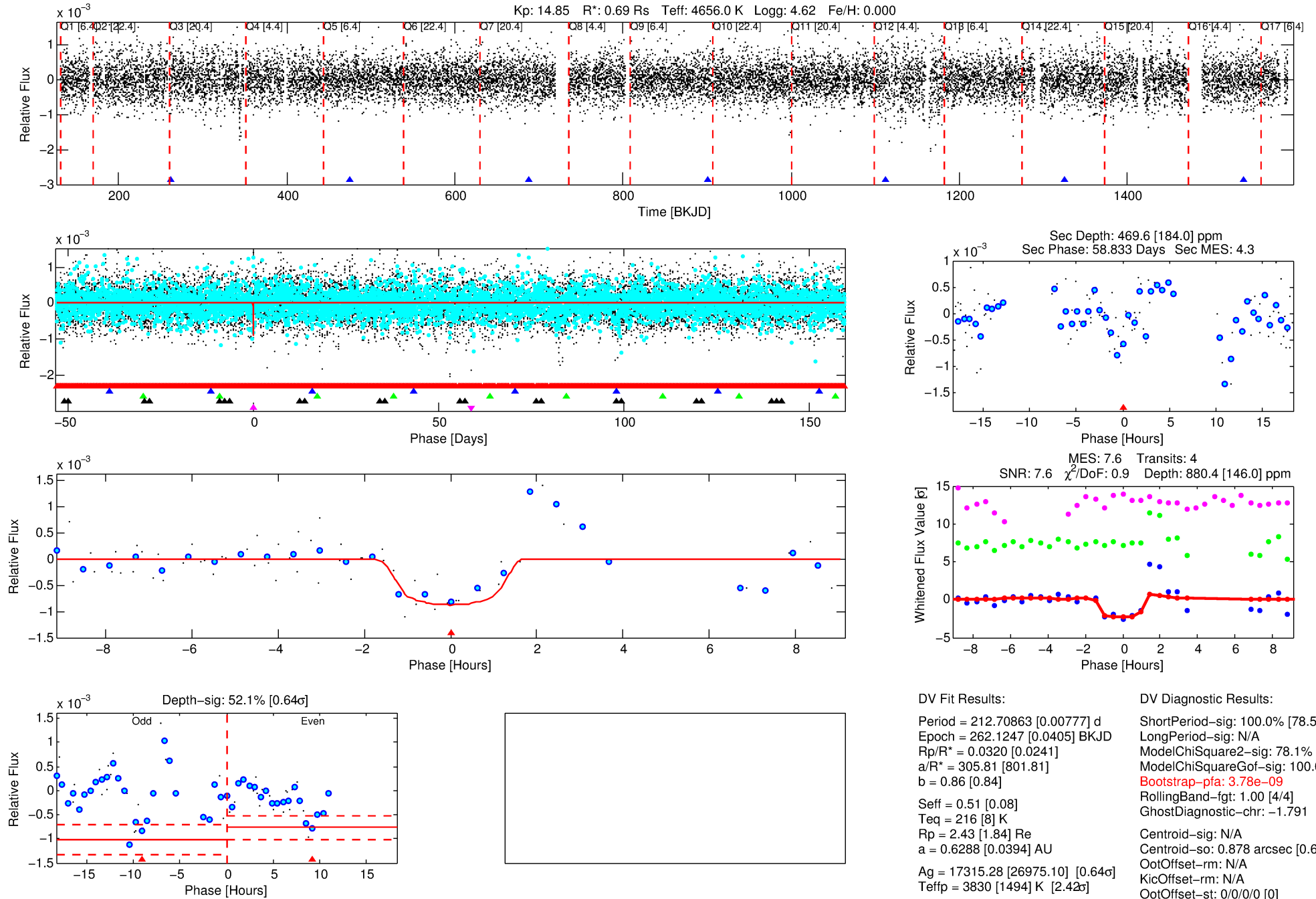
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010515995-05

No Significant Match Found

DV One-Page Summary

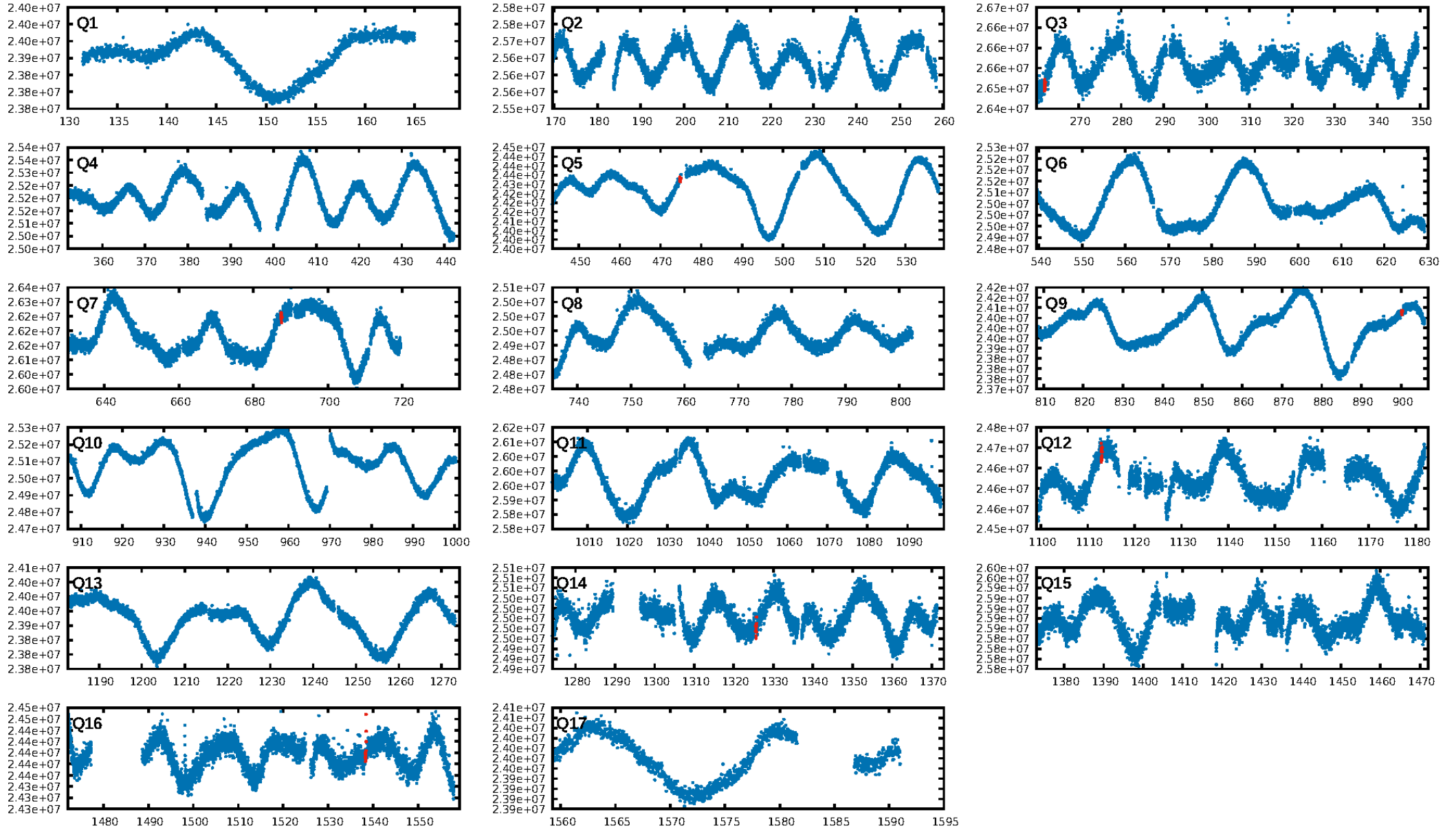
KIC: 10515995 Candidate: 5 of 5 Period: 212.709 d



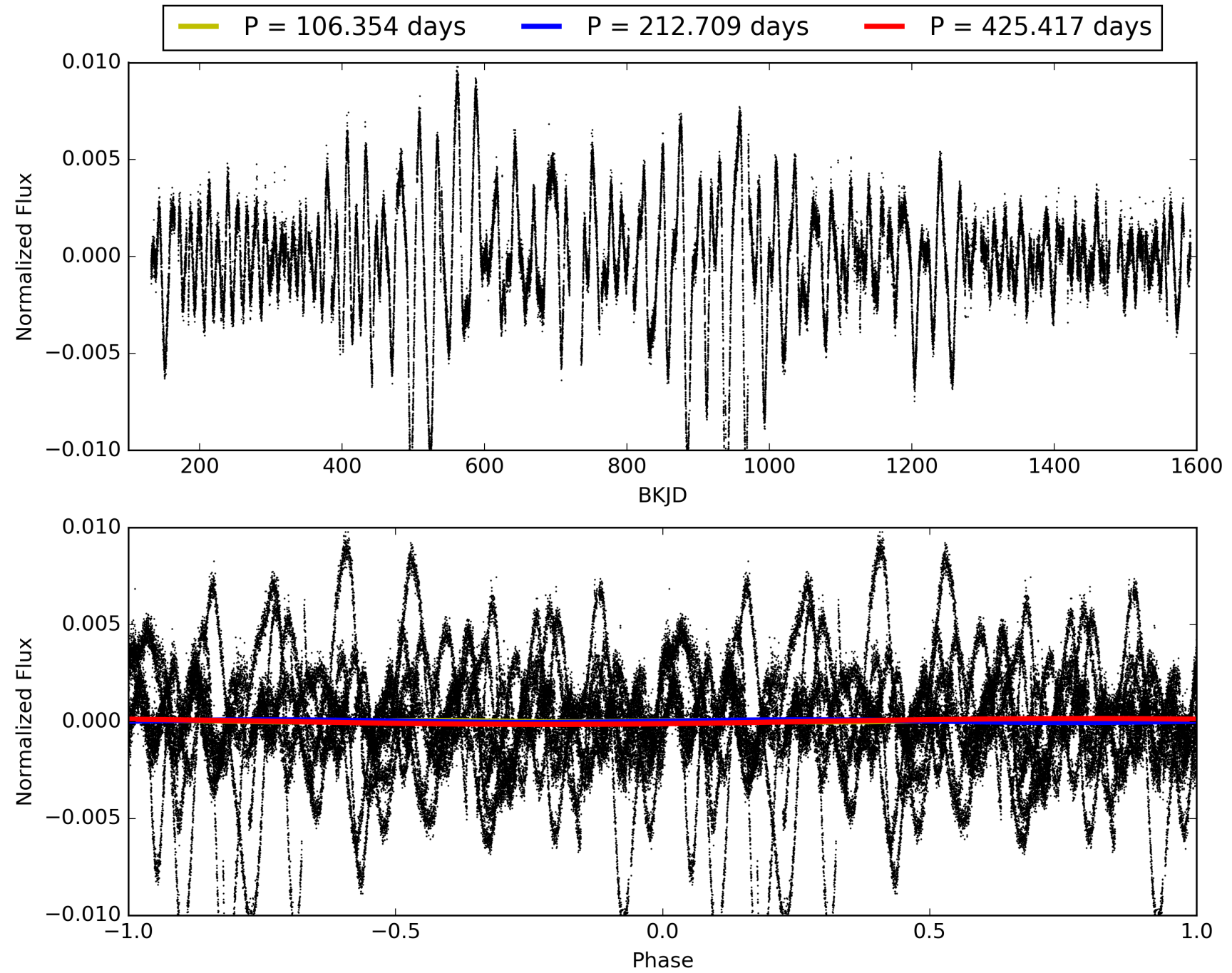
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:29:46 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010515995-05, PDC Light Curves

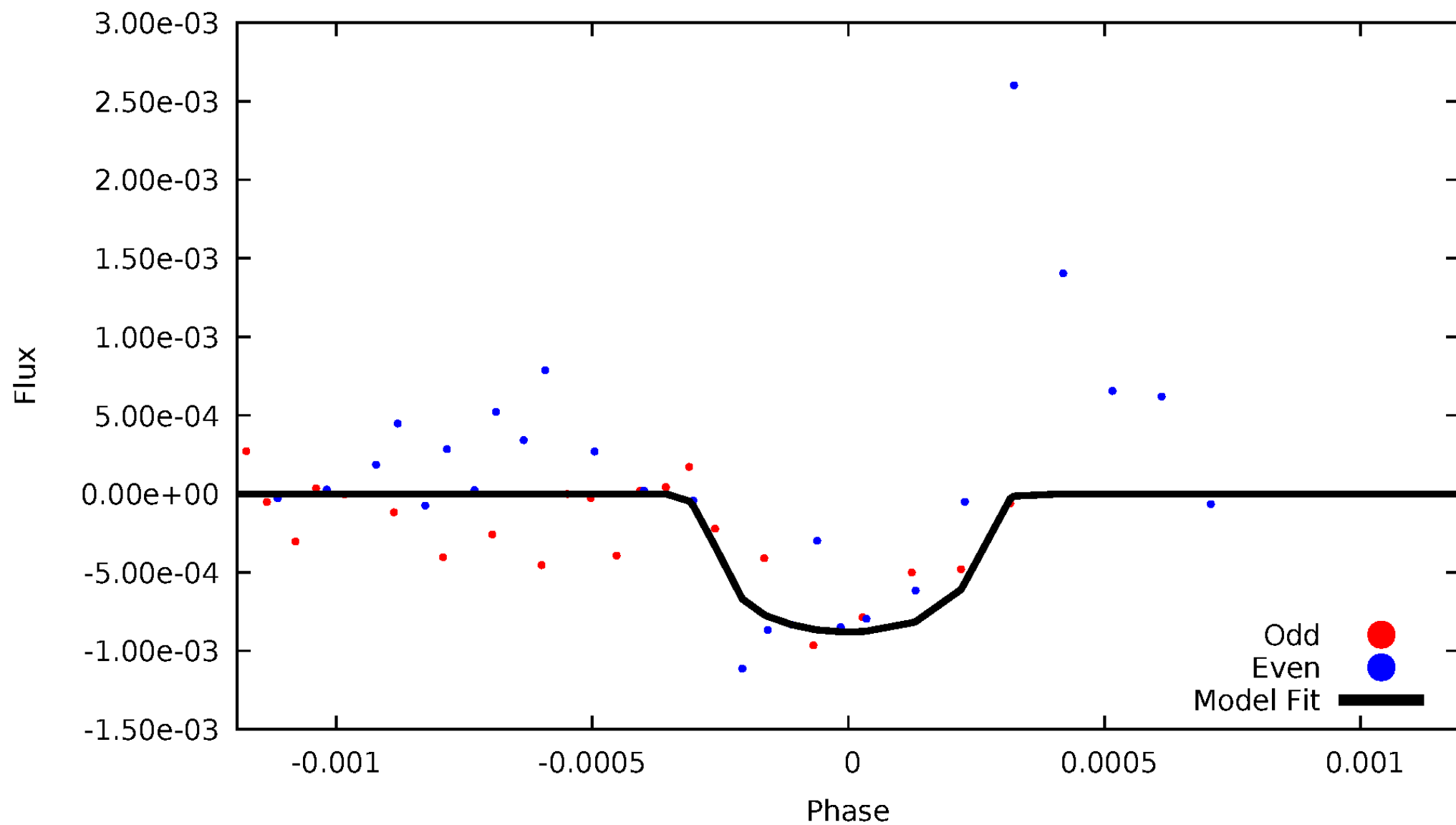


TCE 010515995-05



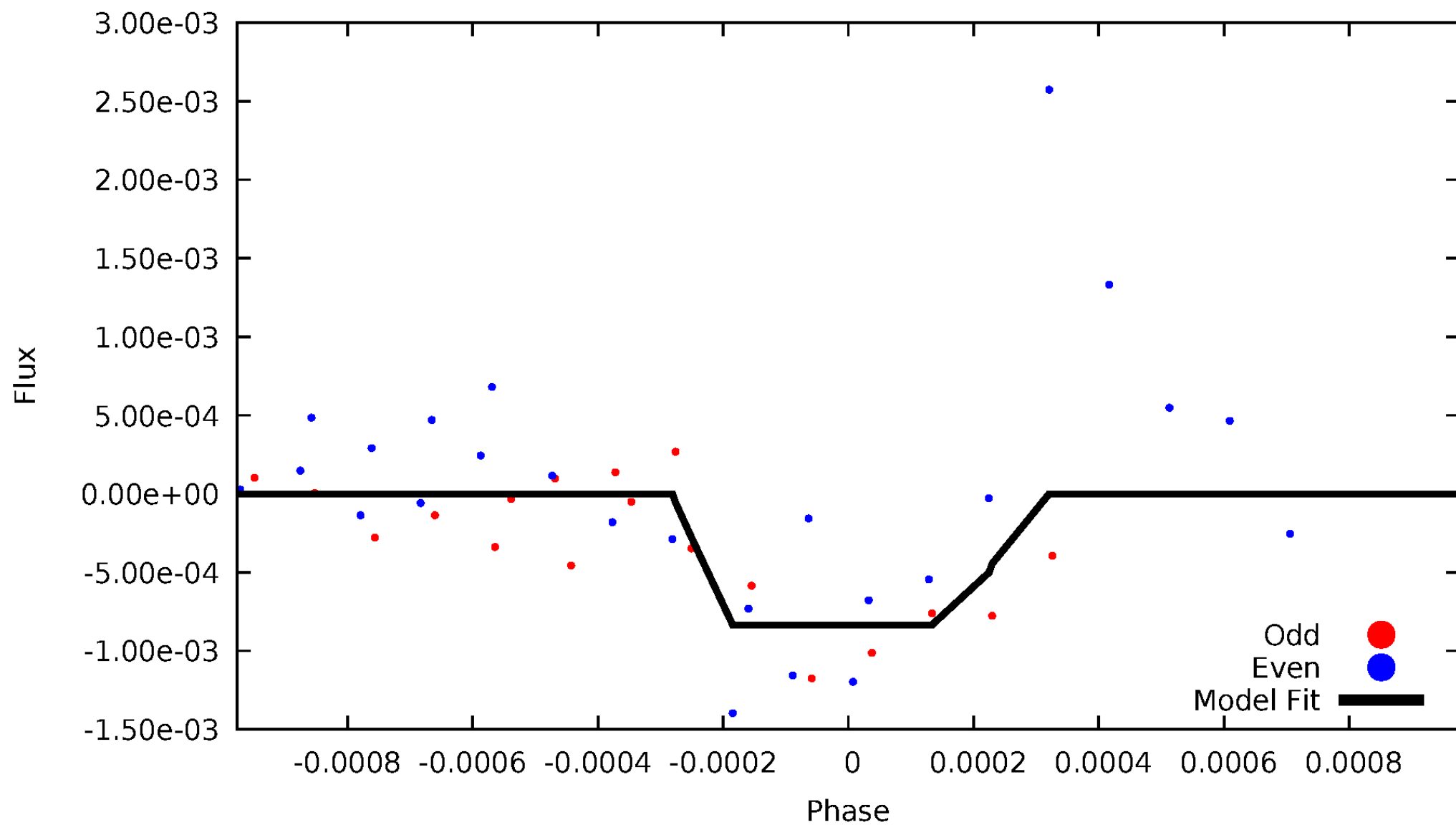
DV Odd/Even

TCE 010515995-05



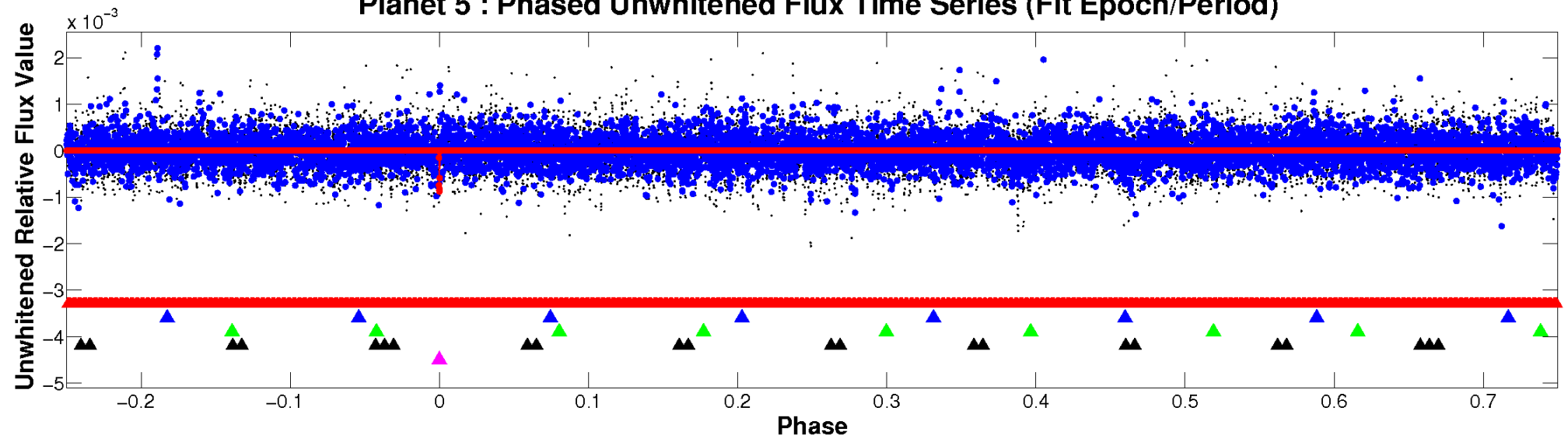
ALT Odd/Even

TCE 010515995-05

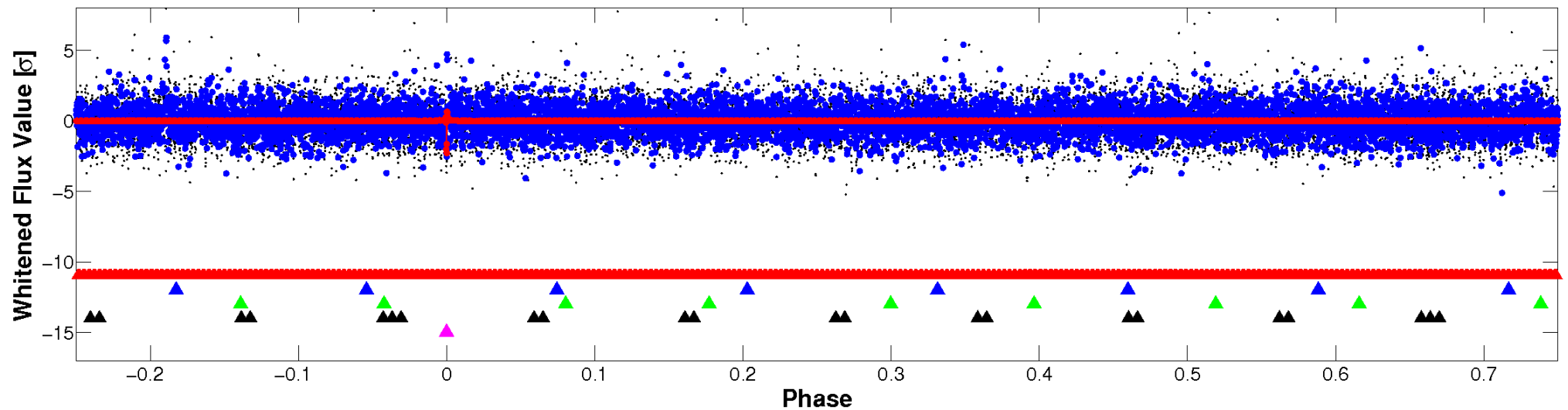


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

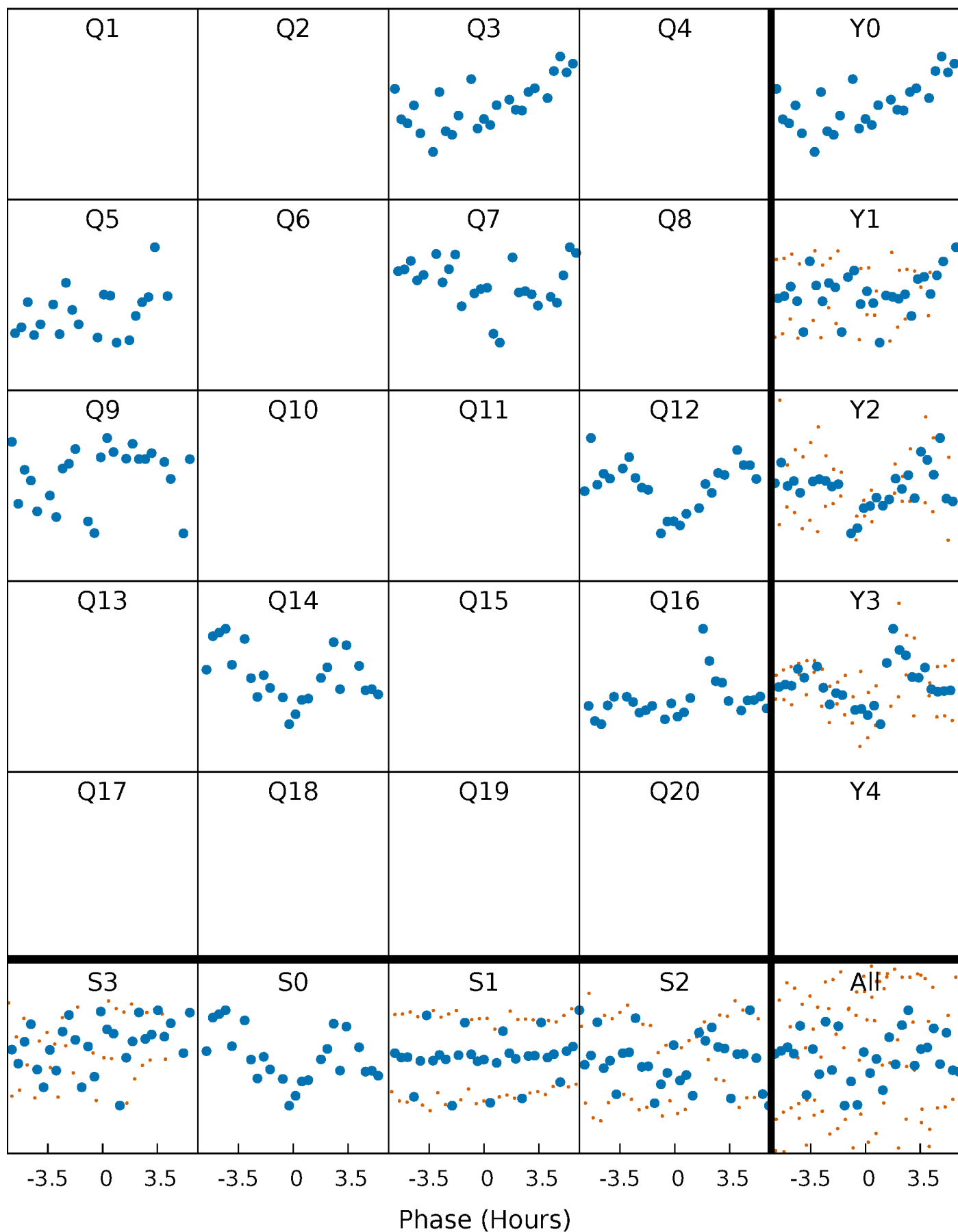


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



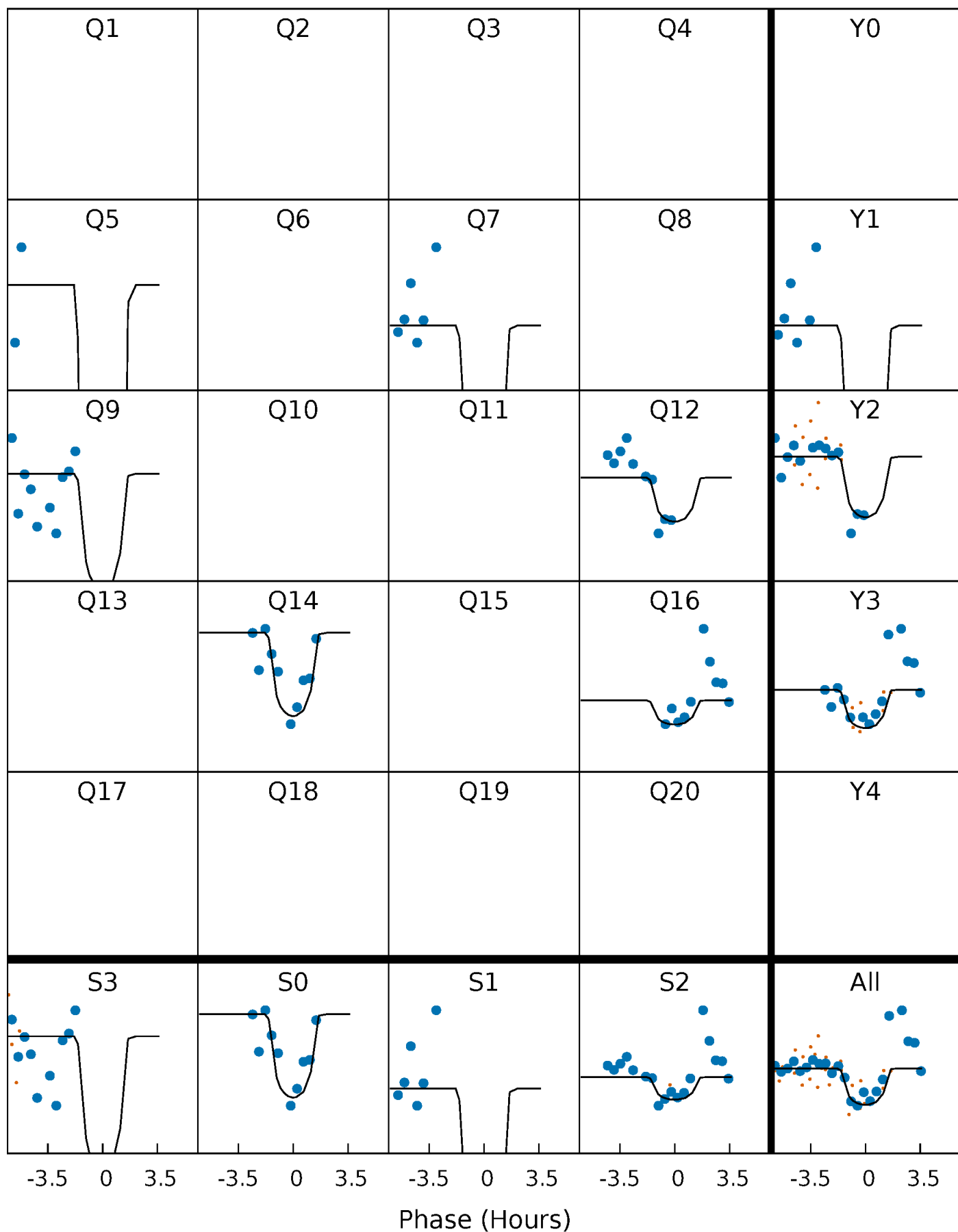
PDC Quarter-Phased Transit Curves

TCE 010515995-05 $P=212.708629$ Days $T_0=262.124657$ (BKJD)



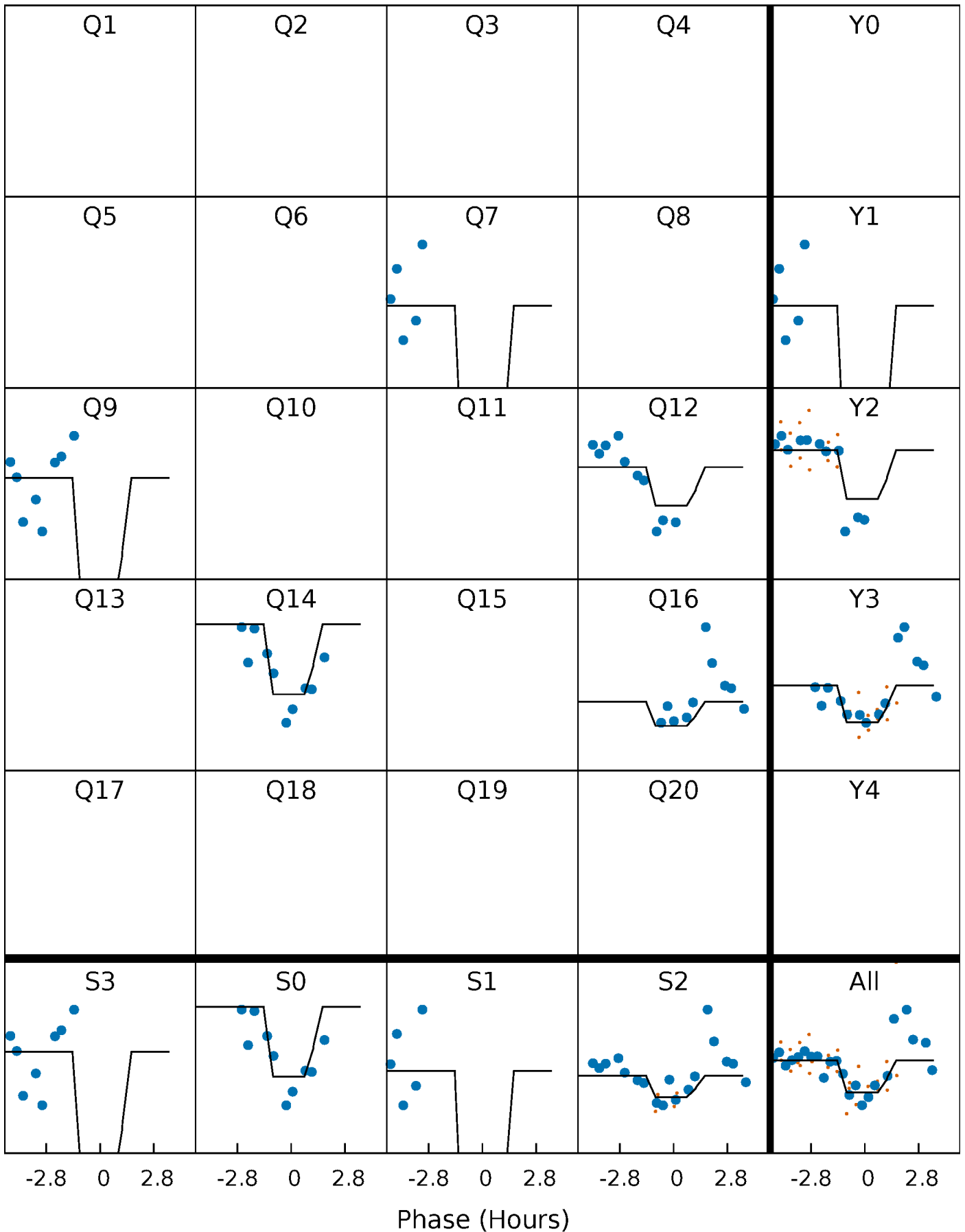
DV Quarter-Phased Transit Curves

TCE 010515995-05 $P=212.708629$ Days $T_0=262.124657$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

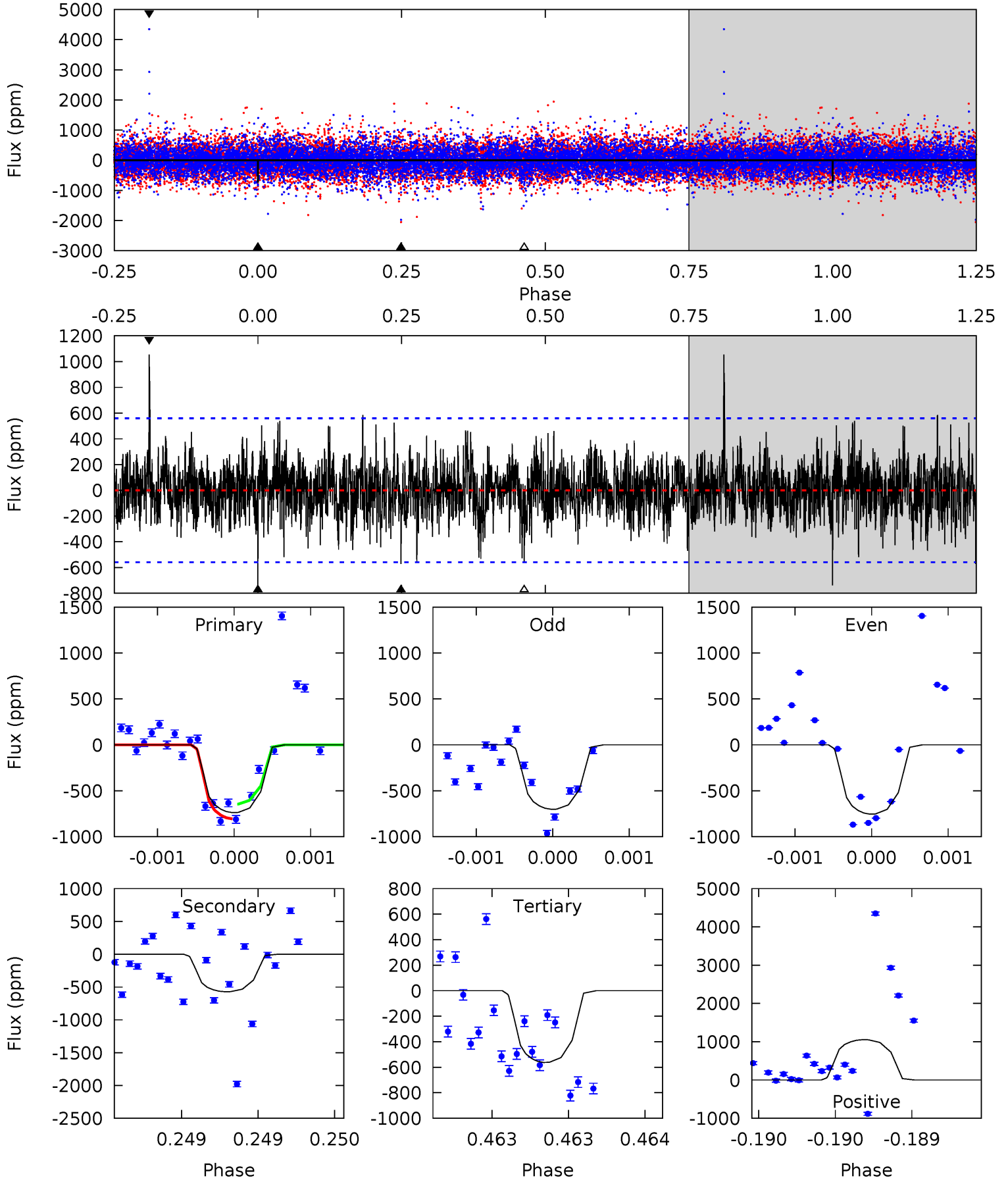
TCE 010515995-05 P=212.711265 Days $T_0=262.109371$ (BKJD)



DV Model-Shift Uniqueness Test

010515995-05, P = 212.708629 Days, E = 49.416028 Days

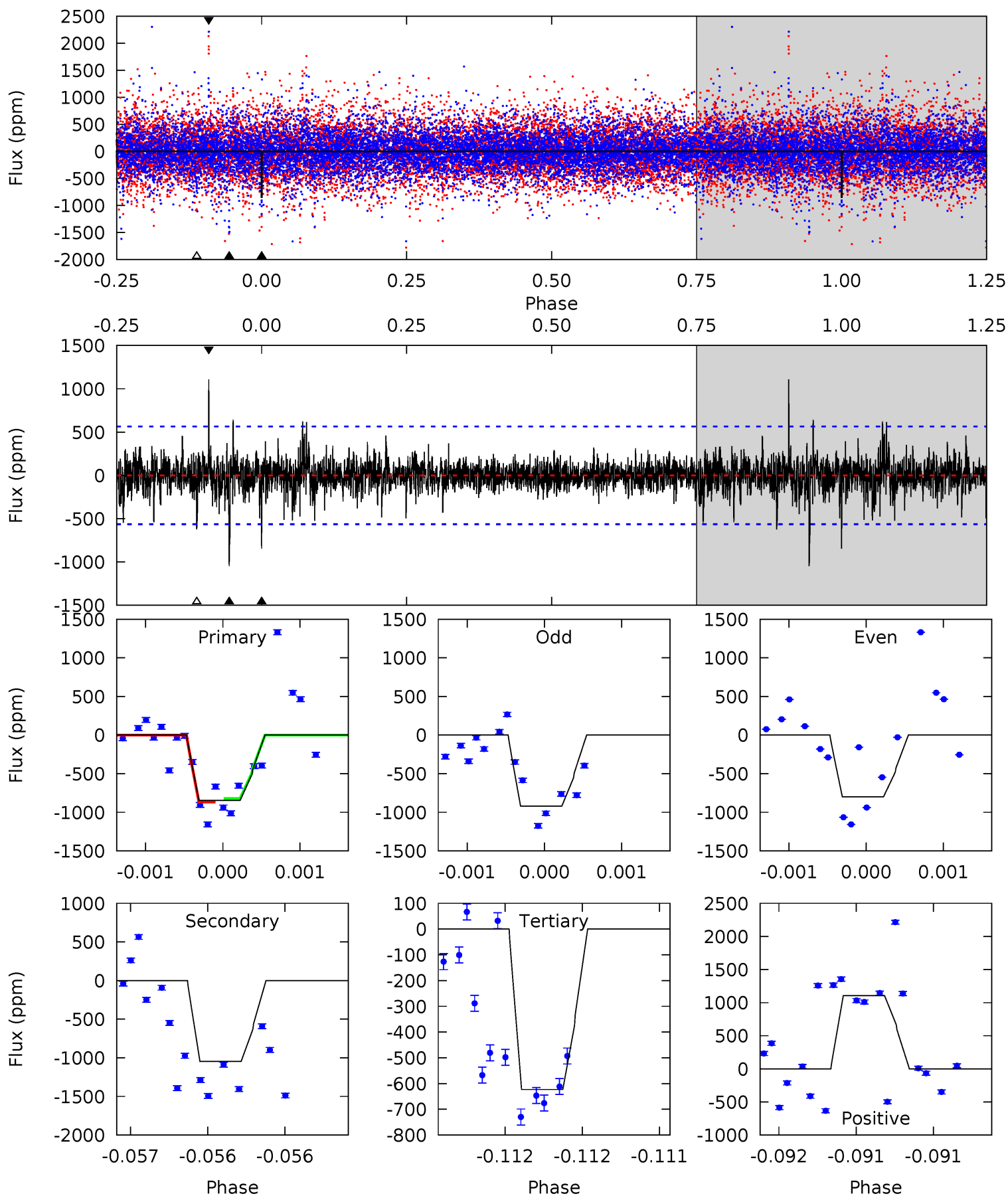
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.31	5.65	5.57	10.4	5.53	3.42	1.52	1.74	-3.13	0.09	-4.78	0.26	1.09	0.59	0.79



Alt Model-Shift Uniqueness Test

010515995-05, P = 212.711265 Days, E = 49.398106 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.29	10.3	6.11	10.9	5.54	3.43	1.19	2.18	-2.57	4.16	-0.59	0.59	0.96	0.51	0.23



Stellar Parameters For KIC 010515995

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4656^{+125}_{-139}	$4.619^{+0.032}_{-0.042}$	$0.000^{+0.250}_{-0.300}$	$0.695^{+0.056}_{-0.051}$	$0.732^{+0.051}_{-0.064}$	$3.072^{+0.483}_{-0.503}$
	+3%/-3%	+1%/-1%	+inf%/-inf%	+8%/-7%	+7%/-9%	+16%/-16%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010515995-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-571 ± 101	$2.66^{+1.72}_{-1.48}$	302^{+10}_{-10}	4029^{+1586}_{-614}	17412^{+72701}_{-10993}
Alt.	-1047 ± 102	$2.48^{+1.87}_{-1.56}$	302^{+9}_{-10}	4627^{+2747}_{-844}	$37284^{+229255}_{-25200}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

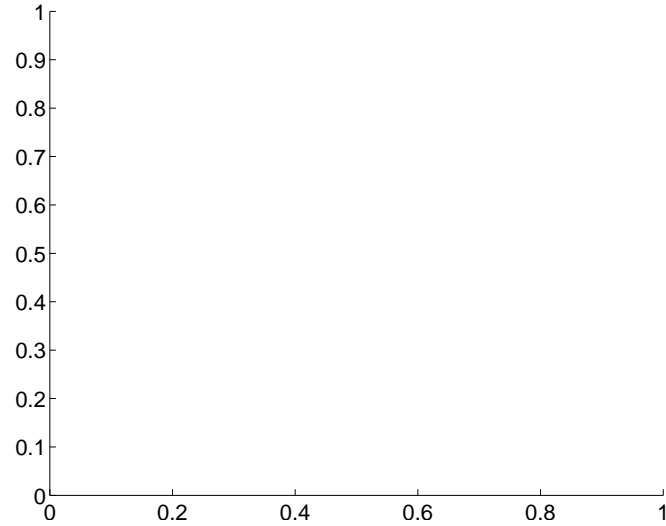
Supplemental centroid analysis for 010515995-05. Kepler magnitude: 14.85. Transit SNR 7.57

There are 0 quarters with good PRF difference image offsets

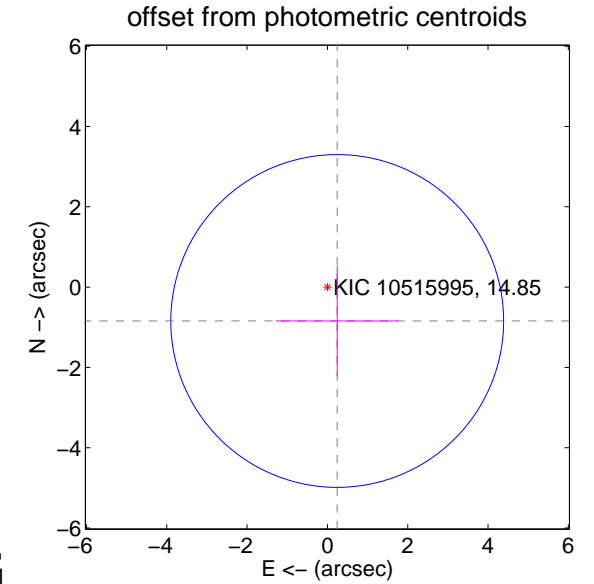
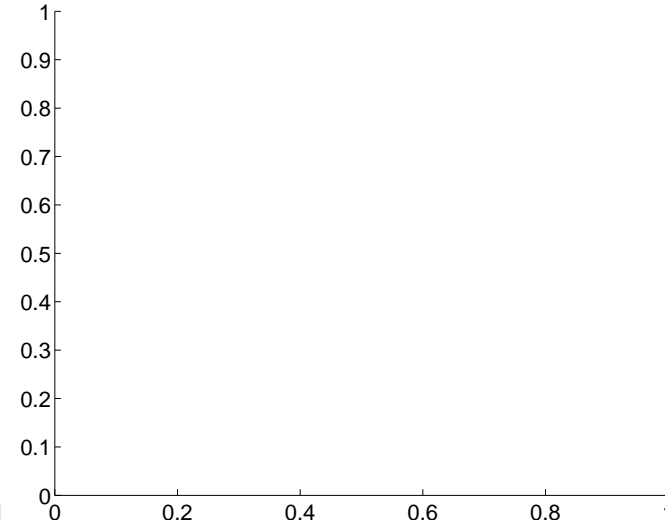
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	0.88 ± 1.38	0.64	-0.24 ± 1.53	-0.84 ± 1.37

There is no PRF-fit offset from OOT-fit

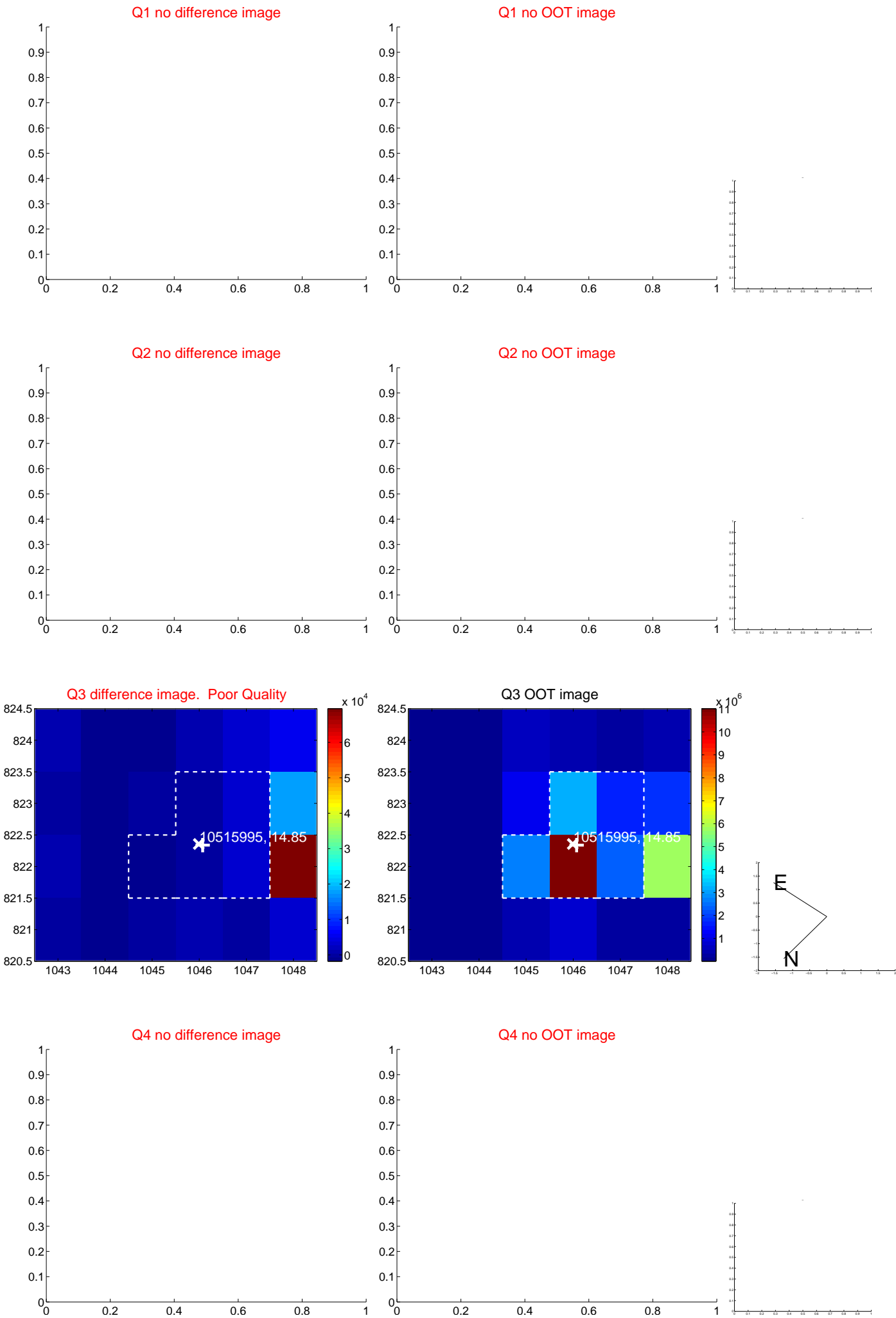


There is no PRF-fit offset from KIC

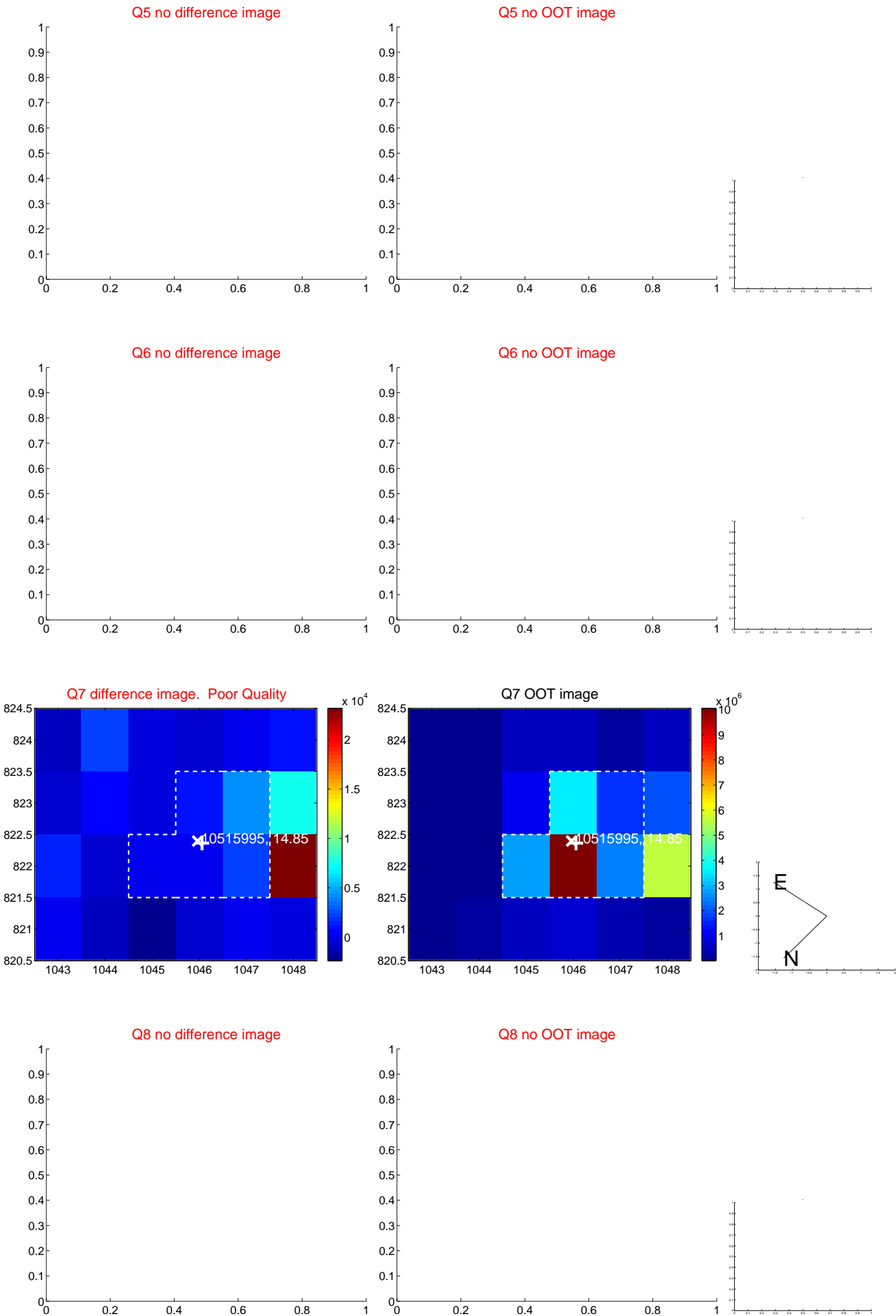


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

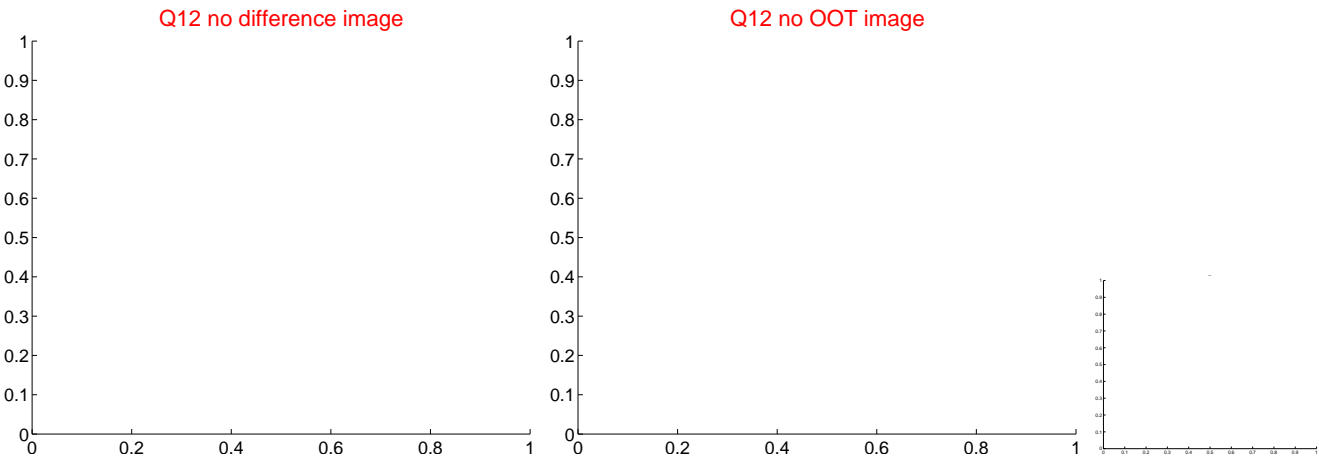
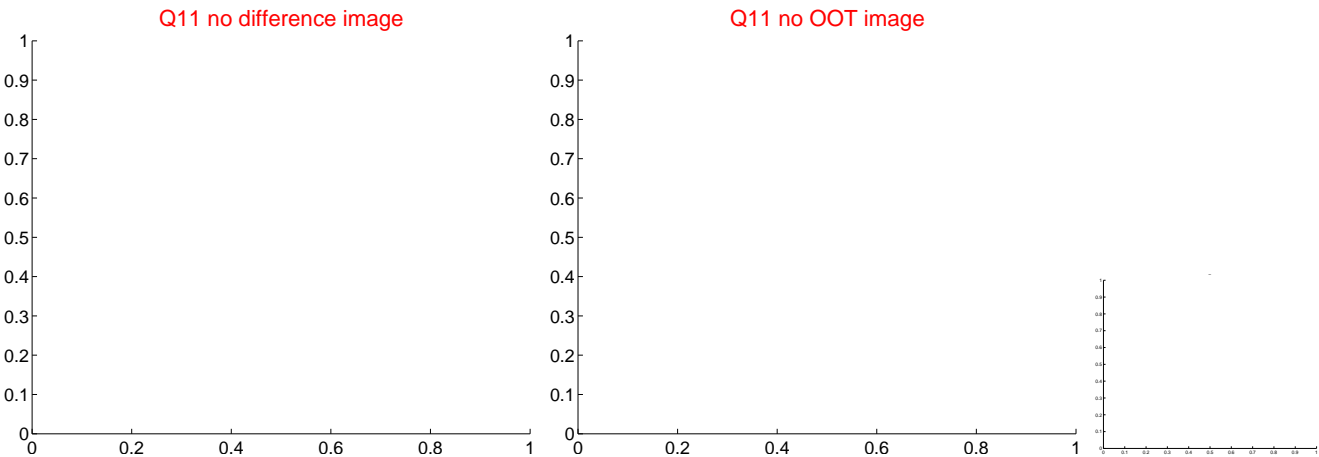
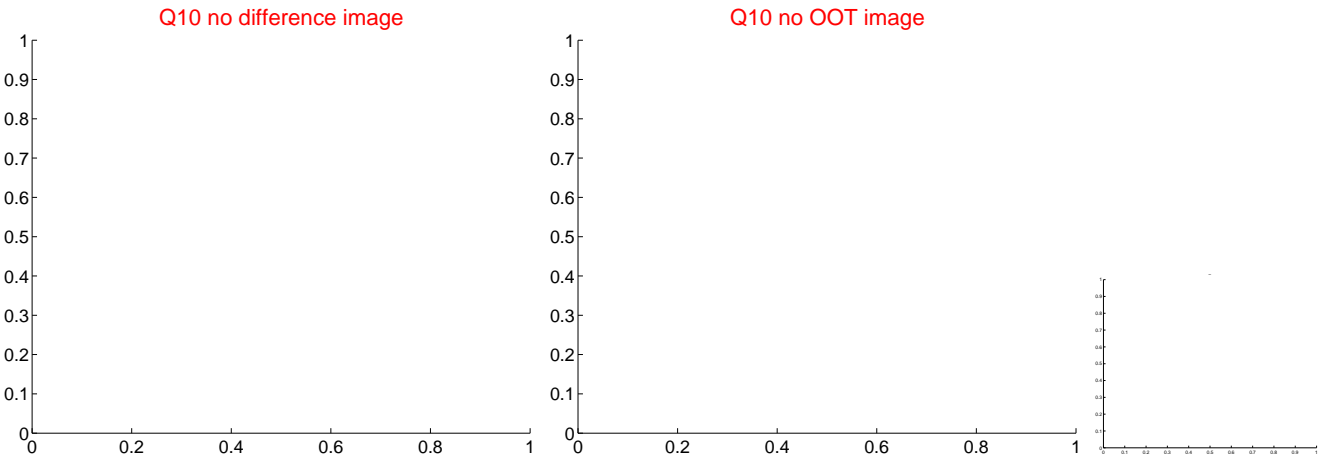
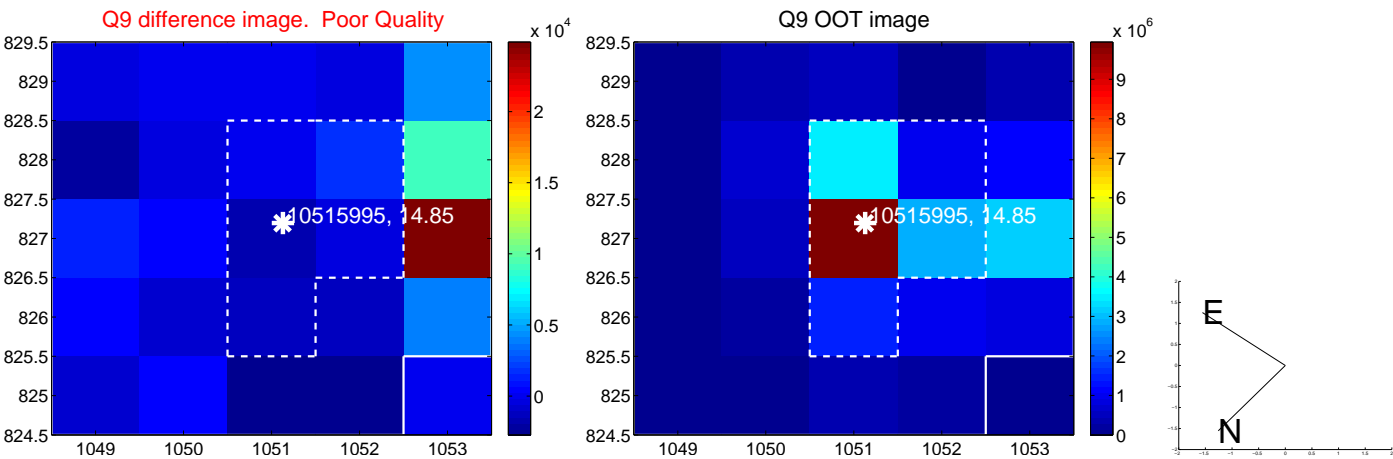
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



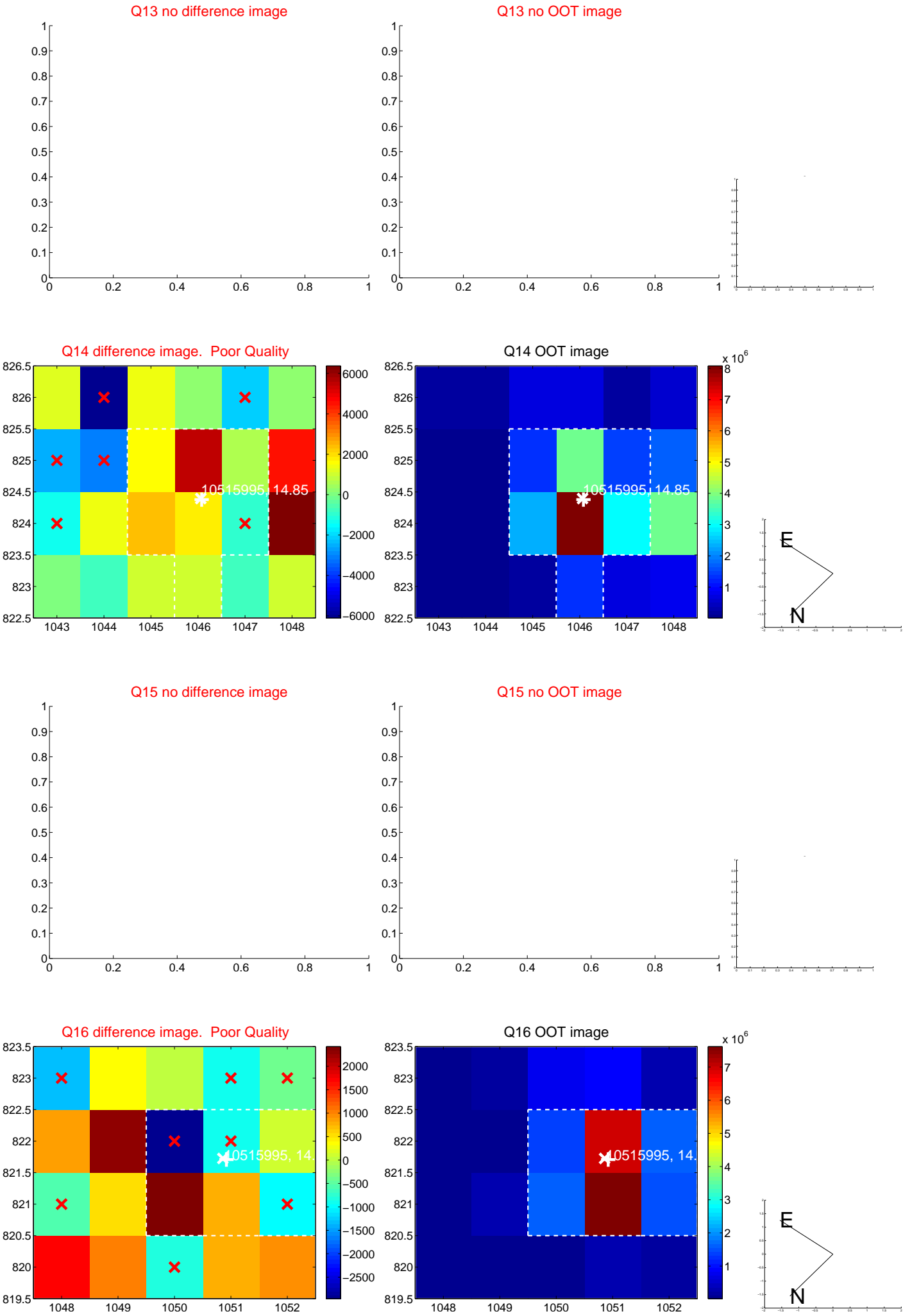
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



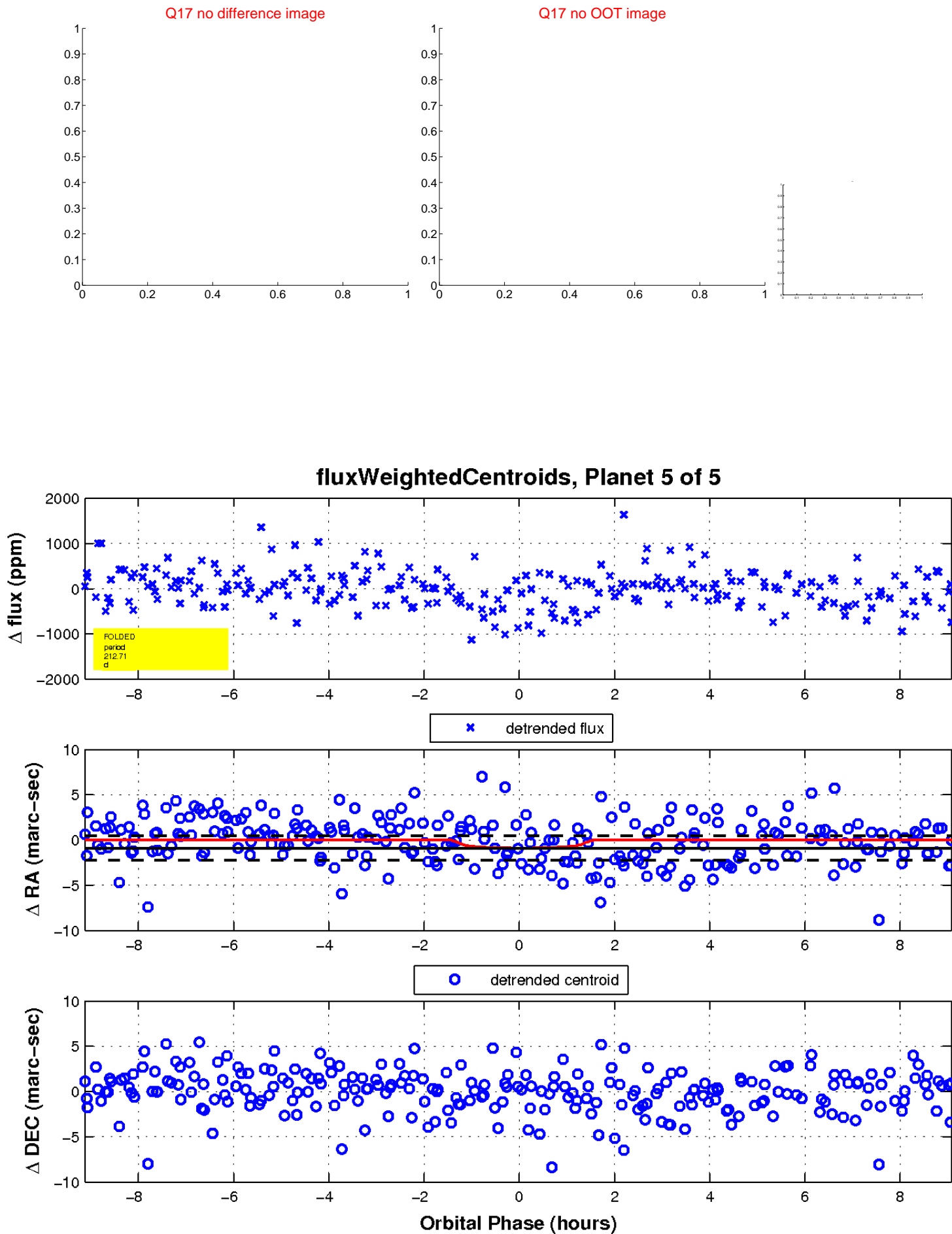
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

