

KIC 010096641

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})
010096641-01	OBS	No	1.541084	131.971892	23.8	6.877	8.6	6.5	3.77	6292	2.14	20938.44
010096641-02	OBS	No	110.604124	201.856018	179.5	12.329	9.6	5.2	3.77	6292	5.56	70.20
010096641-03	OBS	No	67.034391	141.117890	315.5	2.570	7.9	8.0	3.77	6292	13.23	136.87
010096641-04	OBS	No	25.776244	137.530666	182.1	2.481	8.3	8.2	3.77	6292	5.88	489.50
010096641-05	OBS	No	385.198169	496.396434	354.1	4.389	7.8	7.5	3.77	6292	7.59	13.30
010096641-06	OBS	No	80.586517	187.891891	271.6	3.224	7.3	7.8	3.77	6292	7.29	107.08
010096641-07	OBS	No	83.464284	199.496903	435.5	2.032	7.3	7.8	3.77	6292	8.95	102.18
010096641-08	OBS	No	190.809615	215.693128	356.1	6.936	7.2	7.4	3.77	6292	9.27	33.93
010096641-09	OBS	No	93.528944	142.923973	242.3	2.943	7.1	7.0	3.77	6292	6.20	87.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010096641-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
010096641-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
010096641-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—HALO_GHOST
010096641-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010096641-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
010096641-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
010096641-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

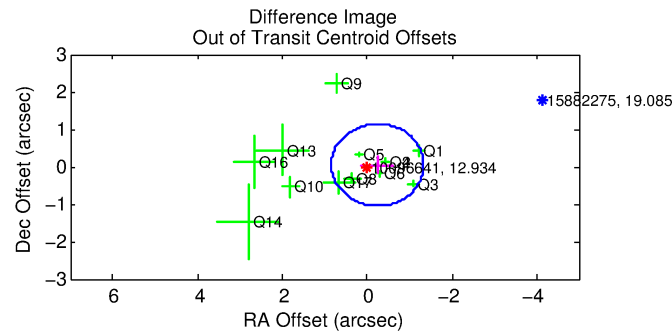
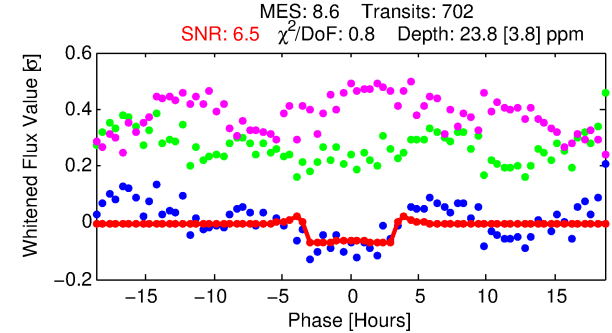
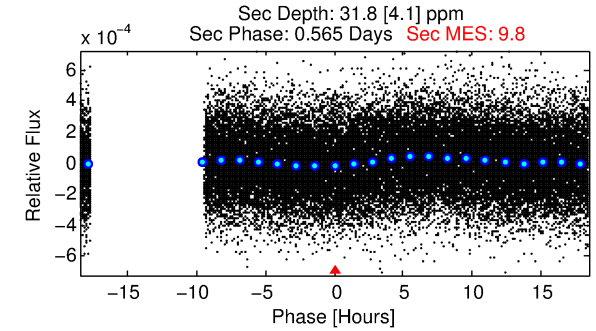
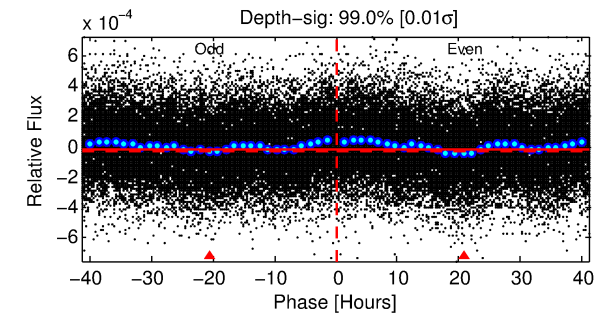
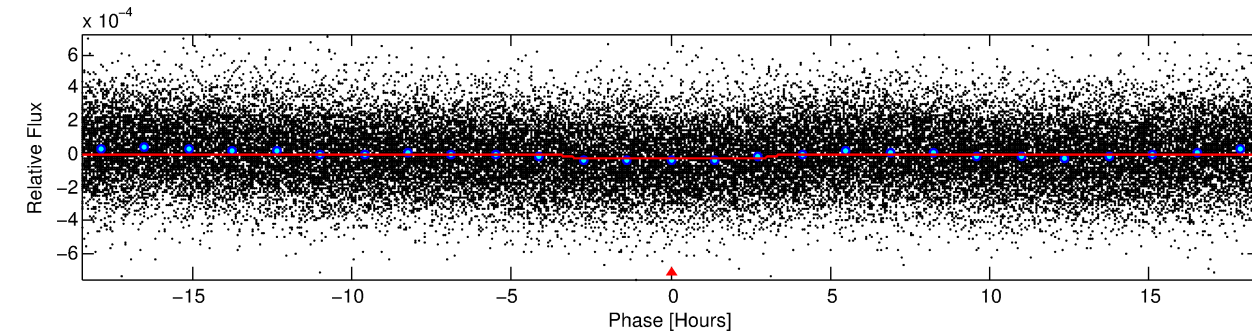
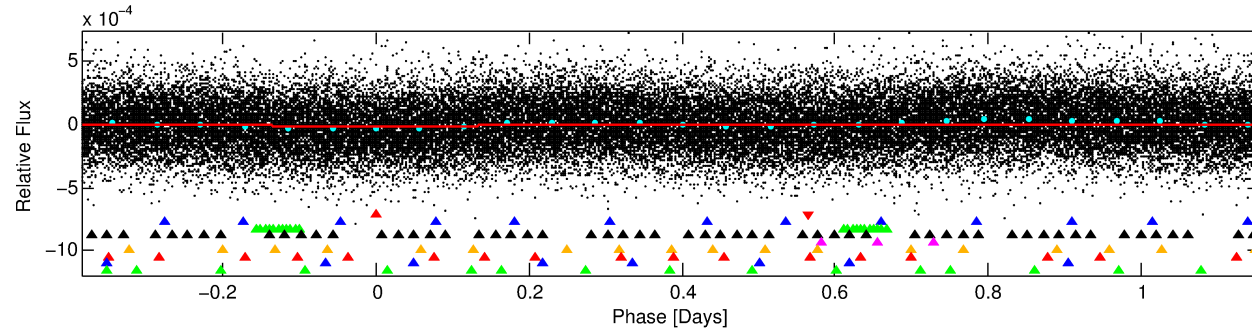
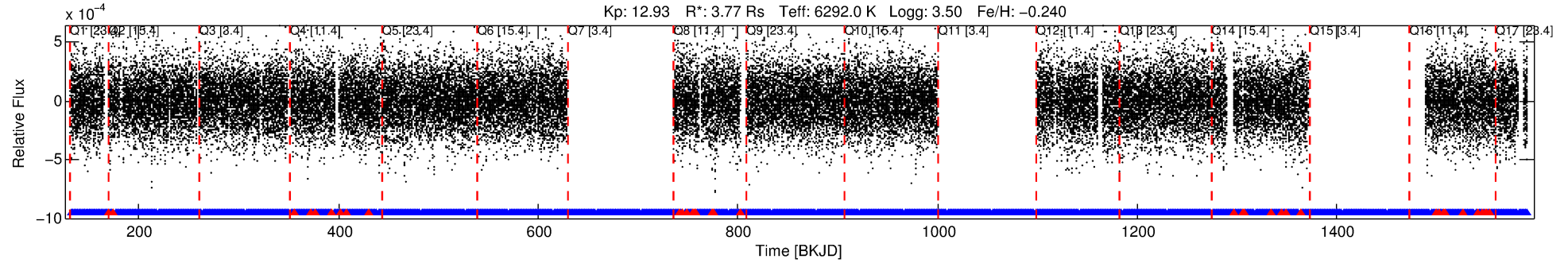
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096641-01

No Significant Match Found

DV One-Page Summary

KIC: 10096641 Candidate: 1 of 9 Period: 1.541 d



DV Fit Results:

Period = 1.54108 [0.00002] d
Epoch = 131.9719 [0.0057] BKJD
Rp/R* = 0.0052 [0.0018]
a/R* = 1.23 [0.80]
b = 0.89 [0.45]
Seff = 20938.44 [14066.04]
Teq = 3067 [515] K
Rp = 2.14 [1.21] Re
a = 0.0308 [0.0129] AU
Ag = 3.65 [3.53] [0.75 σ]
Teffp = 6554 [1179] K [2.71 σ]

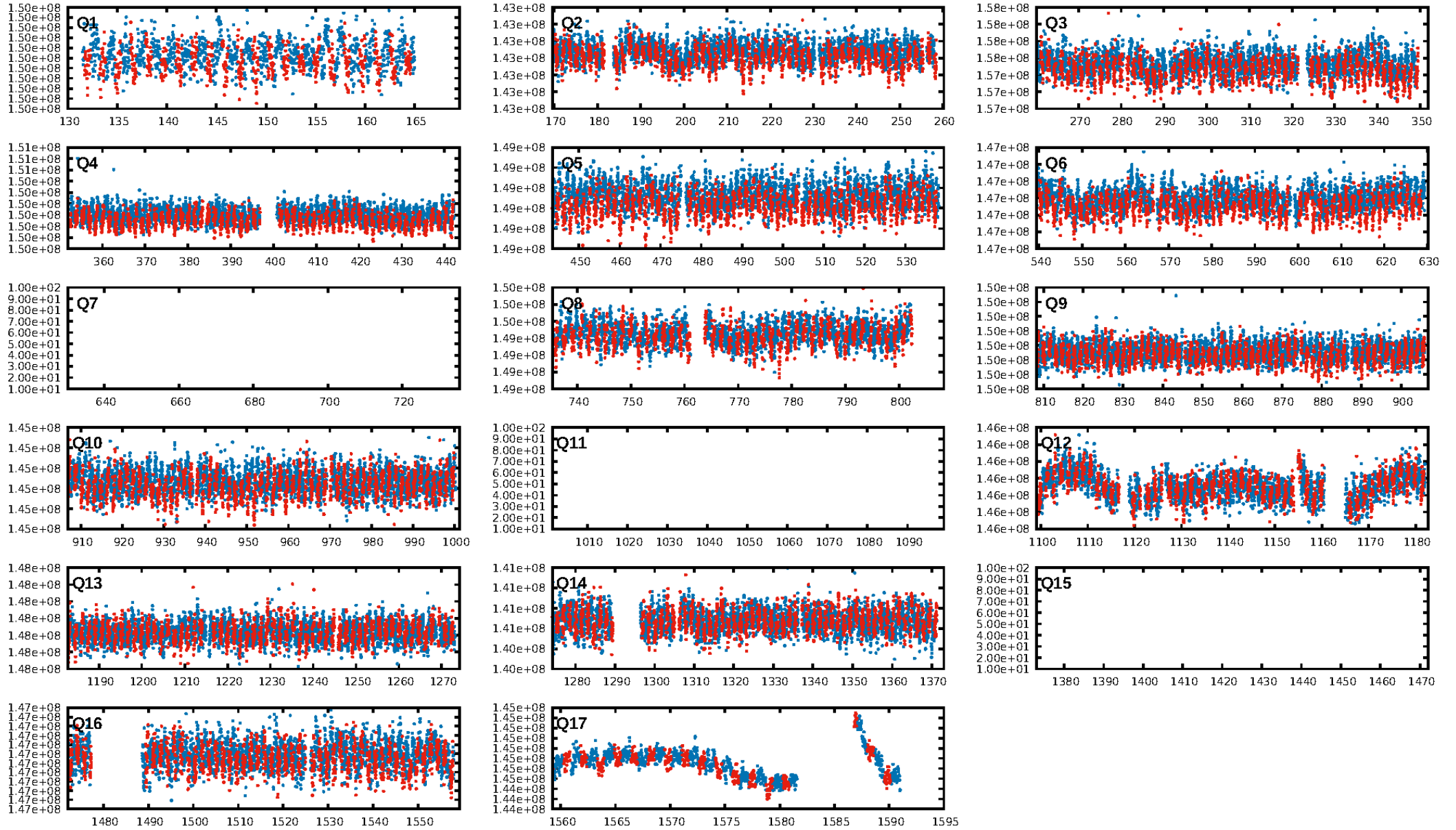
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [79.56 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.68e-12
RollingBand-fgt: 0.95 [628/663]
GhostDiagnostic-chr: 3.192
Centroid-sig: 45.1%
Centroid-so: 0.732 arcsec [0.80 σ]
OotOffset-rm: 0.248 arcsec [0.68 σ]
OotOffset-st: 4/1/3/5 [13]
KicOffset-rm: 0.149 arcsec [0.38 σ]
KicOffset-st: 4/1/3/5 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [14/14]

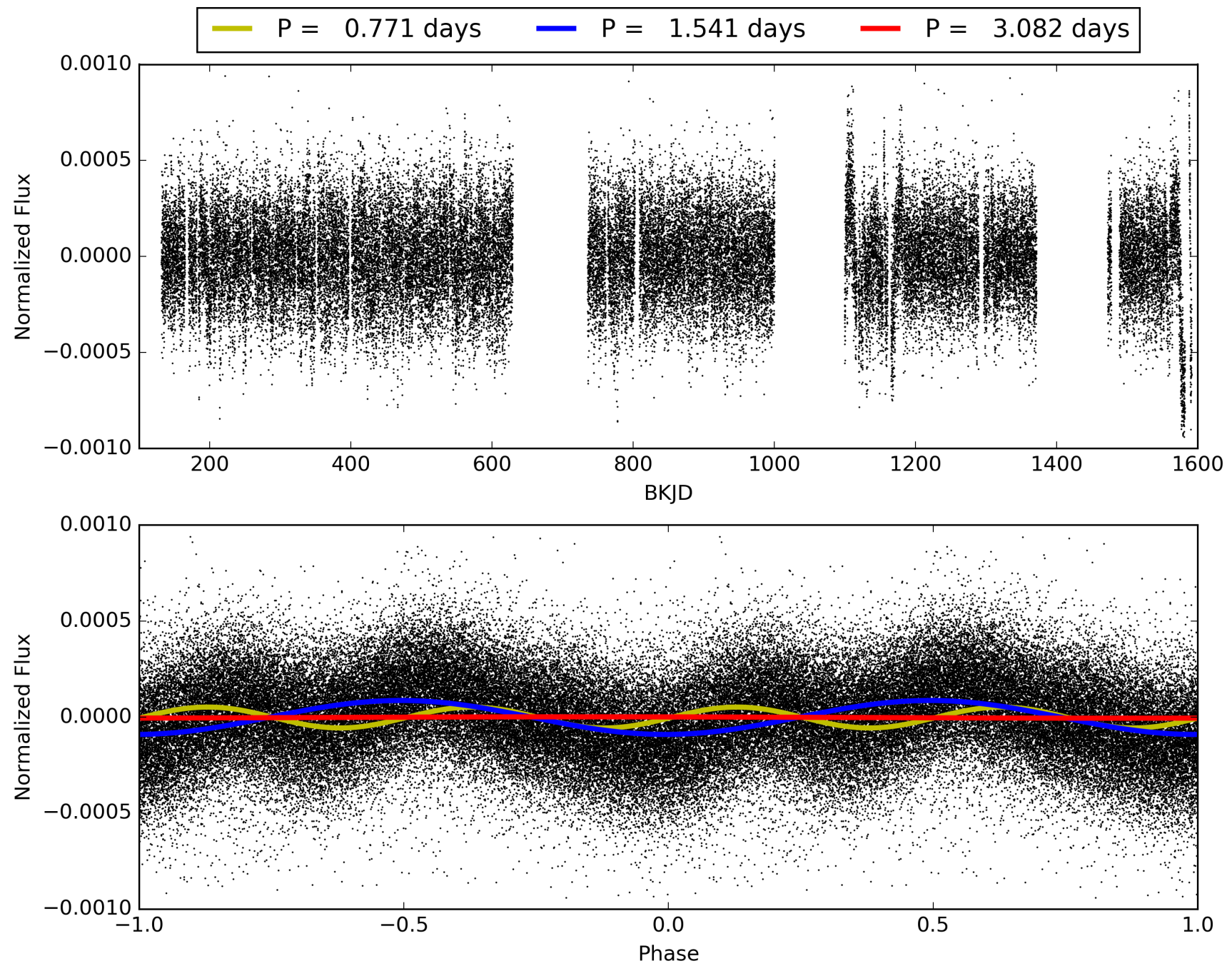
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010096641-01, PDC Light Curves

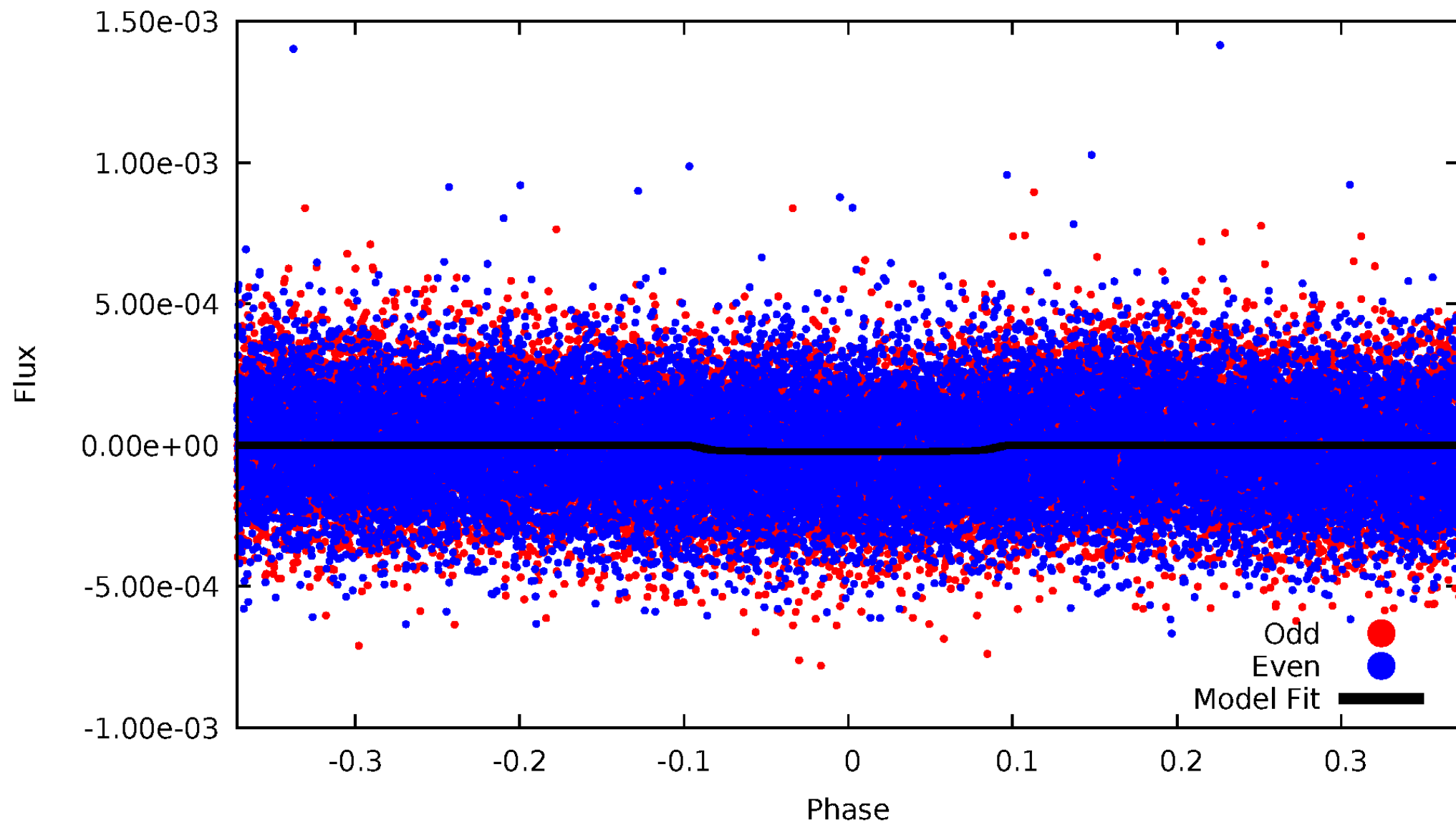


TCE 010096641-01



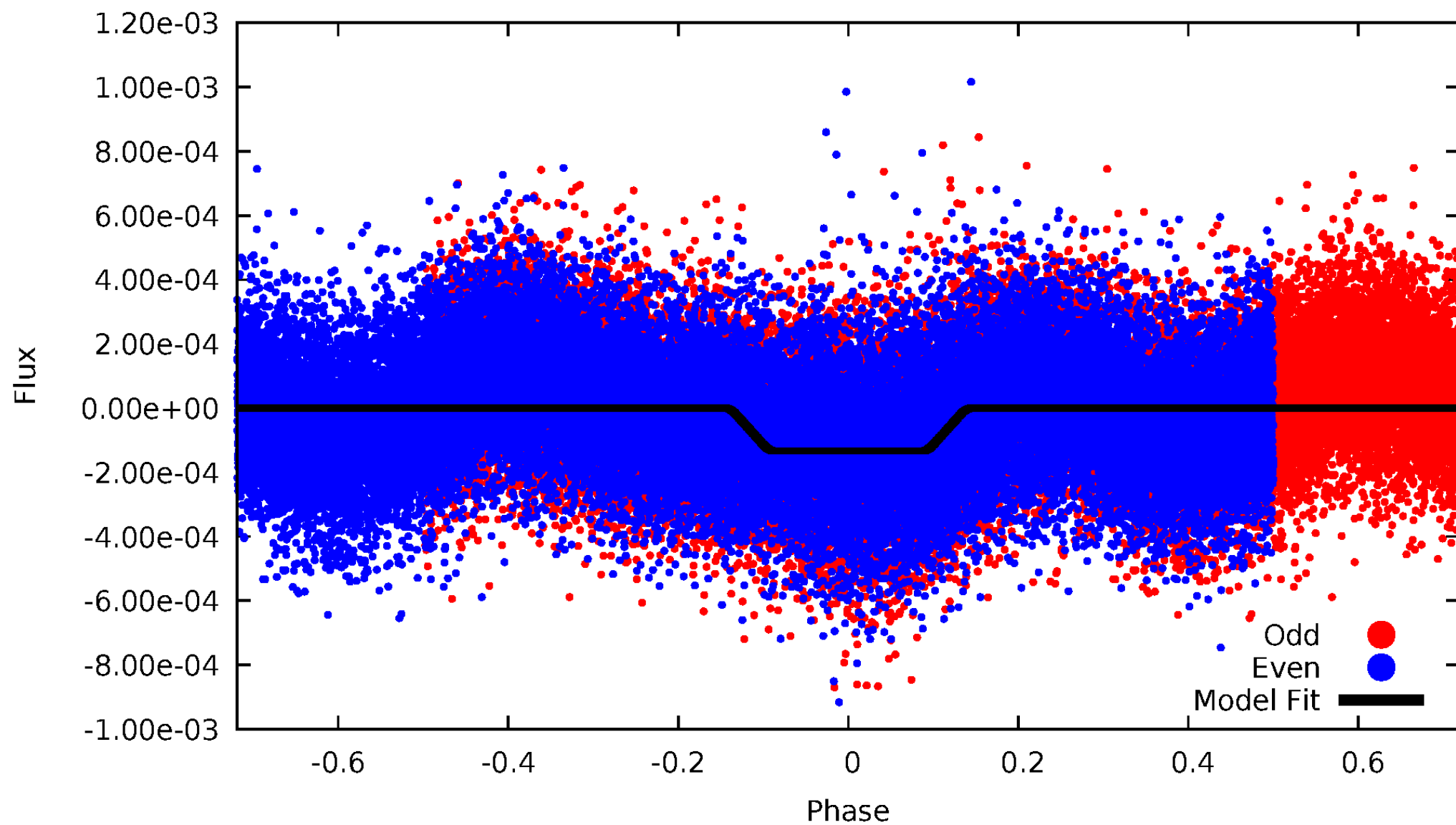
DV Odd/Even

TCE 010096641-01

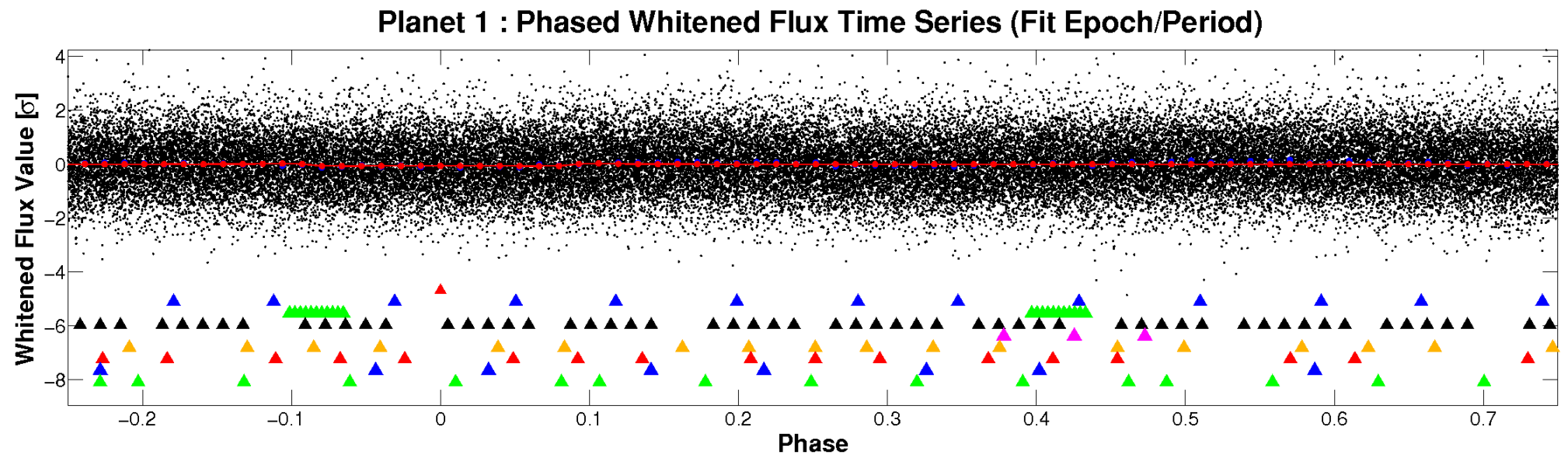
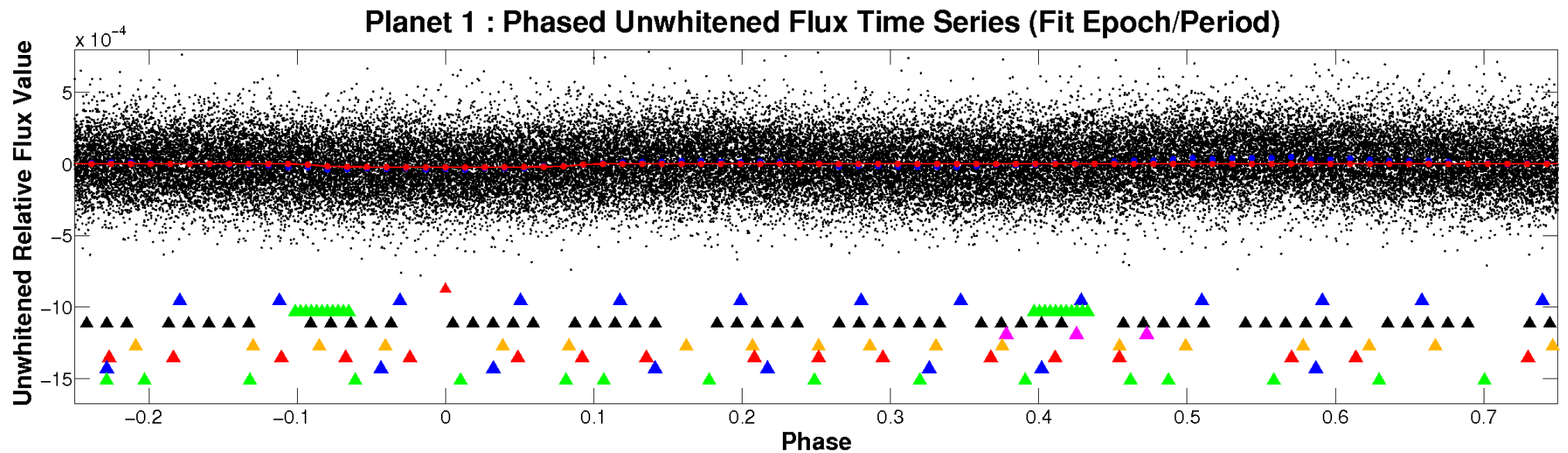


ALT Odd/Even

TCE 010096641-01

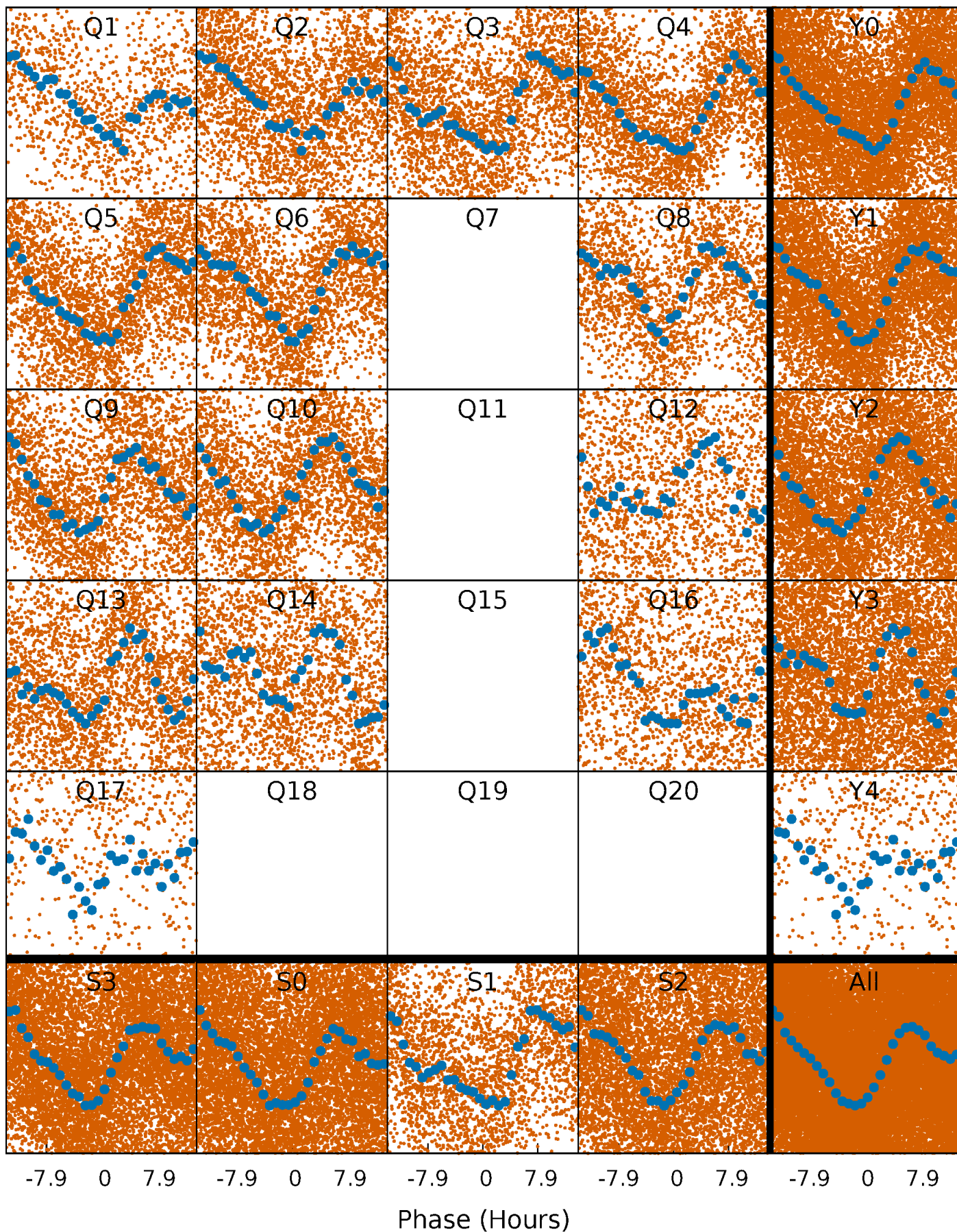


Non-Whitened Vs. Whitened Light Curve



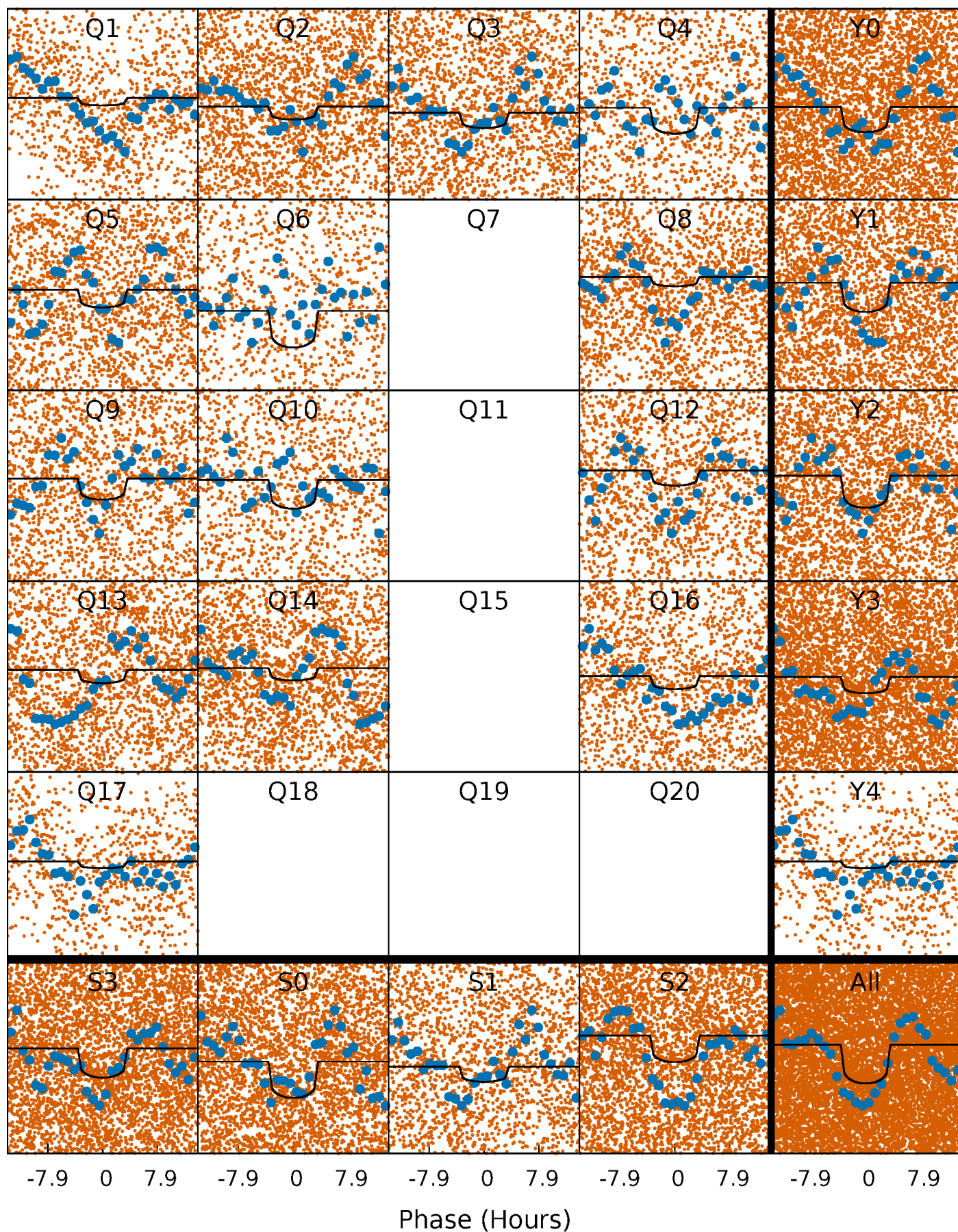
PDC Quarter-Phased Transit Curves

TCE 010096641-01 P= 1.541084 Days $T_0=131.971892$ (BKJD)



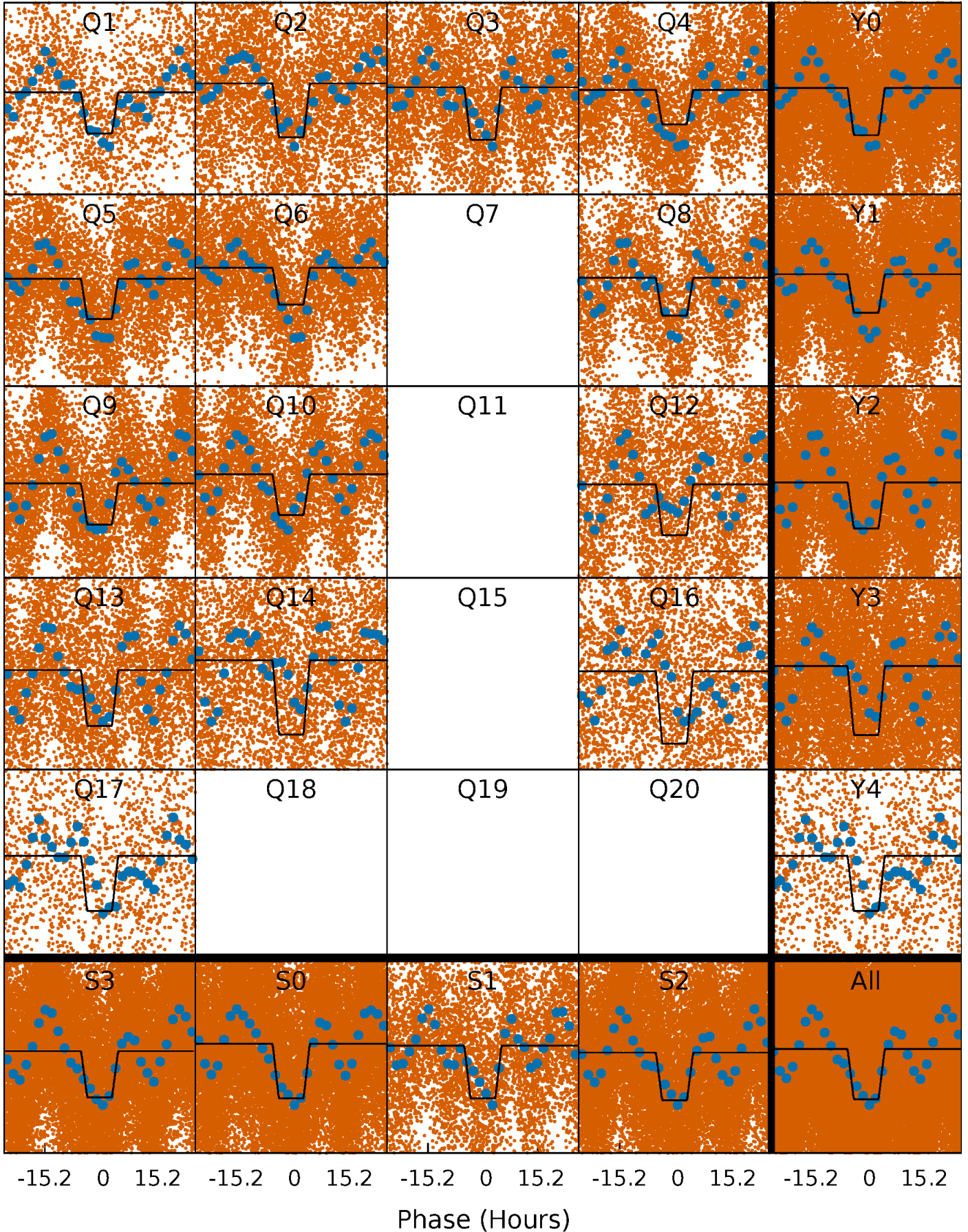
DV Quarter-Phased Transit Curves

TCE 010096641-01 P= 1.541084 Days $T_0=131.971892$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

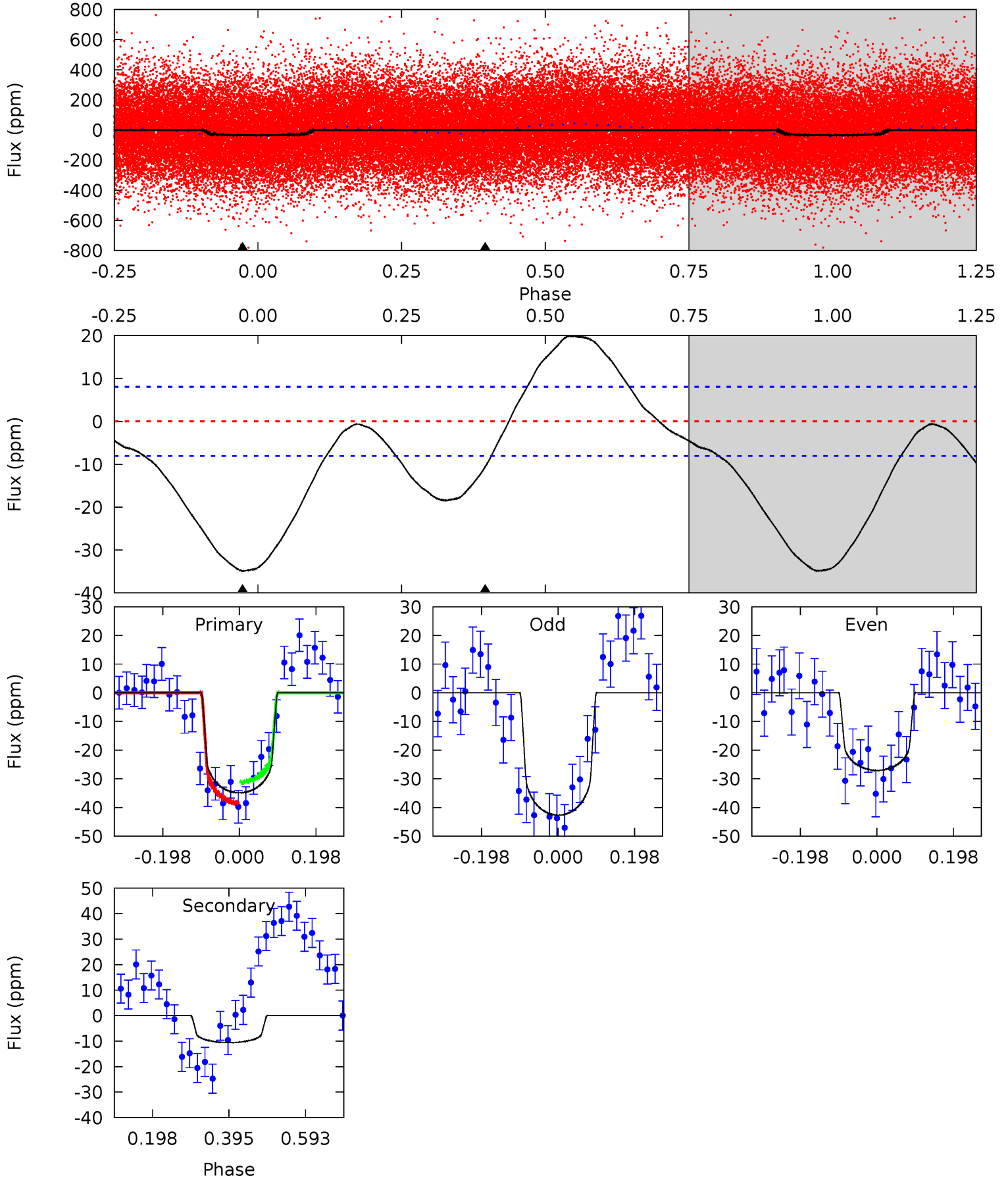
TCE 010096641-01 P= 1.540824 Days $T_0=132.001812$ (BKJD)



DV Model-Shift Uniqueness Test

010096641-01, P = 1.541084 Days, E = 130.430808 Days

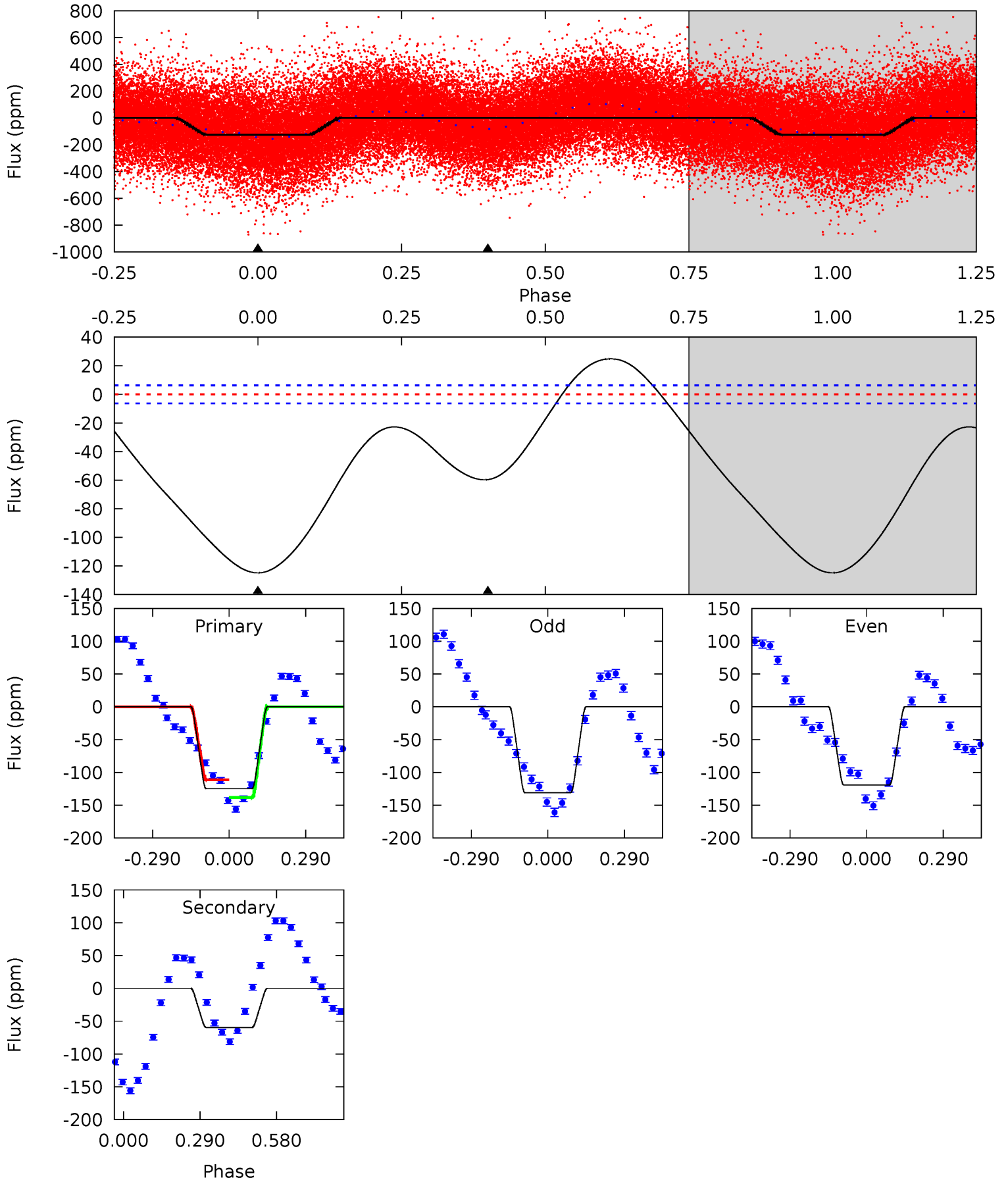
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.1	5.80	0	0	4.42	1.29	3.79	19.1	19.1	5.80	5.80	4.29	1.09	0.36	2.02



Alt Model-Shift Uniqueness Test

010096641-01, P = 1.540824 Days, E = 130.460988 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
86.0	41.0	0	0	4.34	1.06	9.45	86.0	86.0	41.0	41.0	4.07	0.98	0.17	9.27



Stellar Parameters For KIC 010096641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6292^{+192}_{-173}	$3.503^{+0.384}_{-0.096}$	$-0.240^{+0.350}_{-0.300}$	$3.767^{+0.674}_{-1.685}$	$1.648^{+0.194}_{-0.421}$	$0.043^{+0.128}_{-0.016}$
	+3%/-3%	+11%/-3%	+146%/-125%	+18%/-45%	+12%/-26%	+296%/-38%
Source	PHO1	FLK73	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 010096641-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 2	$1.91^{+0.88}_{-0.73}$	4191^{+276}_{-422}	4811^{+1323}_{-790}	$1.497^{+2.444}_{-0.793}$
Alt.	-60 ± 1	$4.40^{+1.14}_{-1.09}$	4188^{+289}_{-430}	4963^{+507}_{-400}	$1.597^{+1.182}_{-0.562}$

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 $A_{obs} \gg 1.0$

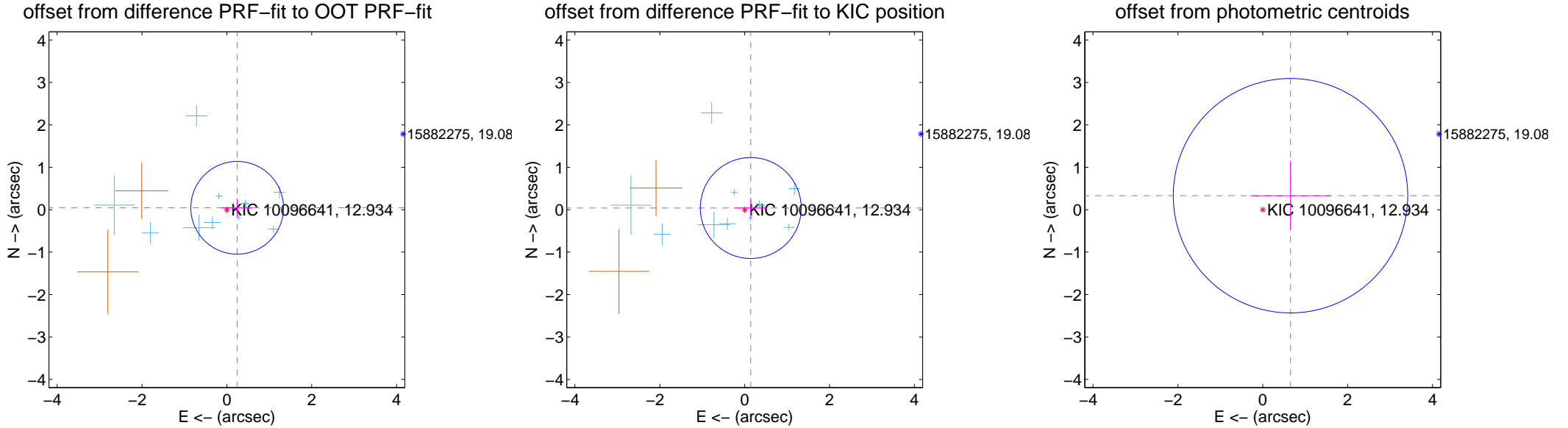
DV Centroid Data

Supplemental centroid analysis for 010096641-01. Kepler magnitude: 12.93. Transit SNR 6.50

There are 11 quarters with good PRF difference image offsets

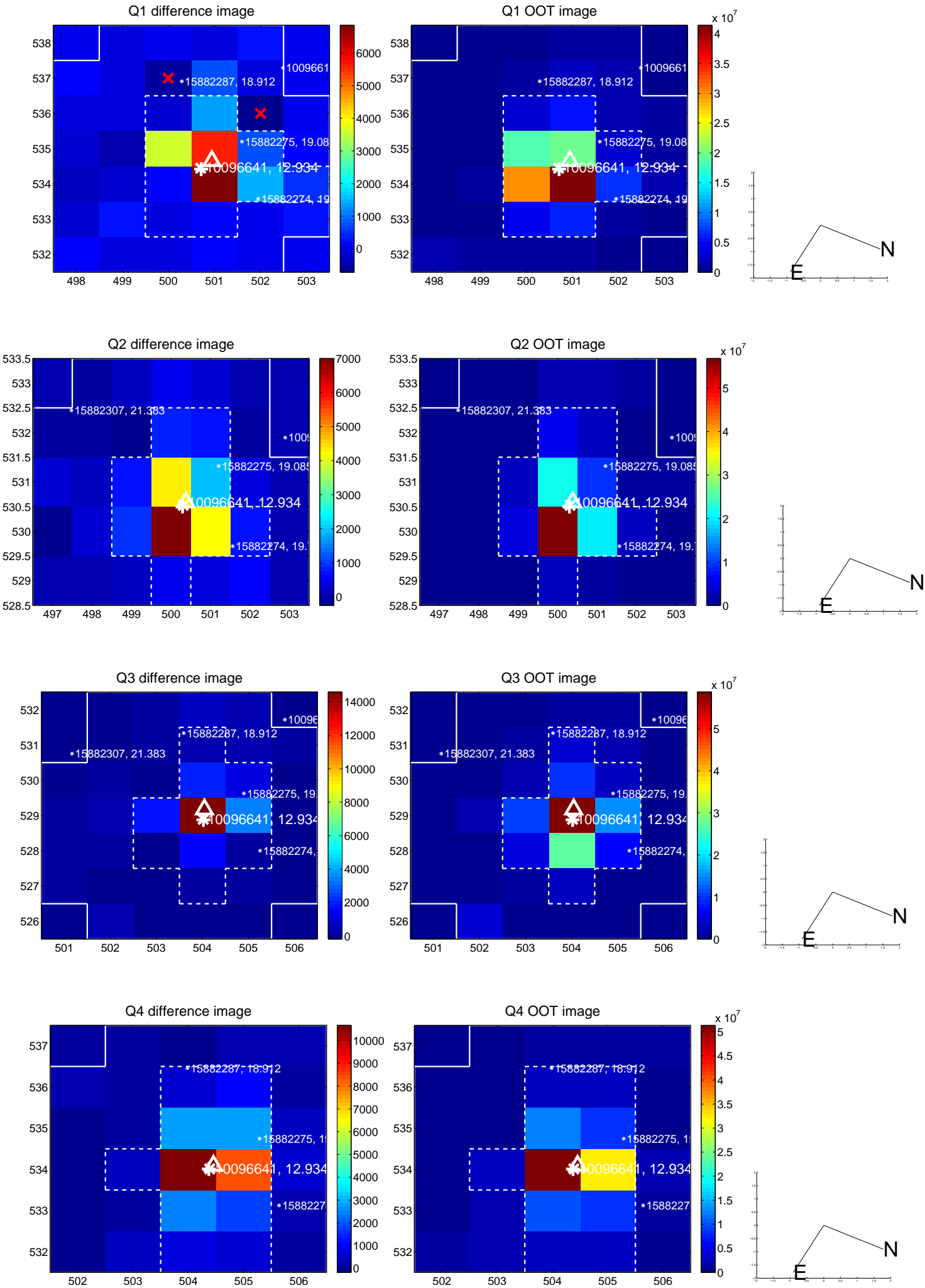
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.248 ± 0.364	0.68	-0.243 ± 0.366	0.045 ± 0.211
PRF-fit source offset from KIC position	0.149 ± 0.396	0.38	-0.144 ± 0.388	0.040 ± 0.239
photometric centroid source offset	0.73 ± 0.92	0.80	-0.65 ± 0.95	0.33 ± 0.82

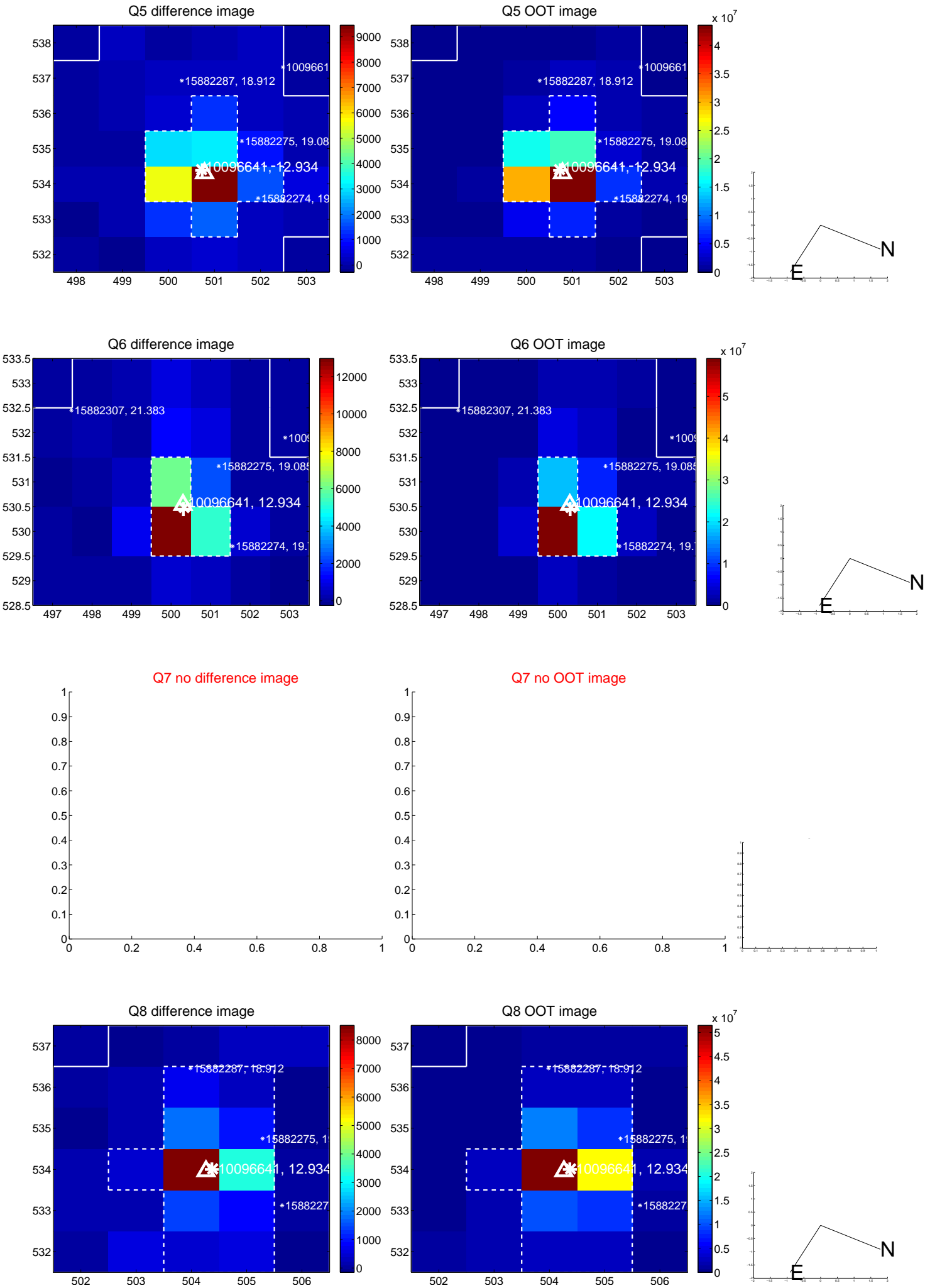


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

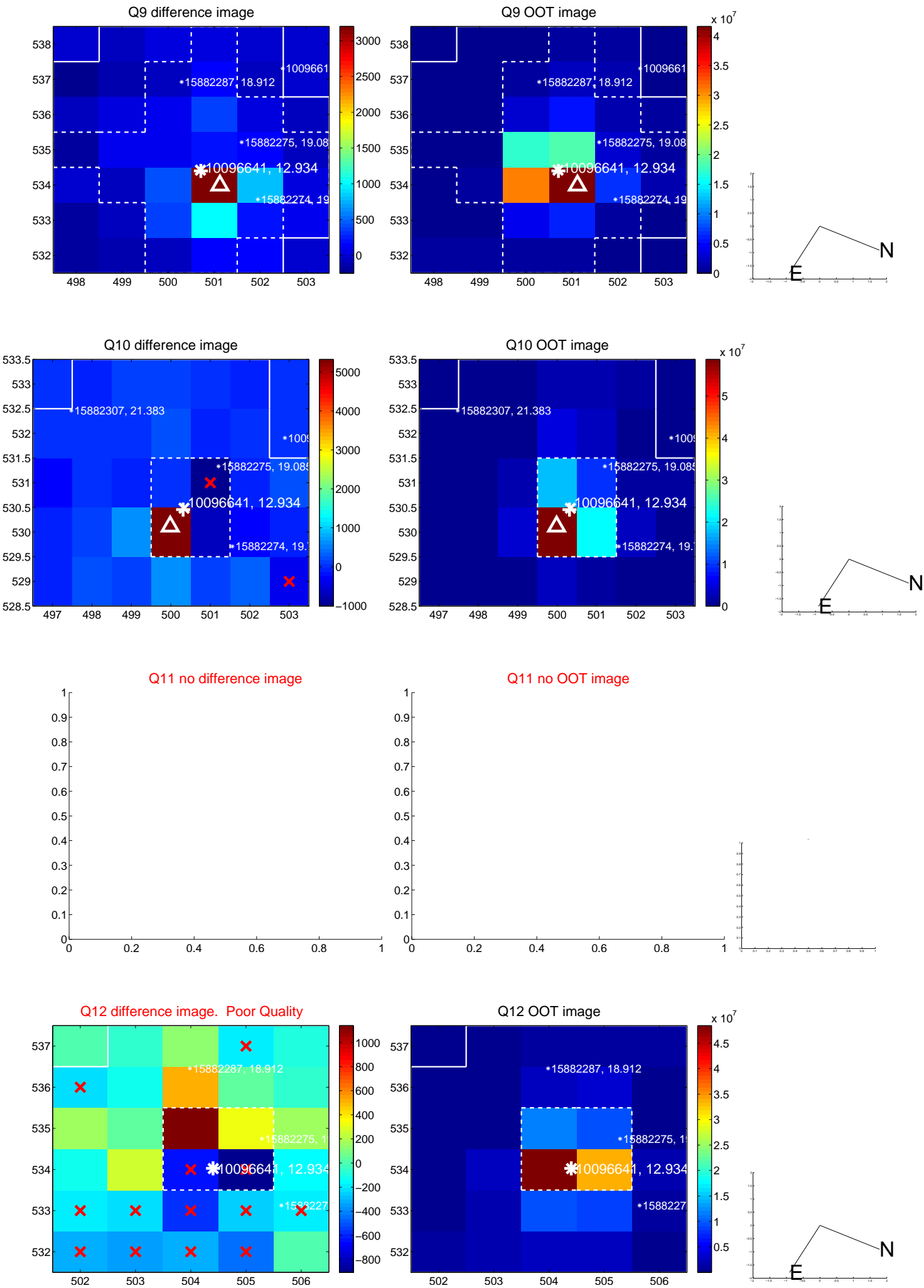
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



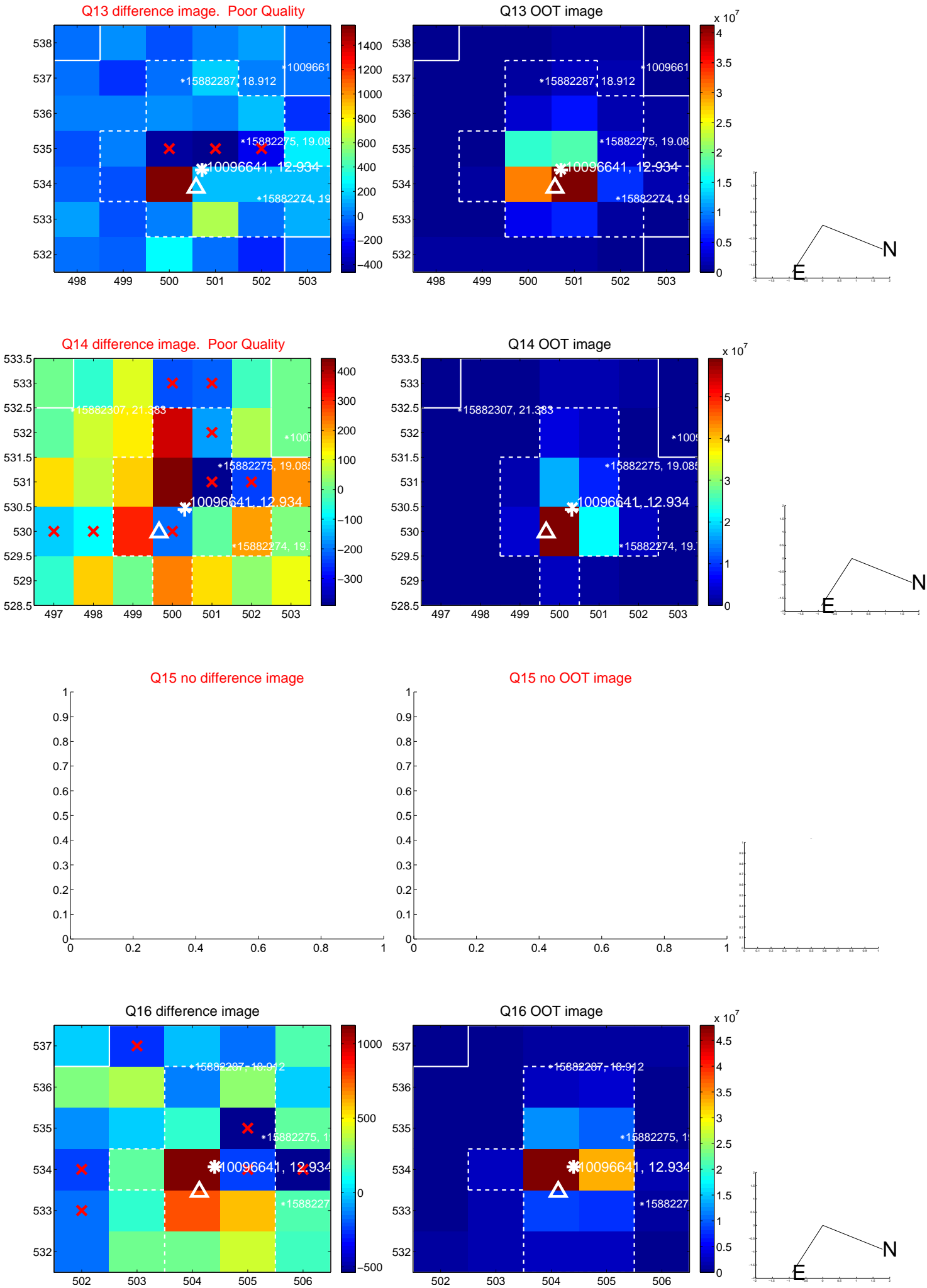
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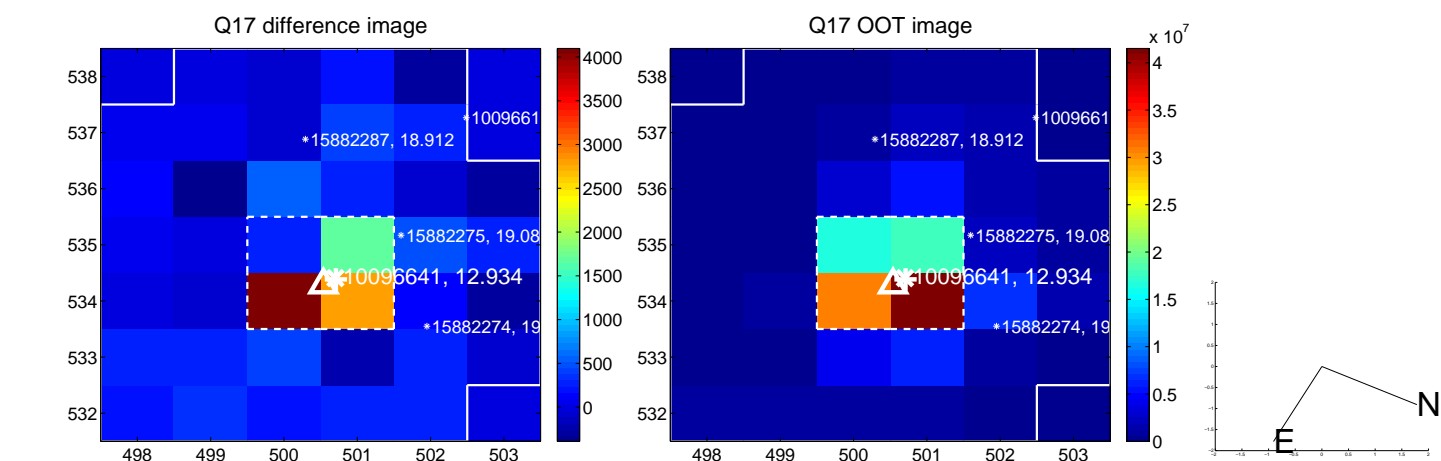
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



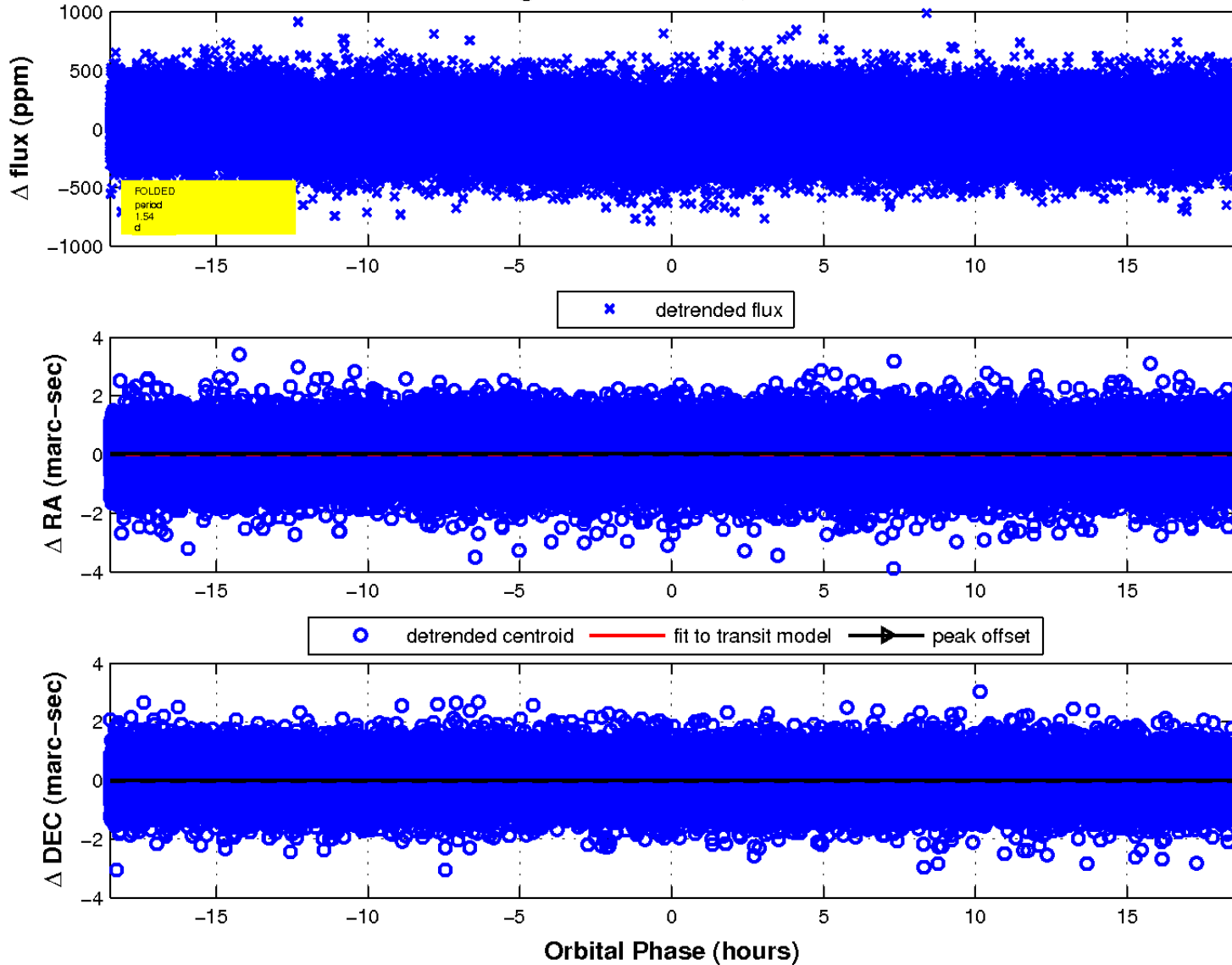
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

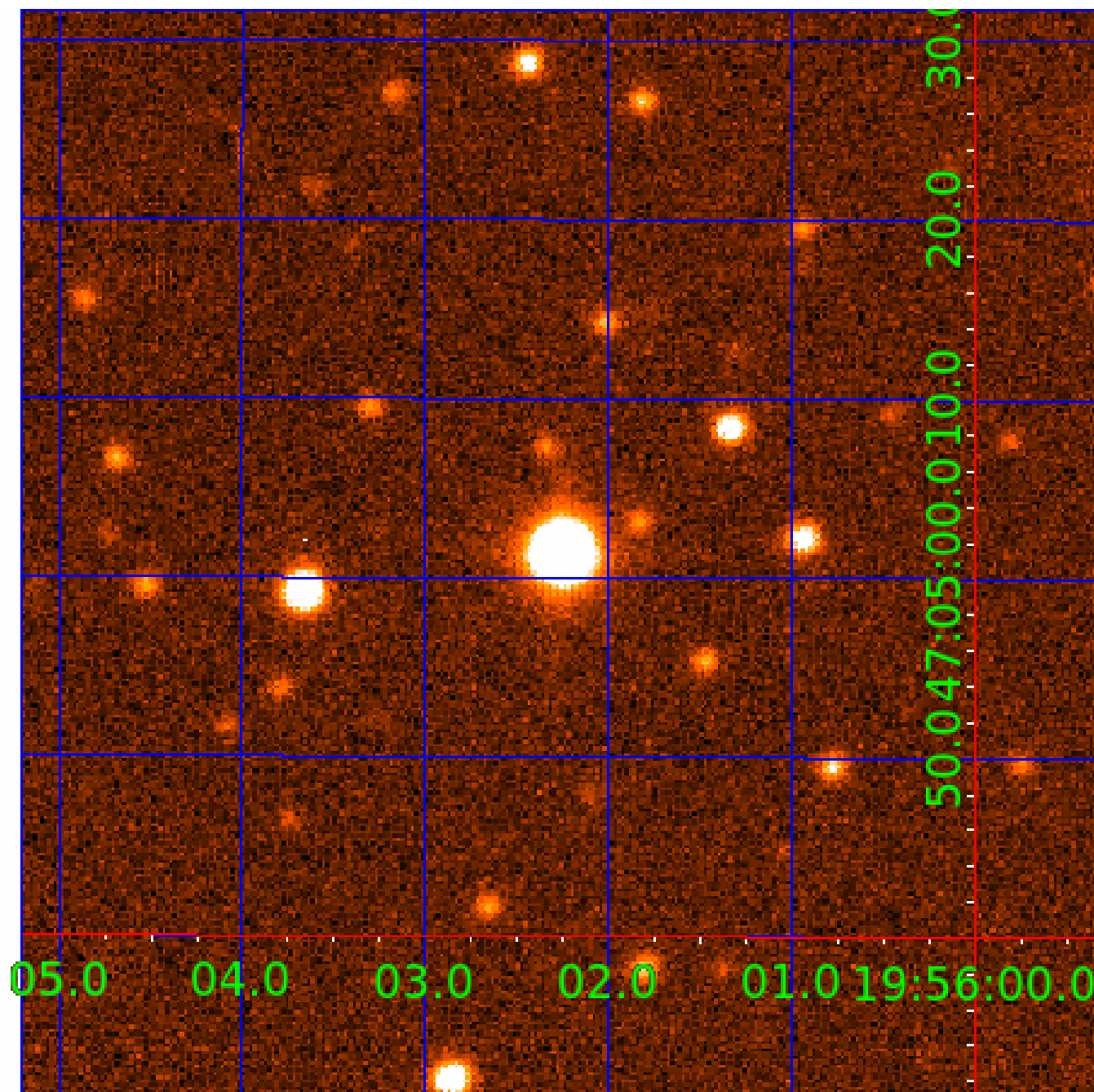


fluxWeightedCentroids, Planet 1 of 9



UKIRT Image

Declination



KIC 010096641

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})
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Robovetter Results

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010096641-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
010096641-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—HALO_GHOST
010096641-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010096641-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
010096641-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
010096641-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

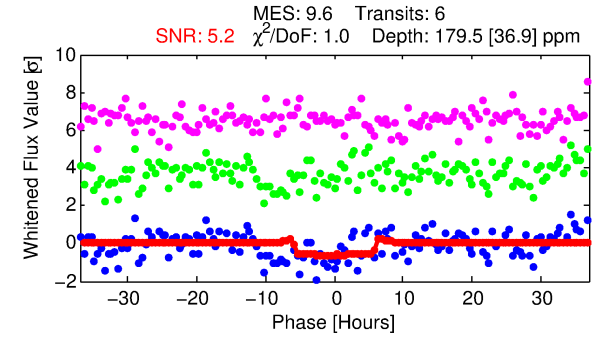
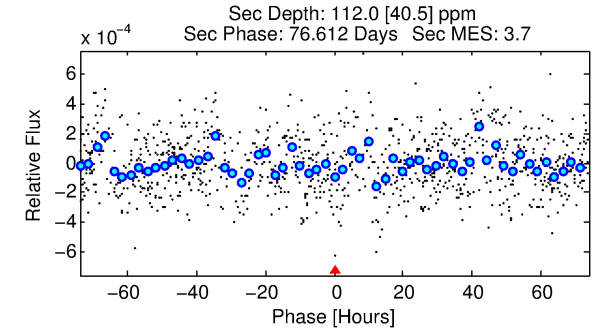
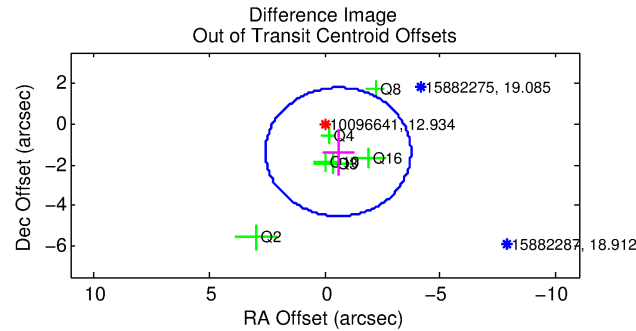
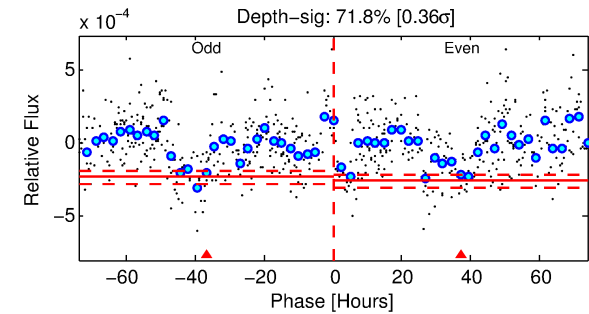
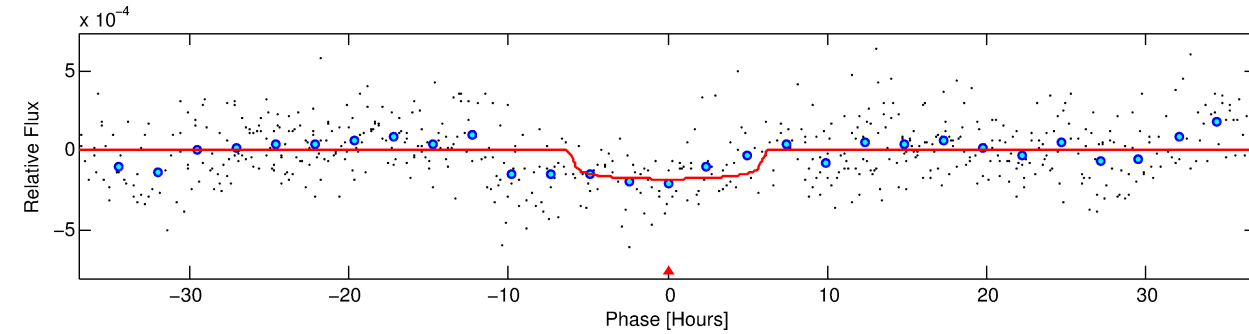
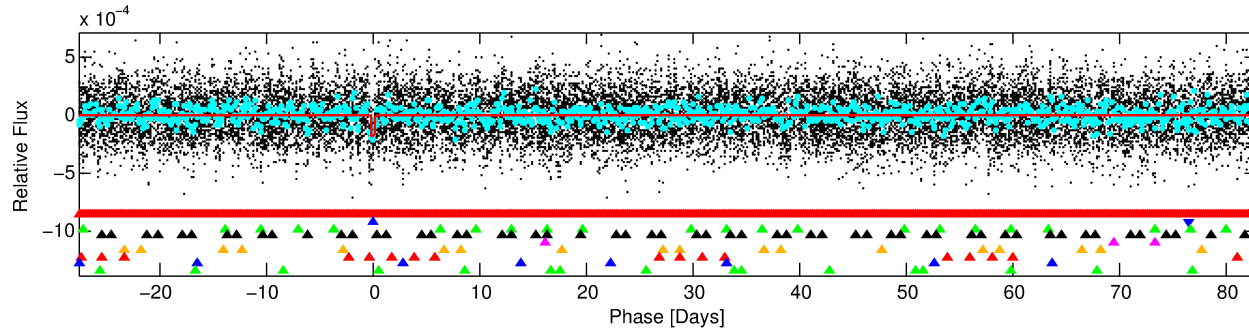
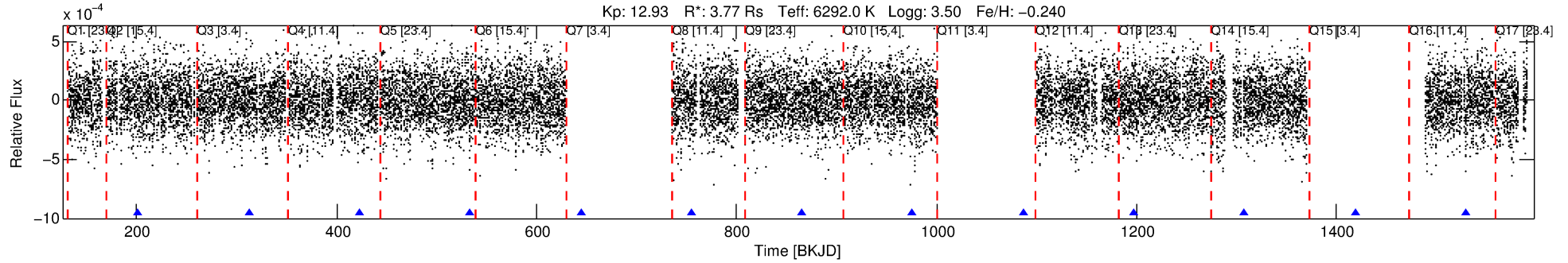
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096641-02

No Significant Match Found

DV One-Page Summary

KIC: 10096641 Candidate: 2 of 9 Period: 110.604 d



DV Fit Results:

Period = 110.60412 [0.00360] d
Epoch = 201.8560 [0.0273] BKJD
Rp/R* = 0.0135 [0.0054]
a/R* = 43.28 [88.47]
b = 0.79 [0.96]
Seff = 70.20 [47.16]
Teq = 738 [124] K
Rp = 5.56 [3.32] Re
a = 0.5328 [0.2234] AU
Ag = 565.68 [618.20] [0.91σ]
Teffp = 5565 [1223] K [3.93σ]

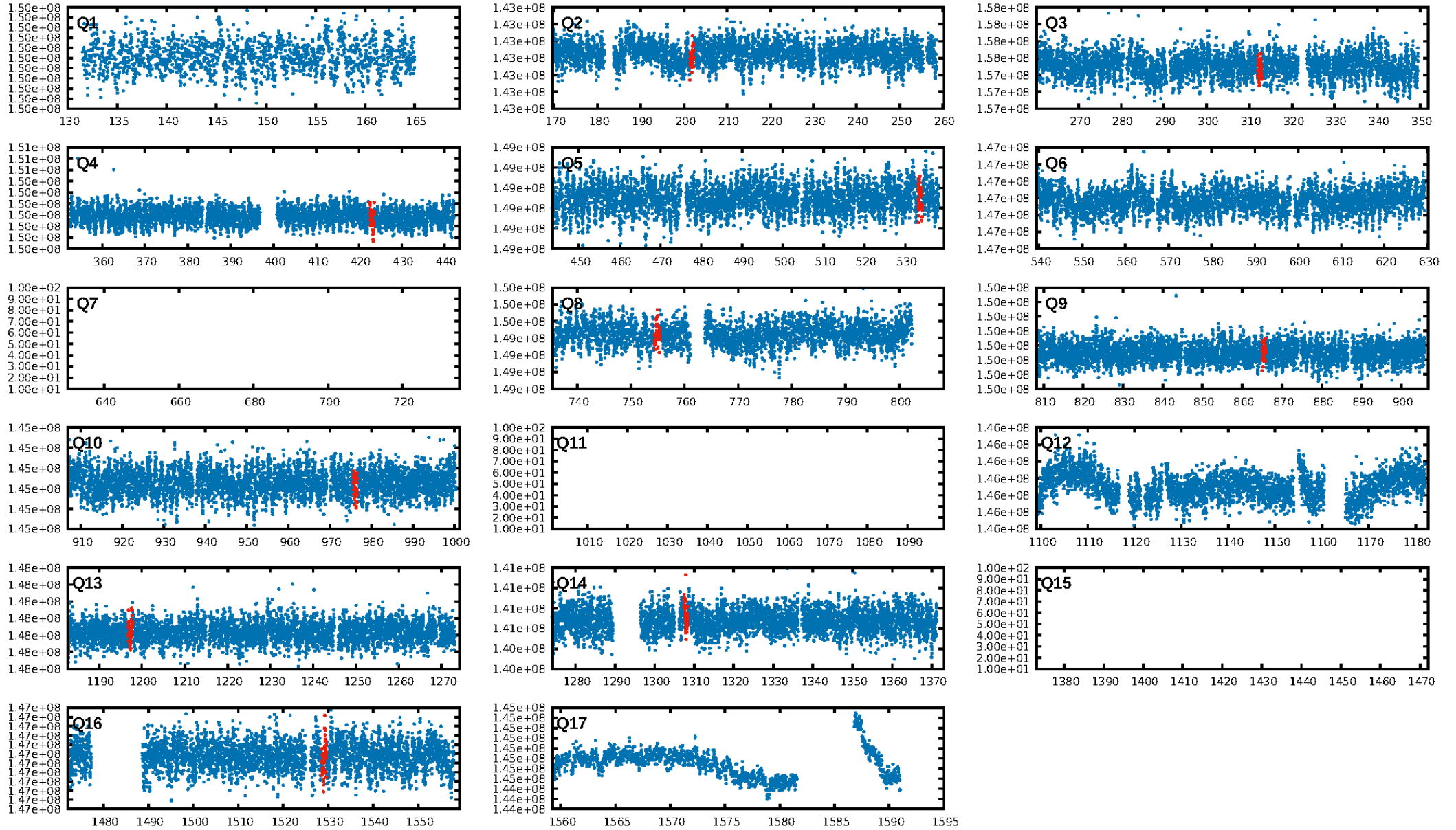
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [32.33σ]
LongPeriod-sig: 100.0% [136.08σ]
ModelChiSquare2-sig: 92.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.19e-16
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.6174
Centroid-sig: 57.9%
Centroid-so: 0.657 arcsec [0.68σ]
OotOffset-rm: 1.495 arcsec [1.43σ]
KicOffset-rm: 1.475 arcsec [1.41σ]
OotOffset-st: 2/1/3/0 [6]
KicOffset-st: 2/1/3/0 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.00 [0/8]

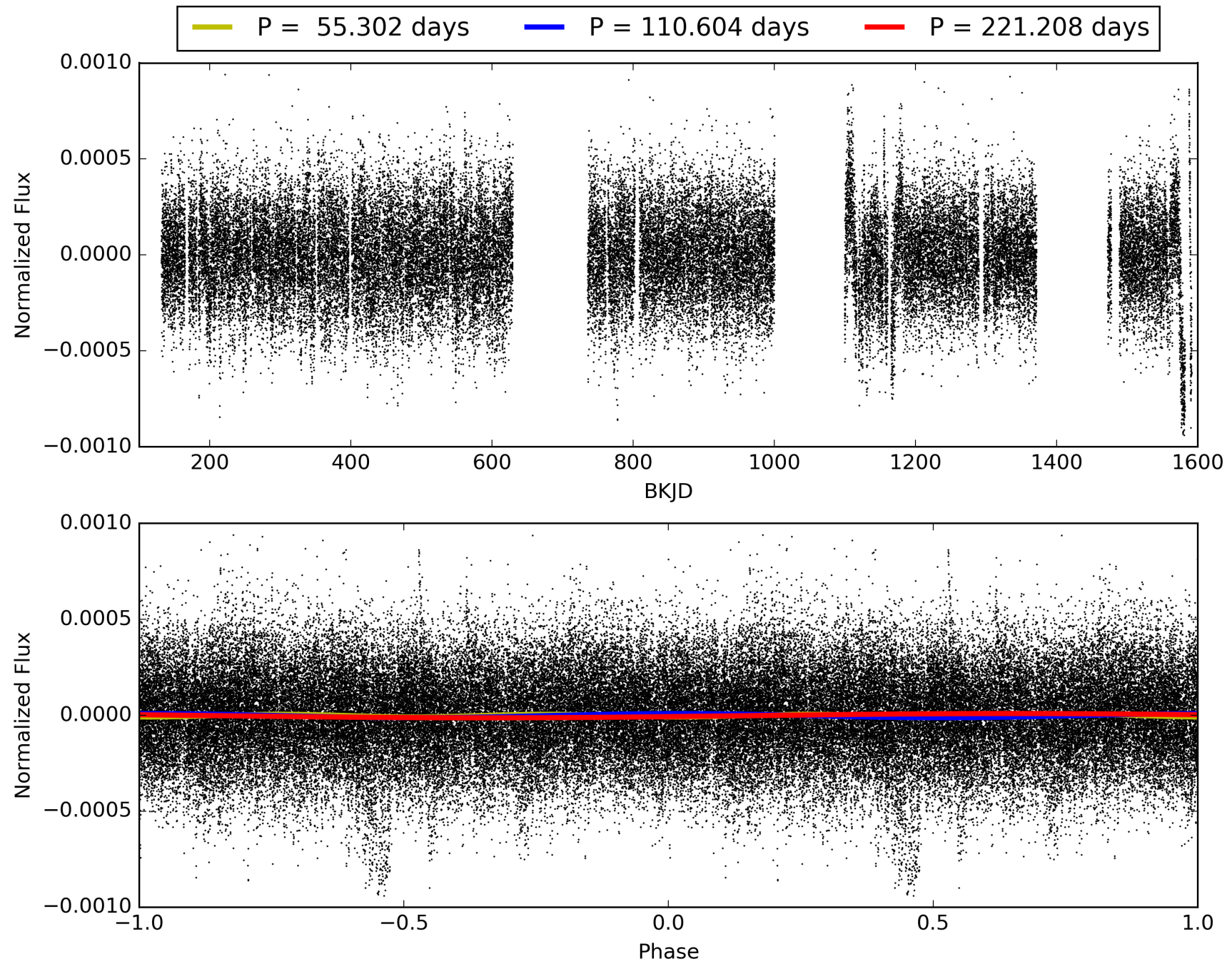
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010096641-02, PDC Light Curves

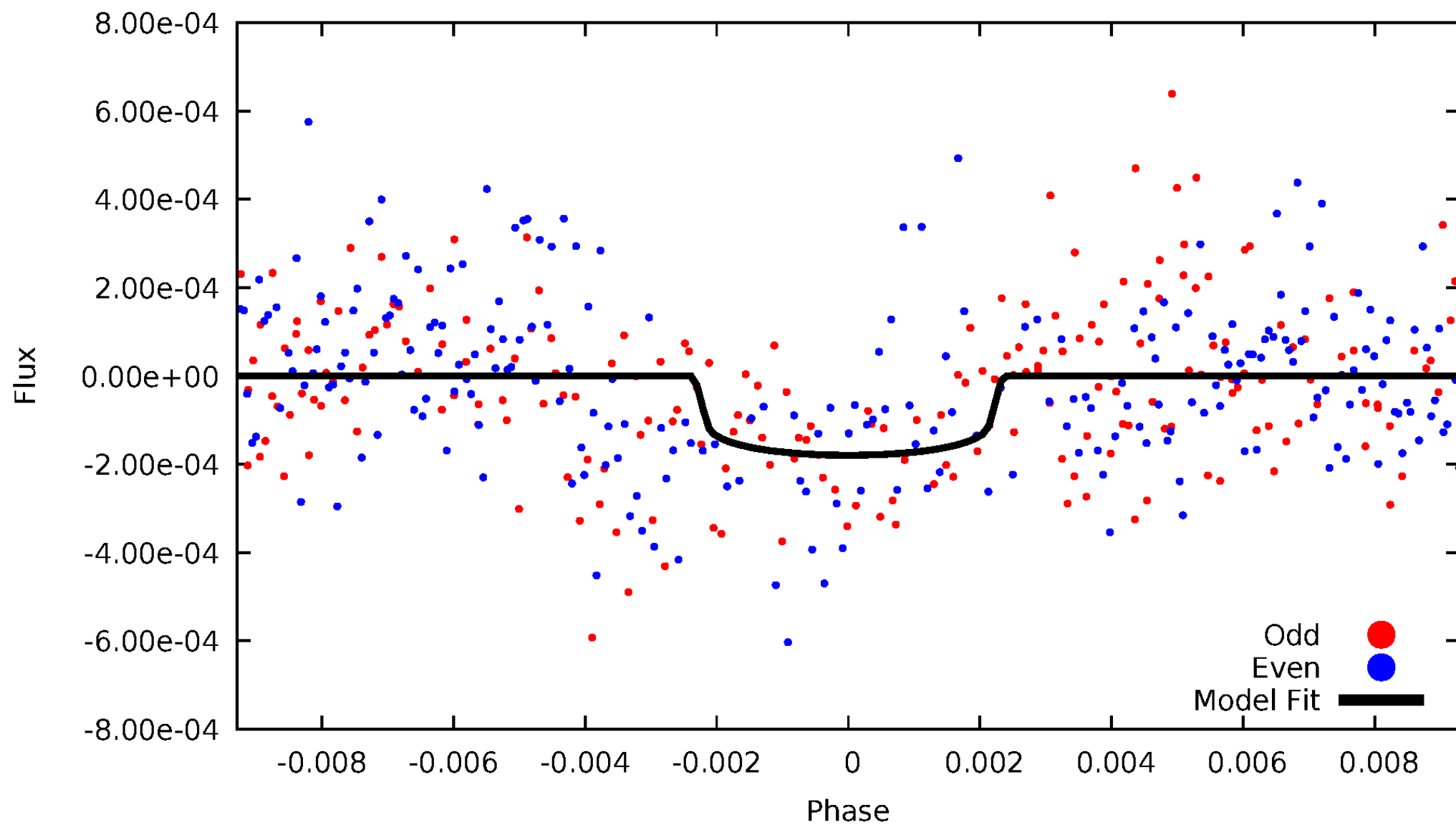


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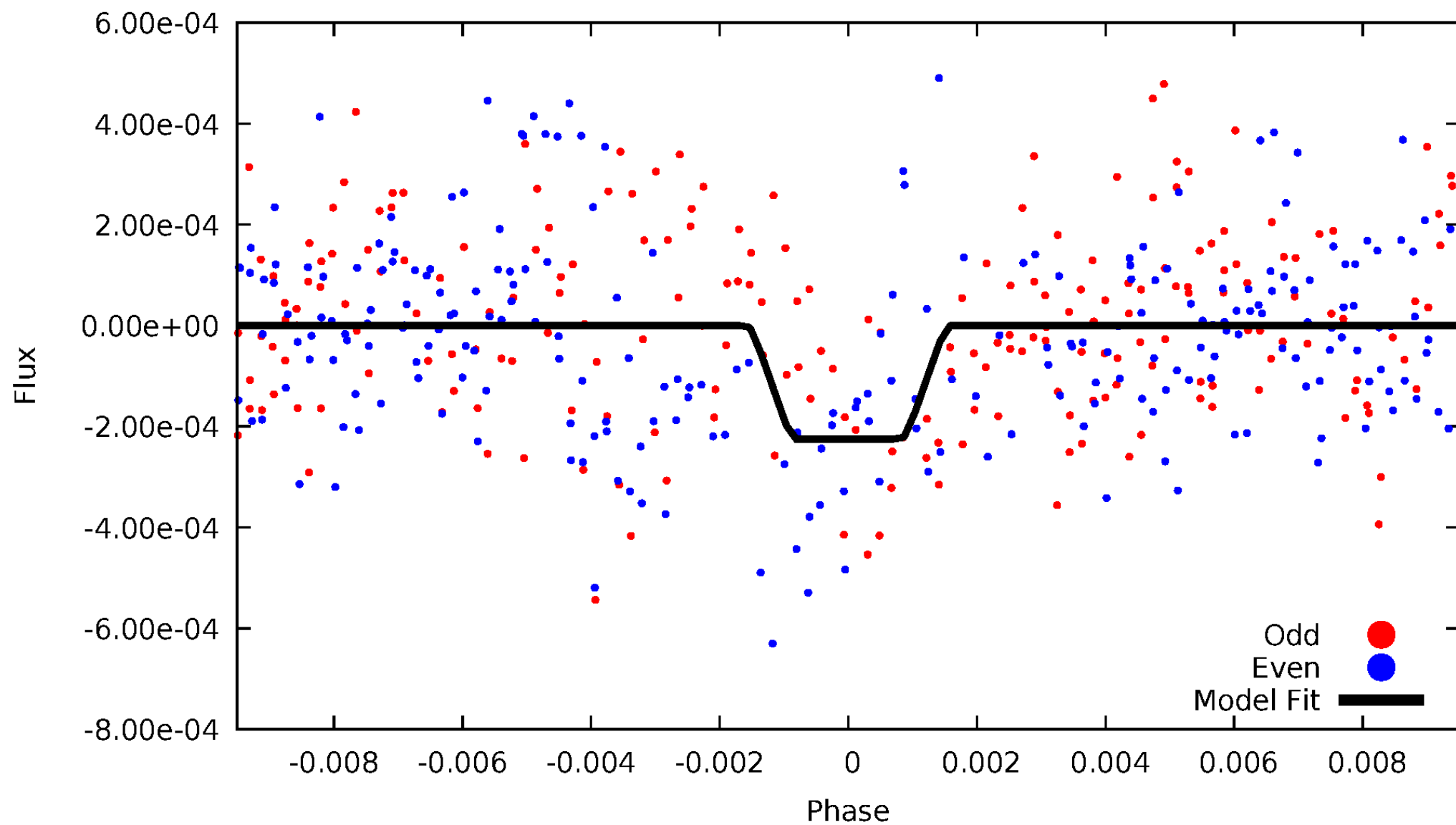
DV Odd/Even

TCE 010096641-02



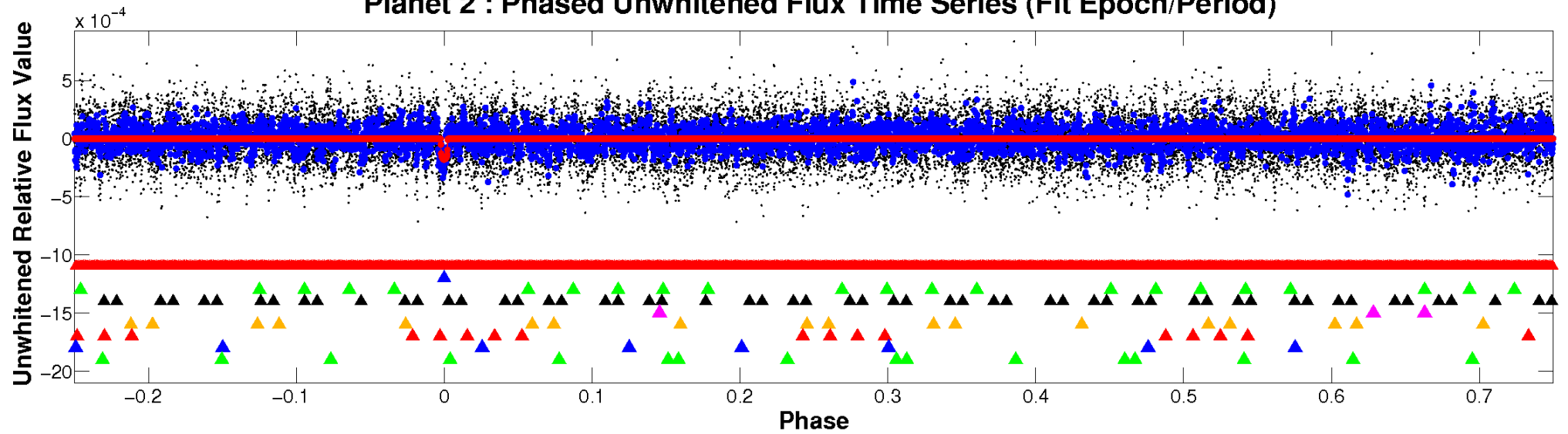
ALT Odd/Even

TCE 010096641-02

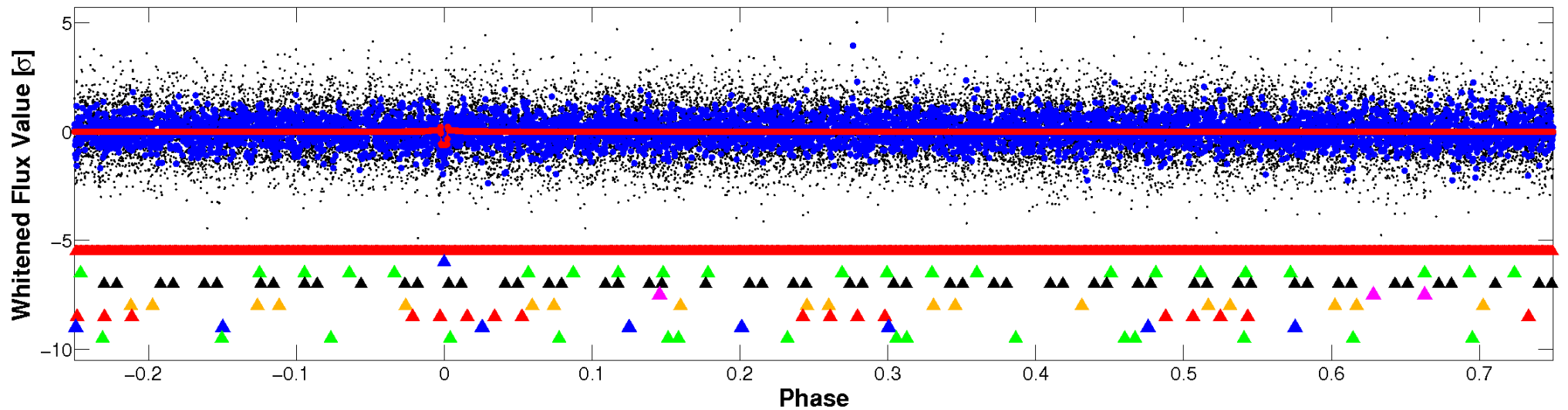


Non-Whitened Vs. Whitened Light Curve

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

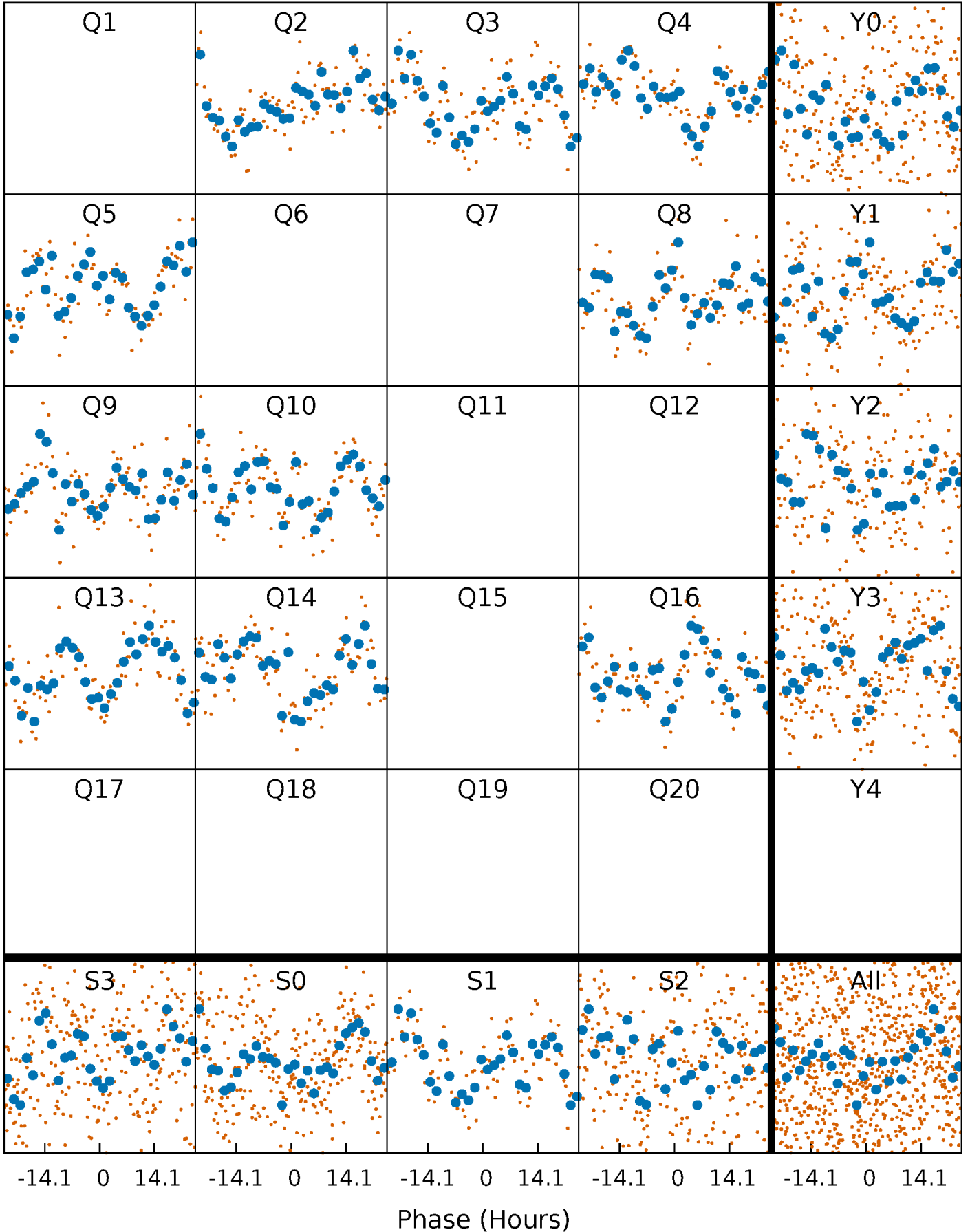


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



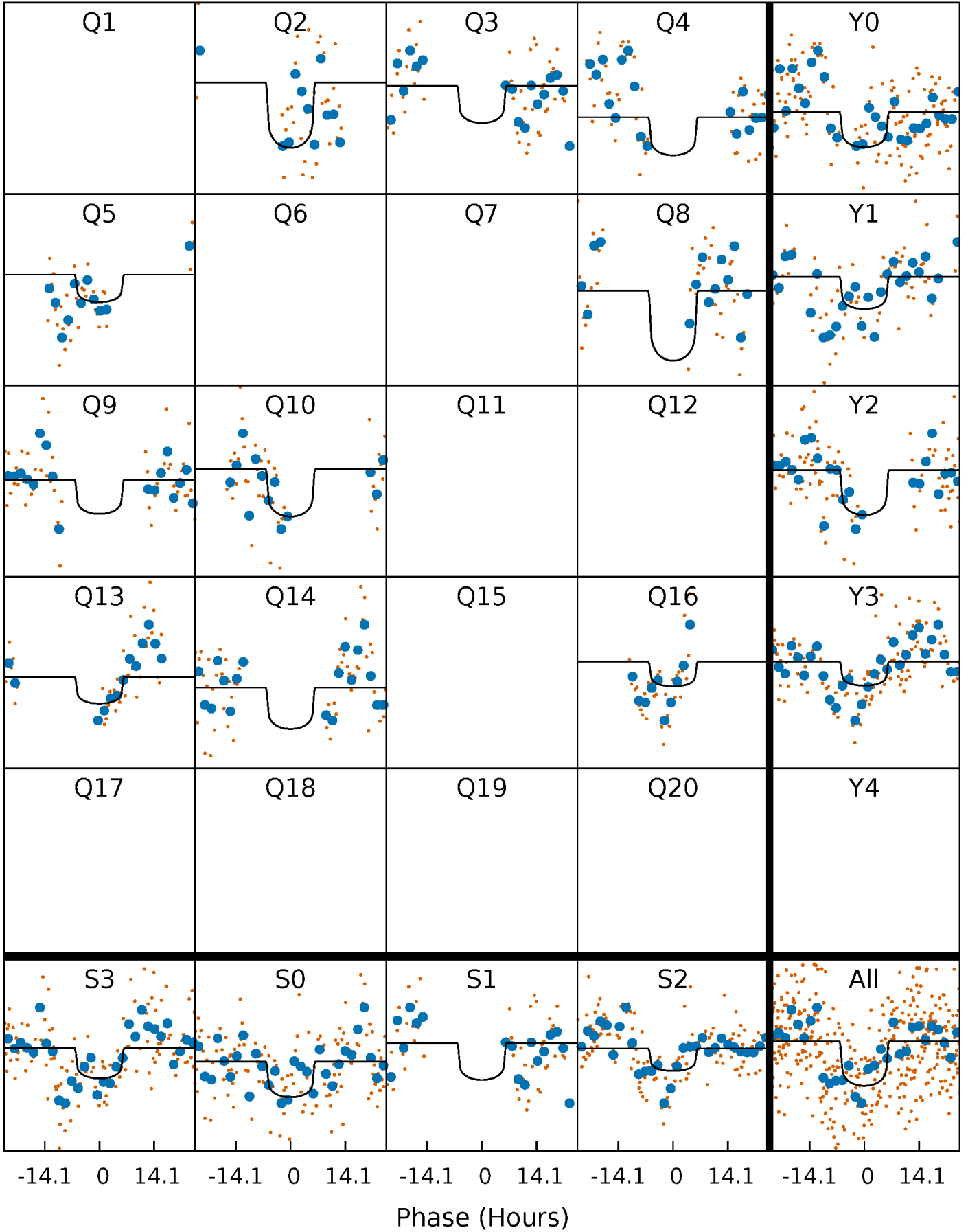
PDC Quarter-Phased Transit Curves

TCE 010096641-02 P=110.604124 Days $T_0=201.856018$ (BKJD)



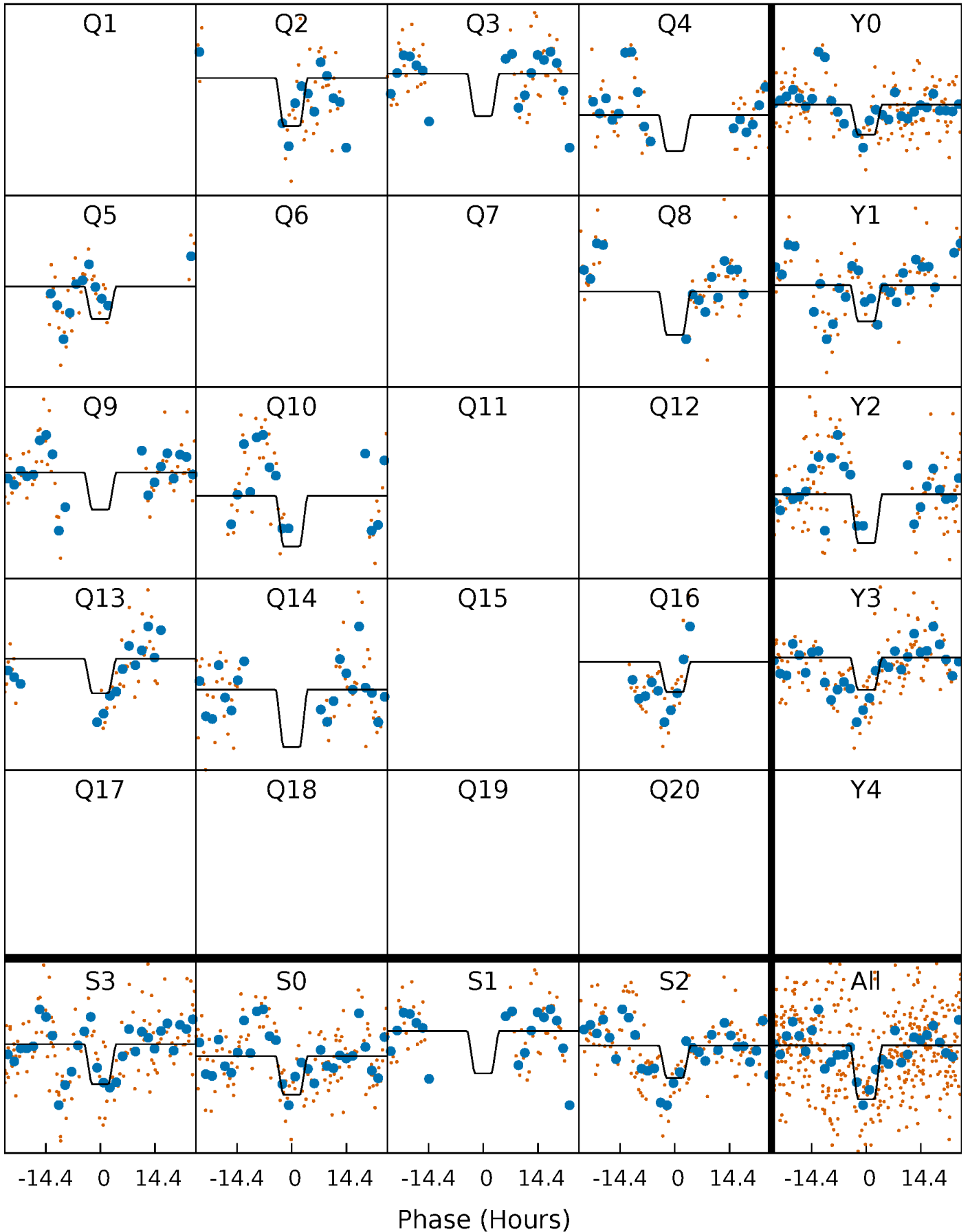
DV Quarter-Phased Transit Curves

TCE 010096641-02 $P=110.604124$ Days $T_0=201.856018$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

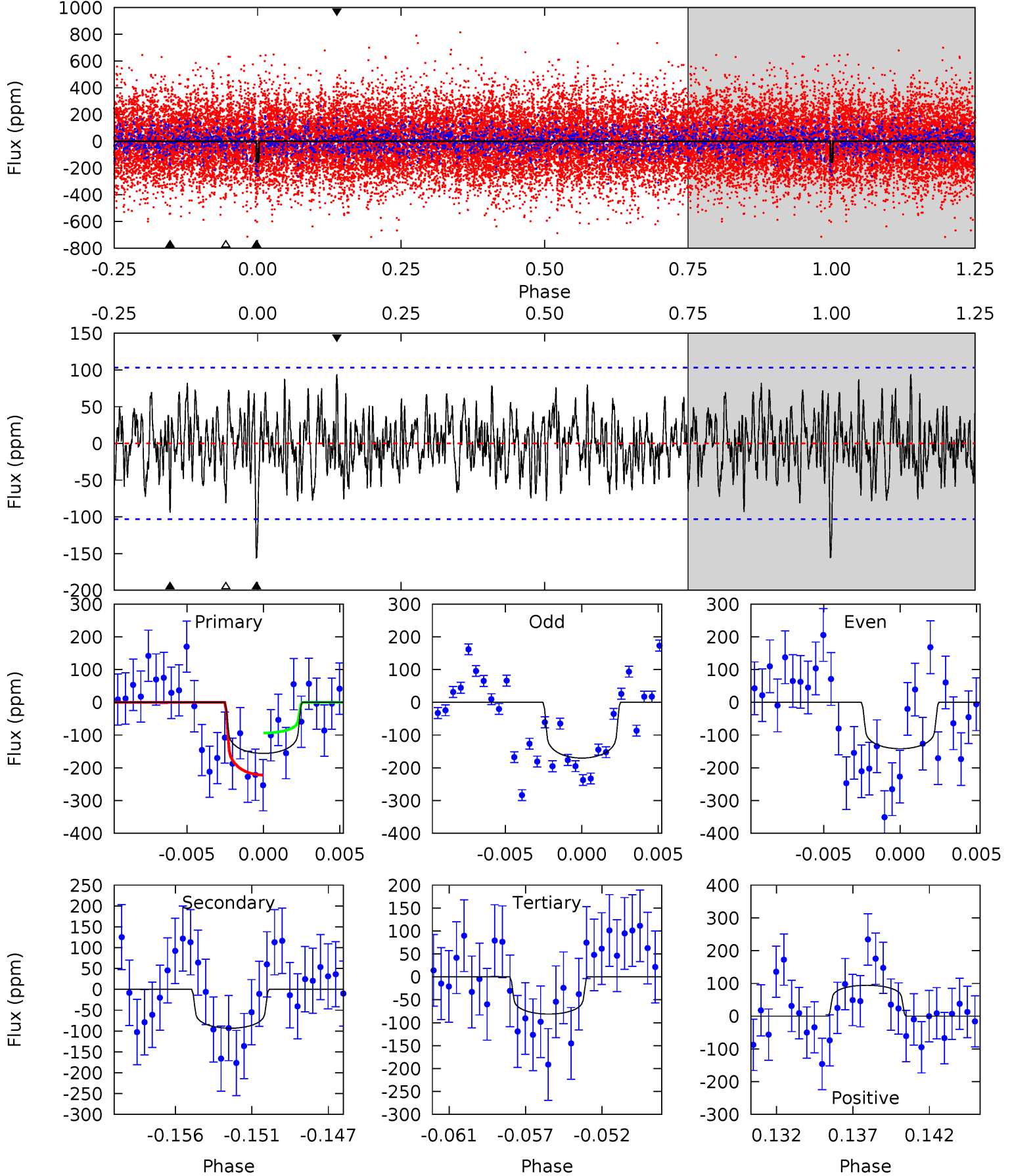
TCE 010096641-02 P=110.606860 Days $T_0=201.851983$ (BKJD)



DV Model-Shift Uniqueness Test

010096641-02, P = 110.604124 Days, E = 91.251894 Days

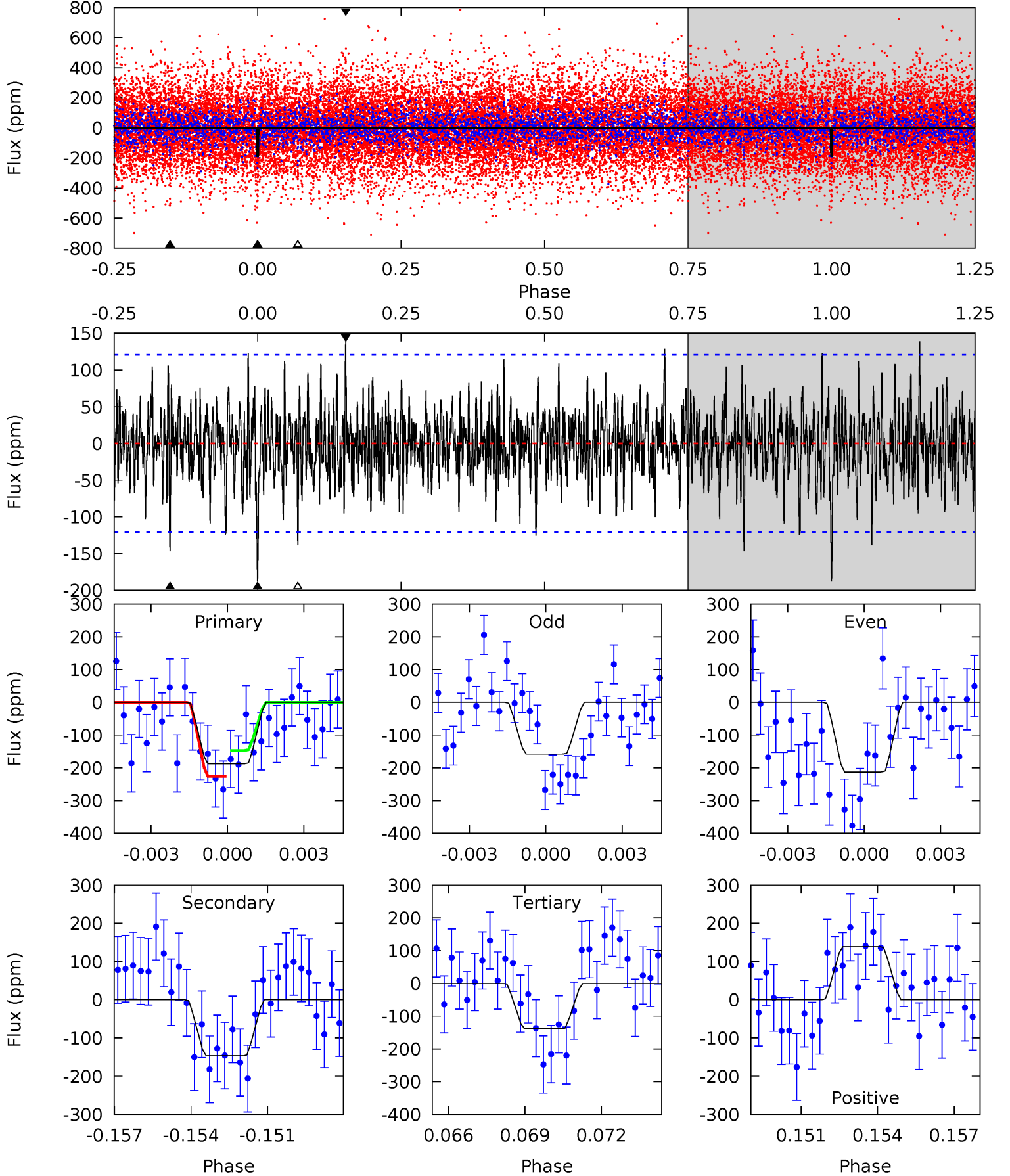
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.82	4.67	4.07	4.72	5.17	2.82	1.55	3.75	3.10	0.60	-0.05	0.72	0.85	0.38	3.22



Alt Model-Shift Uniqueness Test

010096641-02, $P = 110.606860$ Days, $E = 91.245123$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.17	6.39	6.03	6.04	5.24	2.95	1.65	2.14	2.13	0.36	0.35	1.19	1.24	0.42	1.71



Stellar Parameters For KIC 010096641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6292^{+192}_{-173}	$3.503^{+0.384}_{-0.096}$	$-0.240^{+0.350}_{-0.300}$	$3.767^{+0.674}_{-1.685}$	$1.648^{+0.194}_{-0.421}$	$0.043^{+0.128}_{-0.016}$
	+3%/-3%	+11%/-3%	+146%/-125%	+18%/-45%	+12%/-26%	+296%/-38%
Source	PHO1	FLK73	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 010096641-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-93 ± 20	$5.06^{+2.70}_{-1.98}$	1002^{+69}_{-108}	5288^{+1448}_{-732}	550^{+1052}_{-315}
Alt.	-147 ± 23	$5.56^{+2.55}_{-2.18}$	1017^{+62}_{-103}	5718^{+1511}_{-778}	730^{+1142}_{-391}

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 $A_{\text{obs}} \gg 1.0$

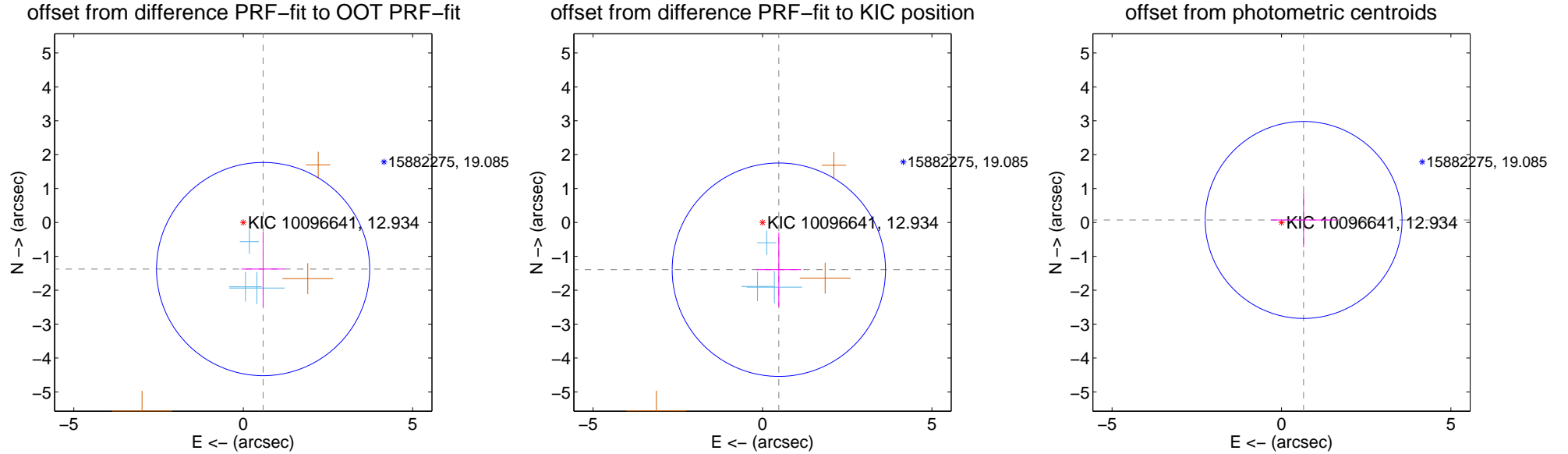
DV Centroid Data

Supplemental centroid analysis for 010096641-02. Kepler magnitude: 12.93. Transit SNR 5.25

There are 3 quarters with good PRF difference image offsets

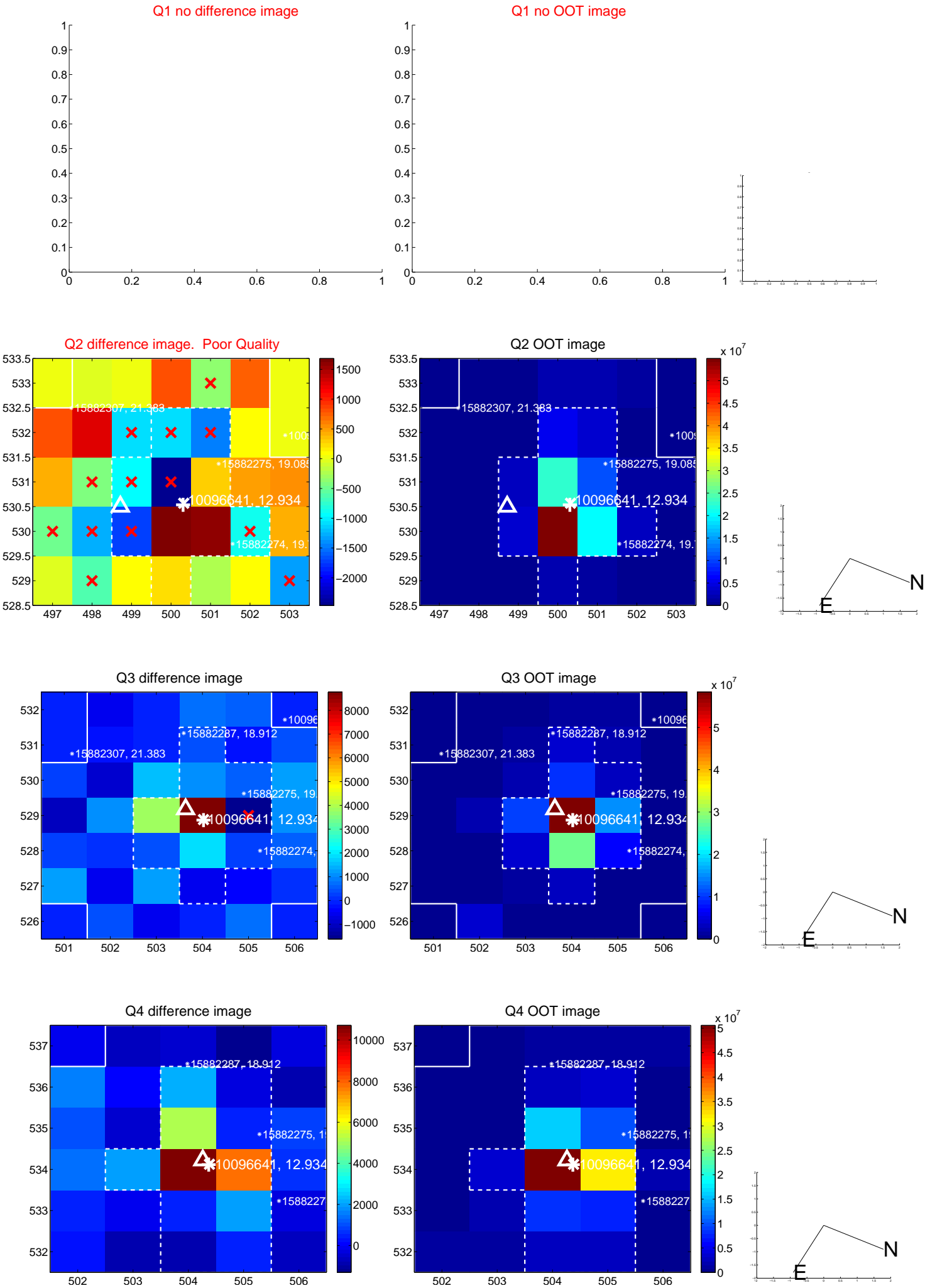
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.495 ± 1.049	1.43	-0.586 ± 0.639	-1.375 ± 1.107
PRF-fit source offset from KIC position	1.475 ± 1.050	1.41	-0.482 ± 0.657	-1.394 ± 1.087
photometric centroid source offset	0.66 ± 0.97	0.68	-0.65 ± 0.97	0.07 ± 0.80

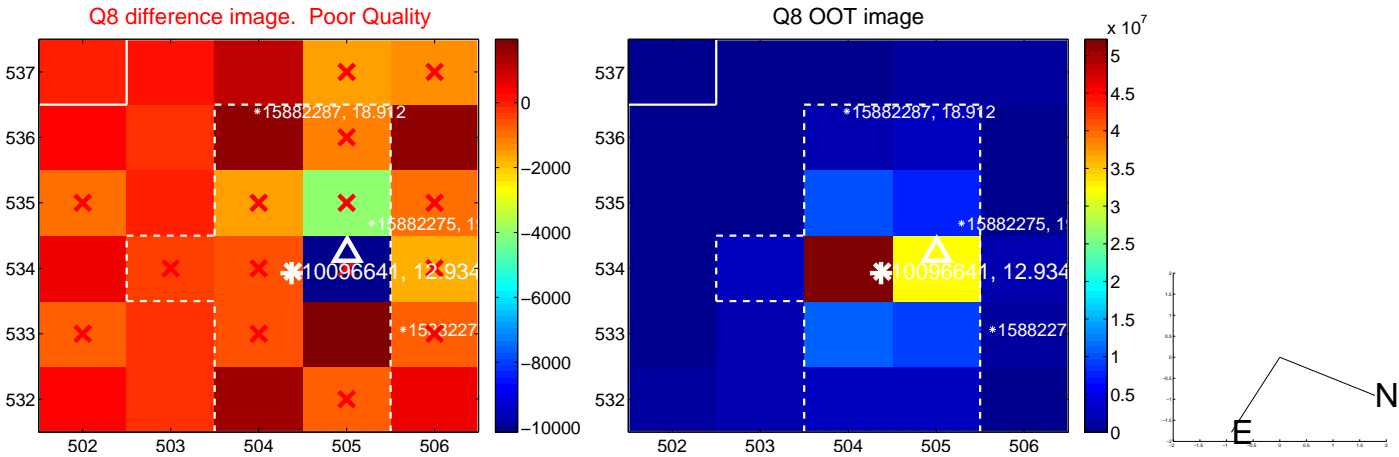
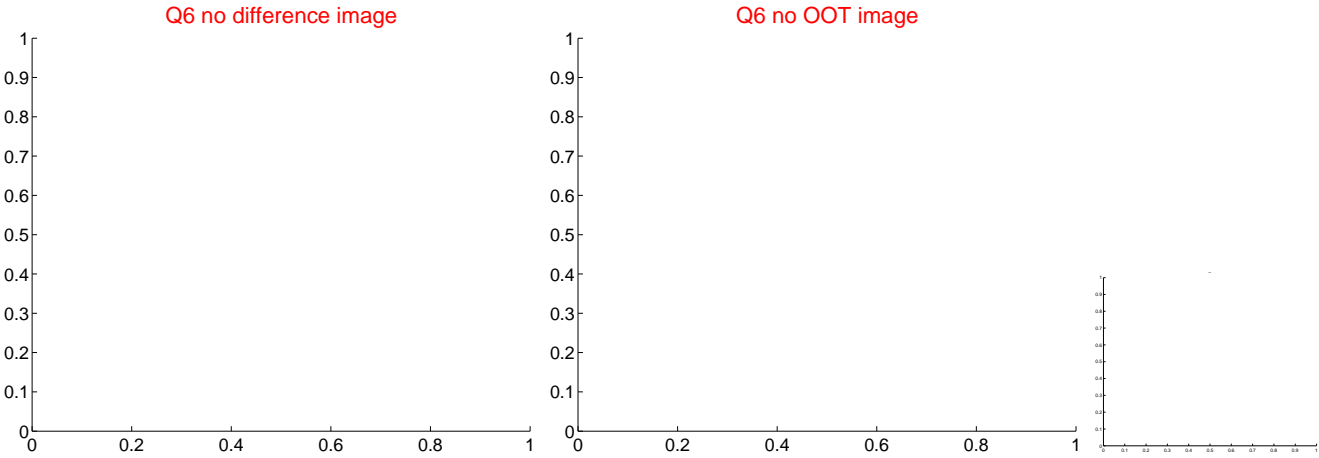
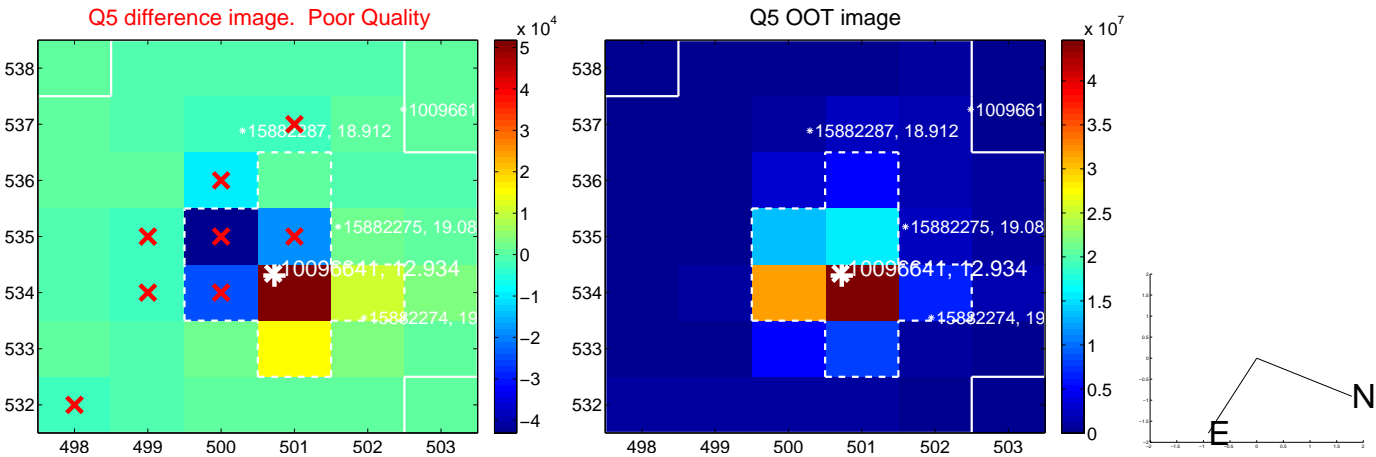


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

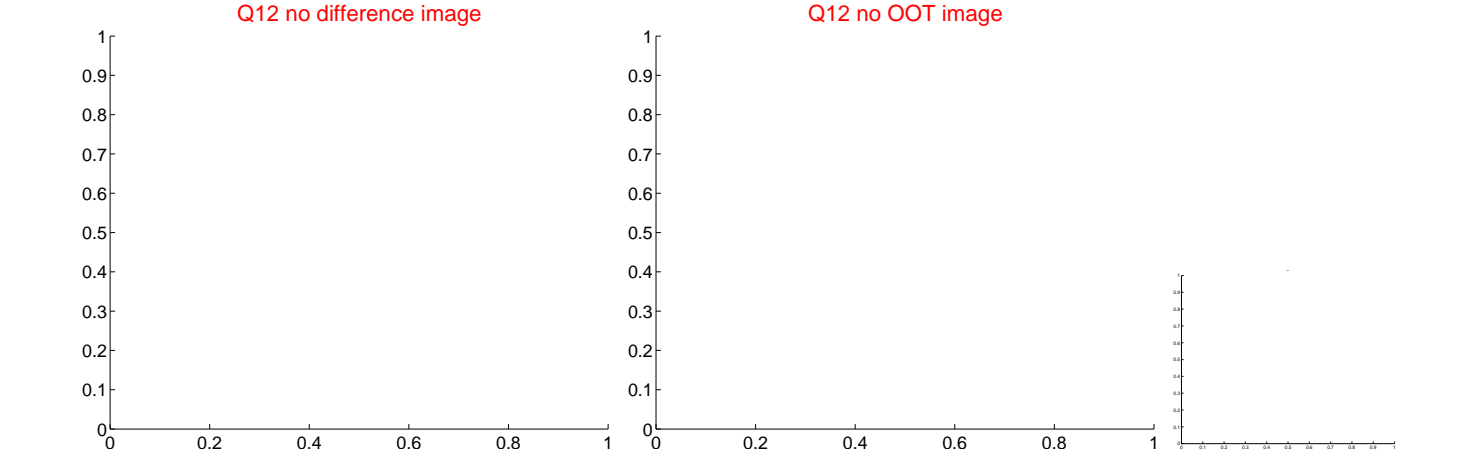
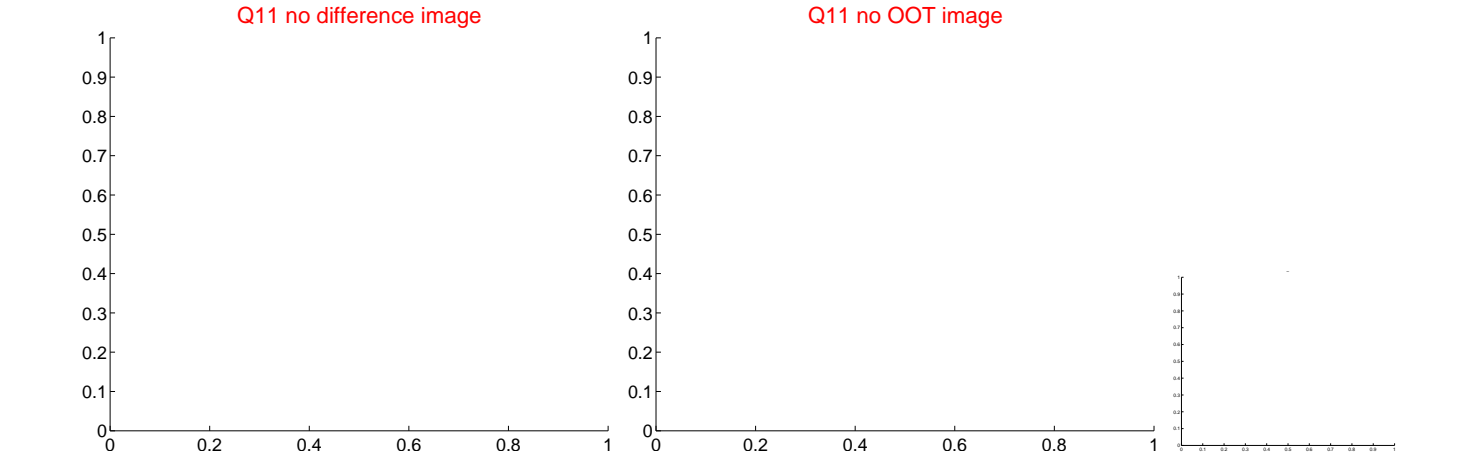
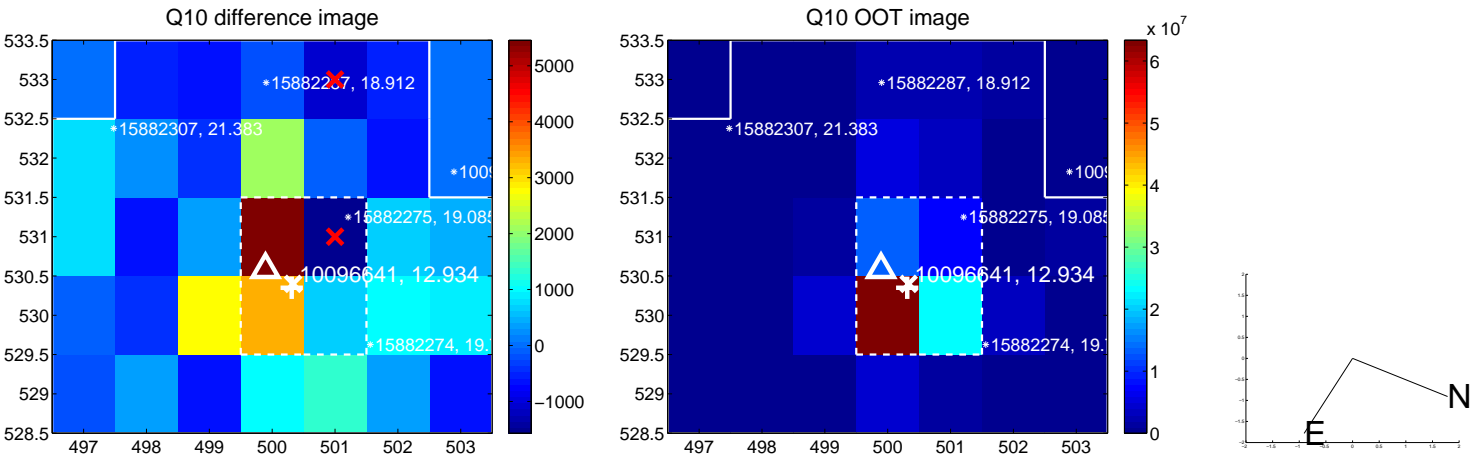
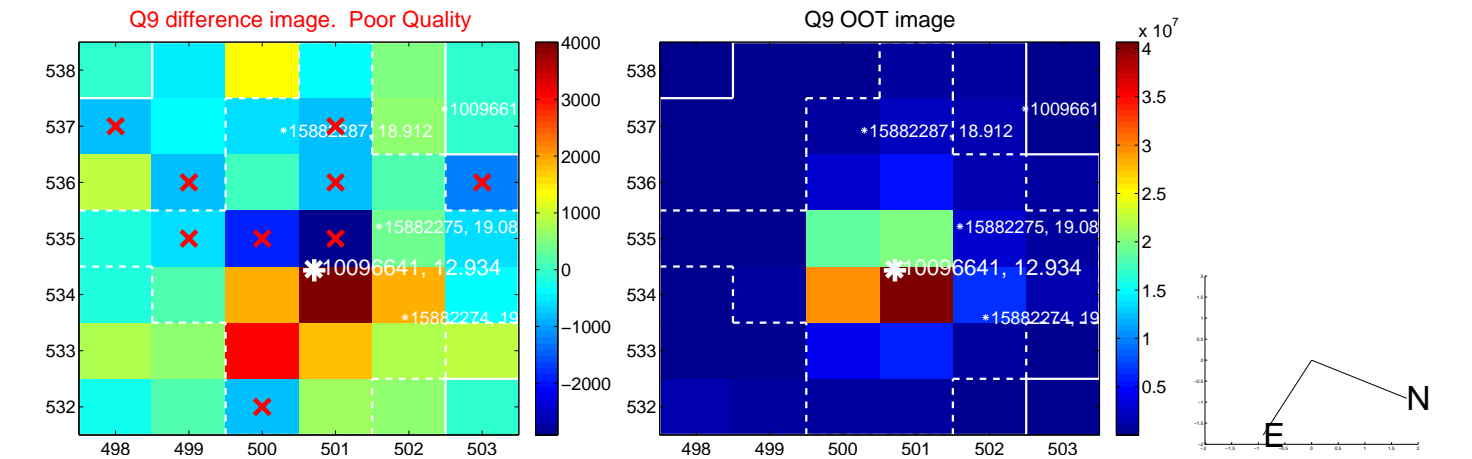
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



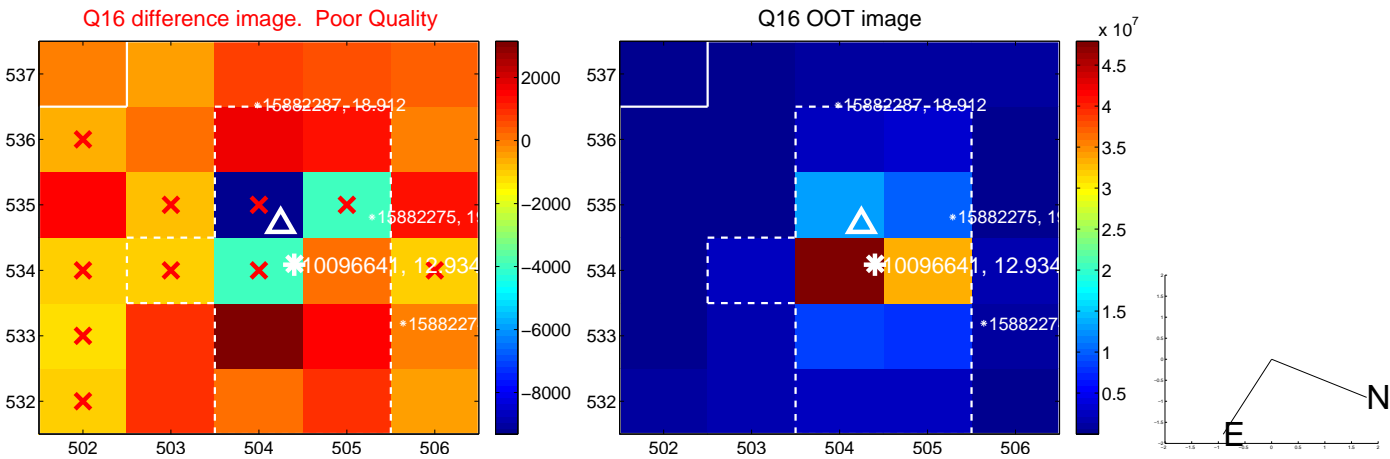
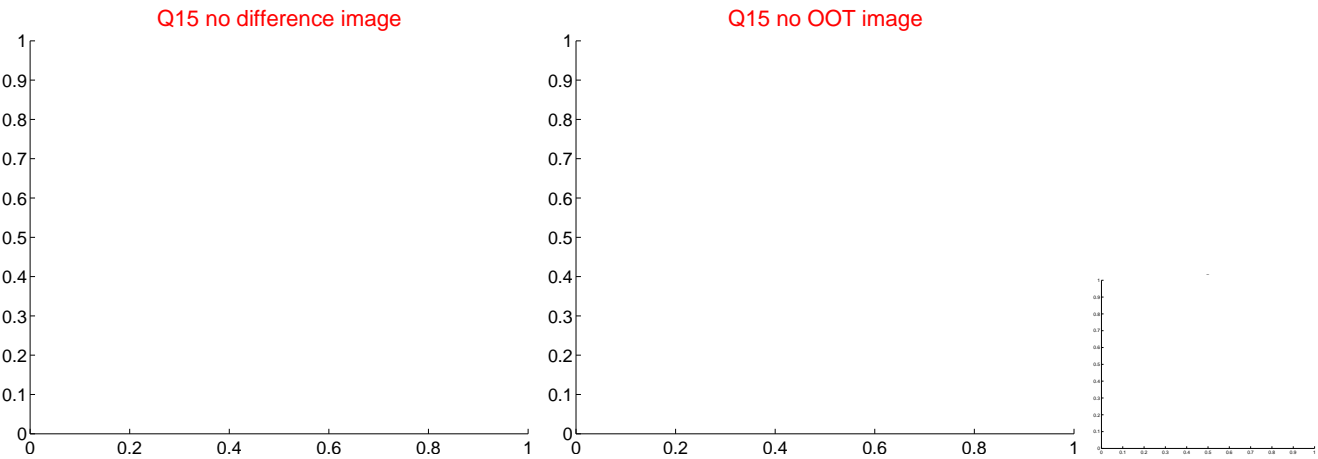
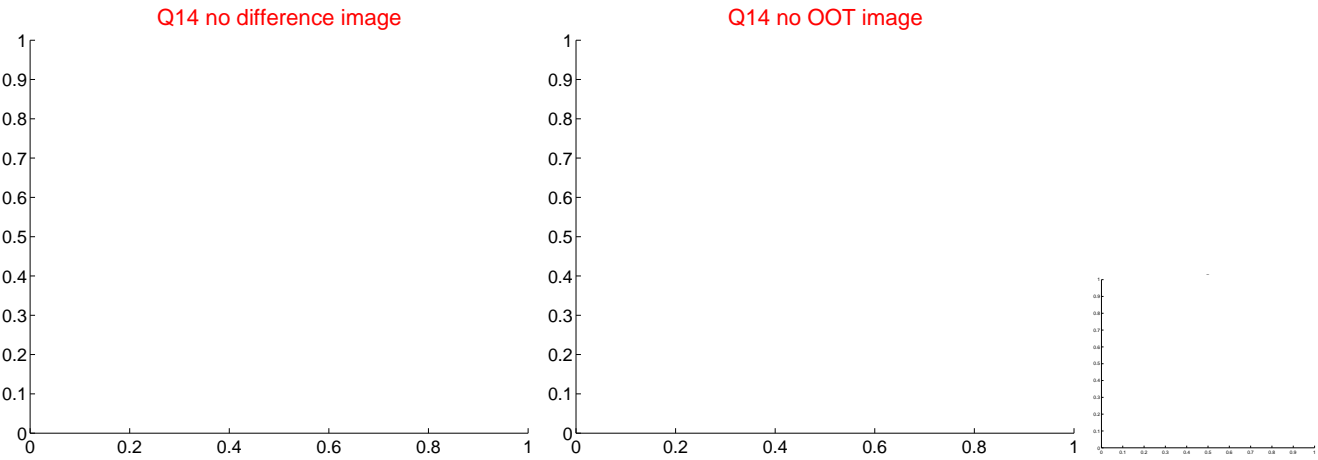
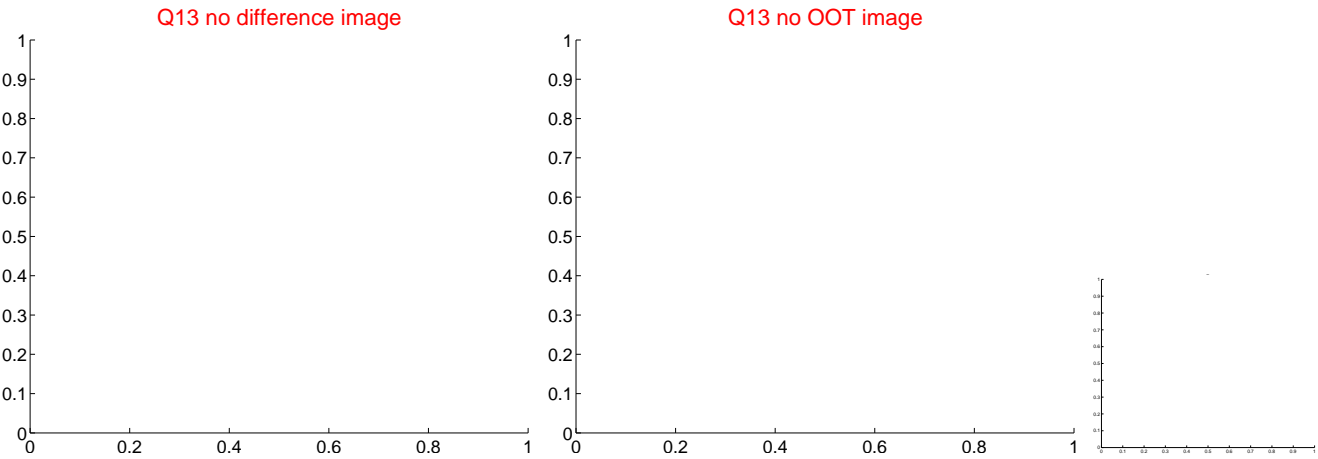
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



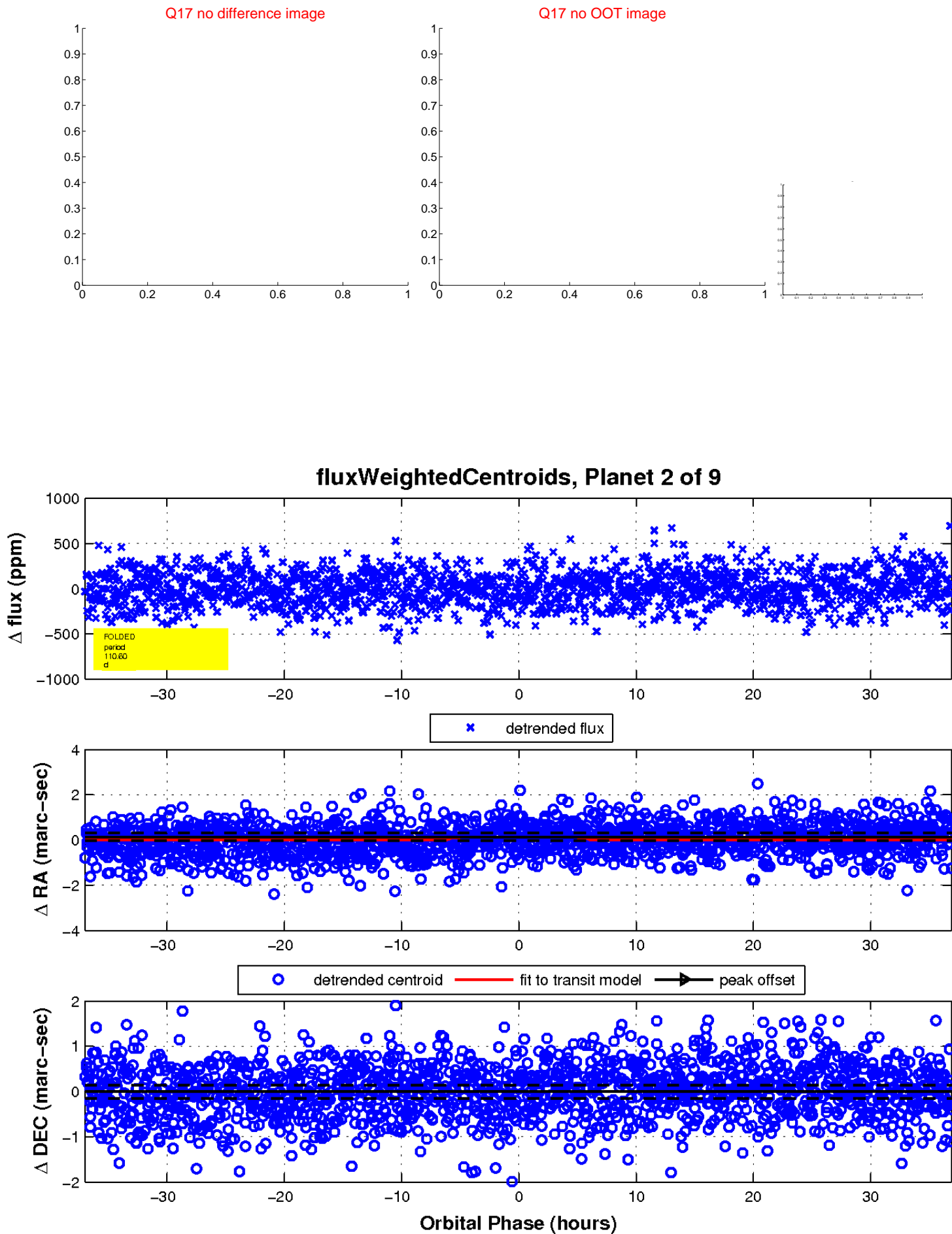
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

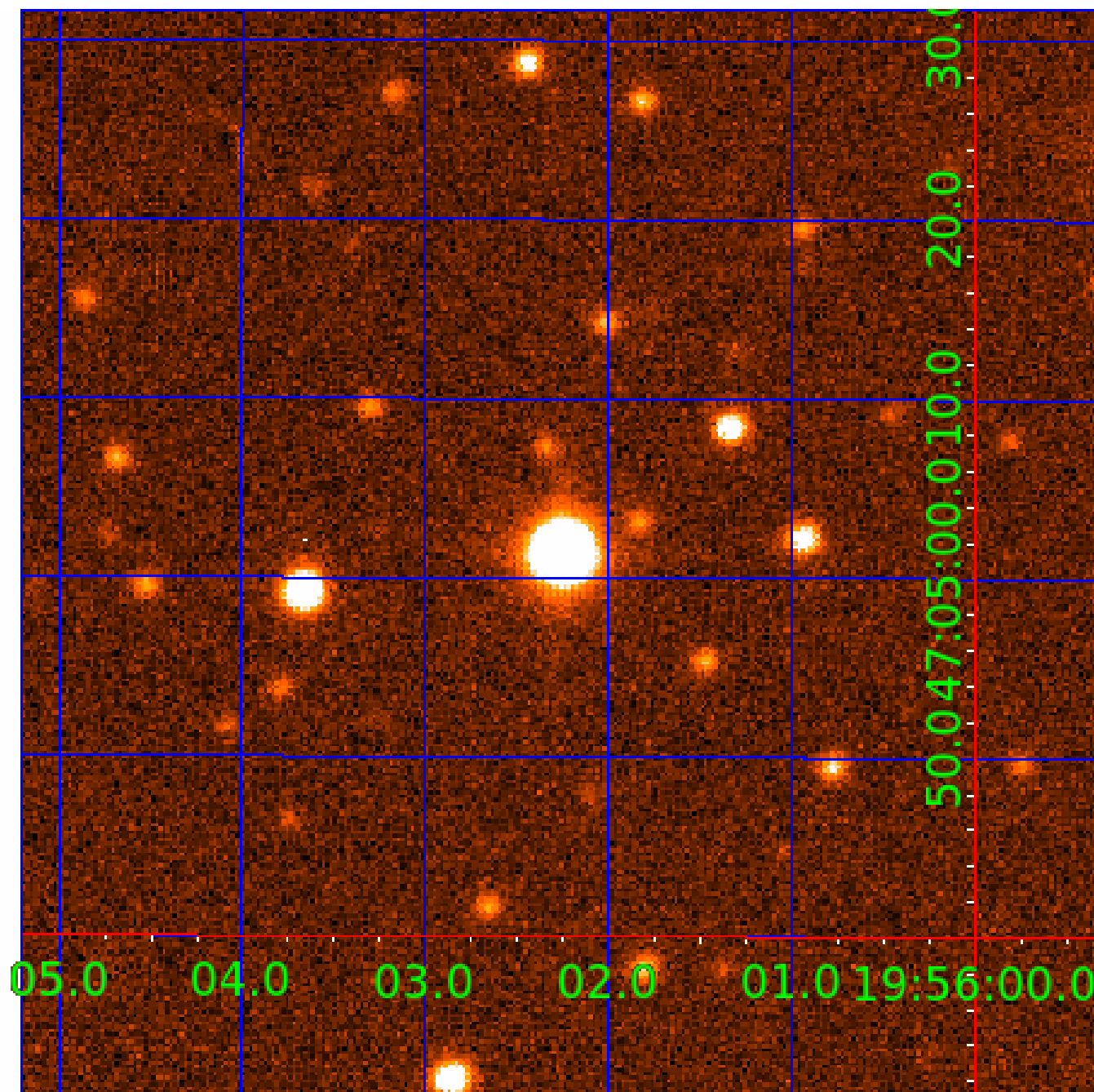


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010096641

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})
010096641-01	OBS	No	1.541084	131.971892	23.8	6.877	8.6	6.5	3.77	6292	2.14	20938.44
010096641-02	OBS	No	110.604124	201.856018	179.5	12.329	9.6	5.2	3.77	6292	5.56	70.20
010096641-03	OBS	No	67.034391	141.117890	315.5	2.570	7.9	8.0	3.77	6292	13.23	136.87
010096641-04	OBS	No	25.776244	137.530666	182.1	2.481	8.3	8.2	3.77	6292	5.88	489.50
010096641-05	OBS	No	385.198169	496.396434	354.1	4.389	7.8	7.5	3.77	6292	7.59	13.30
010096641-06	OBS	No	80.586517	187.891891	271.6	3.224	7.3	7.8	3.77	6292	7.29	107.08
010096641-07	OBS	No	83.464284	199.496903	435.5	2.032	7.3	7.8	3.77	6292	8.95	102.18
010096641-08	OBS	No	190.809615	215.693128	356.1	6.936	7.2	7.4	3.77	6292	9.27	33.93
010096641-09	OBS	No	93.528944	142.923973	242.3	2.943	7.1	7.0	3.77	6292	6.20	87.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010096641-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
010096641-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
010096641-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—HALO_GHOST
010096641-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010096641-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
010096641-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
010096641-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

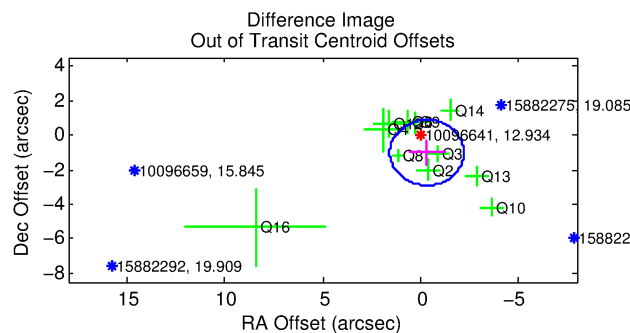
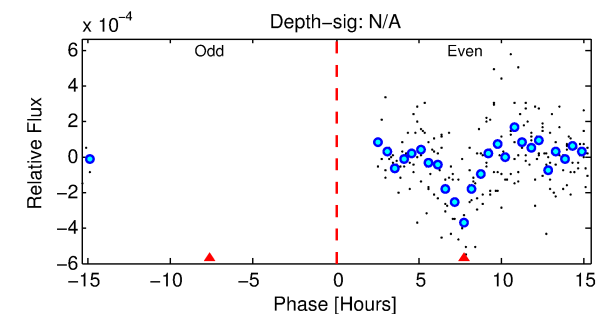
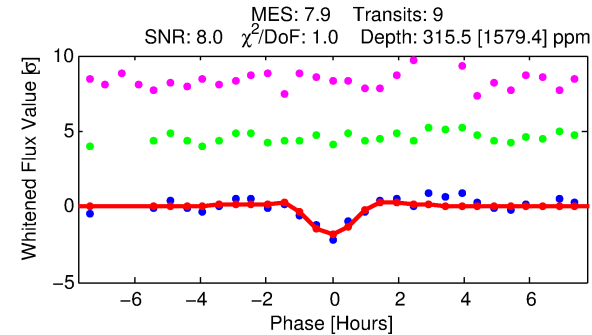
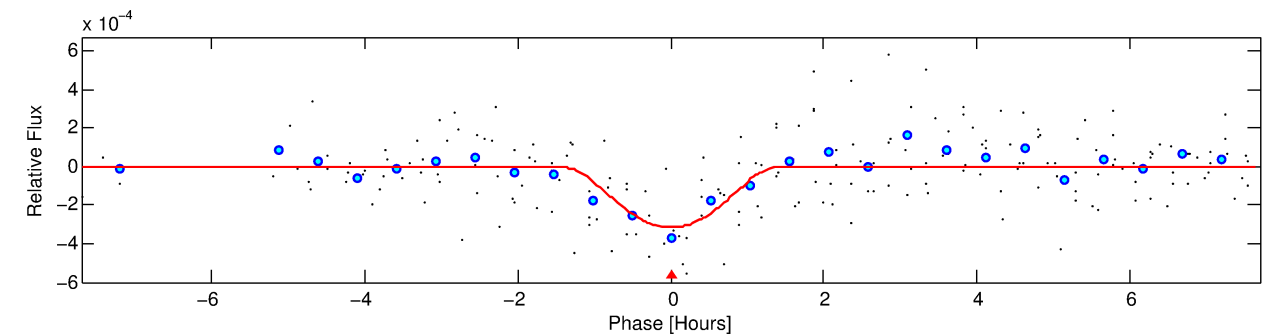
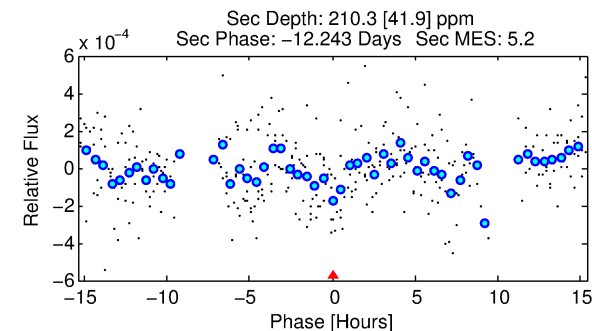
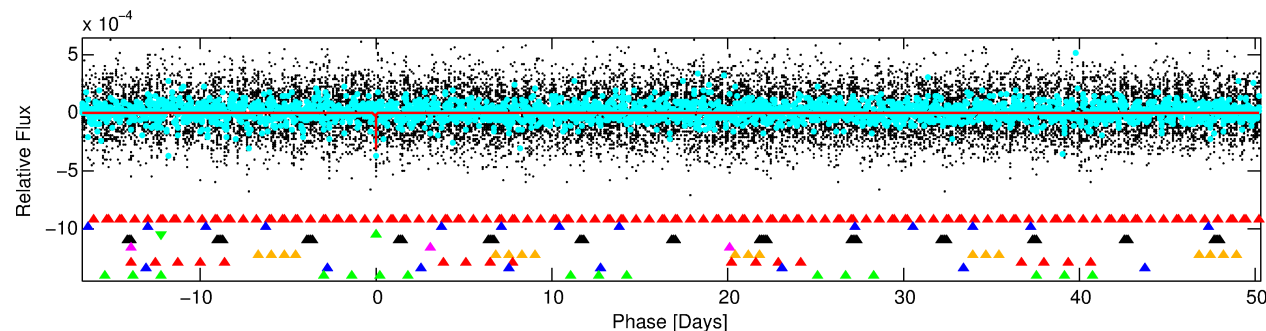
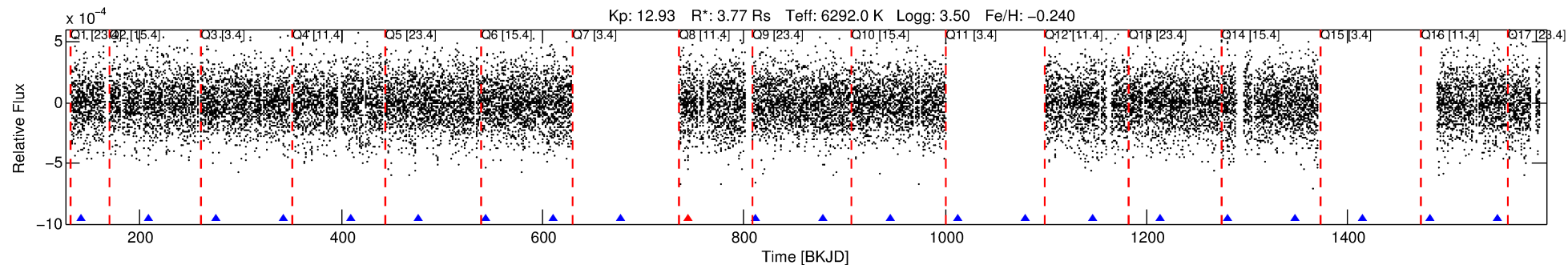
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096641-03

No Significant Match Found

DV One-Page Summary

KIC: 10096641 Candidate: 3 of 9 Period: 67.034 d



DV Fit Results:

Period = 67.03439 [0.00063] d
Epoch = 141.1179 [0.0077] BKJD
Rp/R* = 0.0322 [0.1705]
a/R* = 50.97 [72.03]
b = 1.00 [0.36]
Seff = 136.87 [91.95]
Teq = 872 [146] K
Rp = 13.23 [70.32] Re
a = 0.3816 [0.1600] AU
Ag = 96.18 [1020.56] [0.09]
Teffp = 4223 [11182] K [0.30]

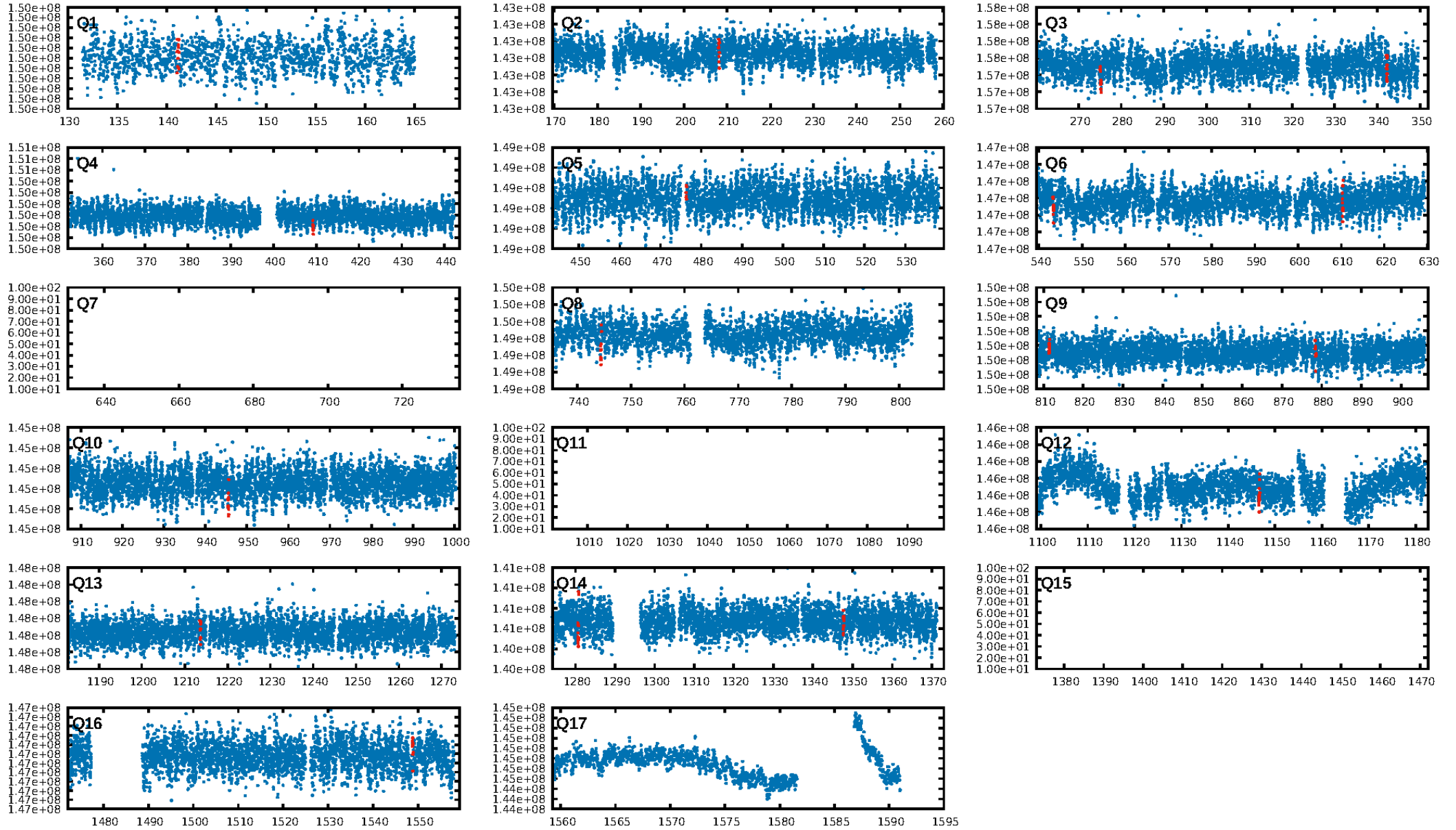
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [277.16]
LongPeriod-sig: 100.0% [78.88]
ModelChiSquare2-sig: 36.7%
ModelChiSquareGof-sig: 91.2%
Bootstrap-pfa: 7.83e-11
RollingBand-fgt: 0.89 [8/9]
GhostDiagnostic-chr: -4.875
Centroid-sig: 28.0%
Centroid-so: 0.803 arcsec [0.95]
OotOffset-rm: 1.067 arcsec [1.69]
KicOffset-rm: 1.032 arcsec [1.75]
OotOffset-st: 4/1/4/2 [11]
KicOffset-st: 4/1/4/2 [11]
DiffImageQuality-fgm: 0.82 [9/11]
DiffImageOverlap-fno: 0.58 [7/12]

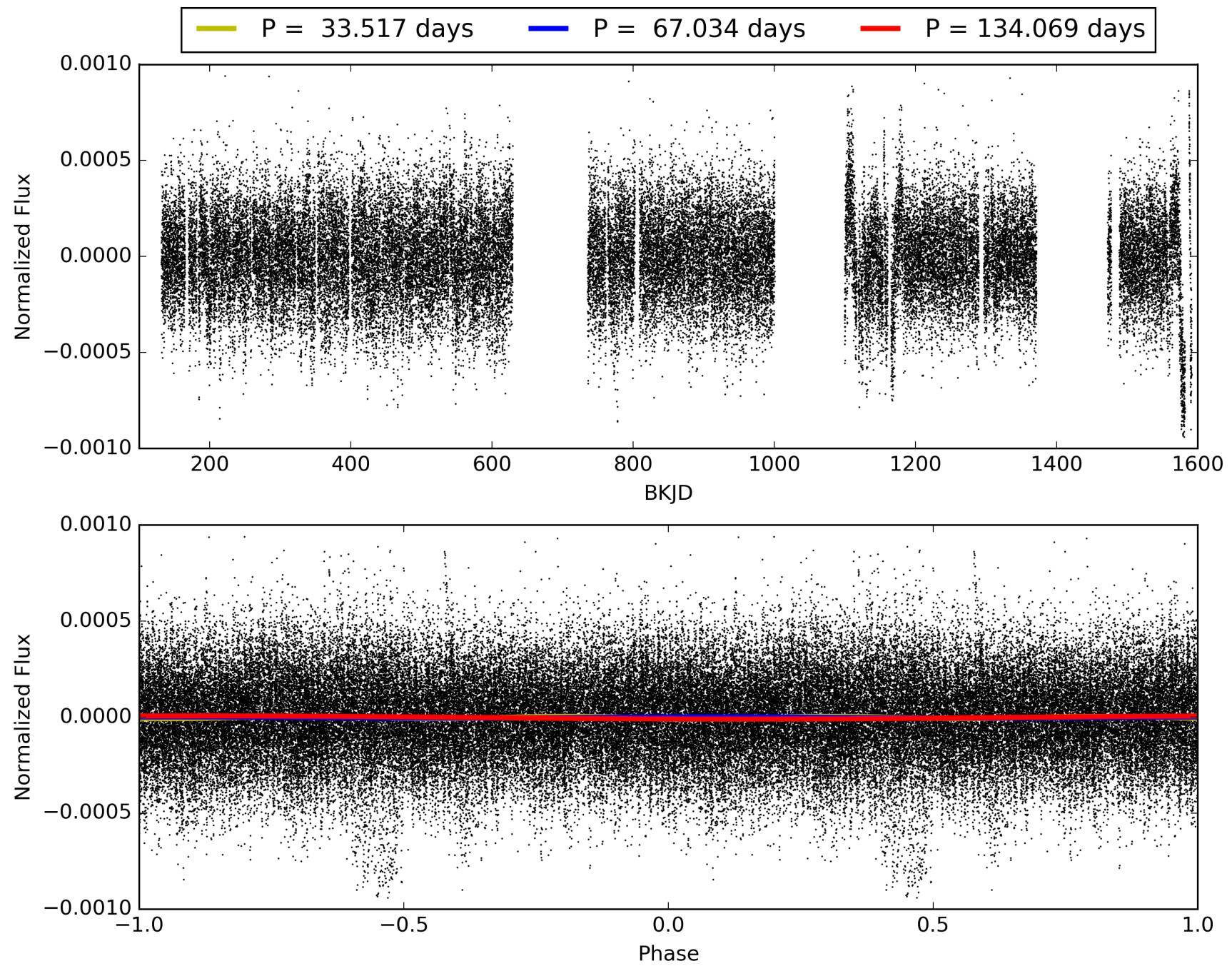
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:58:24 Z

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

TCE 010096641-03, PDC Light Curves

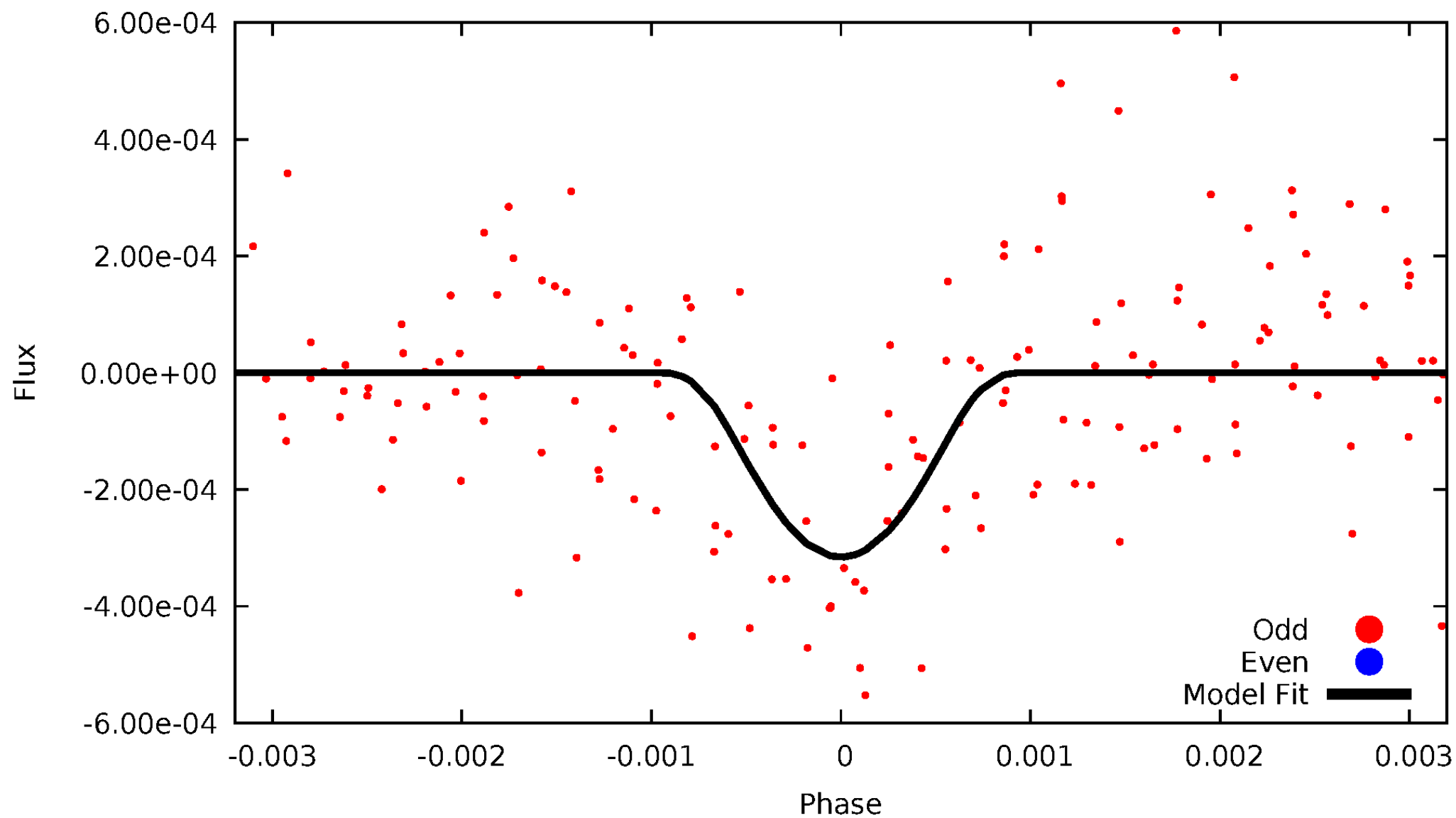


TCE 010096641-03



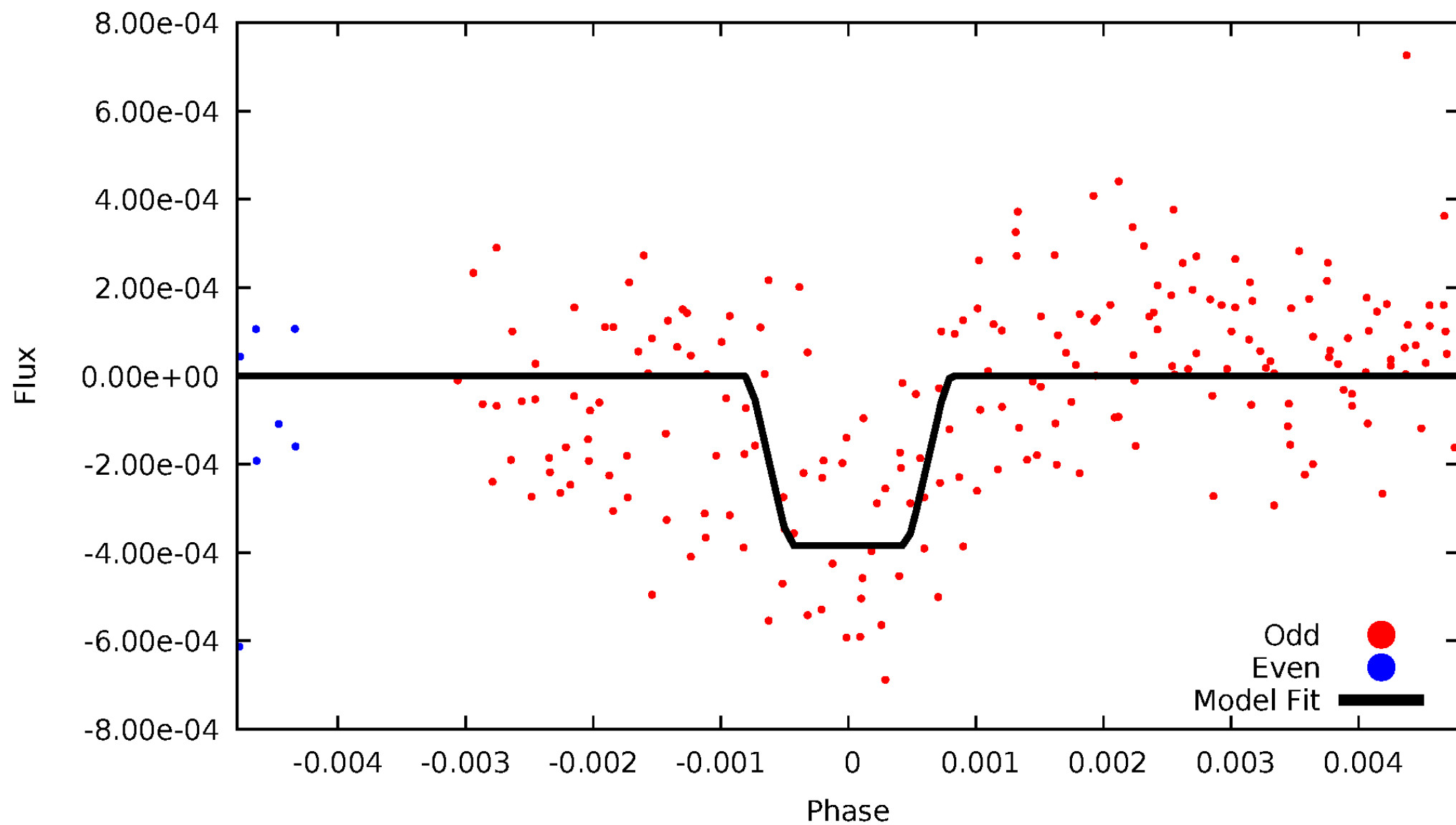
DV Odd/Even

TCE 010096641-03

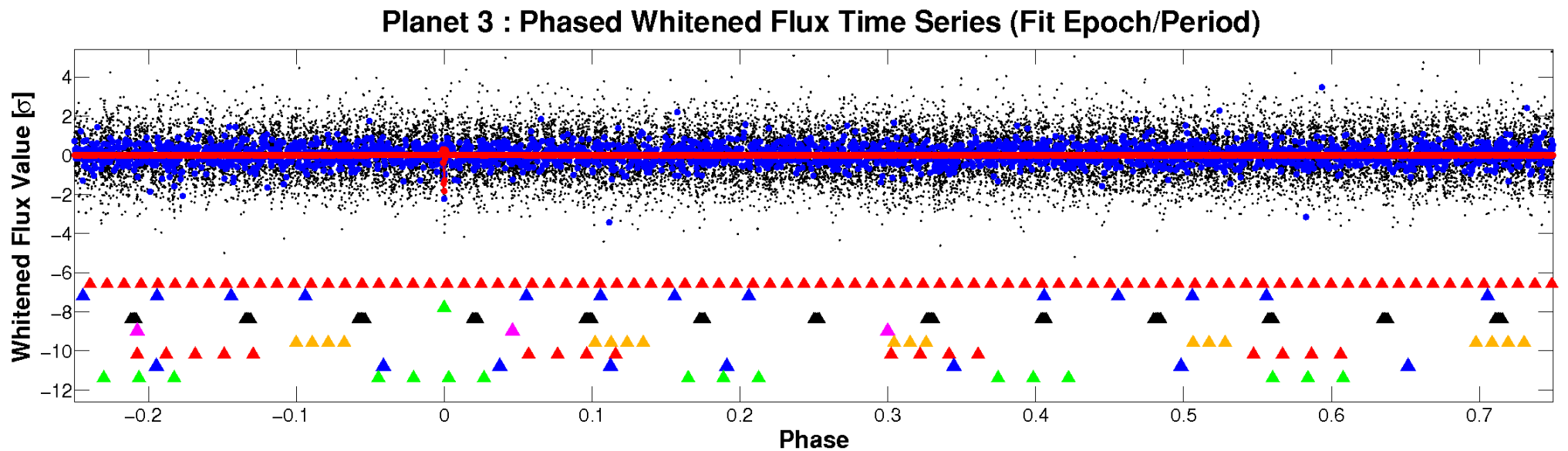
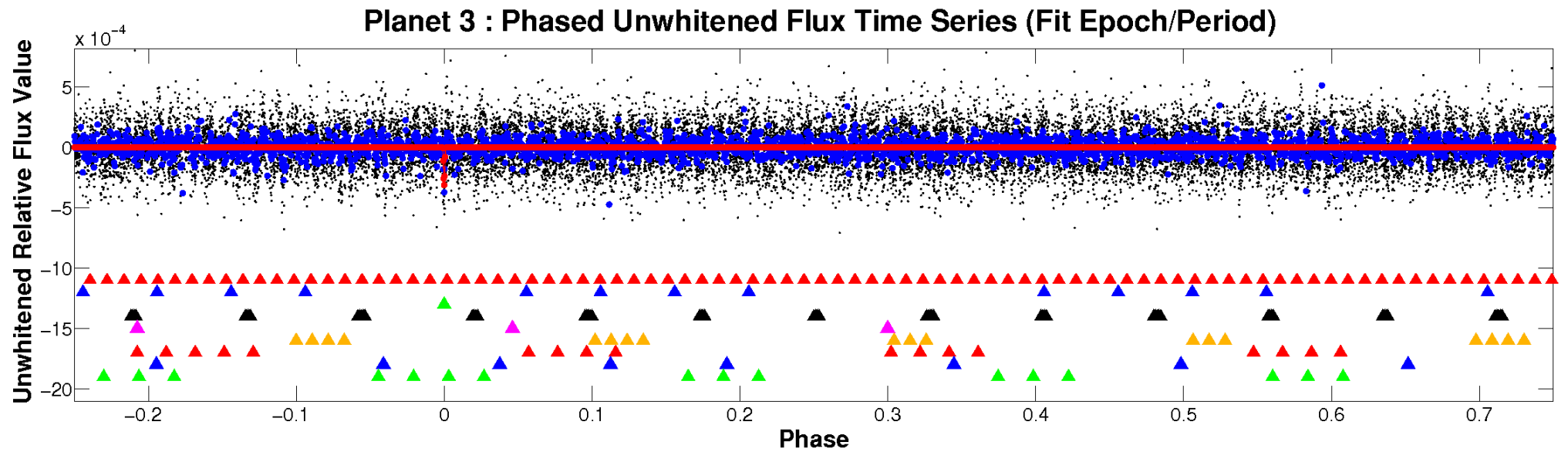


ALT Odd/Even

TCE 010096641-03

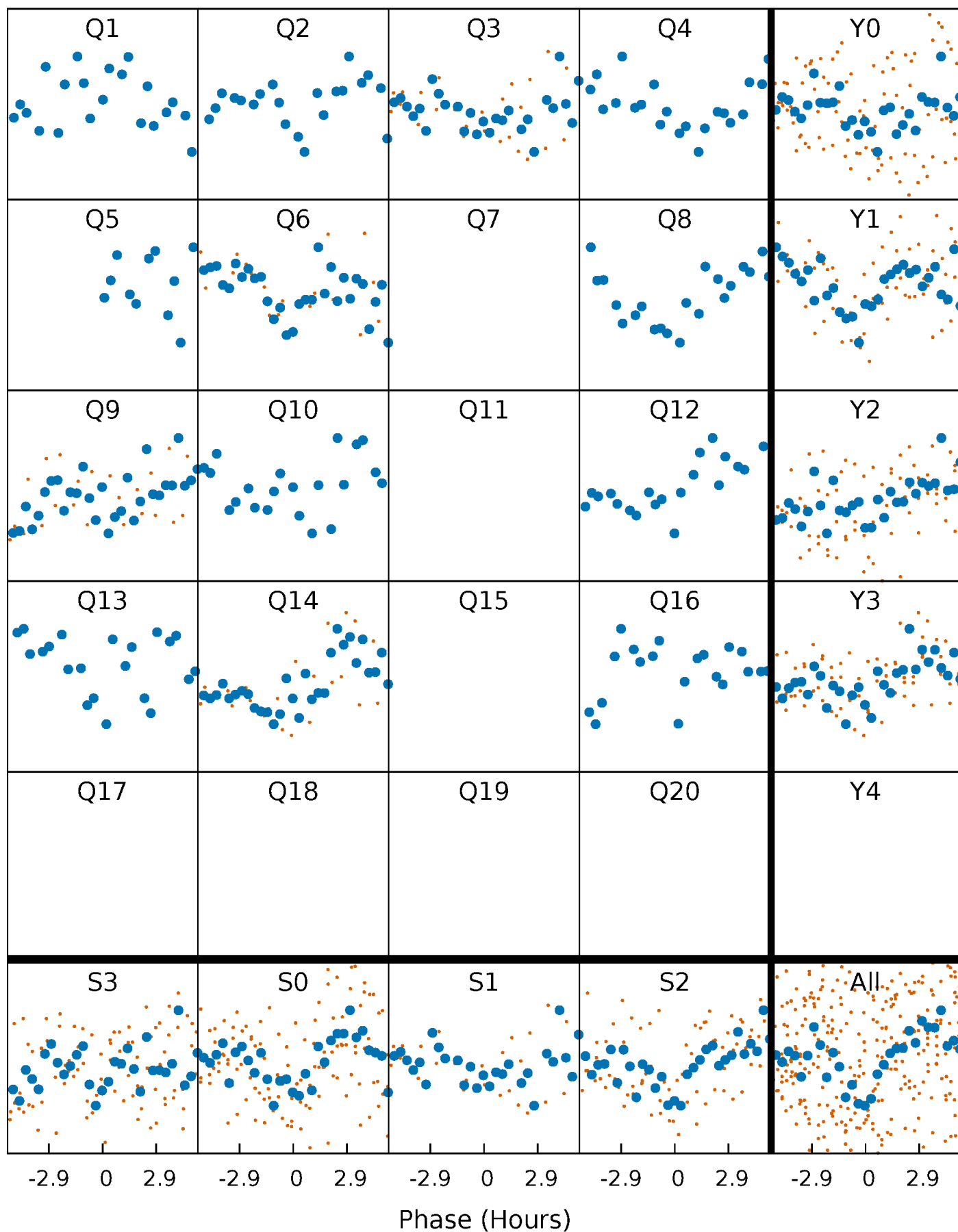


Non-Whitened Vs. Whitened Light Curve



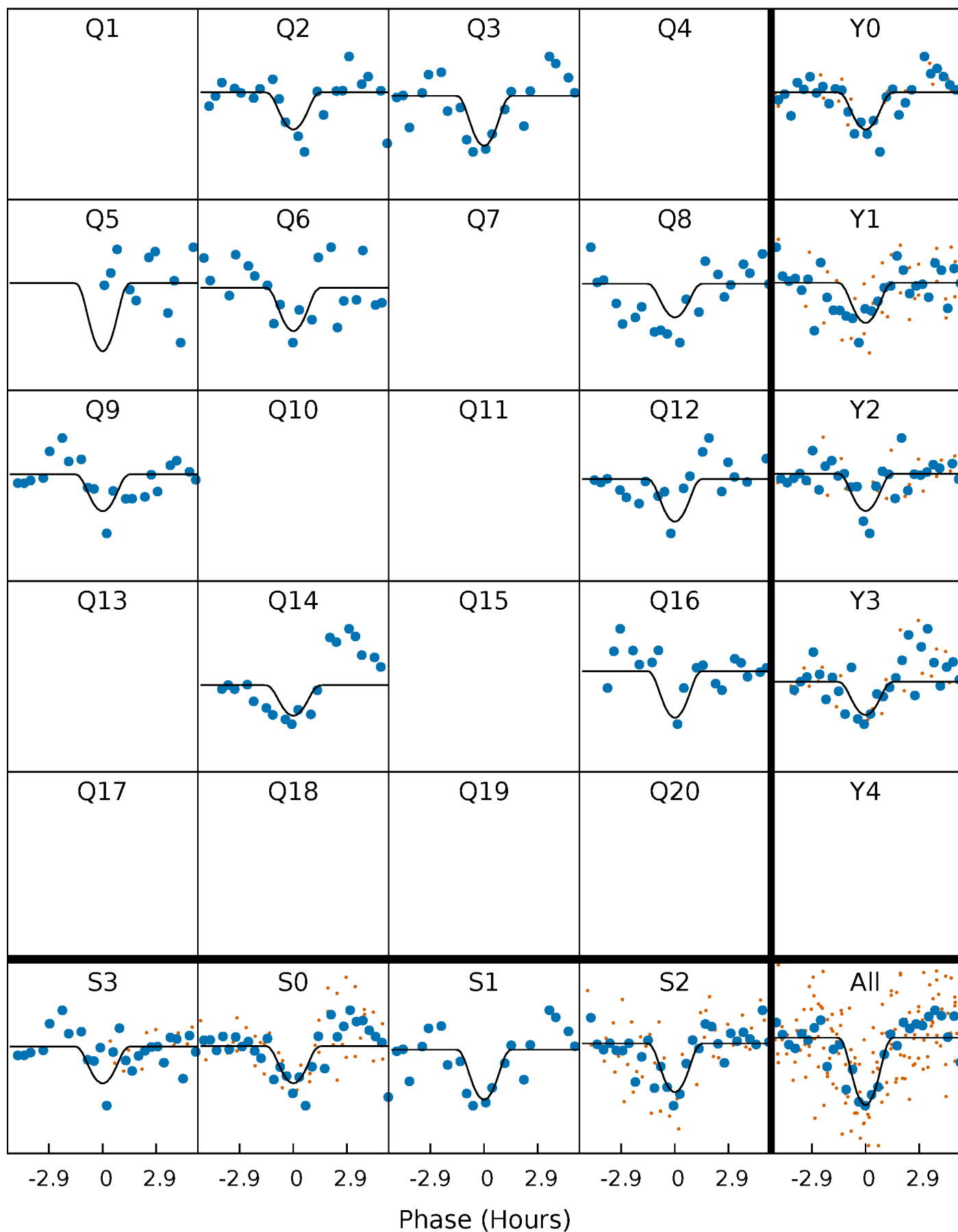
PDC Quarter-Phased Transit Curves

TCE 010096641-03 P= 67.034391 Days $T_0=141.117890$ (BKJD)



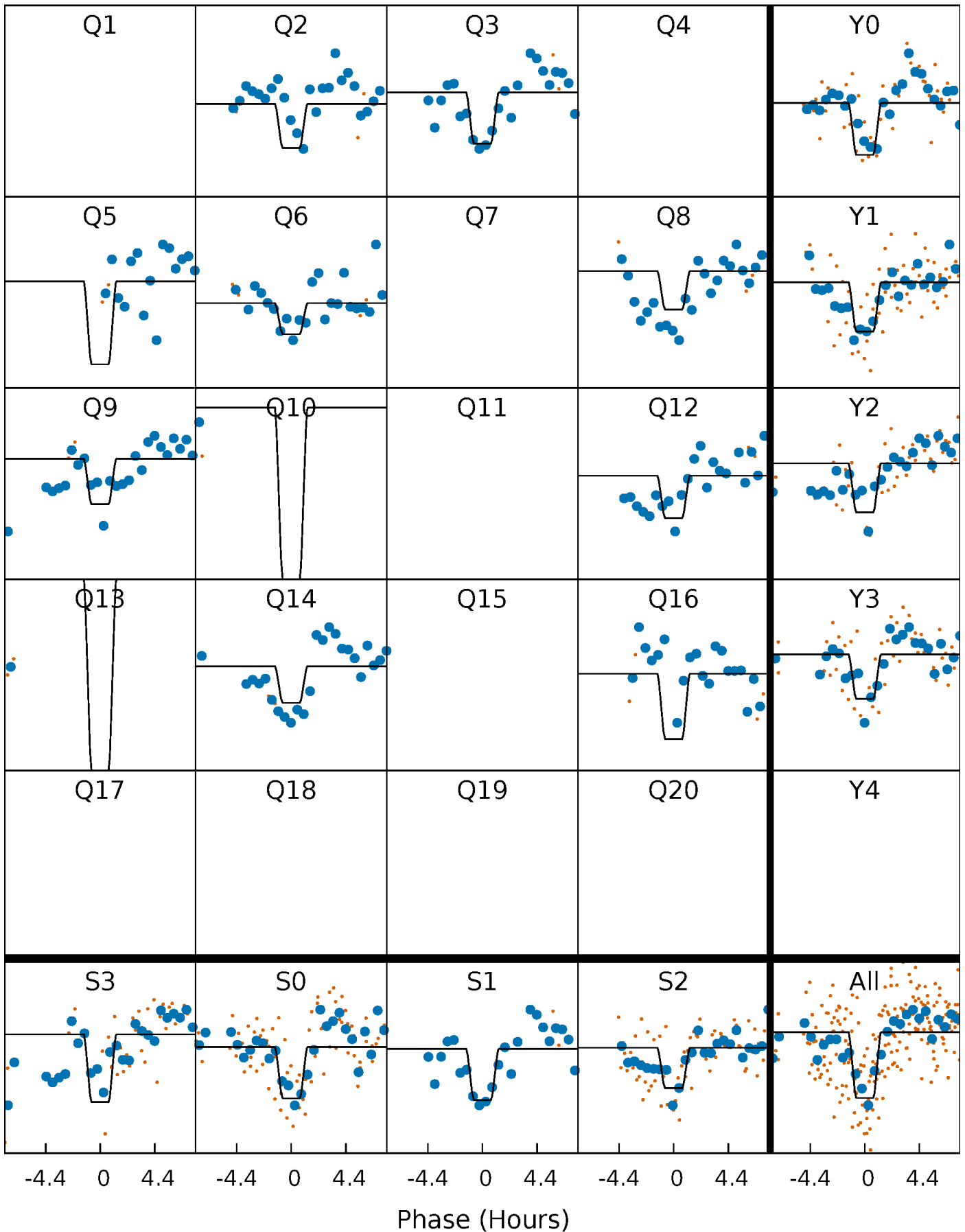
DV Quarter-Phased Transit Curves

TCE 010096641-03 P= 67.034391 Days $T_0=141.117890$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

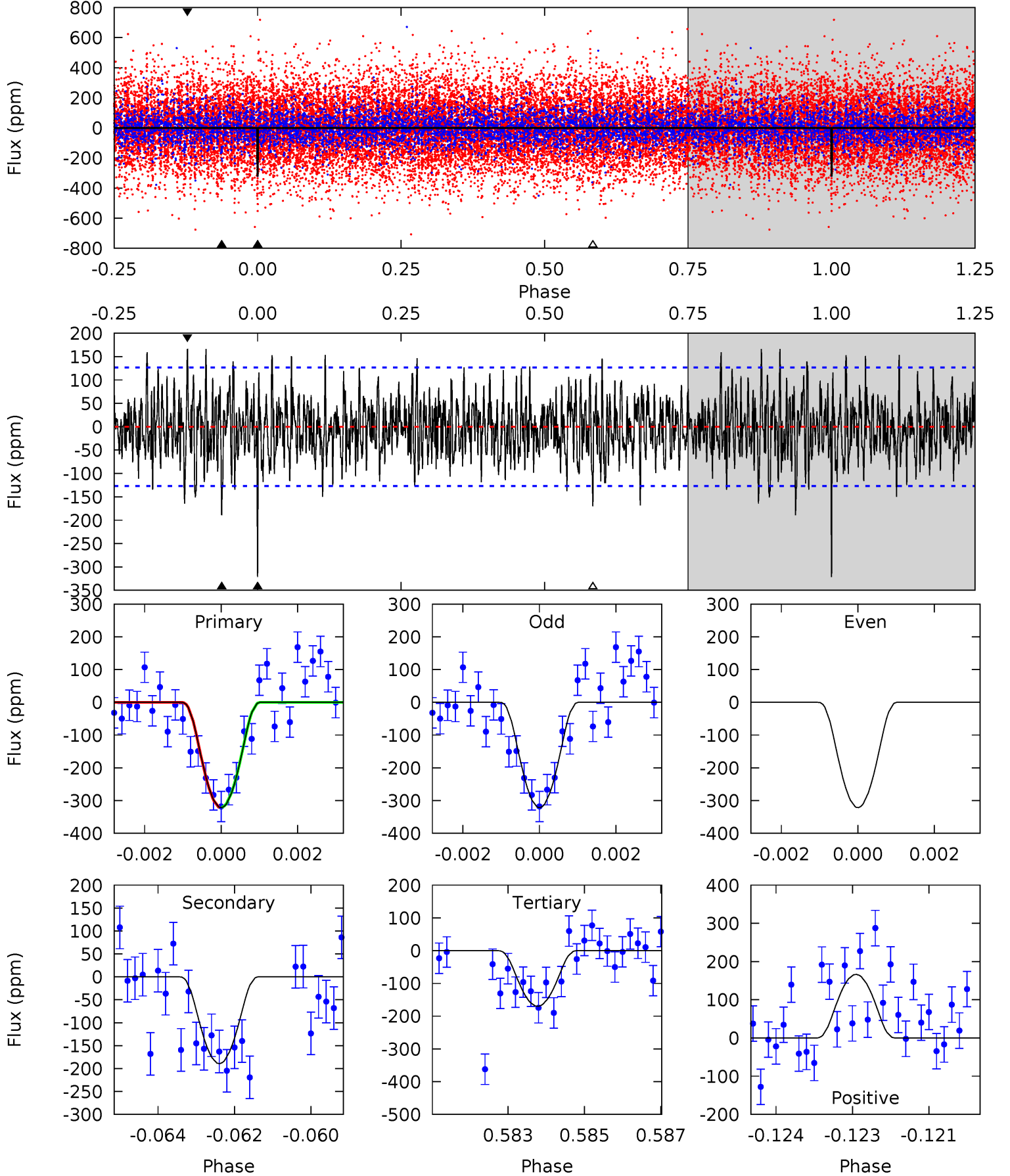
TCE 010096641-03 $P = 67.034455$ Days $T_0 = 141.106573$ (BKJD)



DV Model-Shift Uniqueness Test

010096641-03, P = 67.034391 Days, E = 74.083499 Days

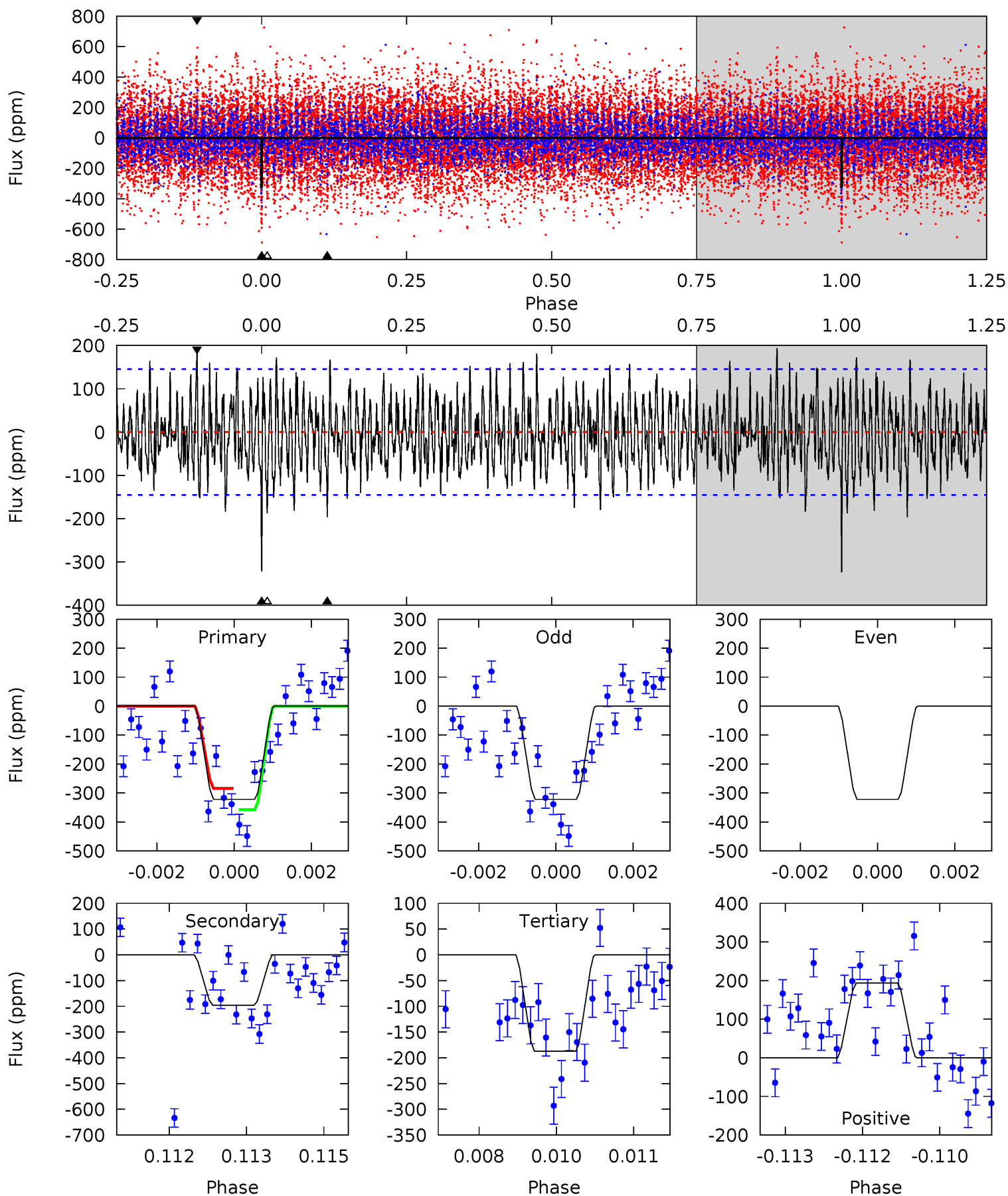
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	7.97	7.15	7.00	5.34	3.12	2.21	6.39	6.54	0.82	0.96	0	0.97	0.34	0.01



Alt Model-Shift Uniqueness Test

010096641-03, P = 67.034455 Days, E = 74.072118 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	7.24	6.92	7.14	5.37	3.16	2.44	4.97	4.74	0.32	0.09	0	0.98	0.38	1.35



Stellar Parameters For KIC 010096641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6292^{+192}_{-173}	$3.503^{+0.384}_{-0.096}$	$-0.240^{+0.350}_{-0.300}$	$3.767^{+0.674}_{-1.685}$	$1.648^{+0.194}_{-0.421}$	$0.043^{+0.128}_{-0.016}$
	+3%/-3%	+11%/-3%	+146%/-125%	+18%/-45%	+12%/-26%	+296%/-38%
Source	PHO1	FLK73	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 010096641-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-189 ± 24	$44.88^{+54.37}_{-31.25}$	1194^{+81}_{-143}	2834^{+1347}_{-549}	$7.332^{+74.102}_{-5.830}$
Alt.	-196 ± 27	$46.92^{+50.37}_{-33.10}$	1190^{+84}_{-137}	2781^{+1286}_{-464}	$7.274^{+71.796}_{-5.740}$

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

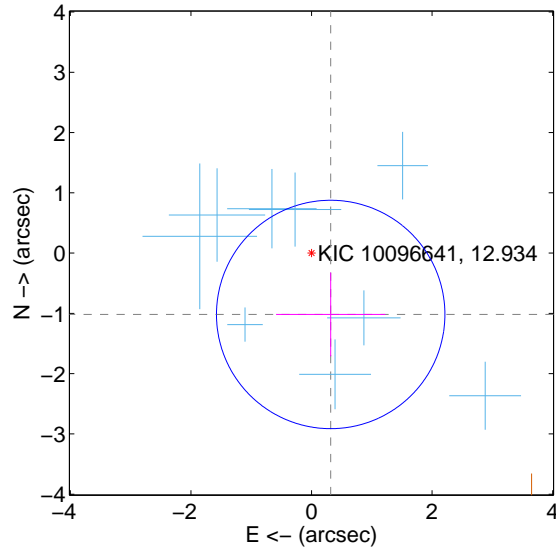
Supplemental centroid analysis for 010096641-03. Kepler magnitude: 12.93. Transit SNR 7.96

There are 9 quarters with good PRF difference image offsets

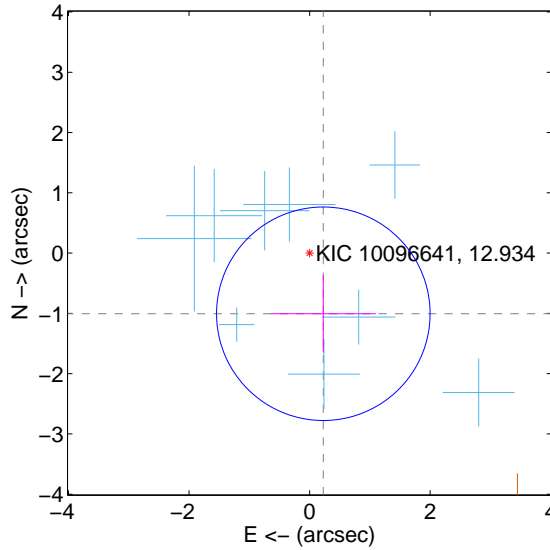
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.067 ± 0.632	1.69	-0.318 ± 0.906	-1.018 ± 0.695
PRF-fit source offset from KIC position	1.032 ± 0.590	1.75	-0.228 ± 0.872	-1.006 ± 0.642
photometric centroid source offset	0.80 ± 0.85	0.95	-0.43 ± 0.90	0.68 ± 0.83

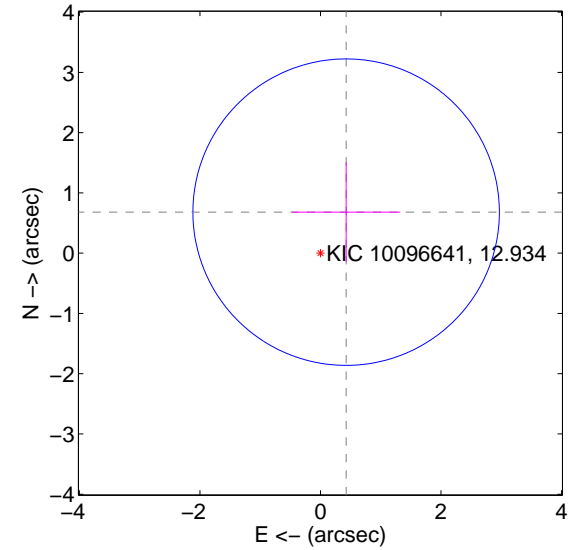
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

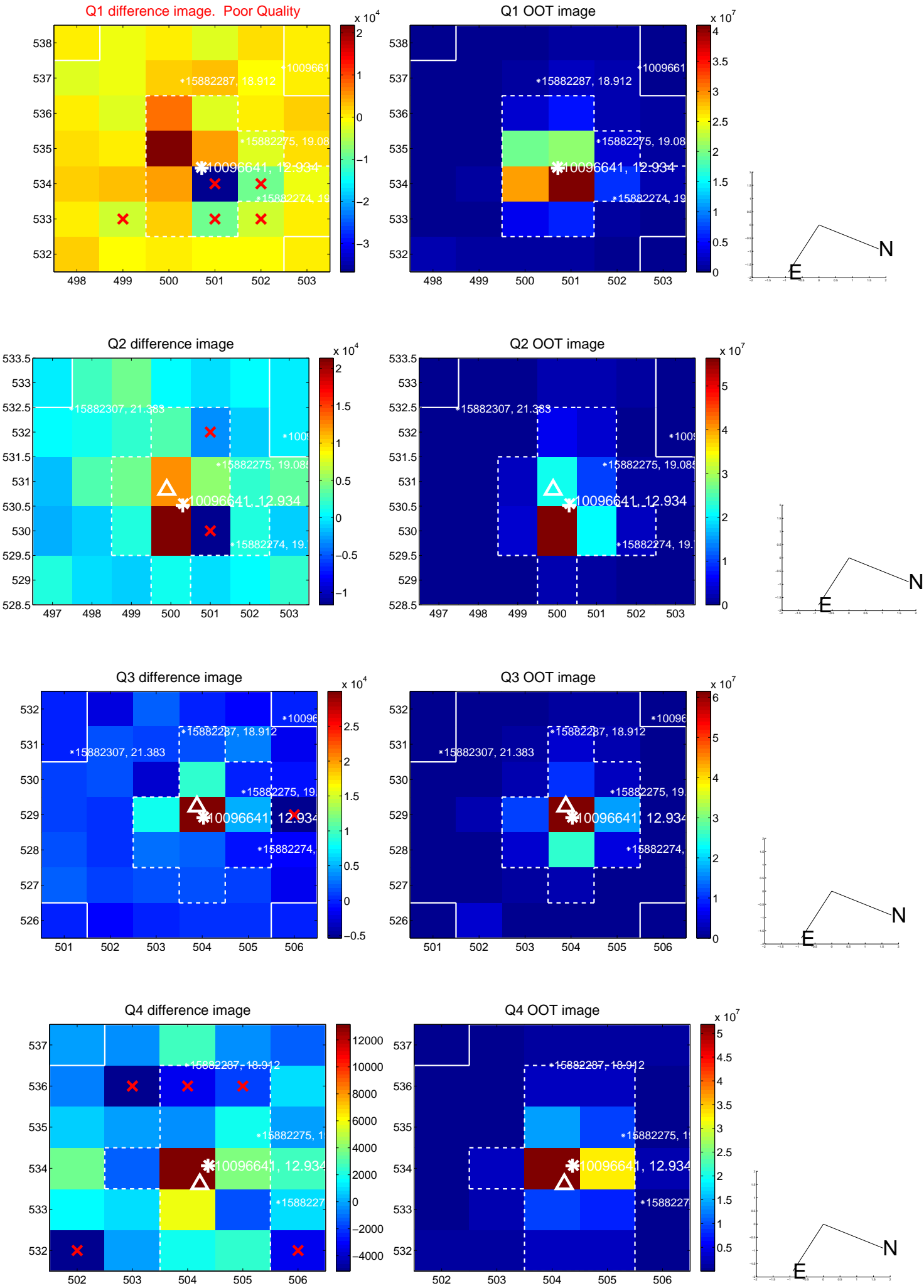


offset from photometric centroids



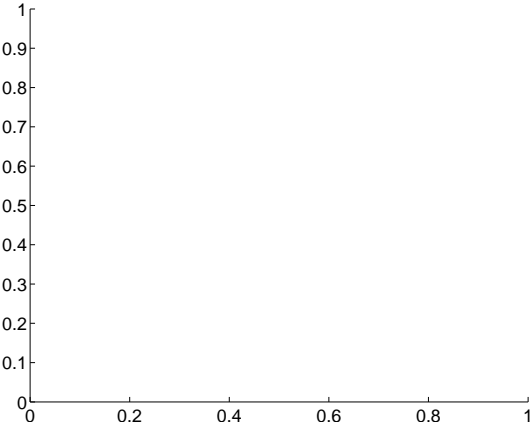
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

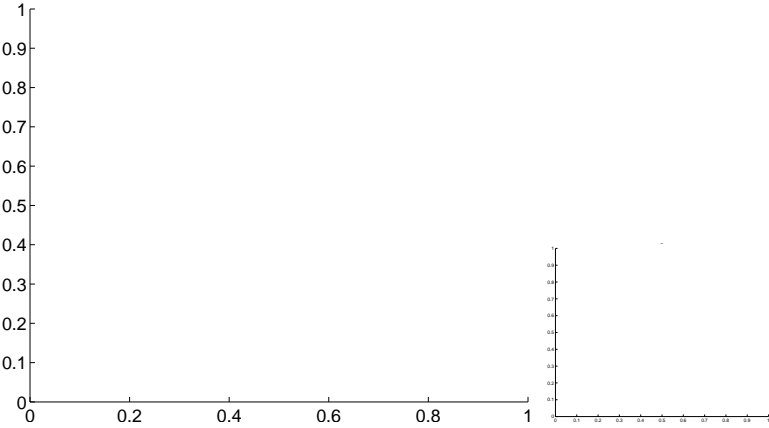


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

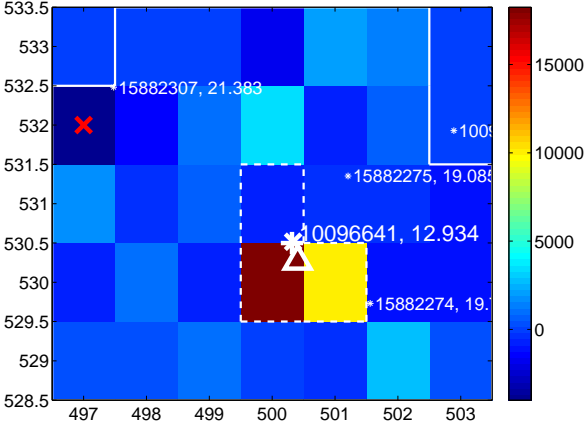
Q5 no difference image



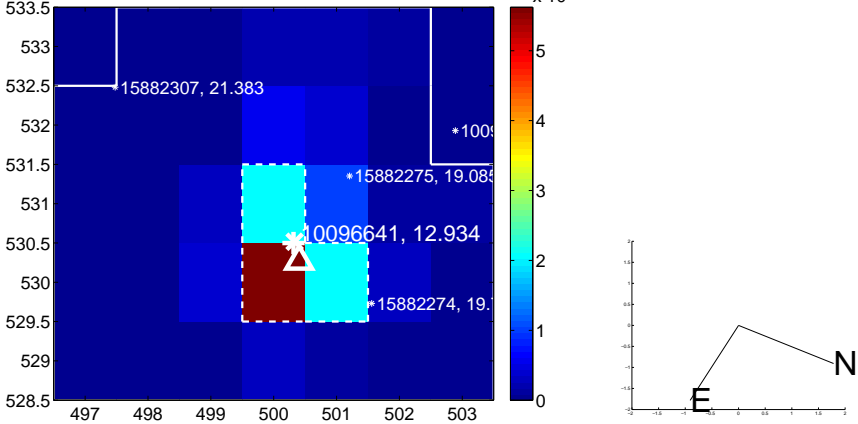
Q5 no OOT image



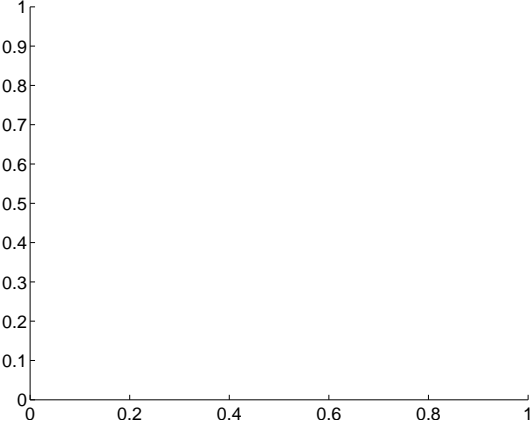
Q6 difference image



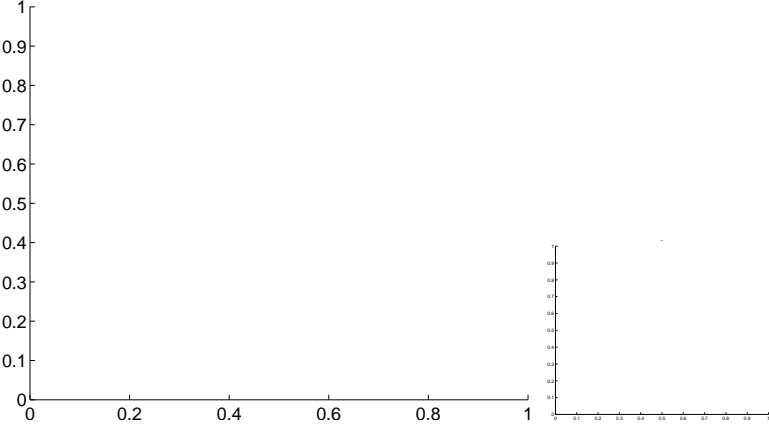
Q6 OOT image



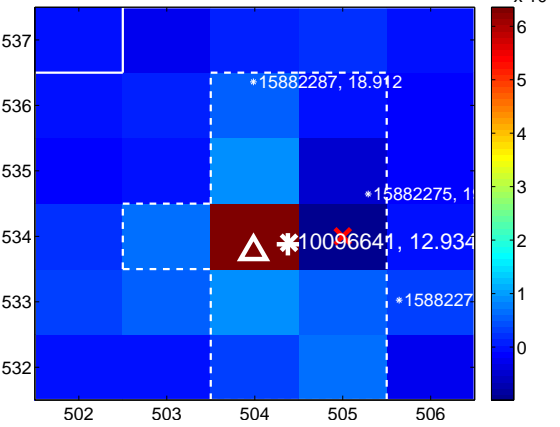
Q7 no difference image



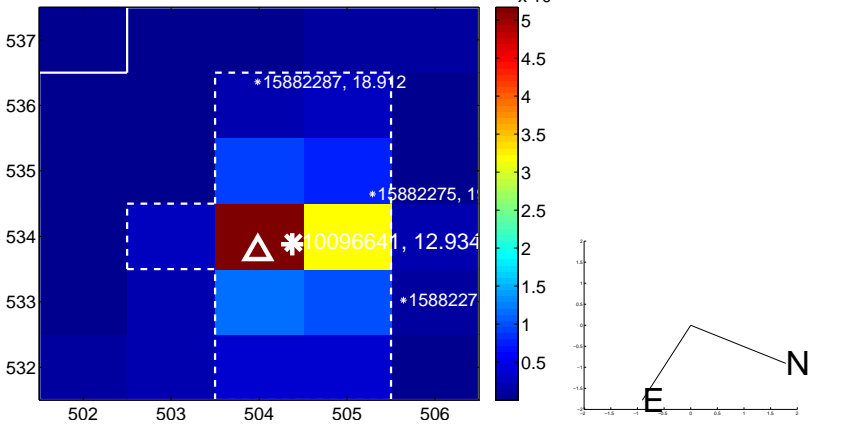
Q7 no OOT image



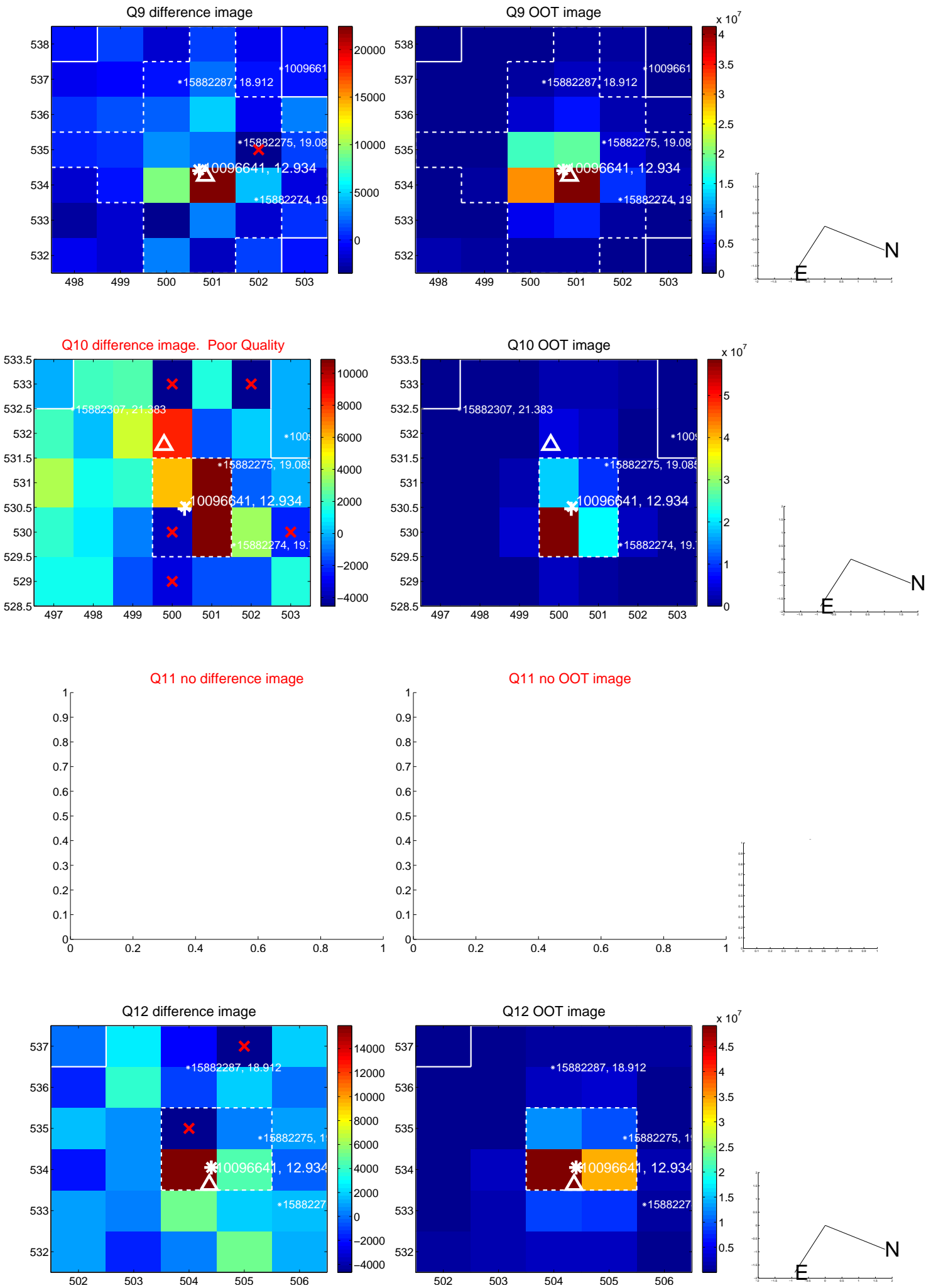
Q8 difference image



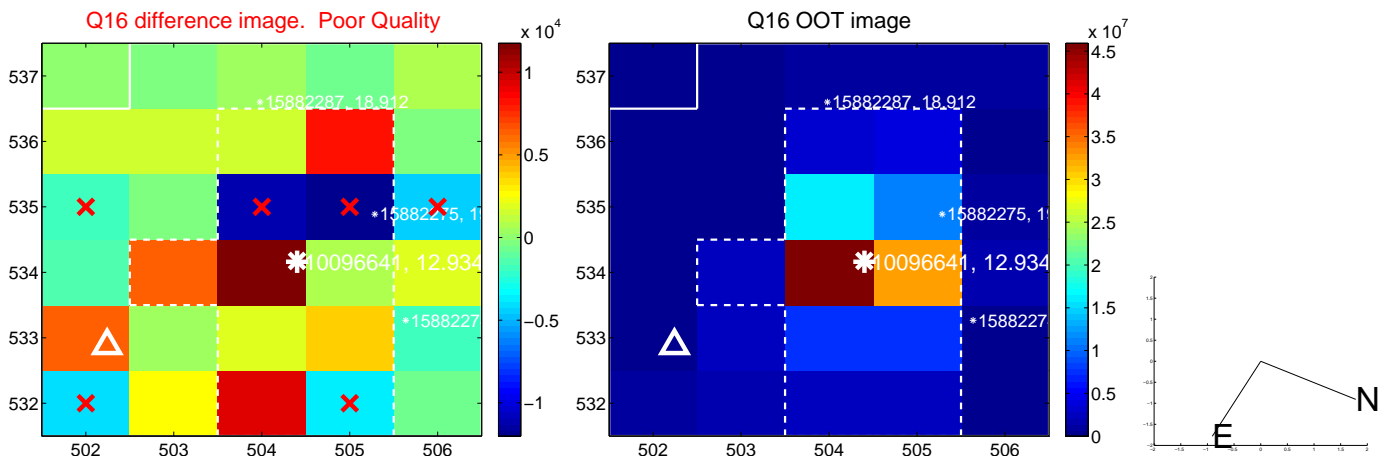
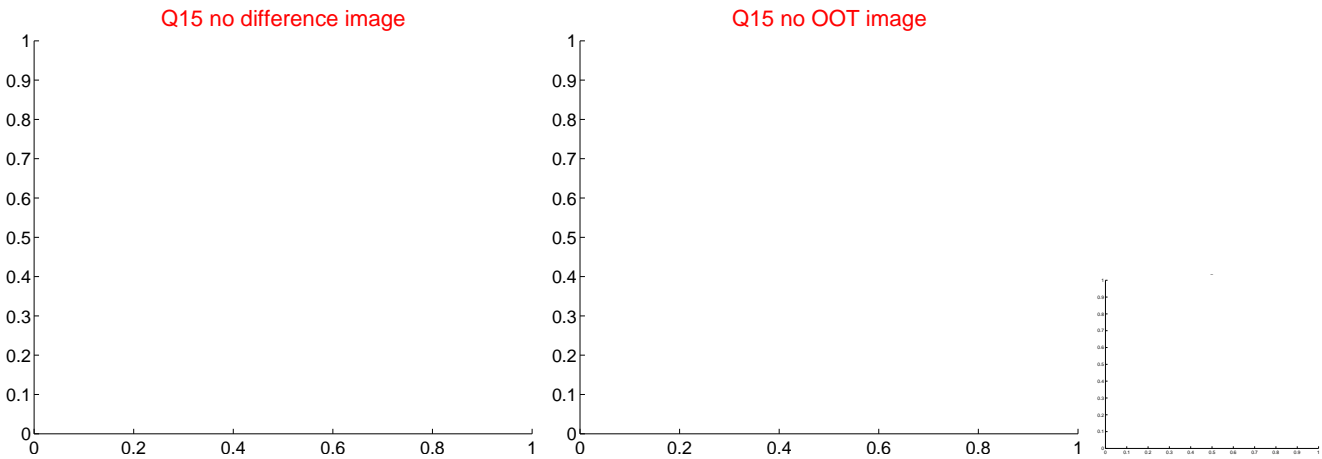
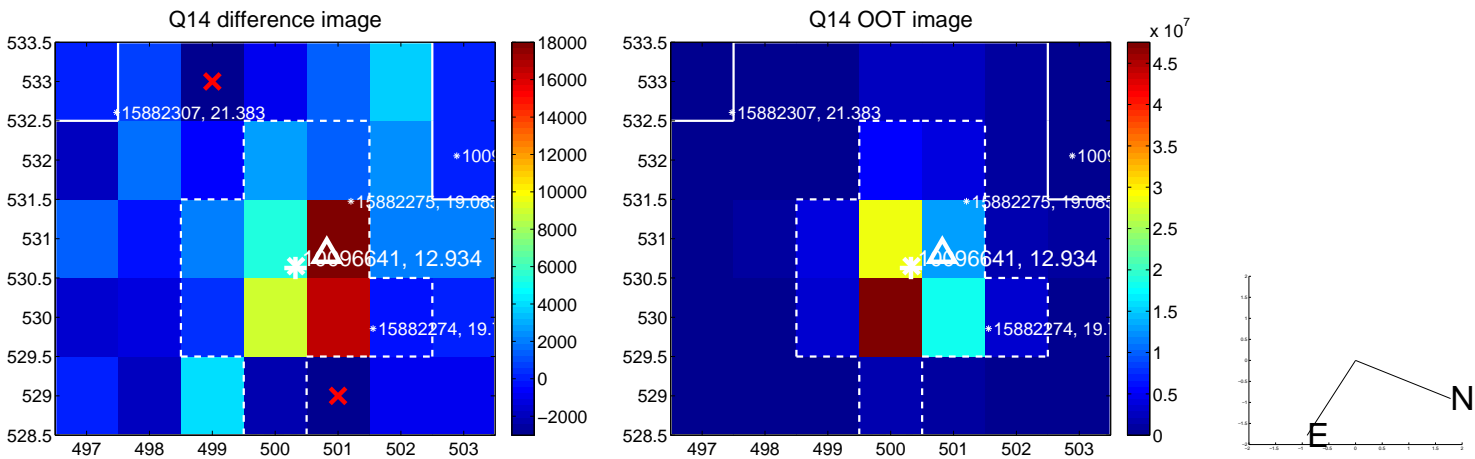
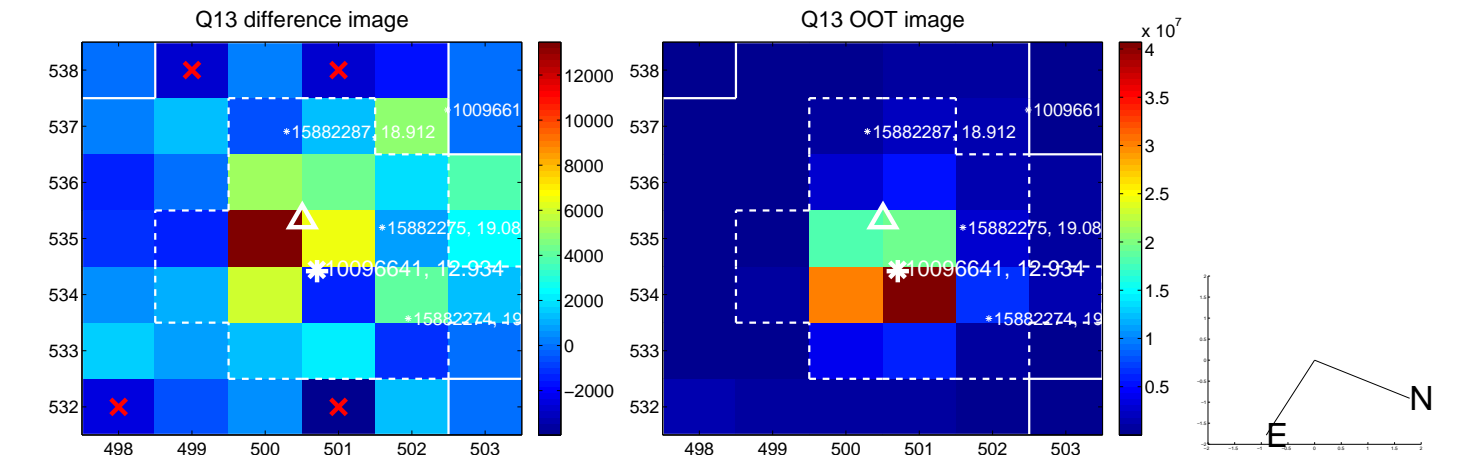
Q8 OOT image



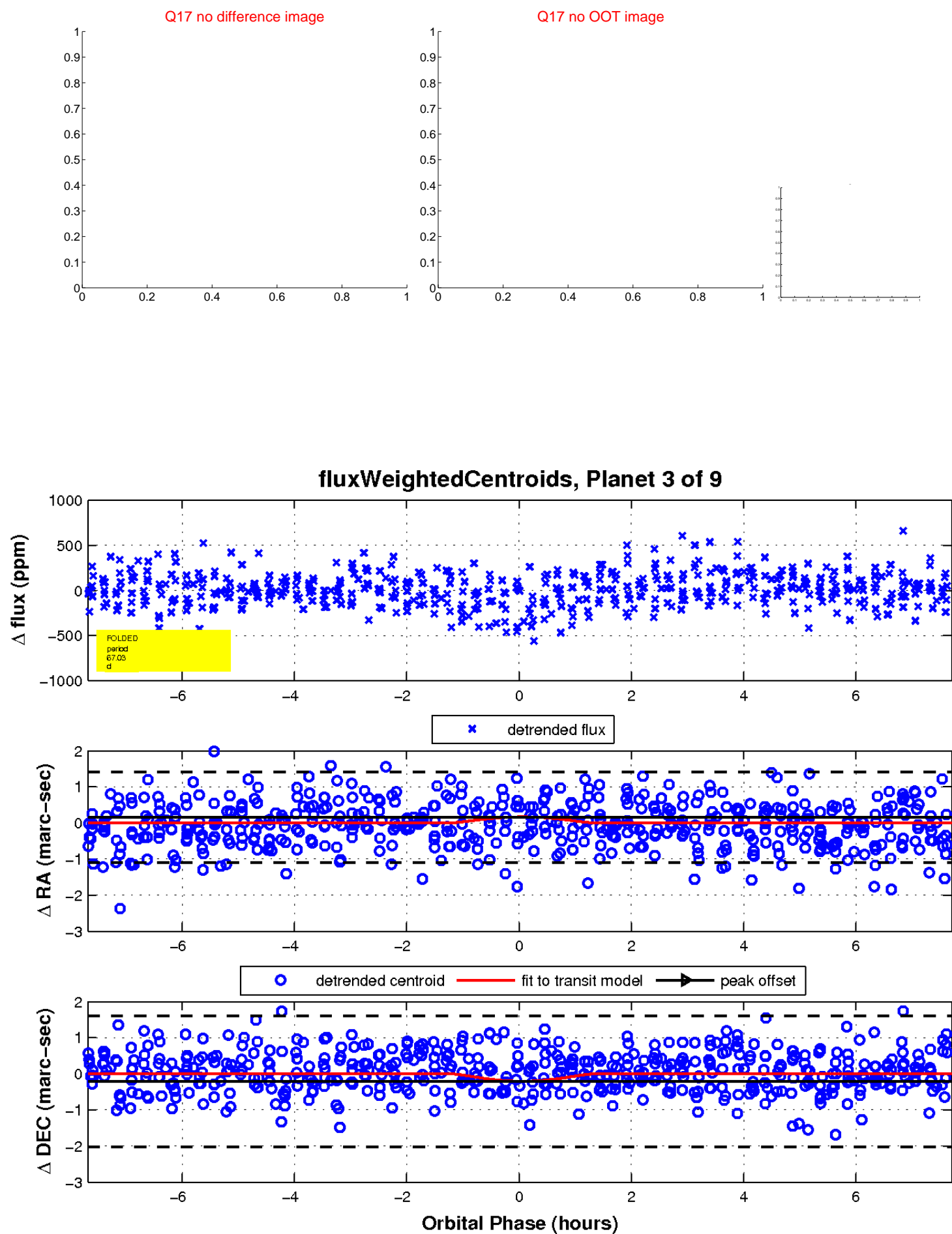
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

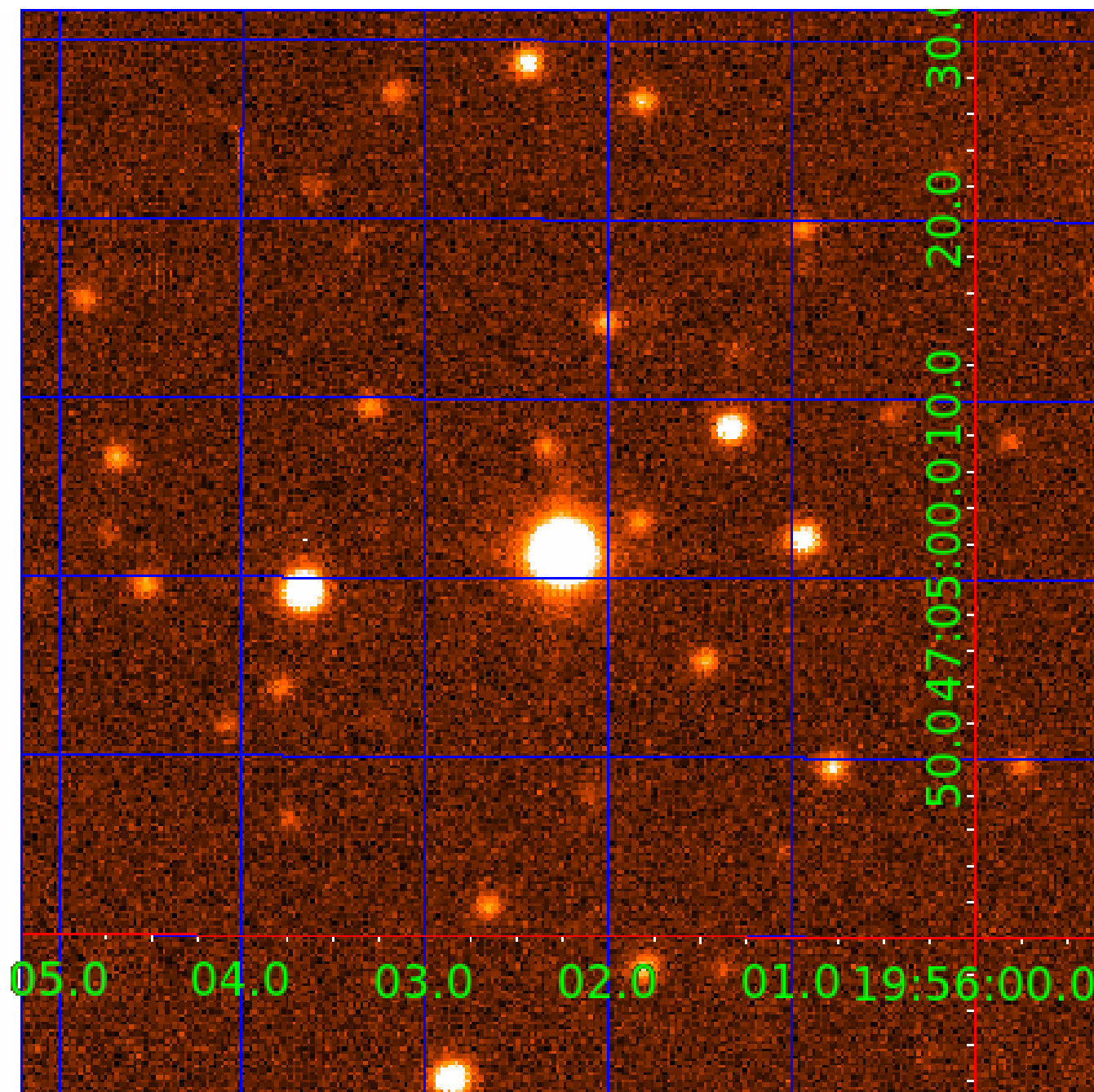


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010096641

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})
010096641-01	OBS	No	1.541084	131.971892	23.8	6.877	8.6	6.5	3.77	6292	2.14	20938.44
010096641-02	OBS	No	110.604124	201.856018	179.5	12.329	9.6	5.2	3.77	6292	5.56	70.20
010096641-03	OBS	No	67.034391	141.117890	315.5	2.570	7.9	8.0	3.77	6292	13.23	136.87
010096641-04	OBS	No	25.776244	137.530666	182.1	2.481	8.3	8.2	3.77	6292	5.88	489.50
010096641-05	OBS	No	385.198169	496.396434	354.1	4.389	7.8	7.5	3.77	6292	7.59	13.30
010096641-06	OBS	No	80.586517	187.891891	271.6	3.224	7.3	7.8	3.77	6292	7.29	107.08
010096641-07	OBS	No	83.464284	199.496903	435.5	2.032	7.3	7.8	3.77	6292	8.95	102.18
010096641-08	OBS	No	190.809615	215.693128	356.1	6.936	7.2	7.4	3.77	6292	9.27	33.93
010096641-09	OBS	No	93.528944	142.923973	242.3	2.943	7.1	7.0	3.77	6292	6.20	87.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010096641-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
010096641-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
010096641-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—HALO_GHOST
010096641-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010096641-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
010096641-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
010096641-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

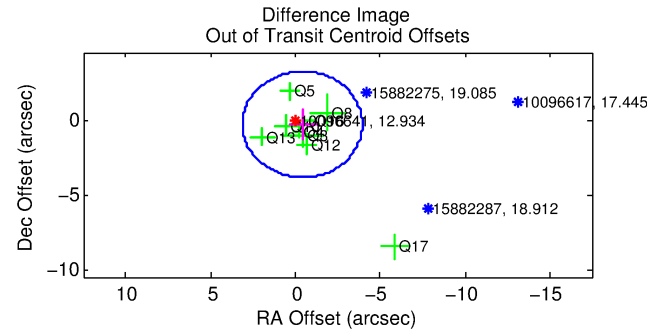
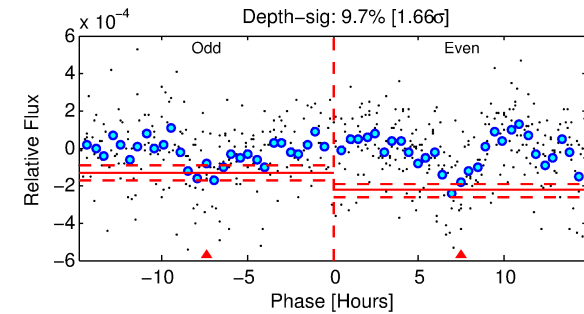
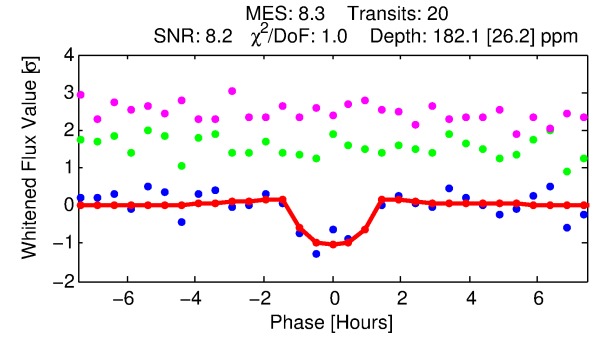
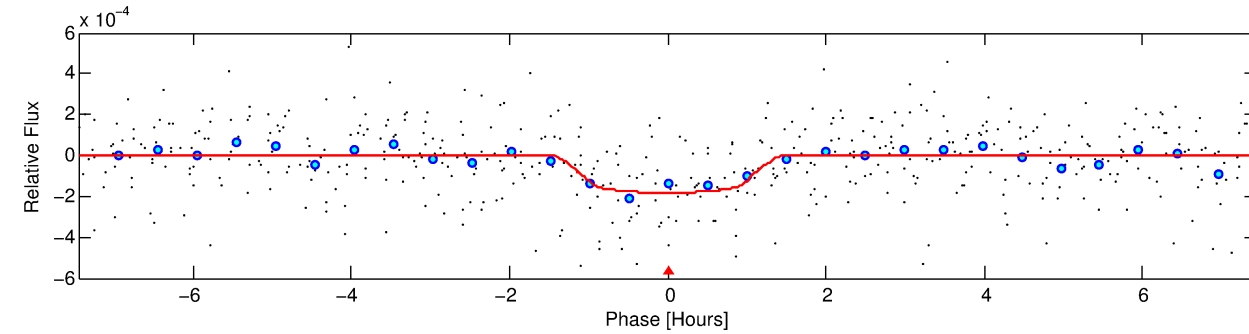
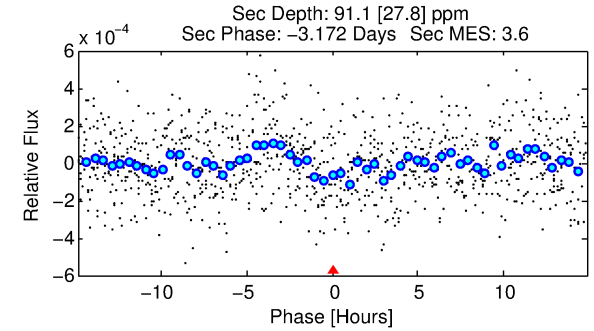
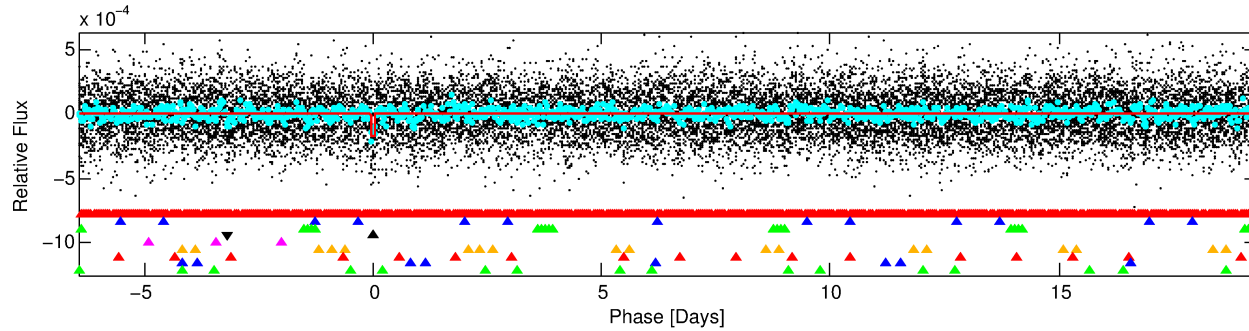
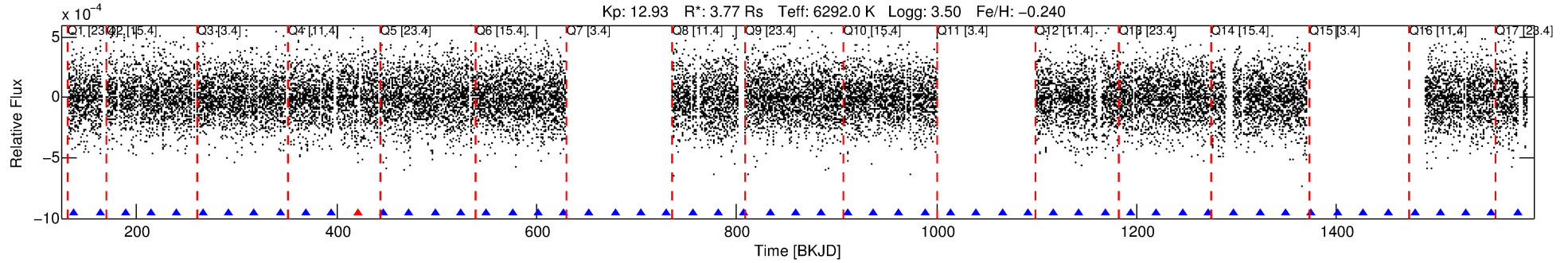
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096641-04

No Significant Match Found

DV One-Page Summary

KIC: 10096641 Candidate: 4 of 9 Period: 25.776 d



DV Fit Results:

Period = 25.77624 [0.00018] d
Epoch = 137.5307 [0.0060] BKJD
Rp/R* = 0.0143 [0.0108]
a/R* = 39.50 [163.07]
b = 0.88 [1.04]
Seff = 489.50 [328.84]
Teq = 1199 [201] K
Rp = 5.88 [5.15] R_e
a = 0.2018 [0.0846] AU
Ag = 58.96 [98.48] [0.59σ]
Teffp = 5138 [1977] K [1.98σ]

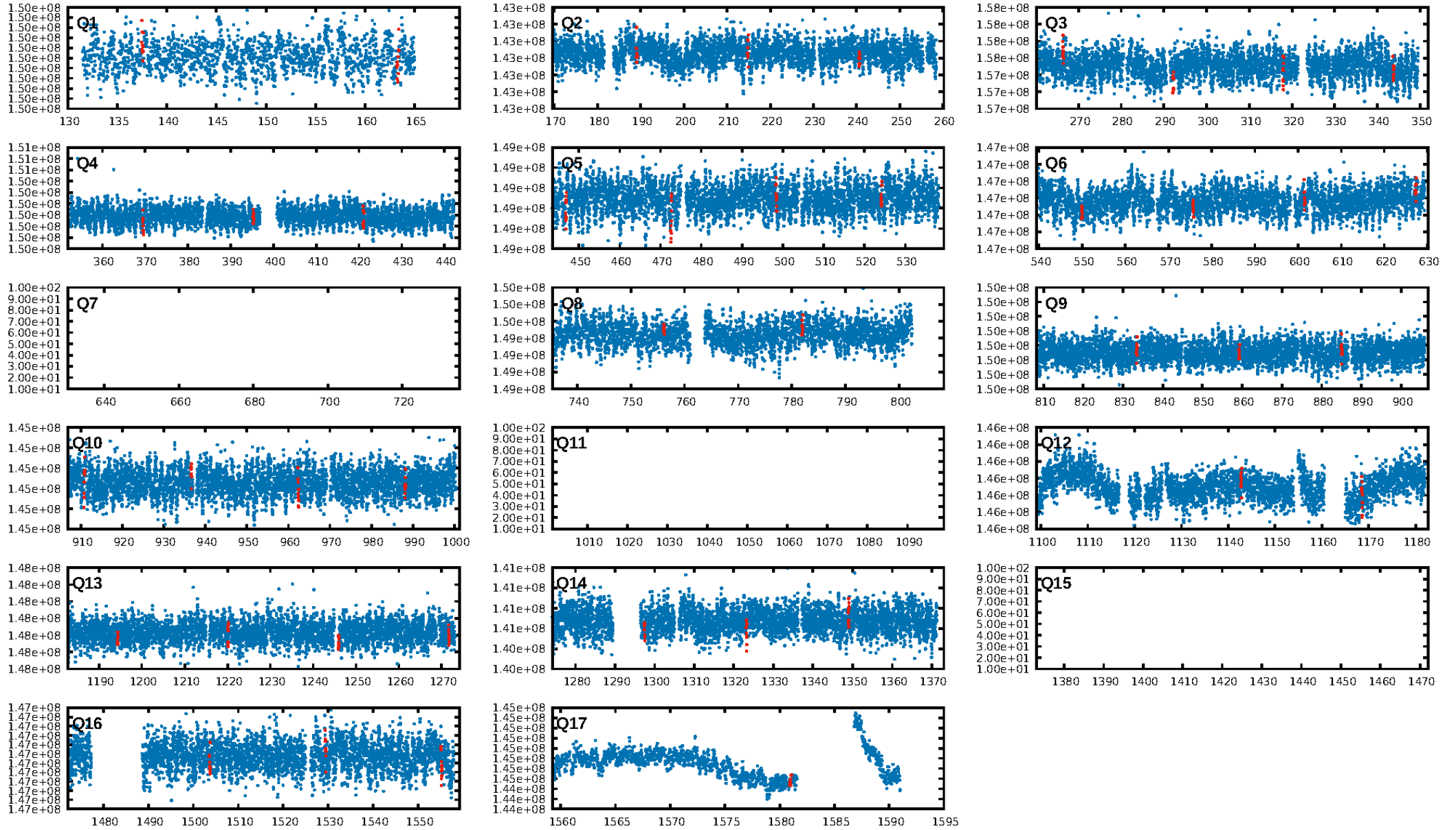
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [79.56σ]
LongPeriod-sig: 100.0% [277.16σ]
ModelChiSquare2-sig: 38.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.33e-11
RollingBand-fgt: 0.94 [16/17]
GhostDiagnostic-chr: 0.08504
Centroid-sig: 5.9%
Centroid-so: 0.939 arcsec [1.29σ]
OotOffset-rm: 0.523 arcsec [0.44σ]
OotOffset-st: 1/1/4/3 [9]
KicOffset-rm: 0.471 arcsec [0.46σ]
KicOffset-st: 1/1/4/3 [9]
DiffImageQuality-fgm: 0.78 [7/9]
DiffImageOverlap-fno: 0.86 [12/14]

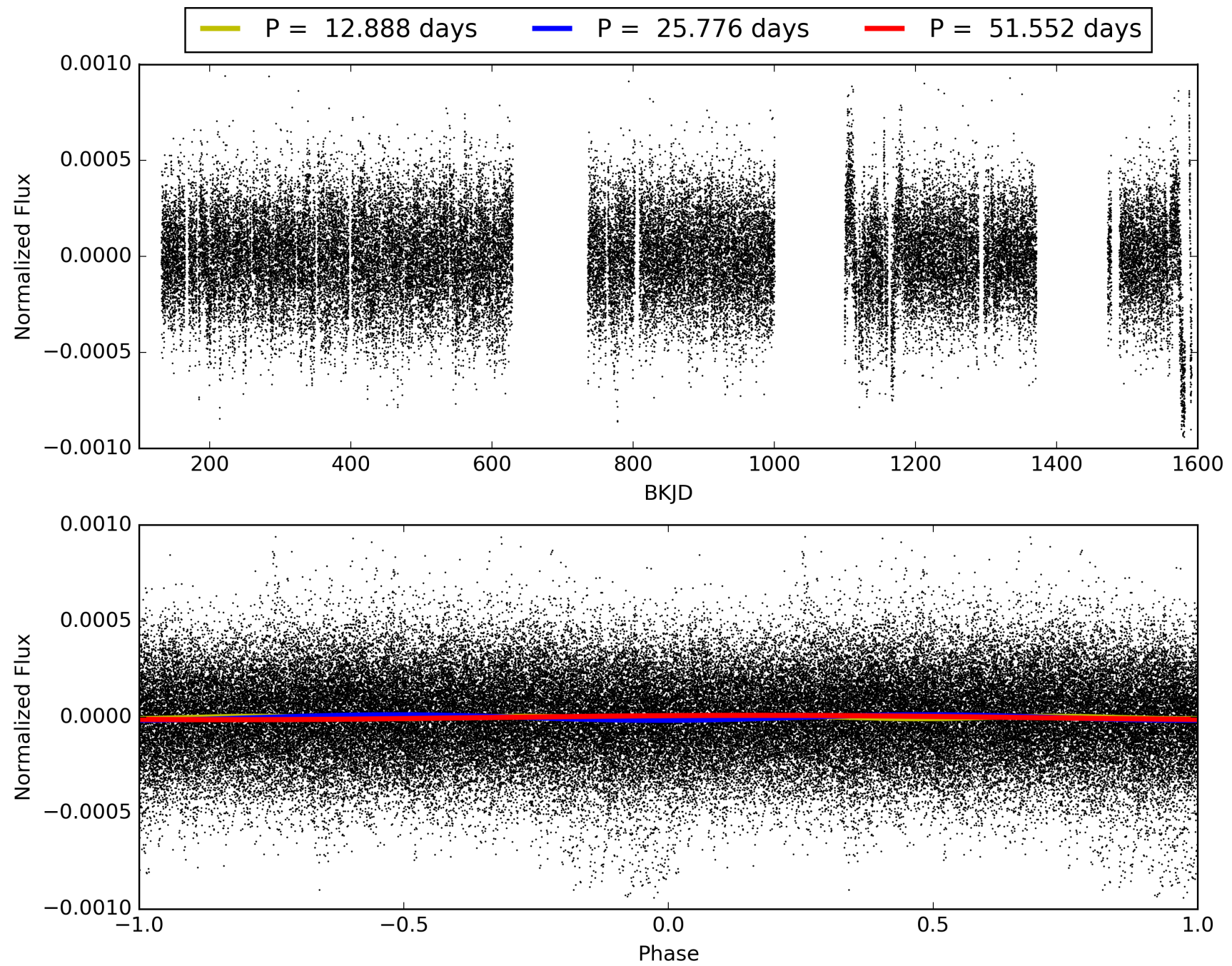
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:58:28 Z

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

TCE 010096641-04, PDC Light Curves

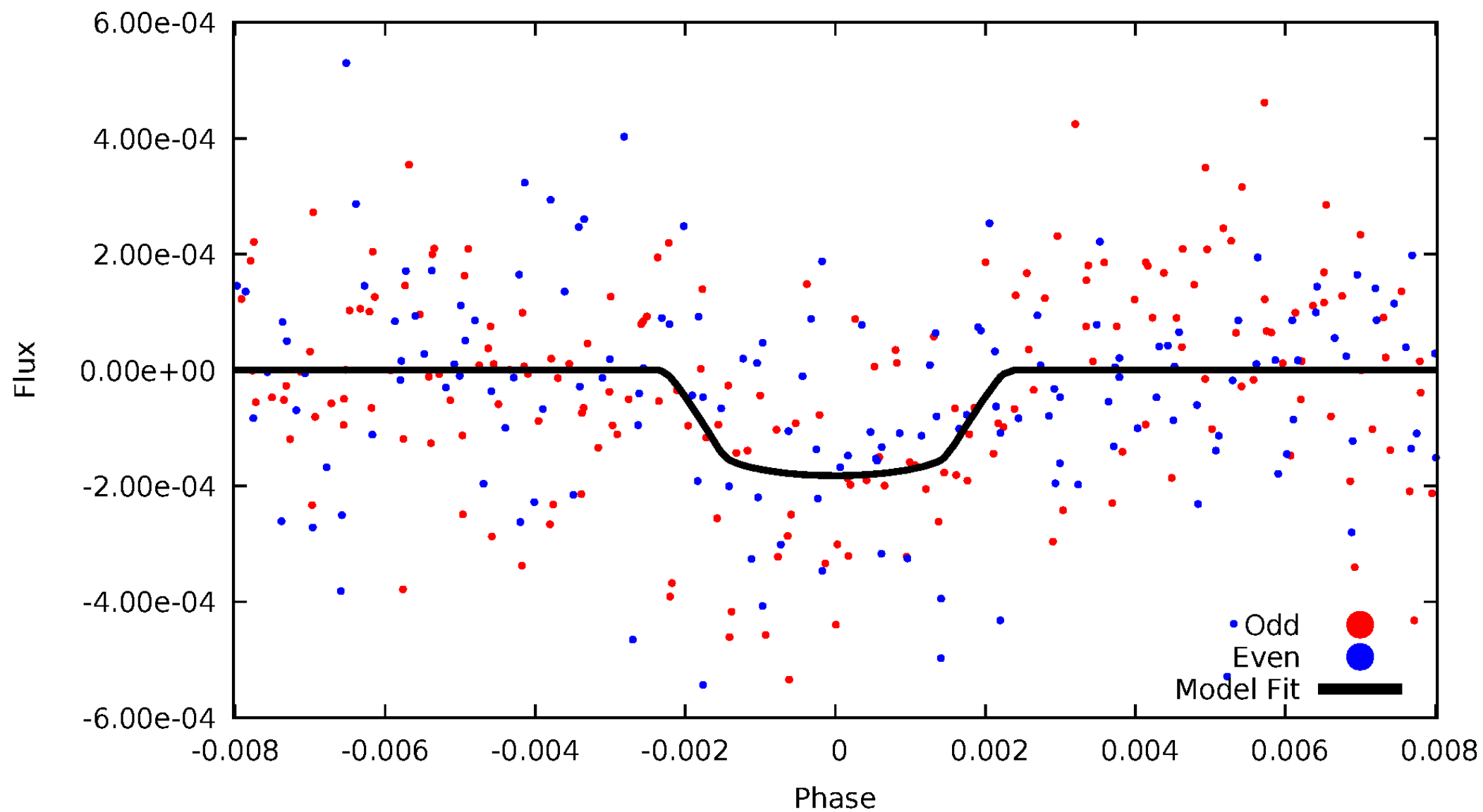


TCE 010096641-04



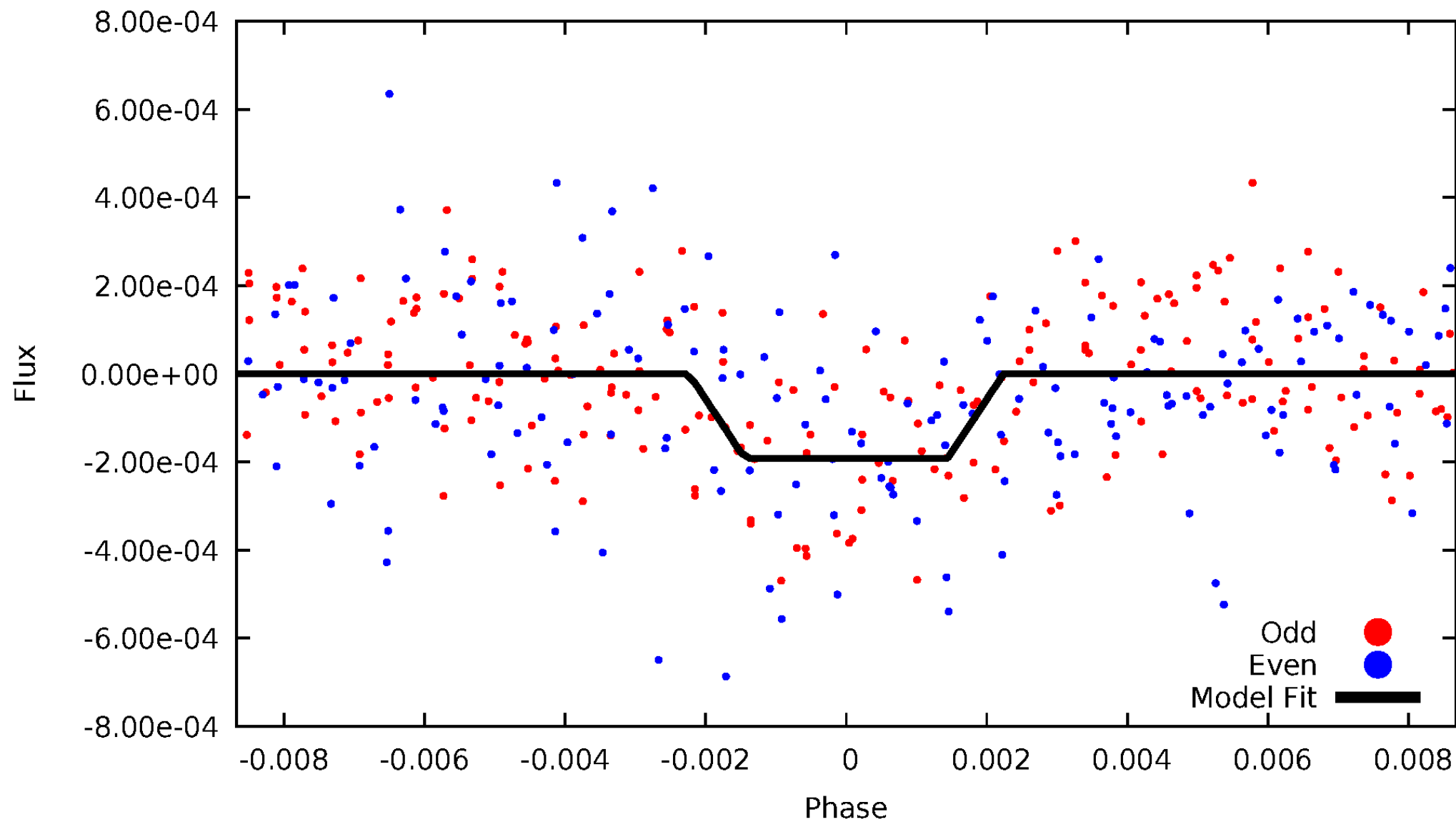
DV Odd/Even

TCE 010096641-04



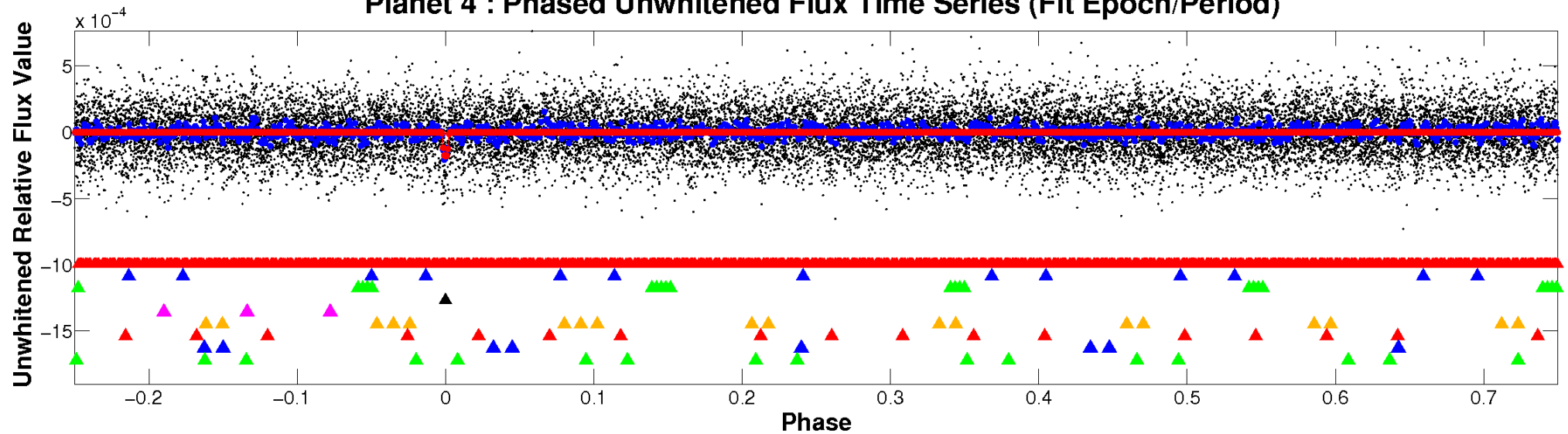
ALT Odd/Even

TCE 010096641-04

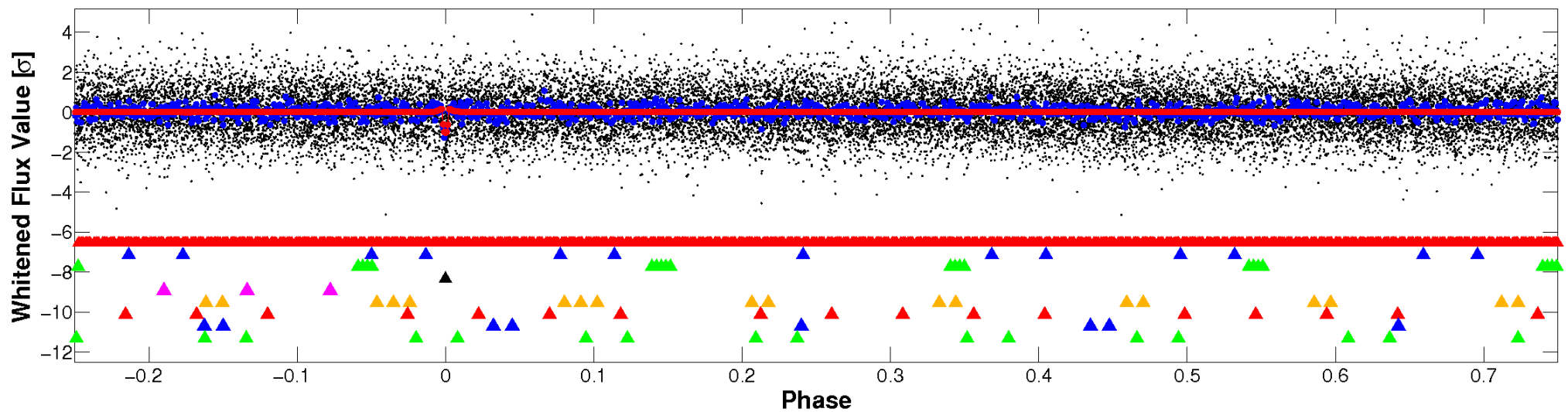


Non-Whitened Vs. Whitened Light Curve

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

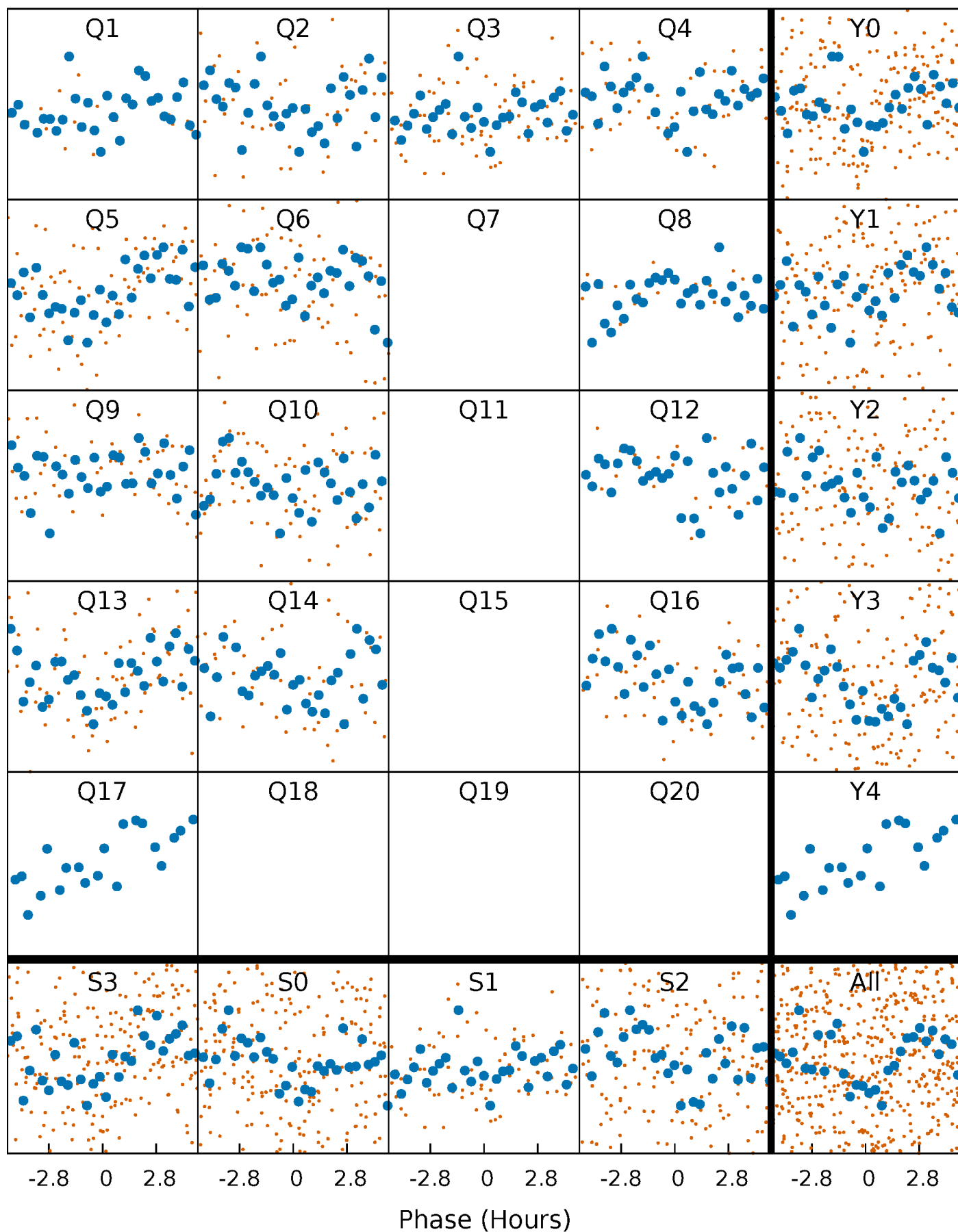


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



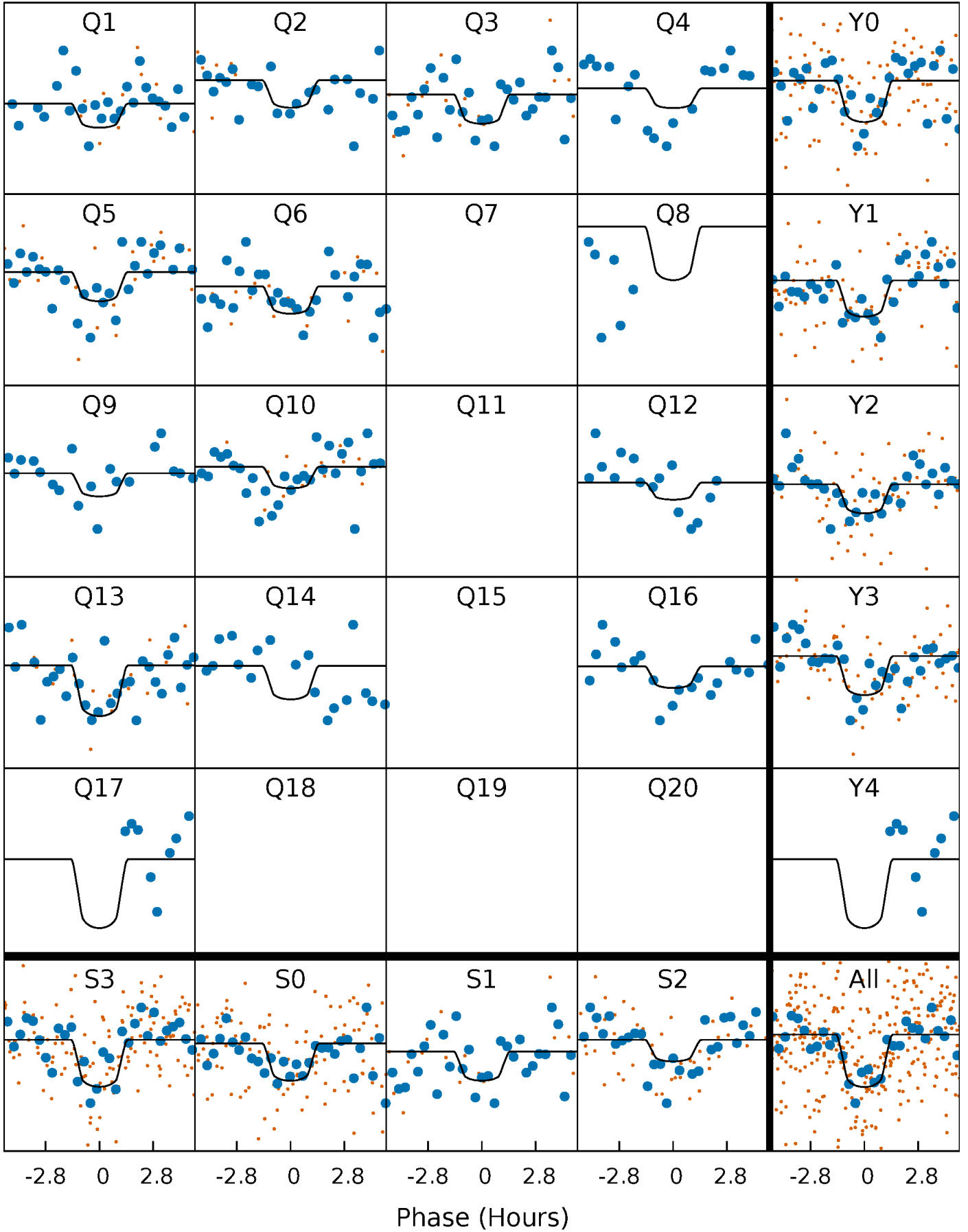
PDC Quarter-Phased Transit Curves

TCE 010096641-04 P= 25.776244 Days $T_0=137.530666$ (BKJD)



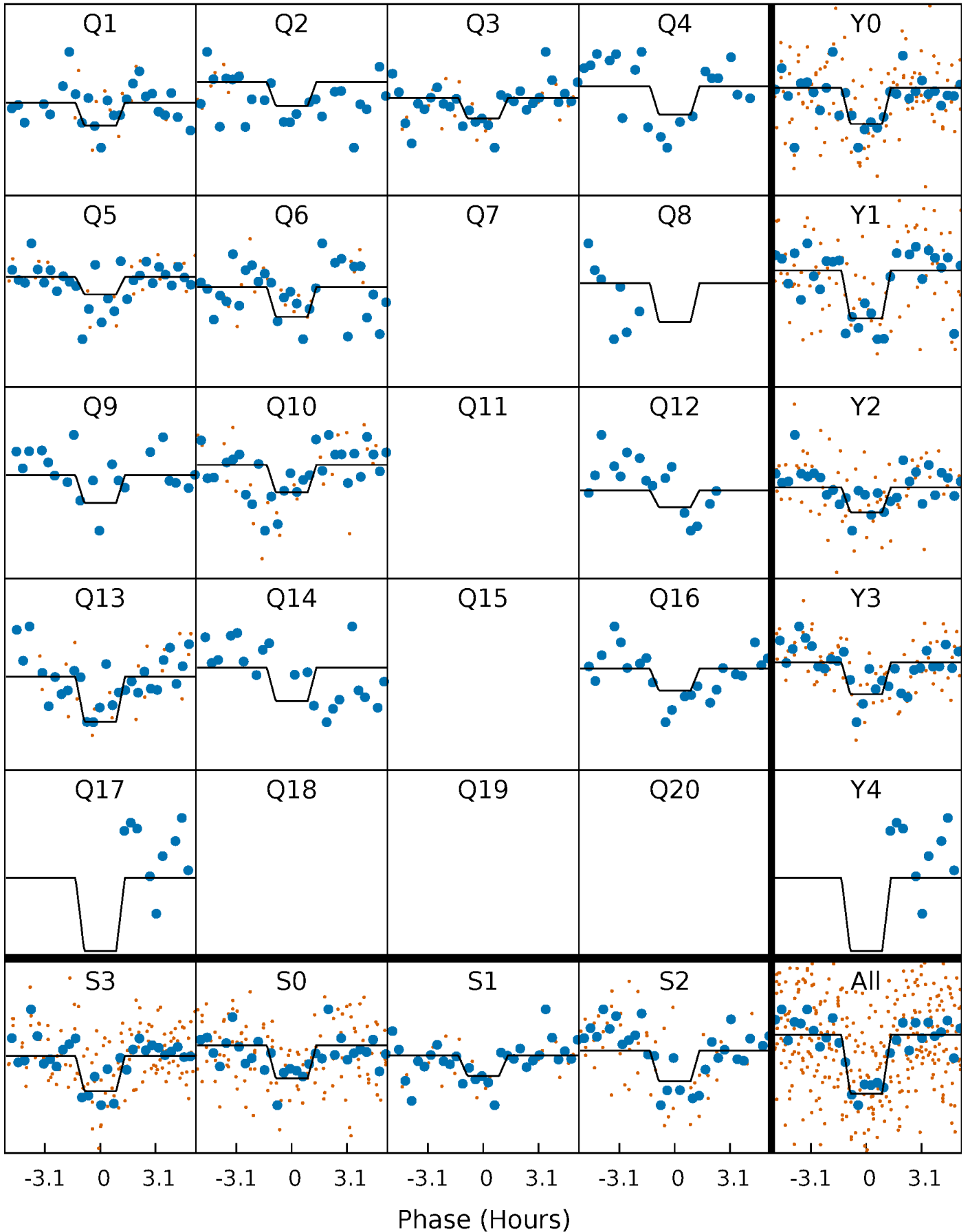
DV Quarter-Phased Transit Curves

TCE 010096641-04 P= 25.776244 Days $T_0=137.530666$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

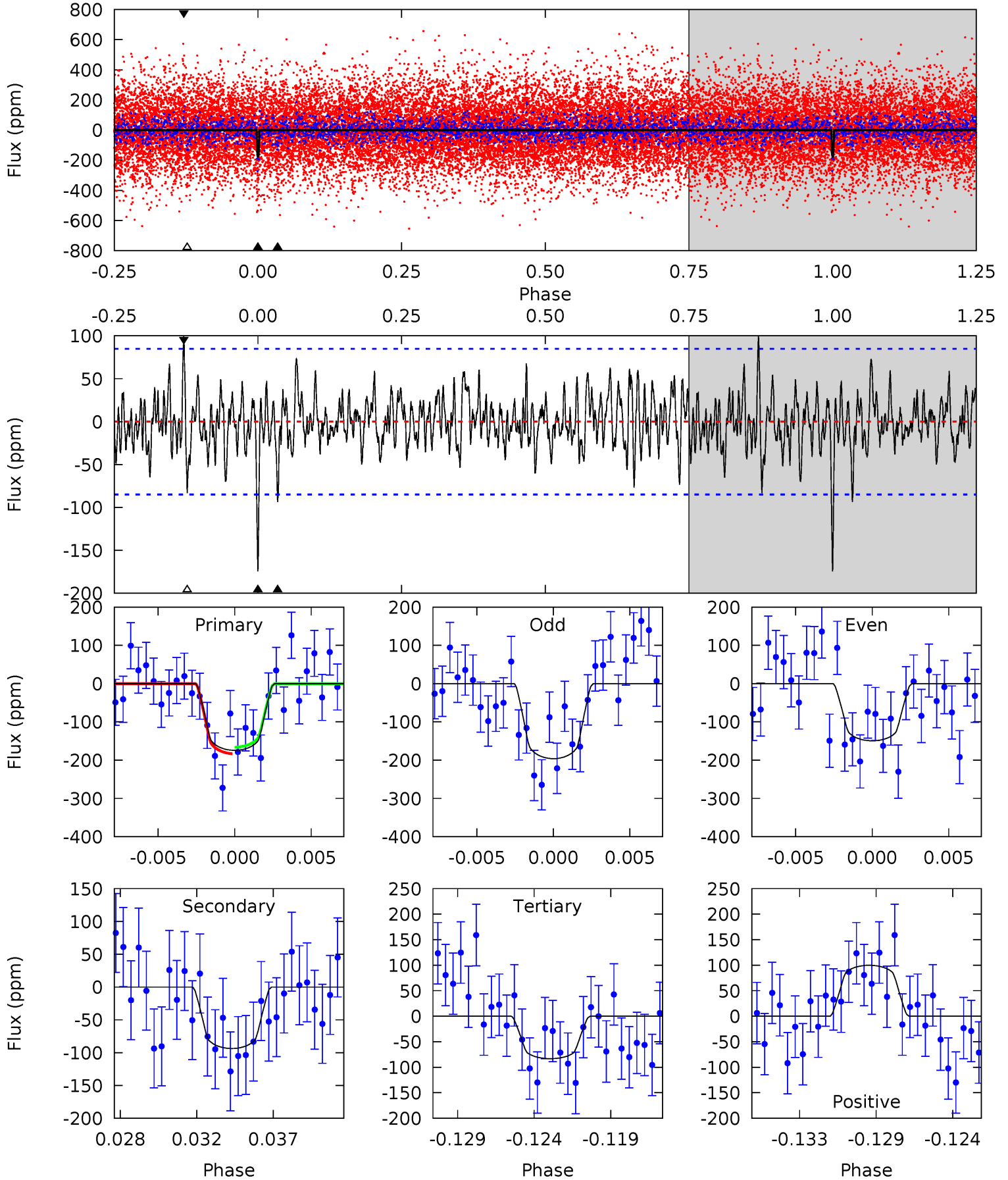
TCE 010096641-04 $P = 25.776273$ Days $T_0 = 137.529027$ (BKJD)



DV Model-Shift Uniqueness Test

010096641-04, $P = 25.776244$ Days, $E = 111.754422$ Days

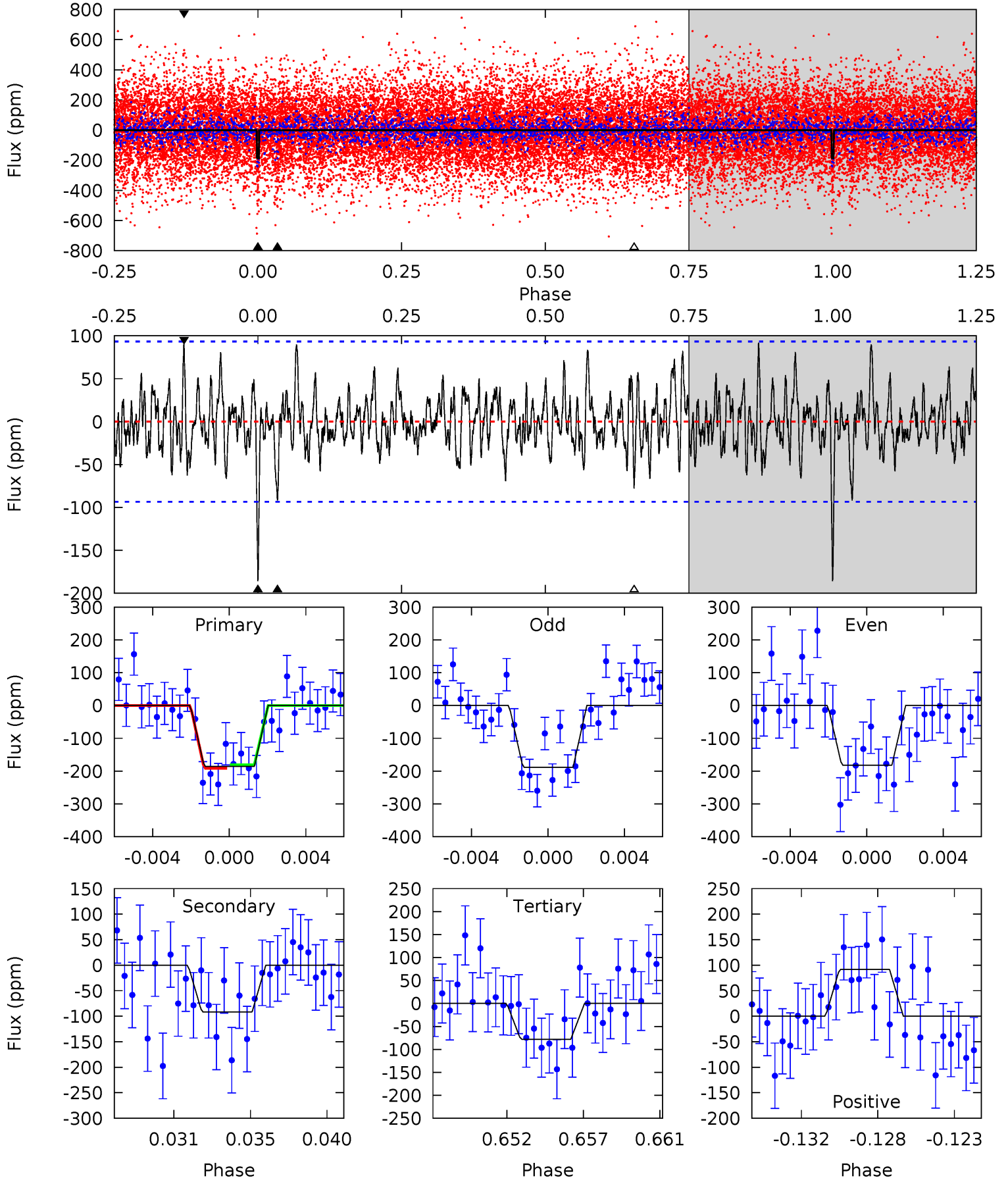
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	5.71	5.07	6.08	5.17	2.83	1.58	5.56	4.55	0.64	-0.37	1.43	1.03	0.36	0.52



Alt Model-Shift Uniqueness Test

010096641-04, P = 25.776273 Days, E = 111.752754 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	5.10	4.34	5.08	5.18	2.85	1.51	5.98	5.23	0.76	0.01	0.17	1.15	0.33	0.29



Stellar Parameters For KIC 010096641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6292^{+192}_{-173}	$3.503^{+0.384}_{-0.096}$	$-0.240^{+0.350}_{-0.300}$	$3.767^{+0.674}_{-1.685}$	$1.648^{+0.194}_{-0.421}$	$0.043^{+0.128}_{-0.016}$
	+3%/-3%	+11%/-3%	+146%/-125%	+18%/-45%	+12%/-26%	+296%/-38%
Source	PHO1	FLK73	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 010096641-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-94 ± 16	$5.77^{+4.61}_{-3.33}$	1646^{+110}_{-183}	5062^{+2485}_{-965}	63^{+280}_{-45}
Alt.	-92 ± 18	$5.36^{+4.26}_{-3.33}$	1638^{+101}_{-198}	5089^{+3268}_{-946}	73^{+420}_{-50}

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 $A_{\text{obs}} \gg 1.0$

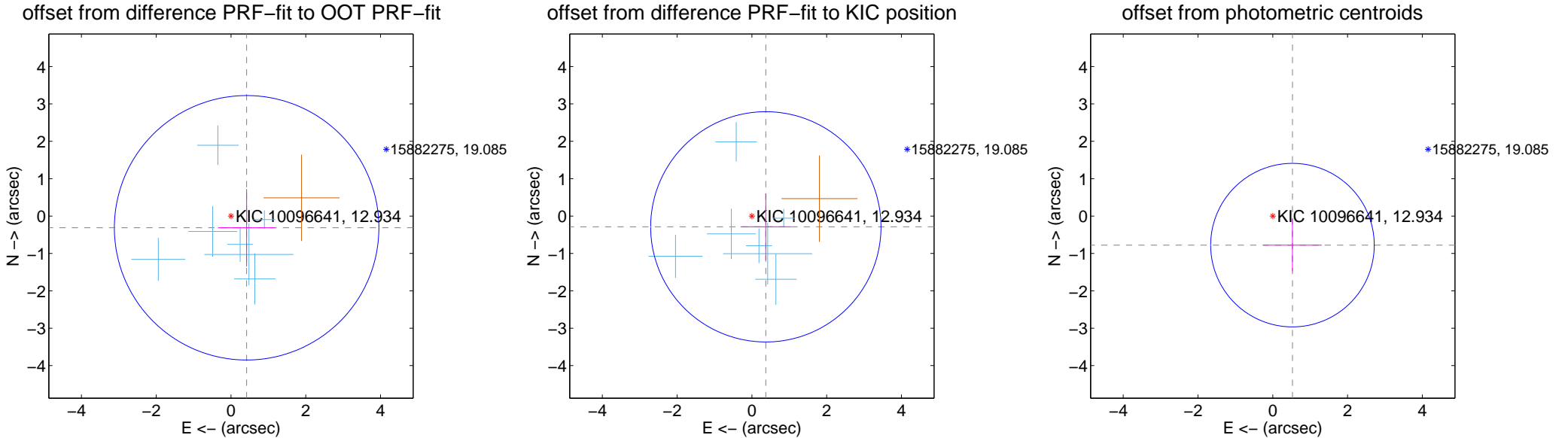
DV Centroid Data

Supplemental centroid analysis for 010096641-04. Kepler magnitude: 12.93. Transit SNR 8.24

There are 7 quarters with good PRF difference image offsets

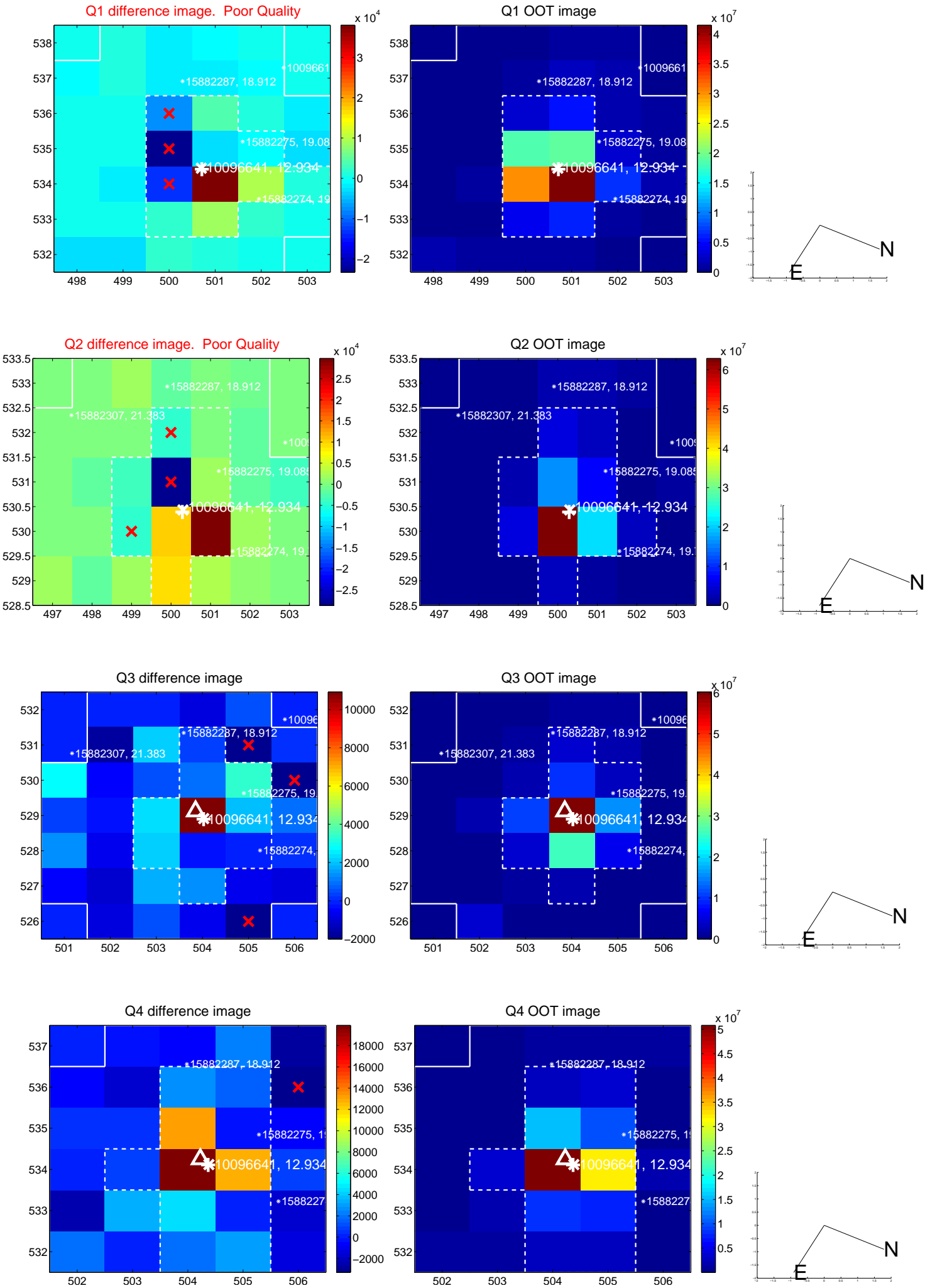
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.523 ± 1.179	0.44	-0.419 ± 0.768	-0.313 ± 1.037
PRF-fit source offset from KIC position	0.471 ± 1.027	0.46	-0.373 ± 0.677	-0.288 ± 0.898
photometric centroid source offset	0.94 ± 0.73	1.29	-0.53 ± 0.78	-0.78 ± 0.70

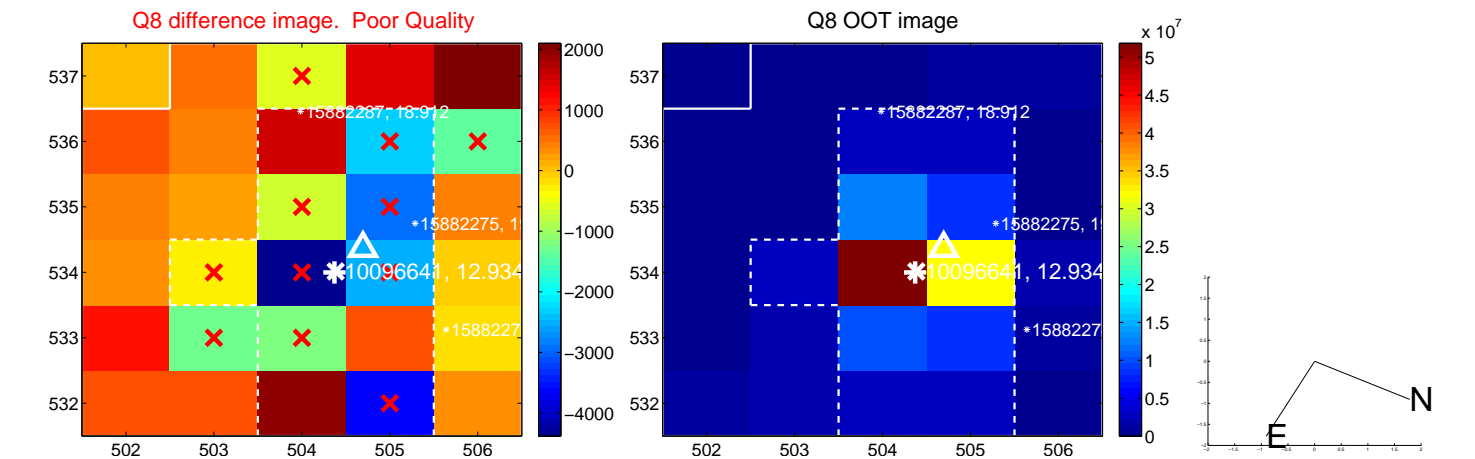
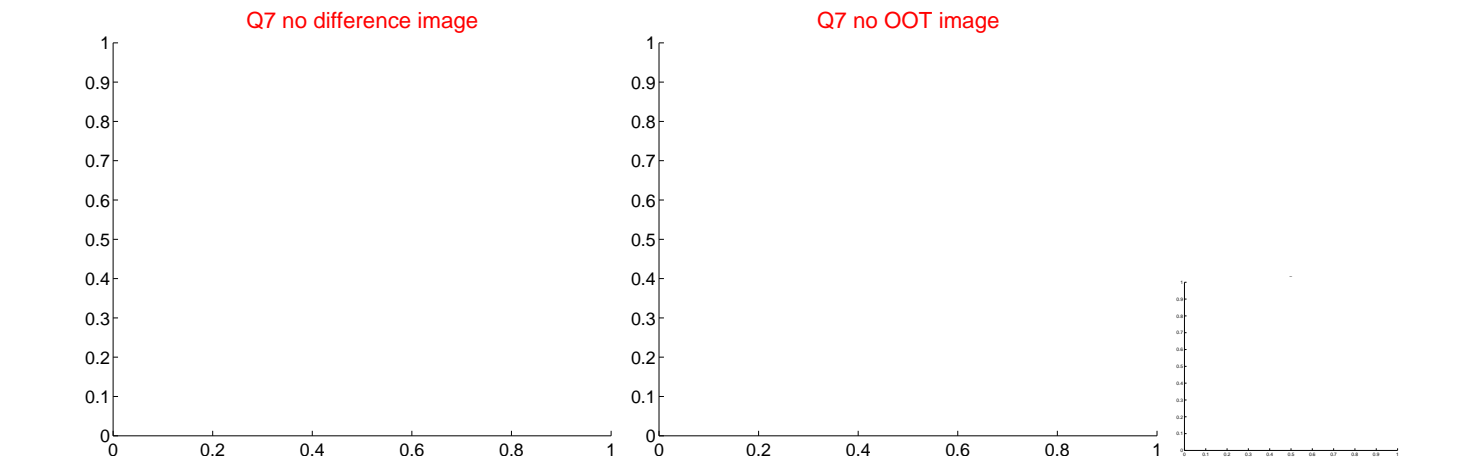
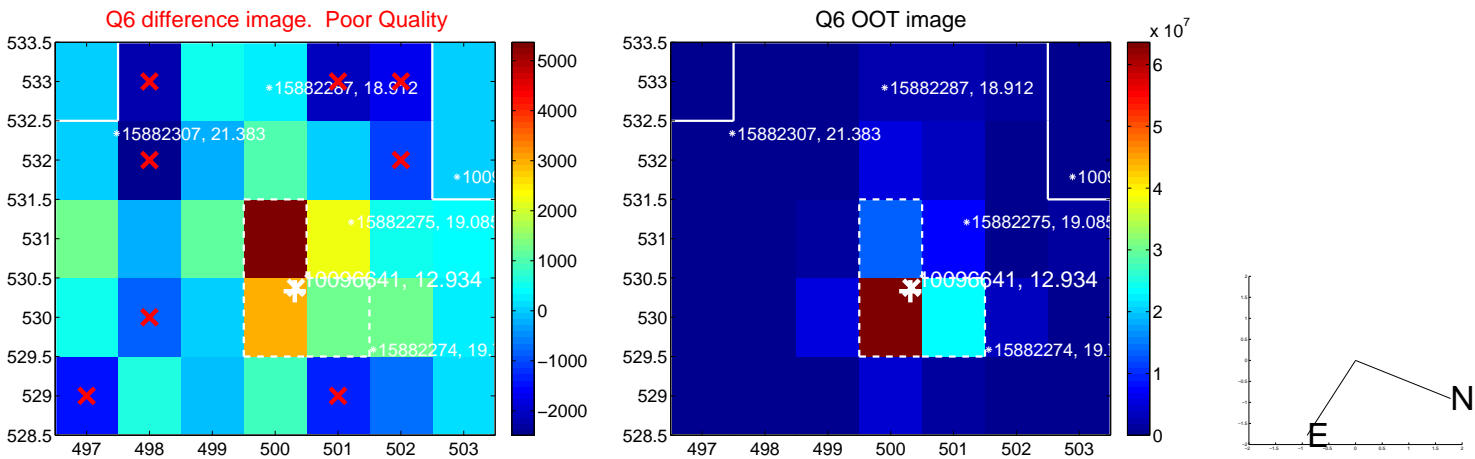
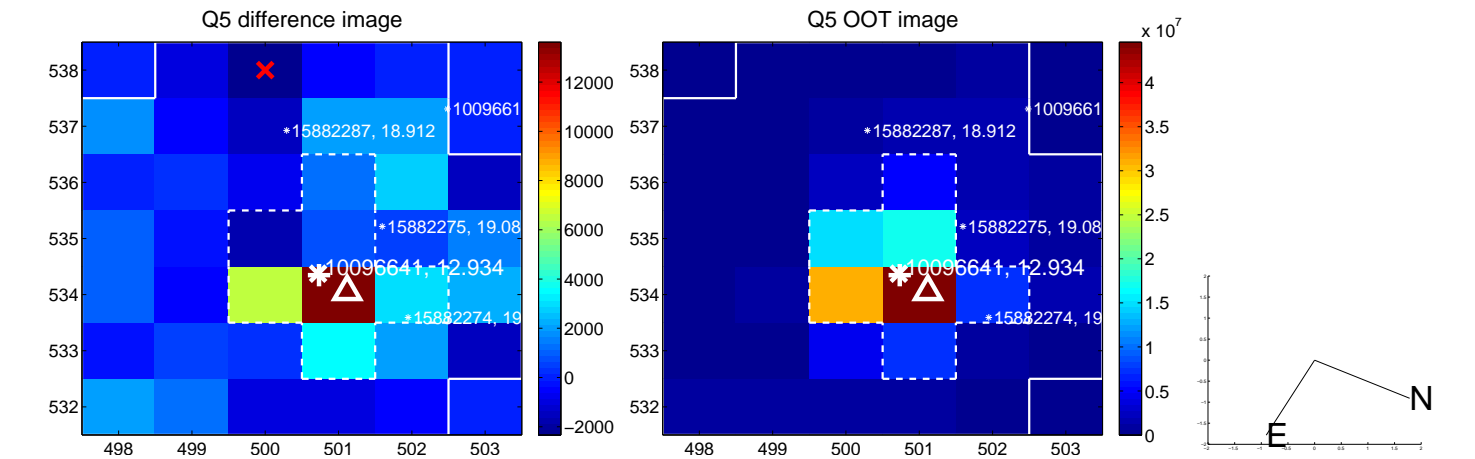


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

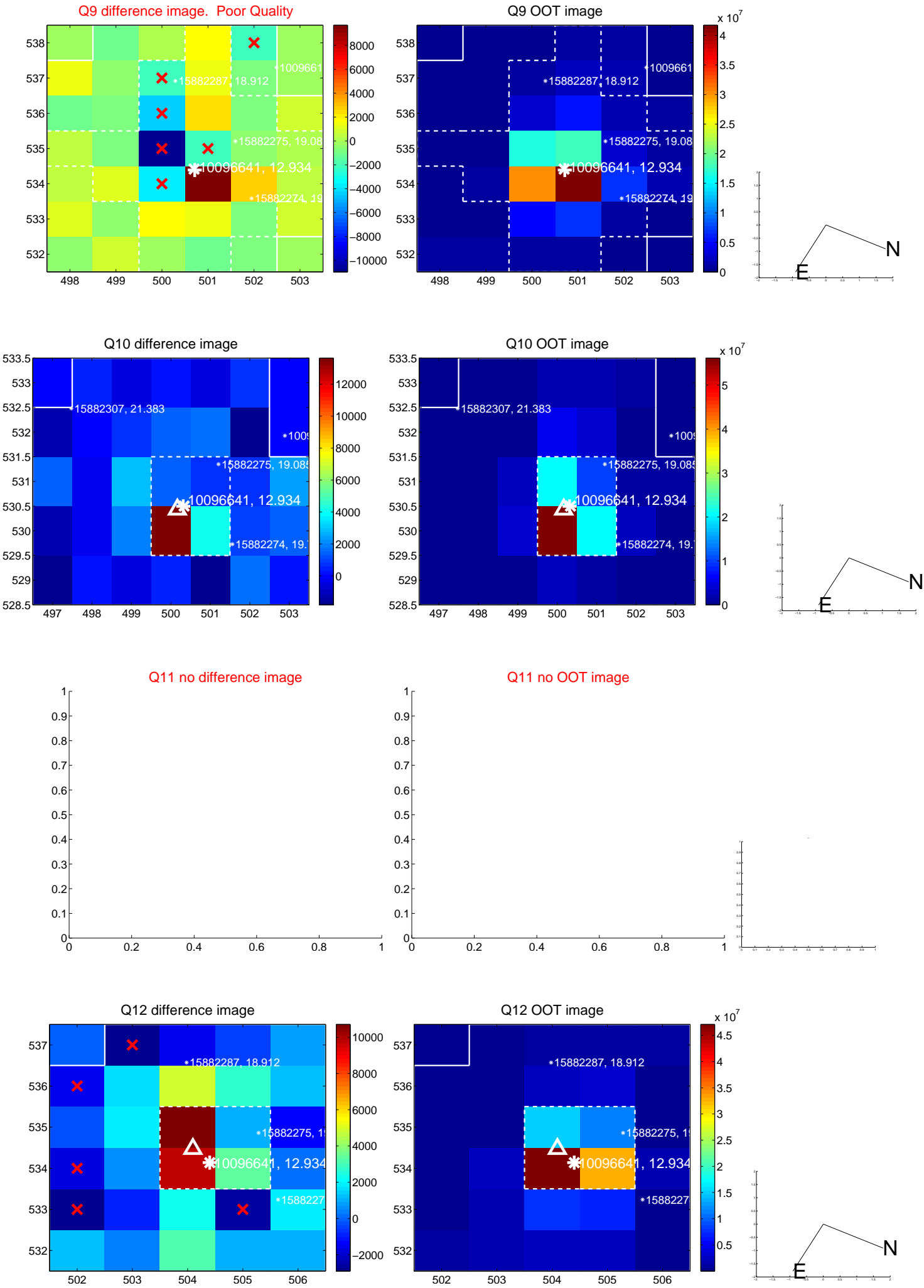
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



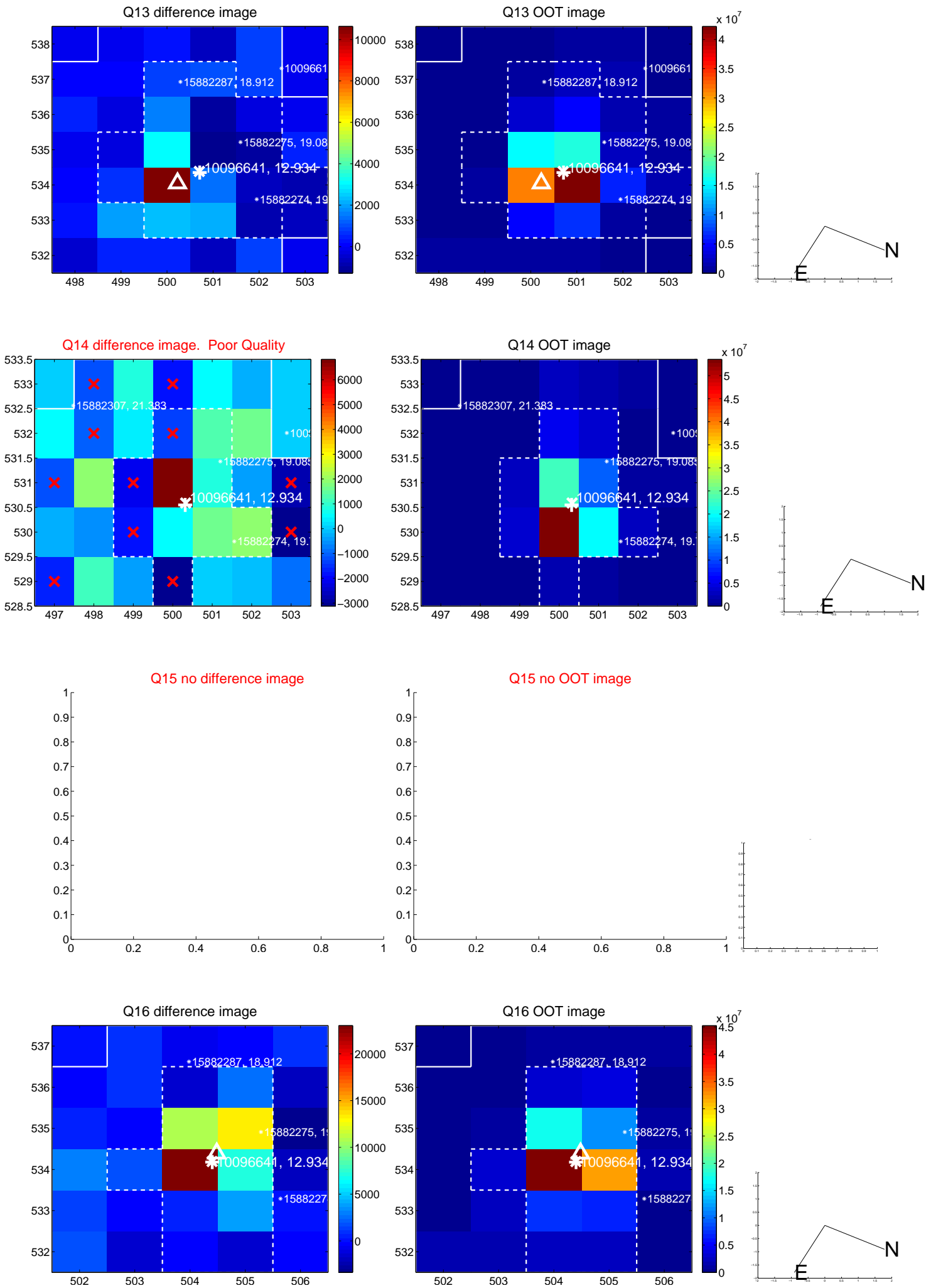
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



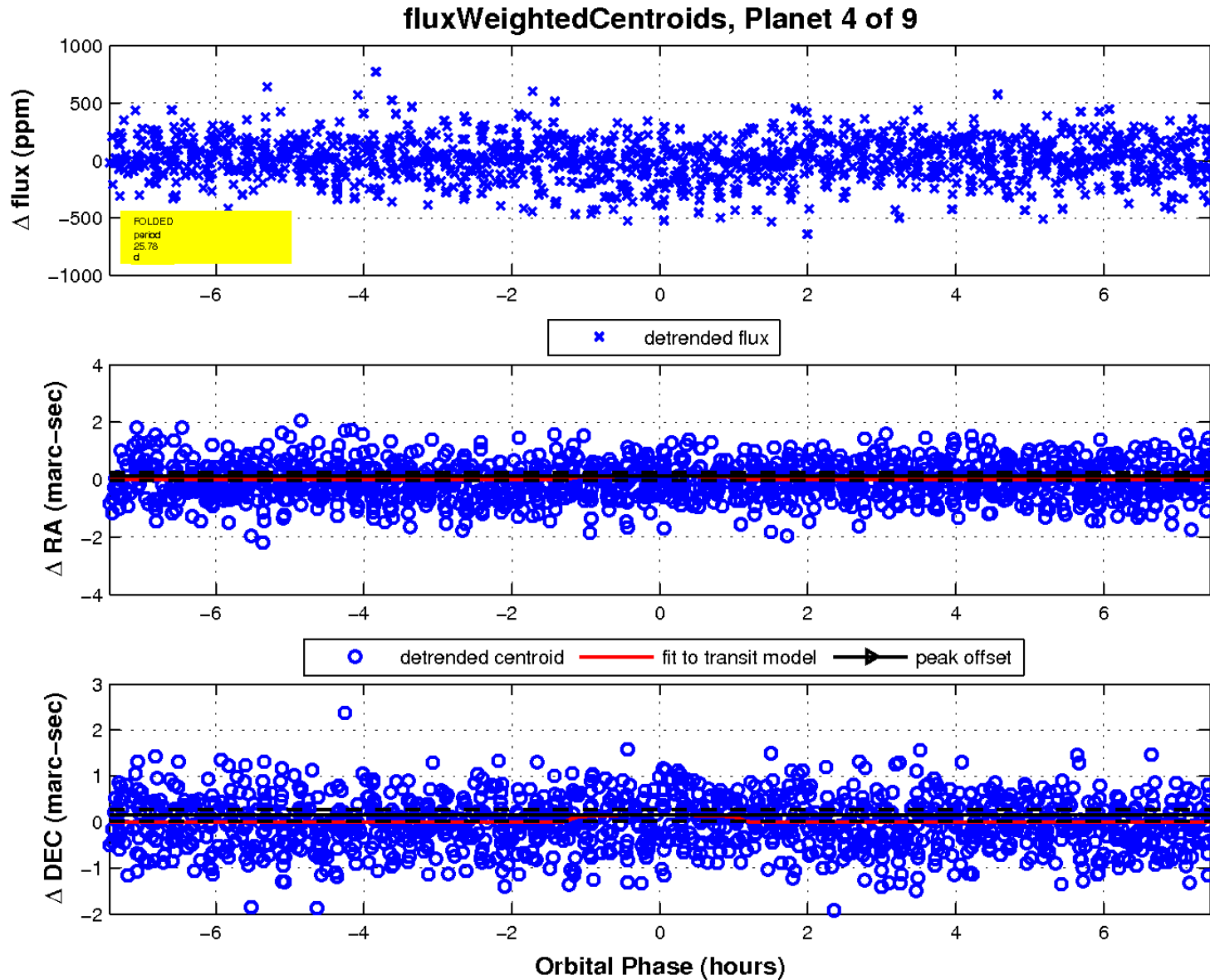
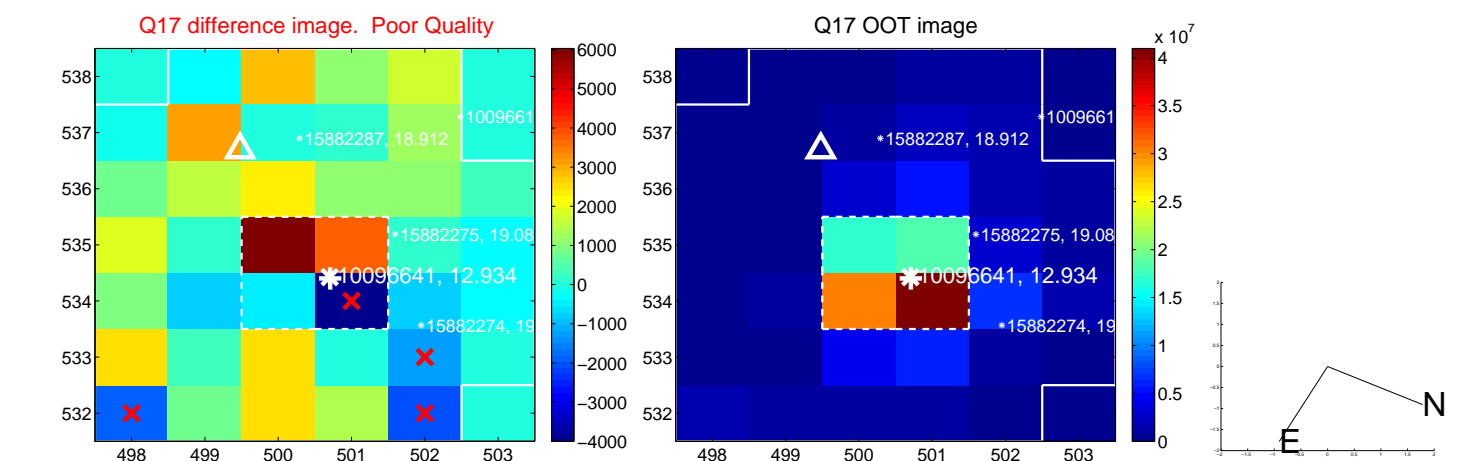
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

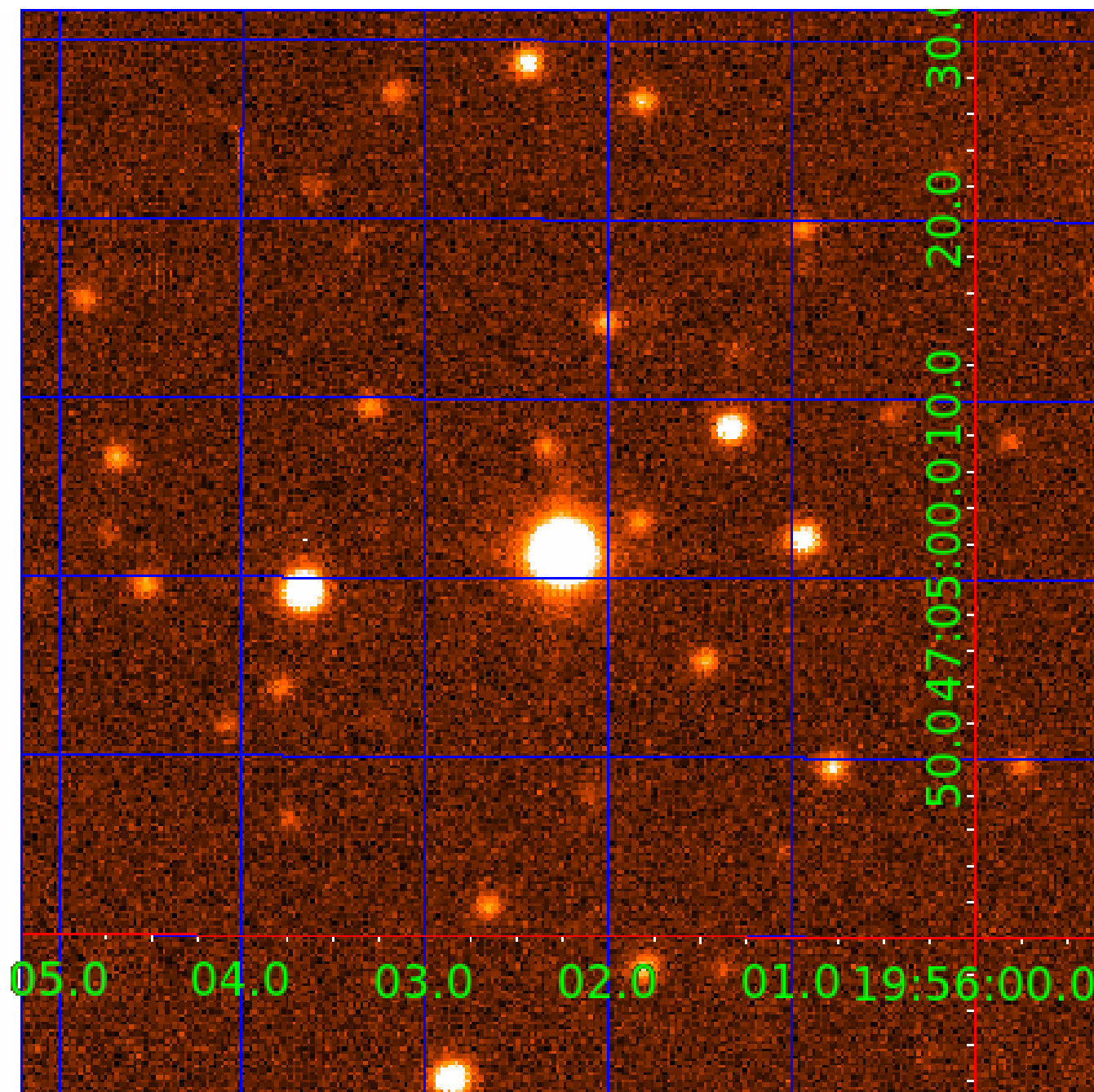


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010096641

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})
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010096641-07	OBS	No	83.464284	199.496903	435.5	2.032	7.3	7.8	3.77	6292	8.95	102.18
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010096641-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
010096641-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—HALO_GHOST
010096641-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010096641-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
010096641-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
010096641-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

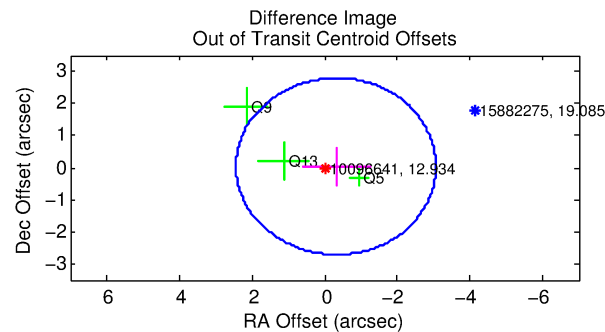
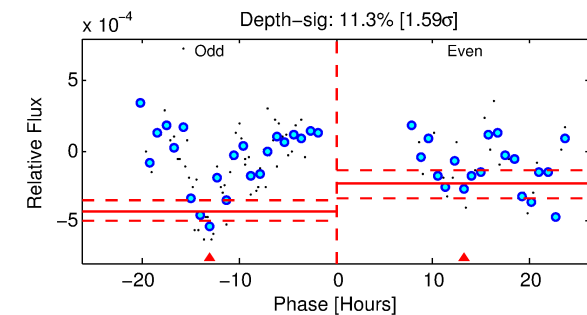
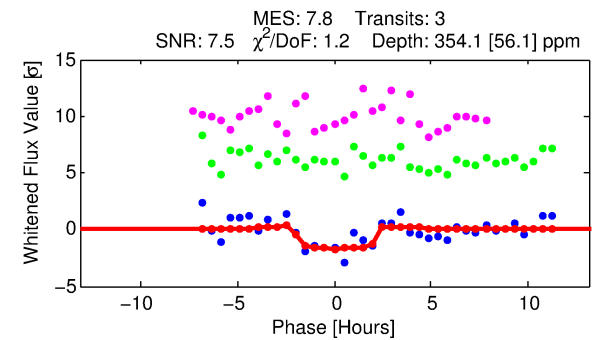
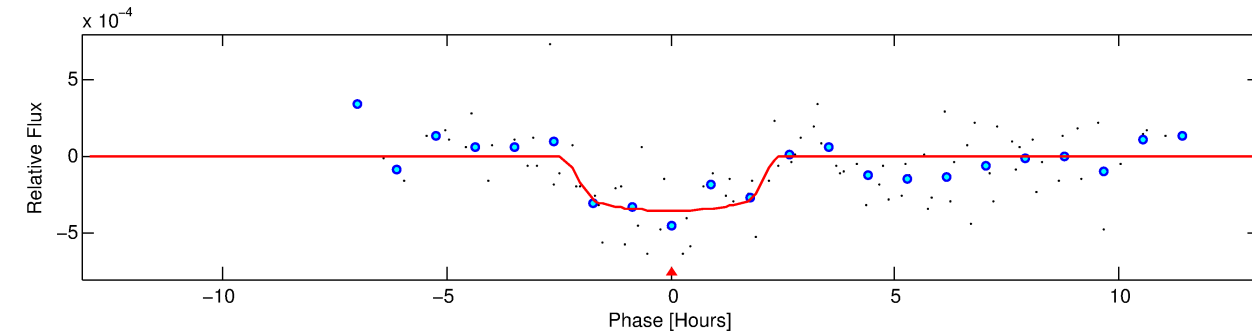
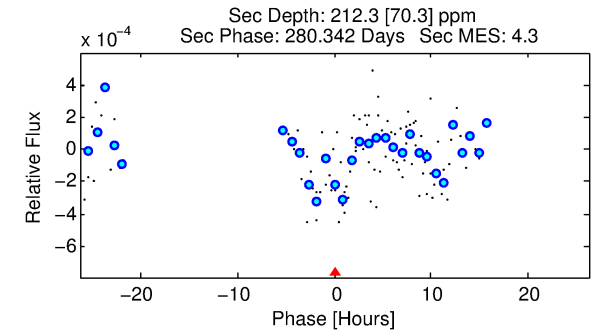
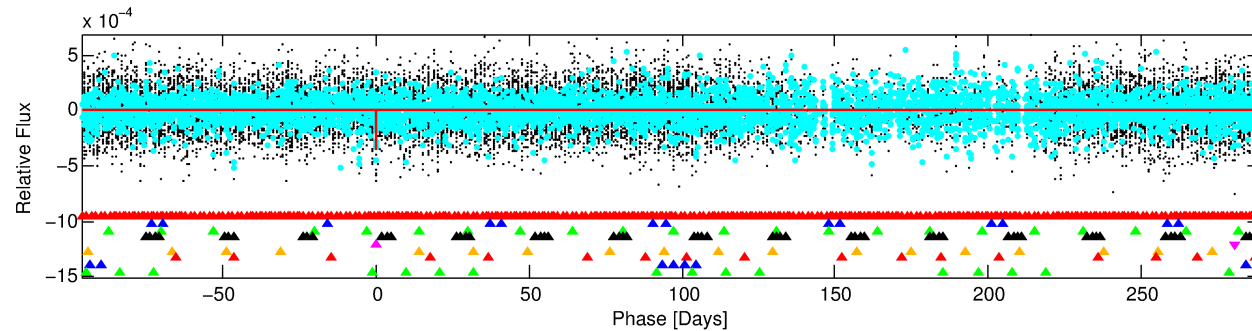
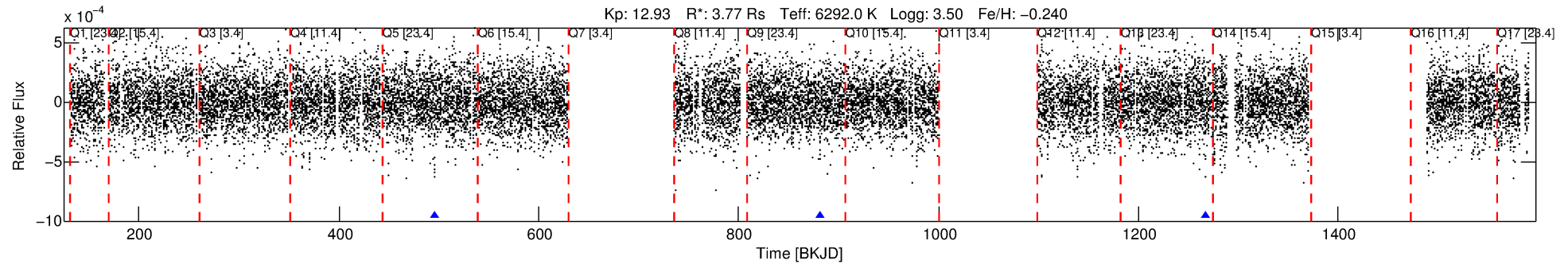
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096641-05

No Significant Match Found

DV One-Page Summary

KIC: 10096641 Candidate: 5 of 9 Period: 385.198 d



DV Fit Results:

Period = 385.19817 [0.00875] d
Epoch = 496.3964 [0.0111] BKJD
Rp/R* = 0.0185 [0.0215]
a/R* = 494.89 [3043.12]
b = 0.70 [4.48]
Seff = 13.30 [8.93]
Teff = 487 [82] K
Rp = 7.59 [9.46] Re
a = 1.2241 [0.5132] AU
Ag = 3037.73 [7416.39] [0.41σ]
Teffp = 5589 [3289] K [1.55σ]

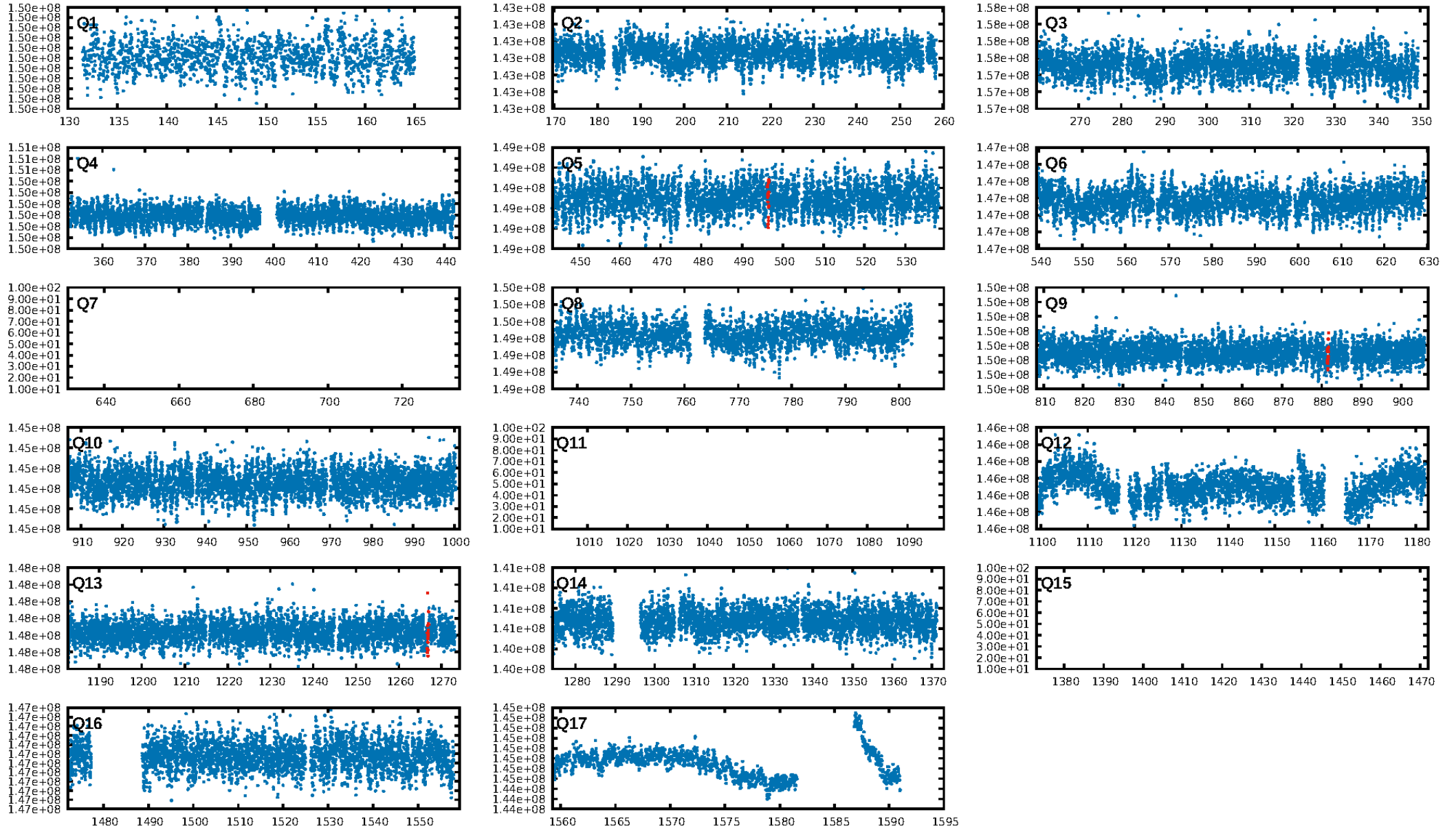
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [568.37σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.9%
ModelChiSquareGof-sig: 81.0%
Bootstrap-pfa: 4.69e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.557
Centroid-sig: 26.2%
Centroid-so: 0.942 arcsec [0.85σ]
OotOffset-rm: 0.316 arcsec [0.35σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-rm: 0.279 arcsec [0.32σ]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

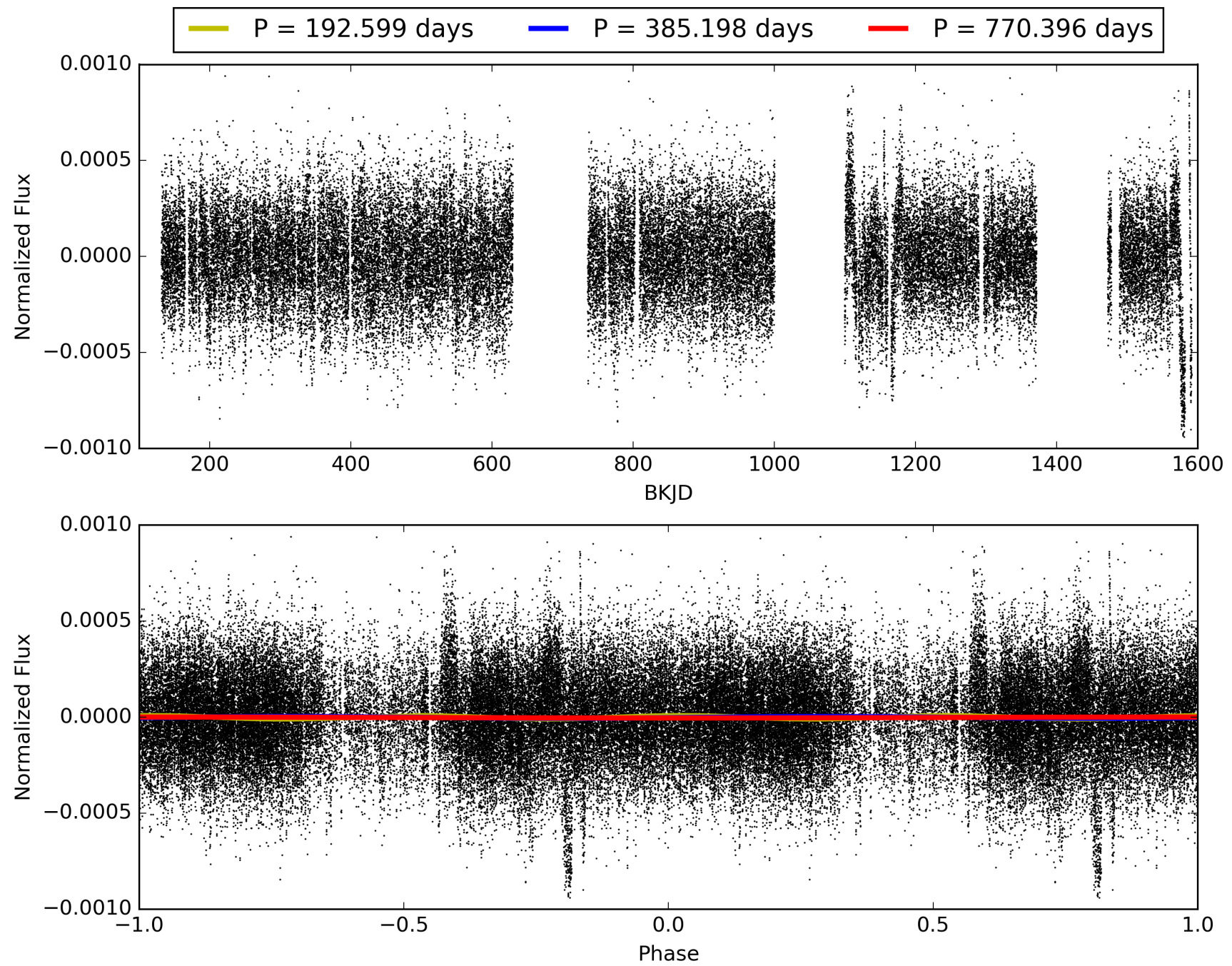
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:58:35 Z

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

TCE 010096641-05, PDC Light Curves

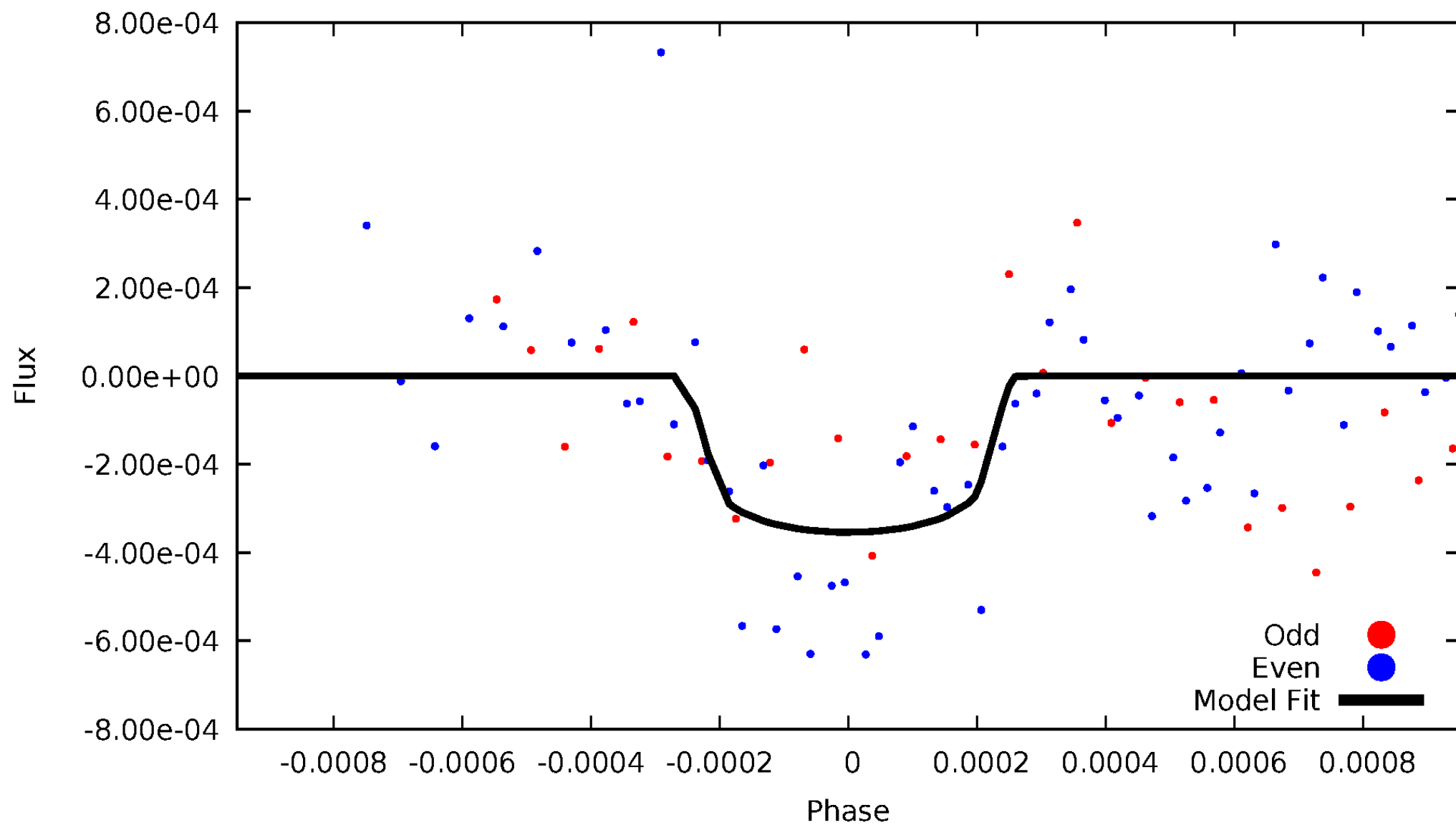


TCE 010096641-05



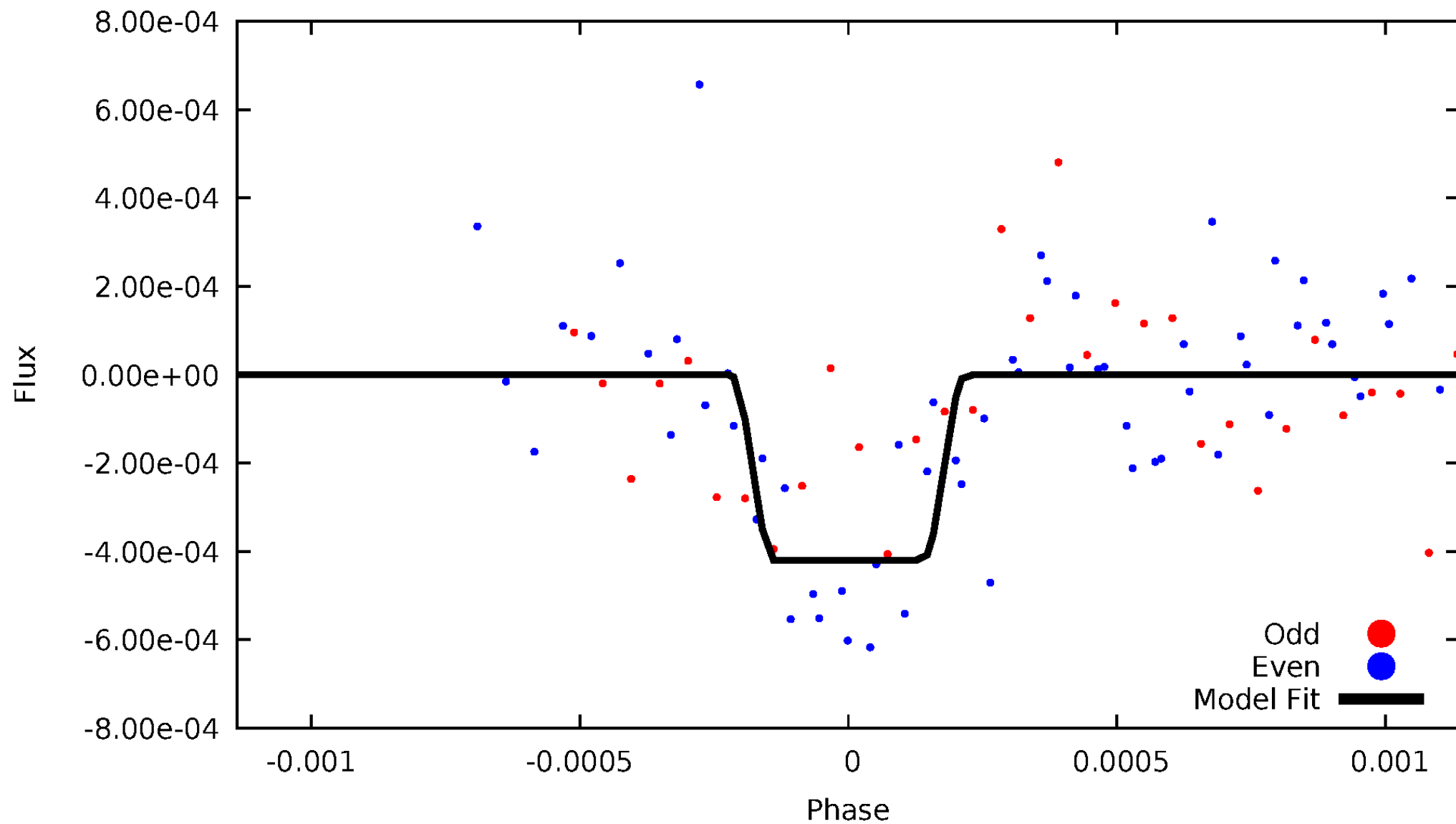
DV Odd/Even

TCE 010096641-05



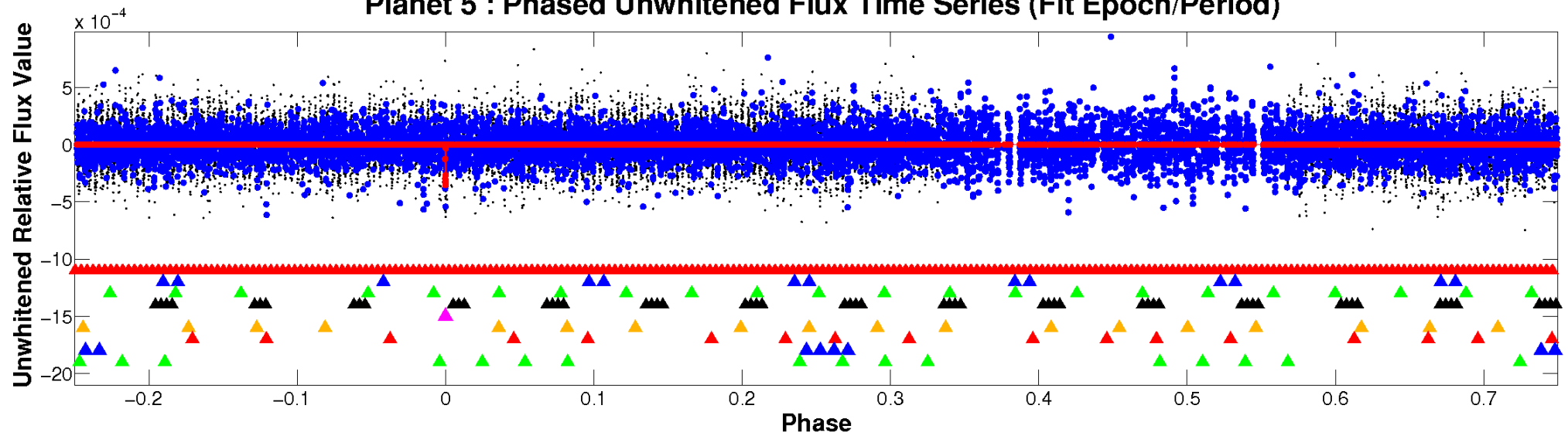
ALT Odd/Even

TCE 010096641-05

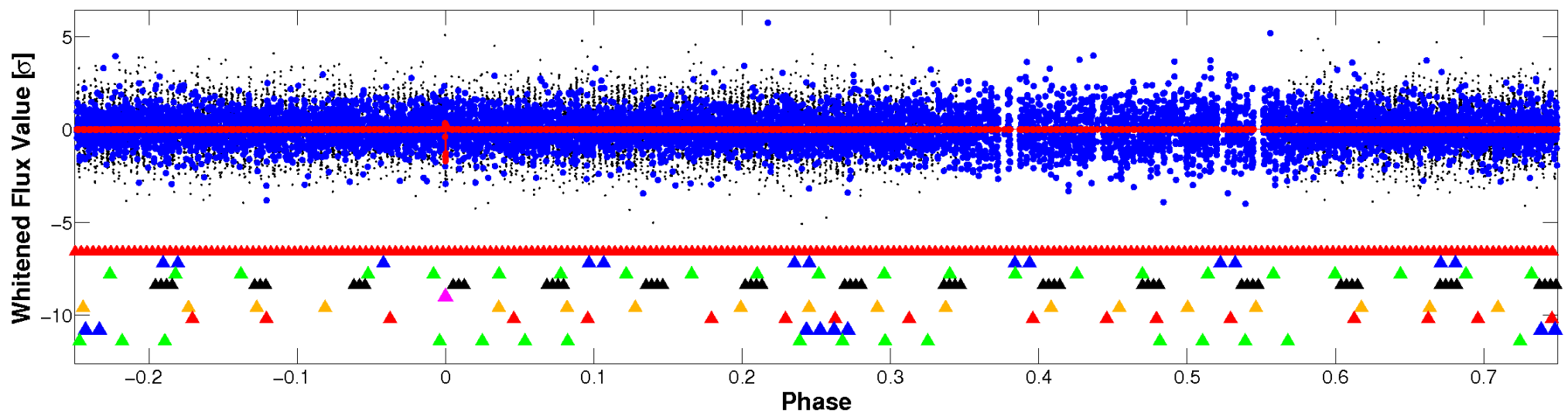


Non-Whitened Vs. Whitened Light Curve

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

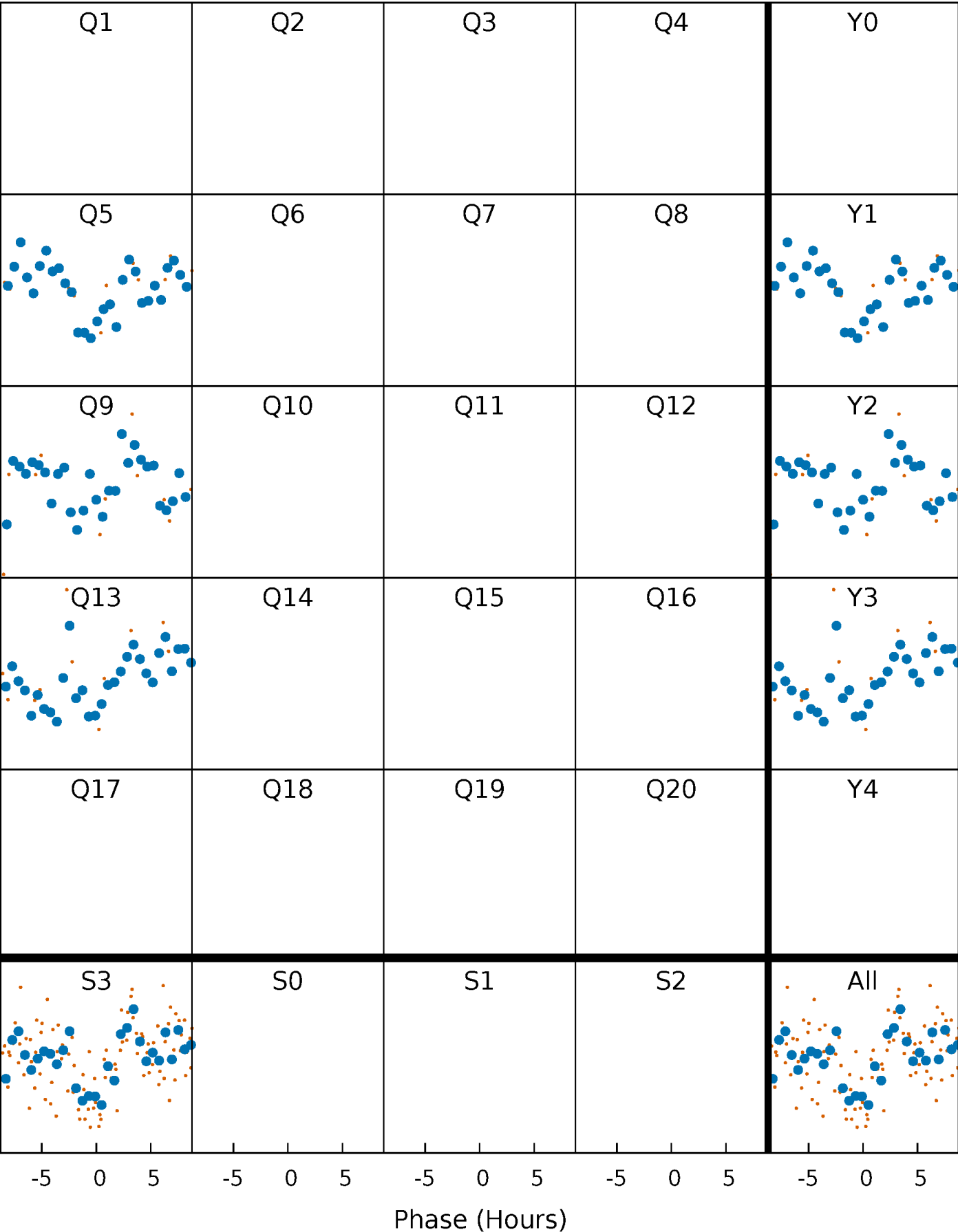


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



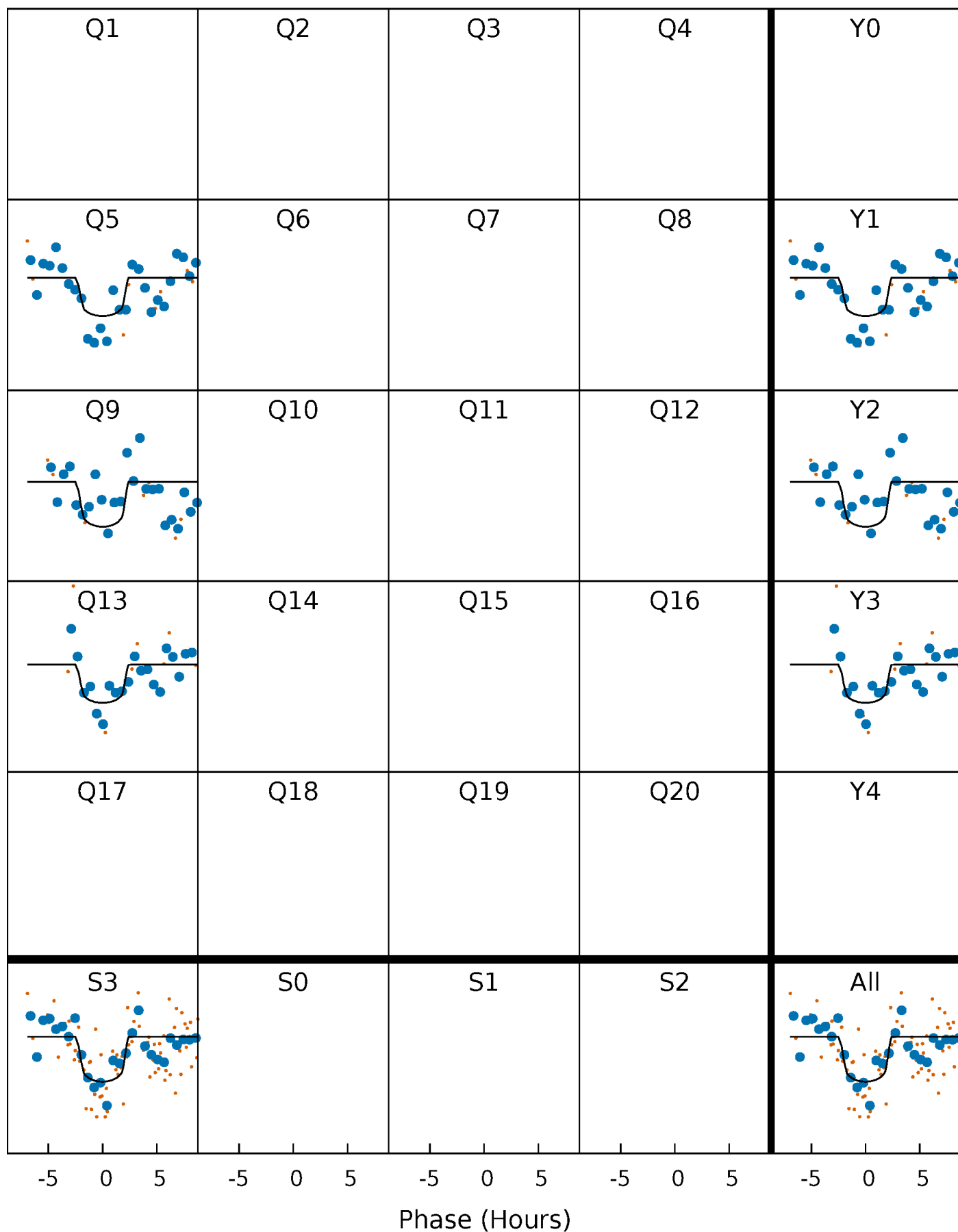
PDC Quarter-Phased Transit Curves

TCE 010096641-05 P=385.198169 Days $T_0=496.396434$ (BKJD)



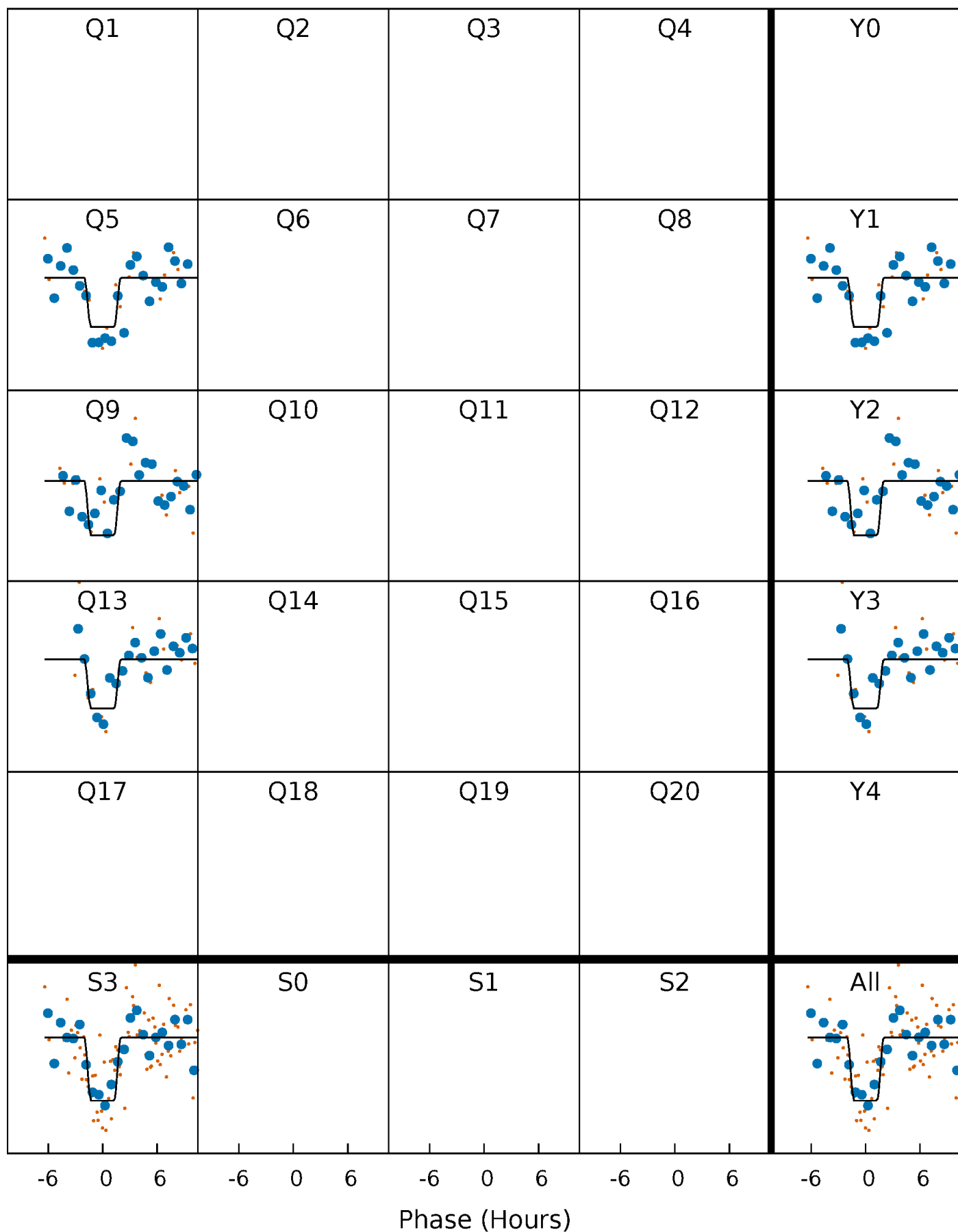
DV Quarter-Phased Transit Curves

TCE 010096641-05 $P=385.198169$ Days $T_0=496.396434$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

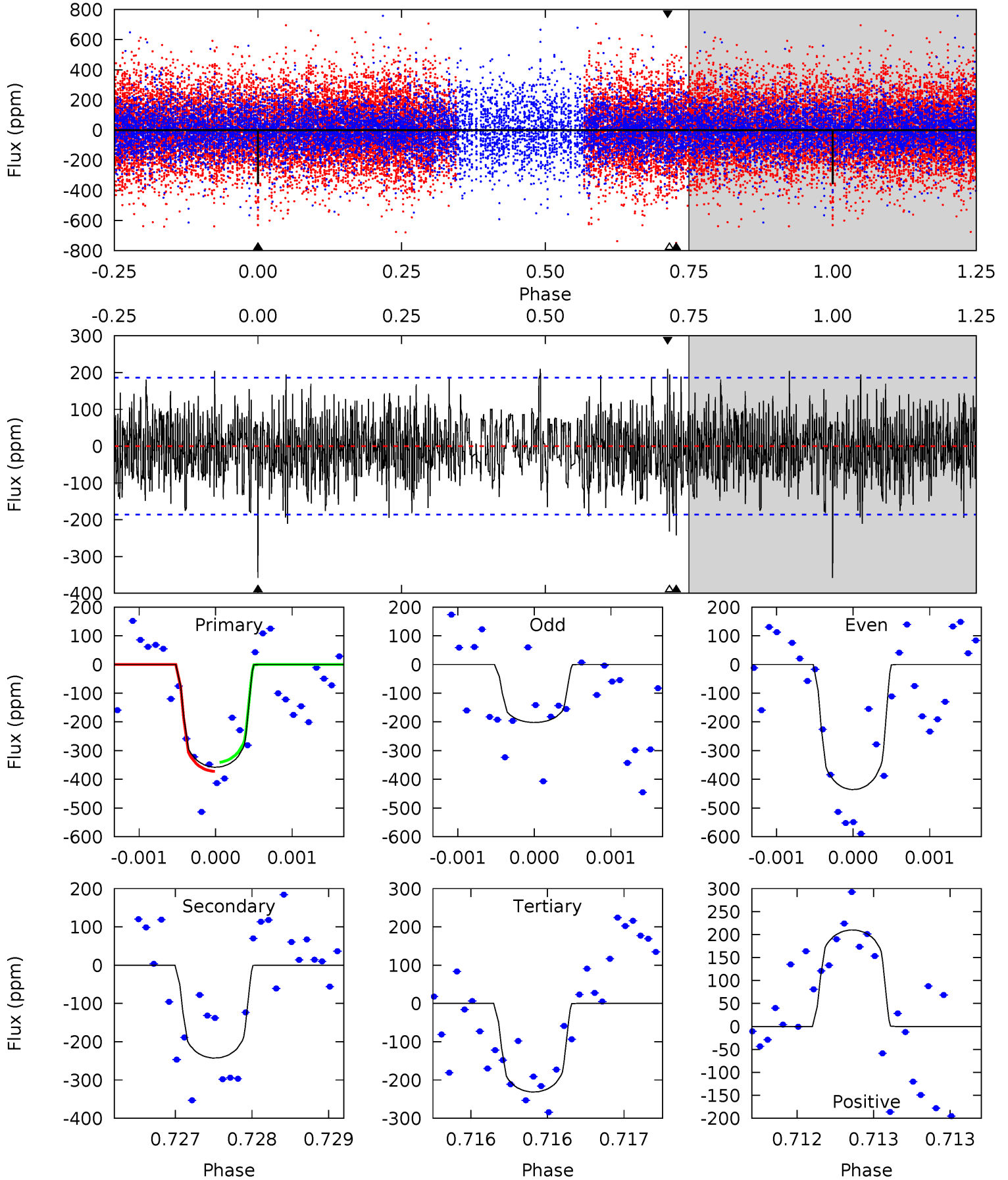
TCE 010096641-05 $P=385.206662$ Days $T_0=496.374189$ (BKJD)



DV Model-Shift Uniqueness Test

010096641-05, P = 385.198169 Days, E = 111.198265 Days

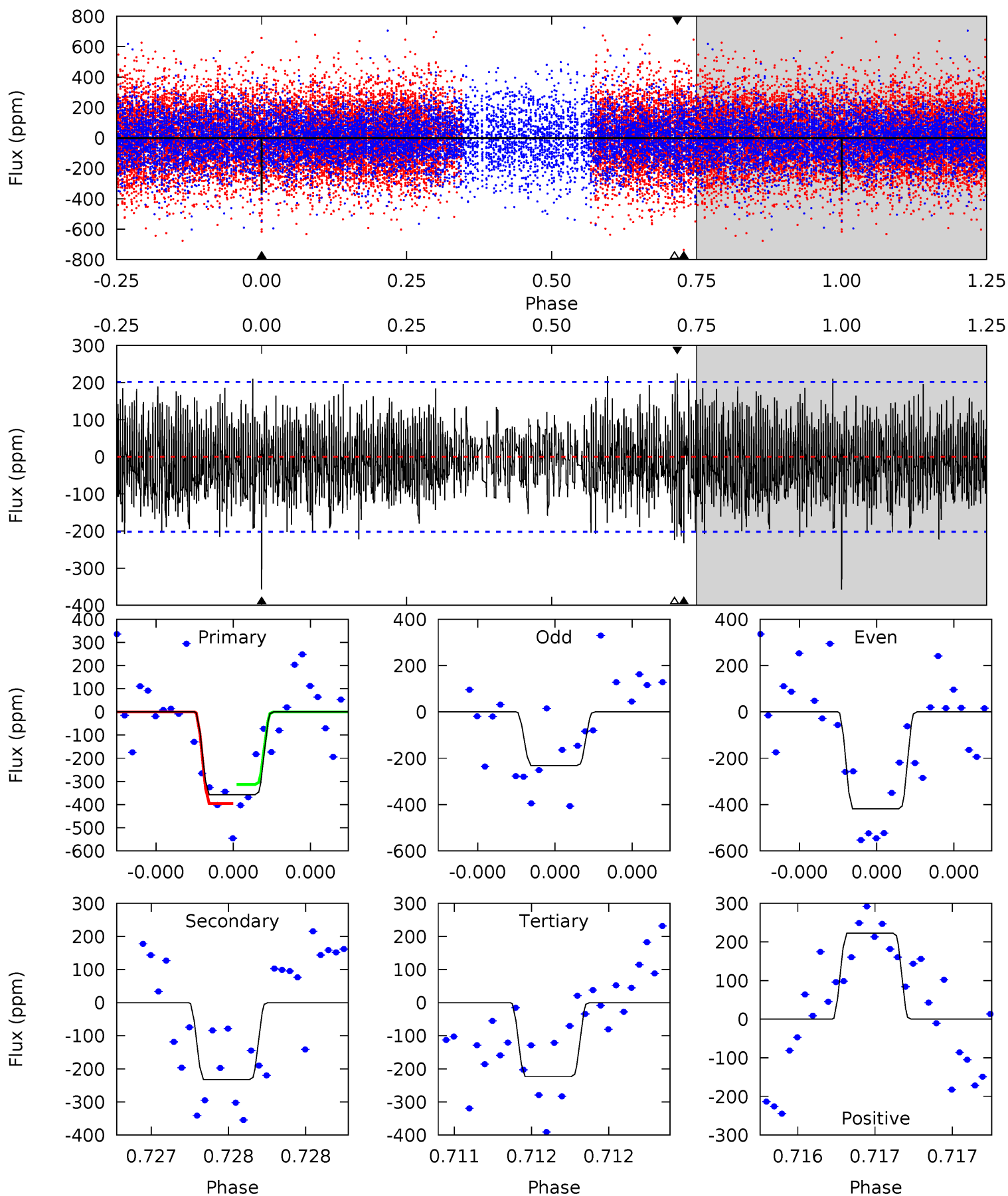
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	7.26	6.92	6.28	5.57	3.47	1.90	3.79	4.43	0.34	0.98	3.29	0.97	0.37	0.47



Alt Model-Shift Uniqueness Test

010096641-05, P = 385.206662 Days, E = 111.167527 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.90	6.45	6.20	6.19	5.59	3.51	2.04	3.71	3.72	0.25	0.26	2.44	0.92	0.38	1.14



Stellar Parameters For KIC 010096641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6292^{+192}_{-173}	$3.503^{+0.384}_{-0.096}$	$-0.240^{+0.350}_{-0.300}$	$3.767^{+0.674}_{-1.685}$	$1.648^{+0.194}_{-0.421}$	$0.043^{+0.128}_{-0.016}$
	+3%/-3%	+11%/-3%	+146%/-125%	+18%/-45%	+12%/-26%	+296%/-38%
Source	PHO1	FLK73	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 010096641-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-243 ± 33	$8.75^{+7.14}_{-5.75}$	664^{+43}_{-67}	5185^{+3678}_{-1074}	2619^{+19455}_{-1811}
Alt.	-233 ± 36	$9.03^{+8.11}_{-5.87}$	668^{+42}_{-69}	5106^{+3839}_{-1095}	2325^{+16576}_{-1667}

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

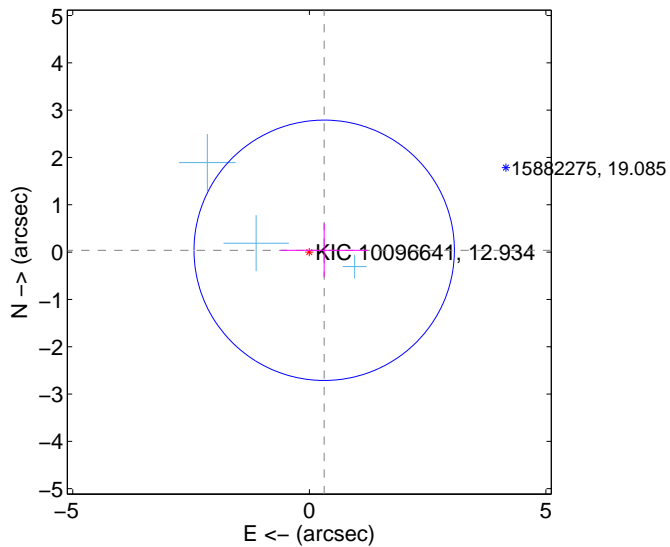
Supplemental centroid analysis for 010096641-05. Kepler magnitude: 12.93. Transit SNR 7.53

There are 3 quarters with good PRF difference image offsets

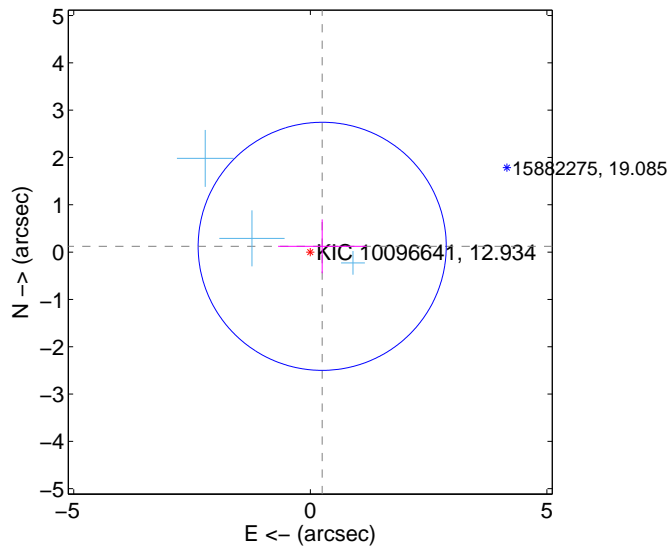
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.316 ± 0.917	0.35	-0.314 ± 0.921	0.038 ± 0.567
PRF-fit source offset from KIC position	0.279 ± 0.874	0.32	-0.251 ± 0.931	0.122 ± 0.569
photometric centroid source offset	0.94 ± 1.11	0.85	-0.59 ± 1.24	-0.73 ± 1.01

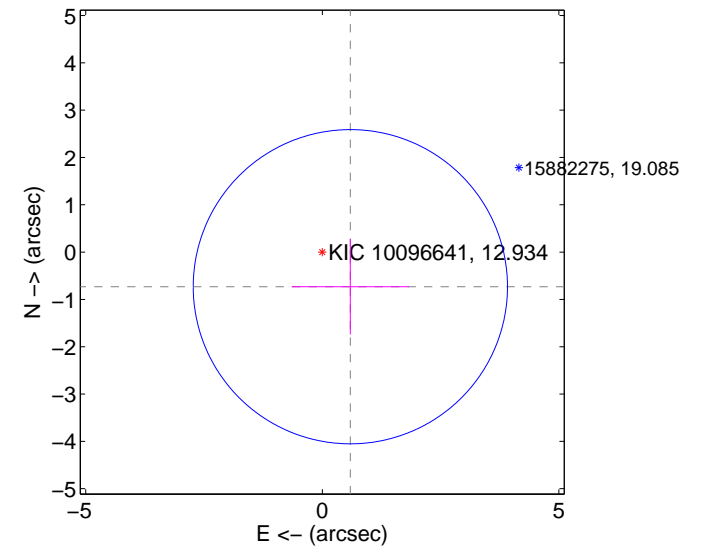
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

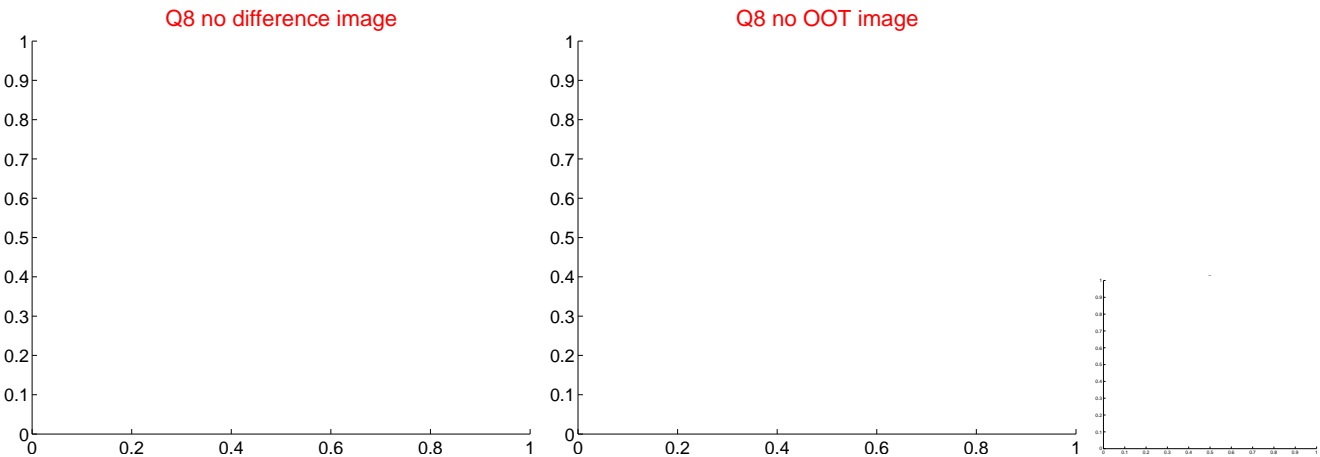
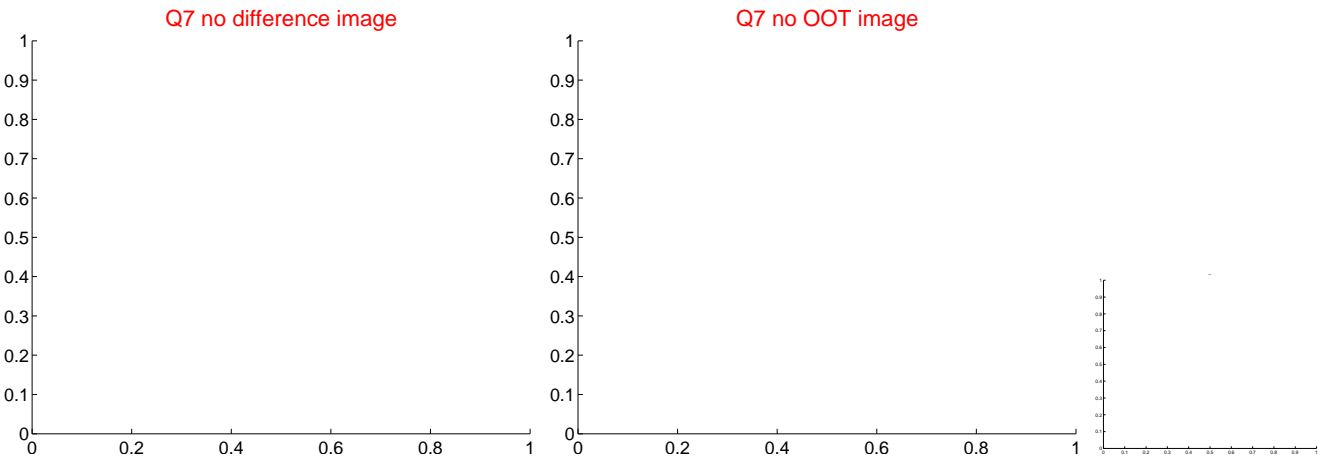
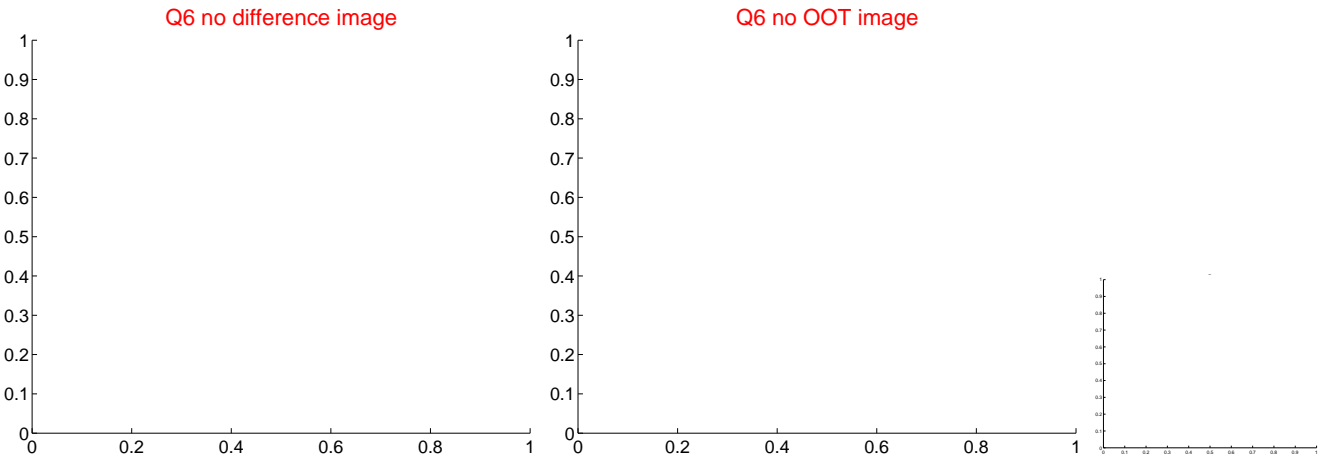
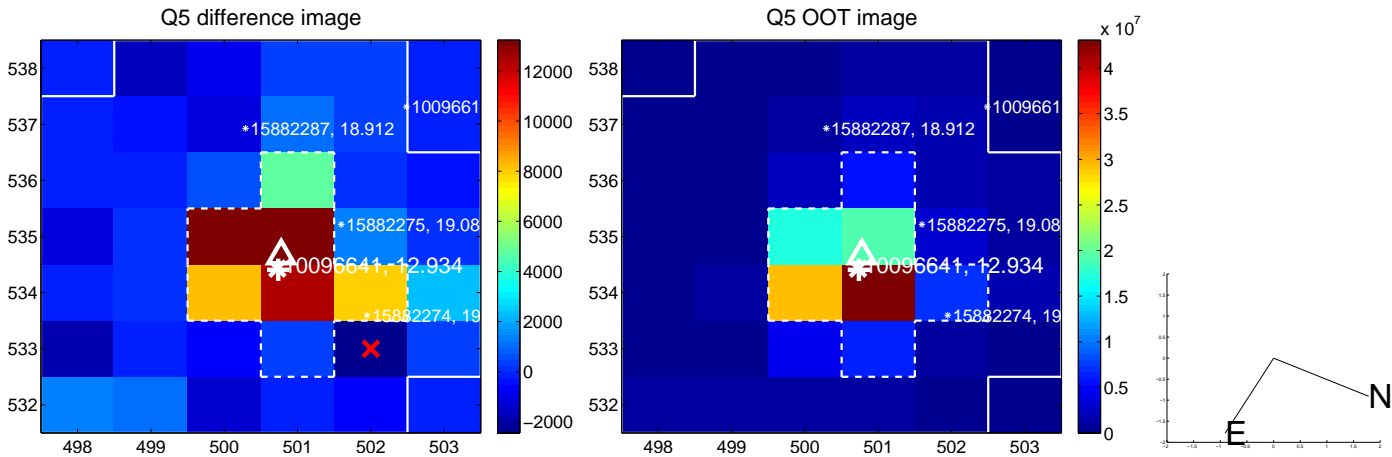


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

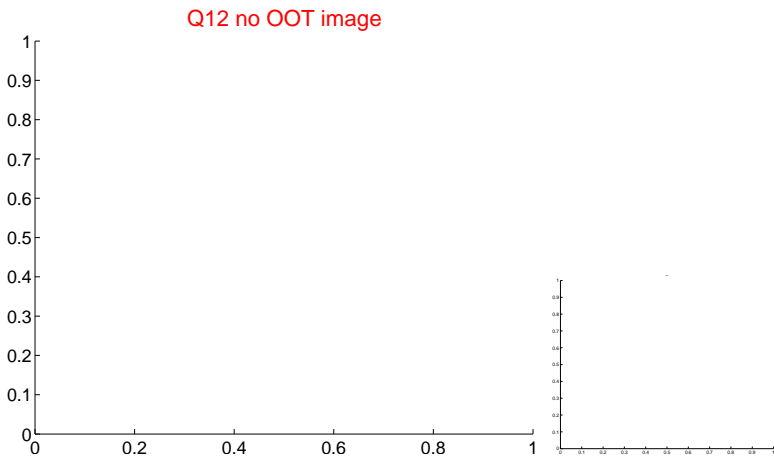
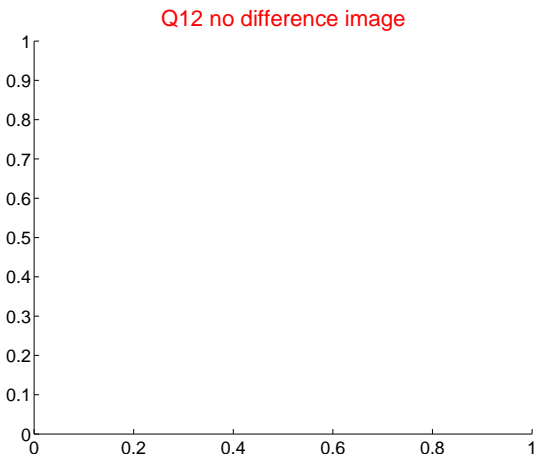
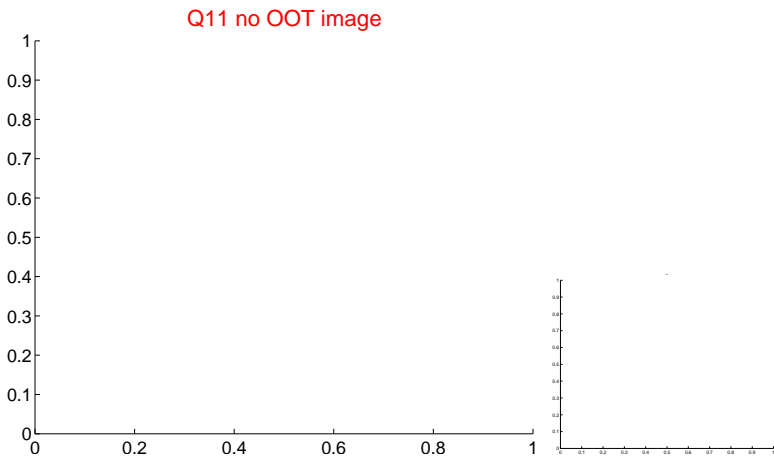
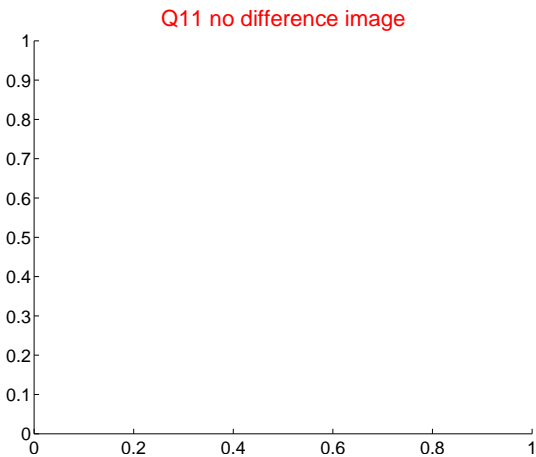
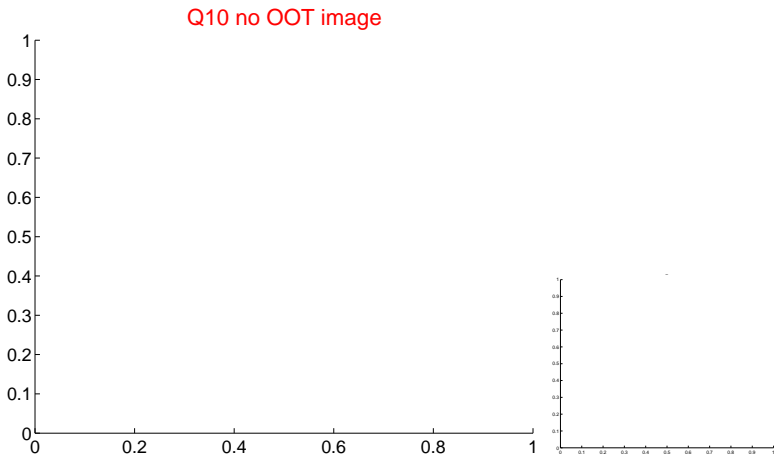
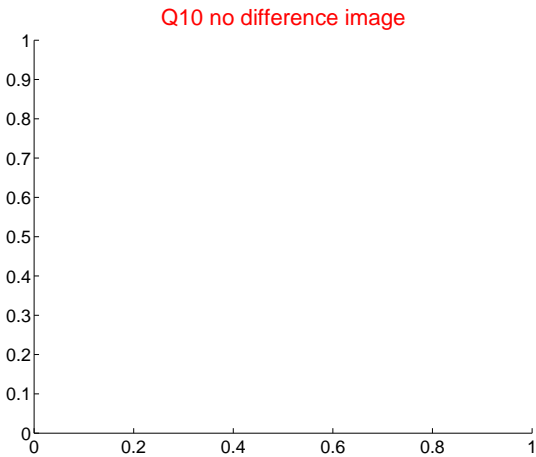
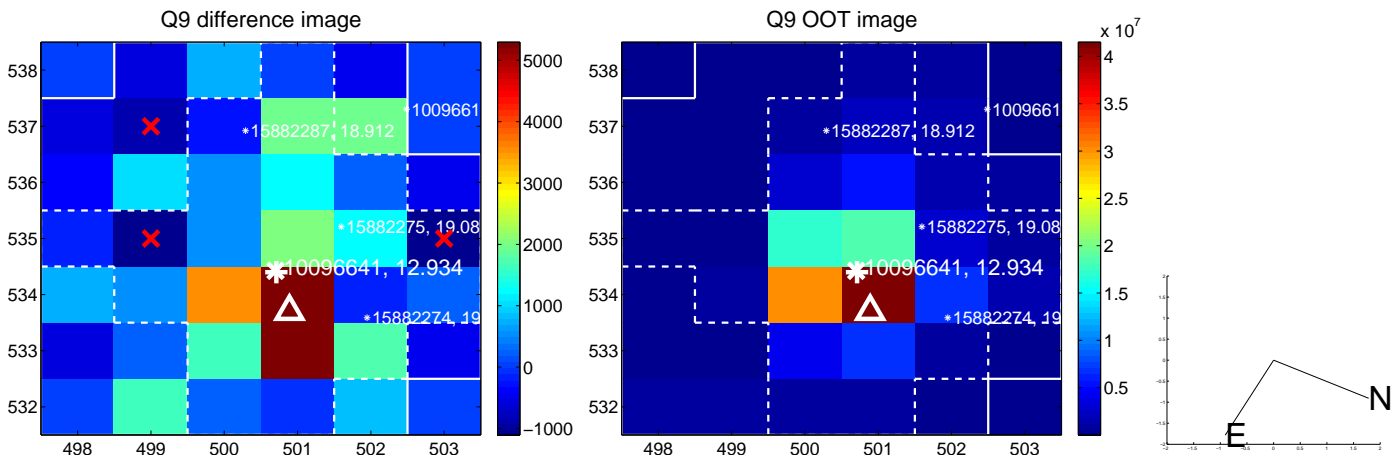
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



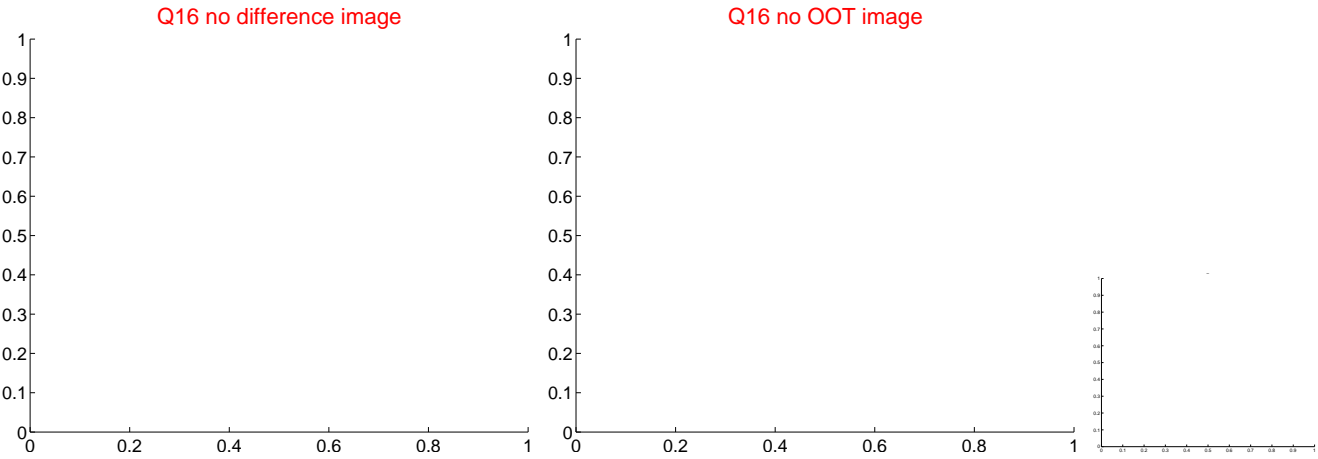
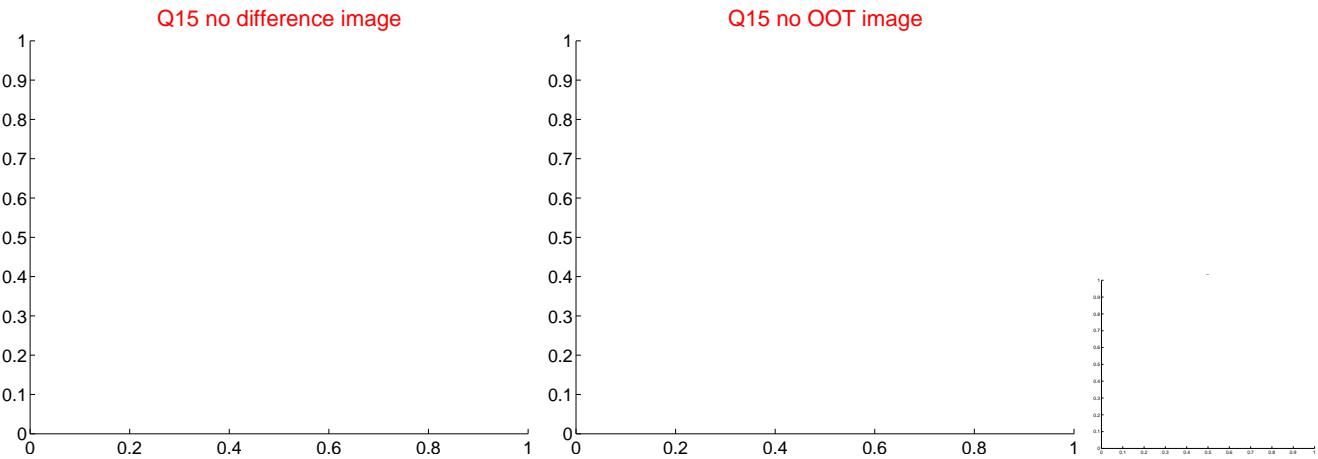
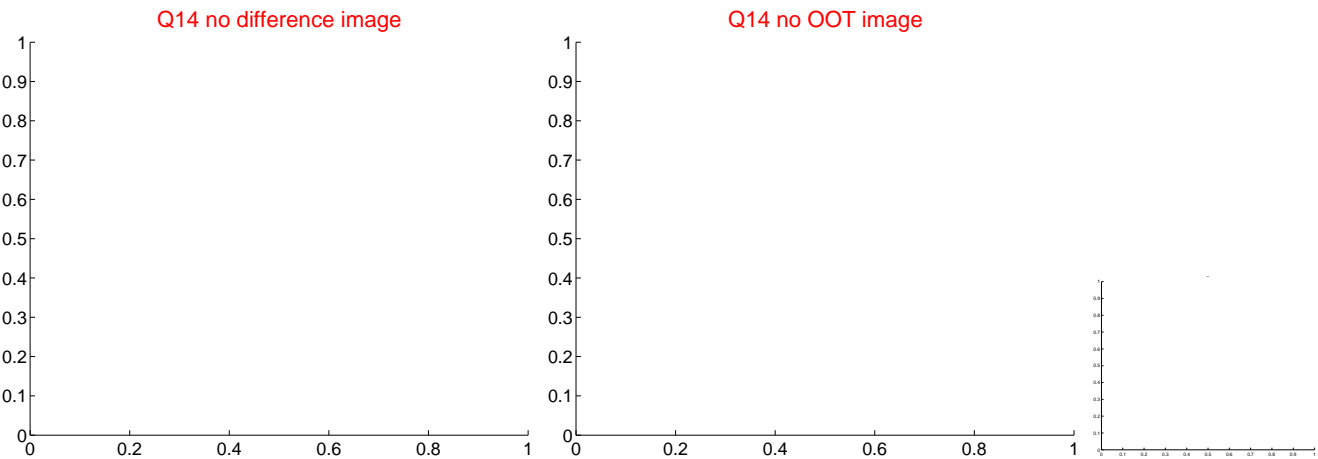
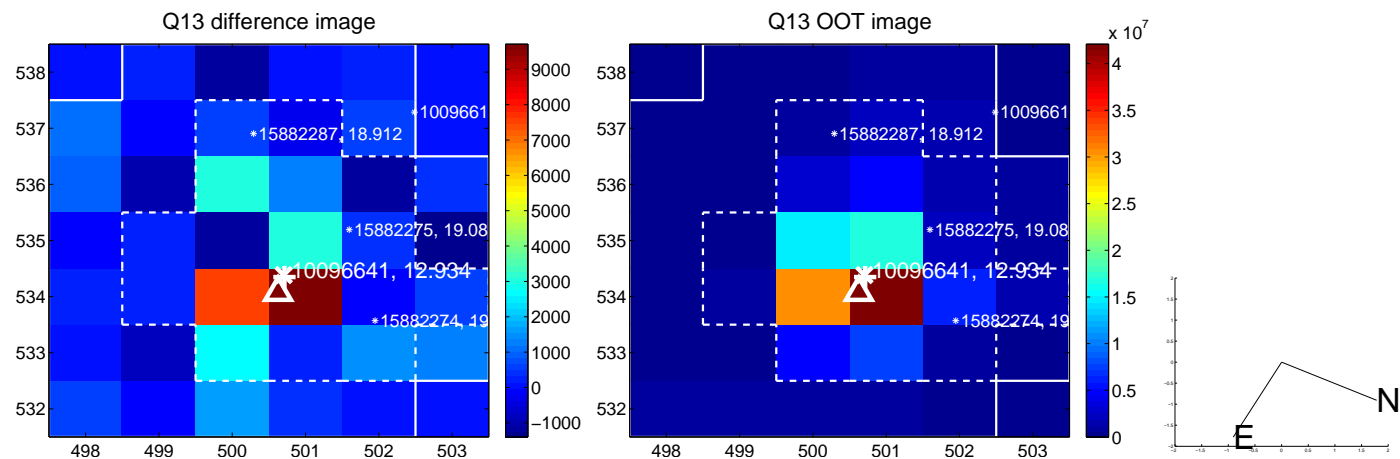
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



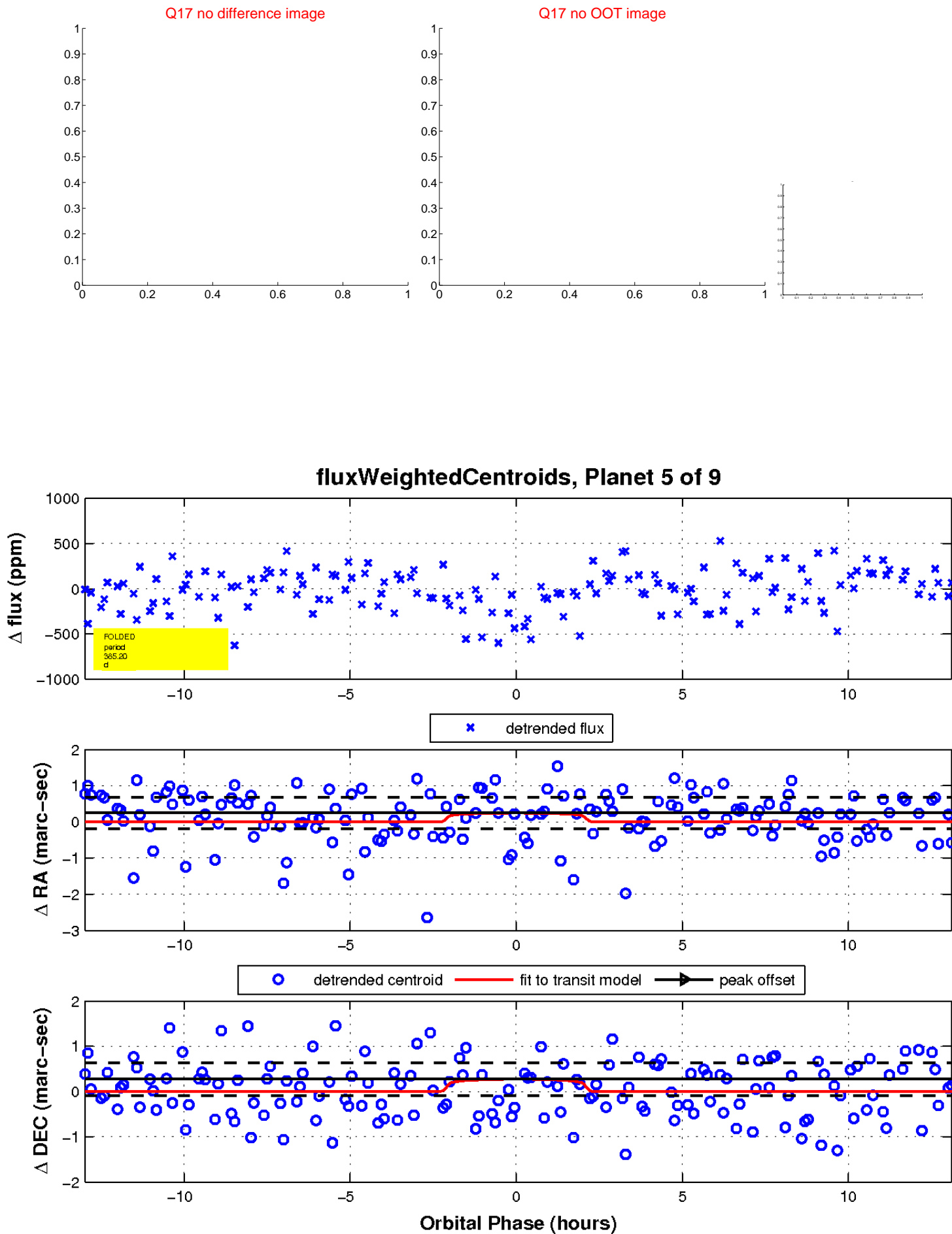
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

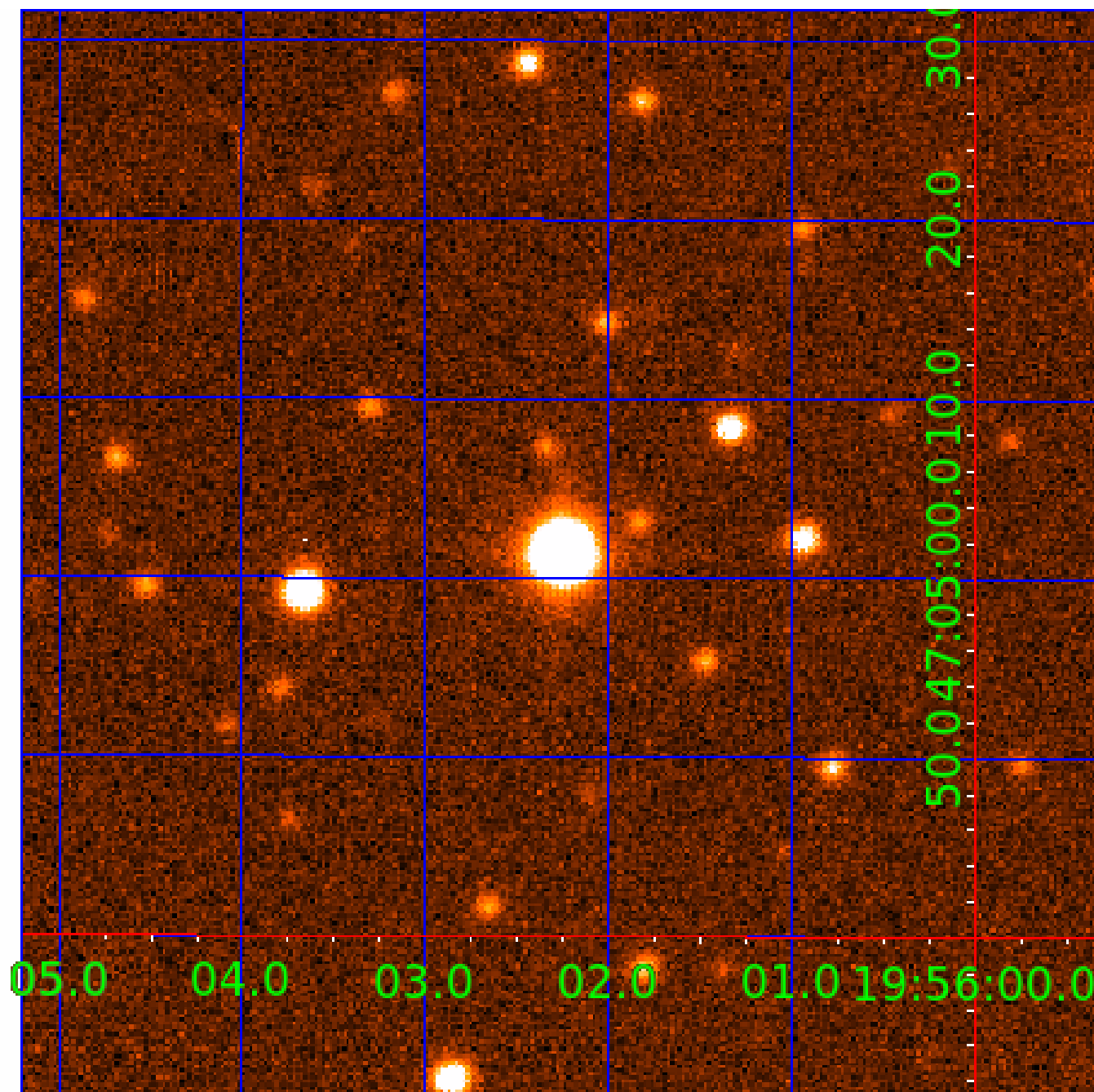


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010096641

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})
010096641-01	OBS	No	1.541084	131.971892	23.8	6.877	8.6	6.5	3.77	6292	2.14	20938.44
010096641-02	OBS	No	110.604124	201.856018	179.5	12.329	9.6	5.2	3.77	6292	5.56	70.20
010096641-03	OBS	No	67.034391	141.117890	315.5	2.570	7.9	8.0	3.77	6292	13.23	136.87
010096641-04	OBS	No	25.776244	137.530666	182.1	2.481	8.3	8.2	3.77	6292	5.88	489.50
010096641-05	OBS	No	385.198169	496.396434	354.1	4.389	7.8	7.5	3.77	6292	7.59	13.30
010096641-06	OBS	No	80.586517	187.891891	271.6	3.224	7.3	7.8	3.77	6292	7.29	107.08
010096641-07	OBS	No	83.464284	199.496903	435.5	2.032	7.3	7.8	3.77	6292	8.95	102.18
010096641-08	OBS	No	190.809615	215.693128	356.1	6.936	7.2	7.4	3.77	6292	9.27	33.93
010096641-09	OBS	No	93.528944	142.923973	242.3	2.943	7.1	7.0	3.77	6292	6.20	87.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010096641-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
010096641-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
010096641-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—HALO_GHOST
010096641-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010096641-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
010096641-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
010096641-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

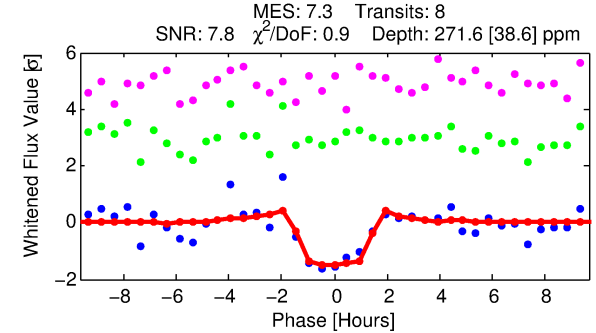
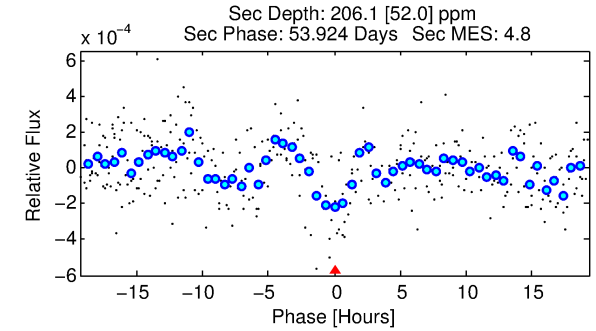
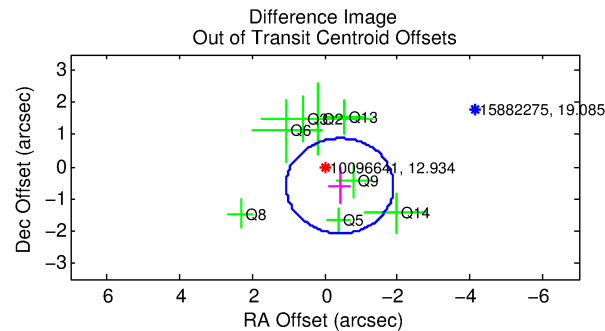
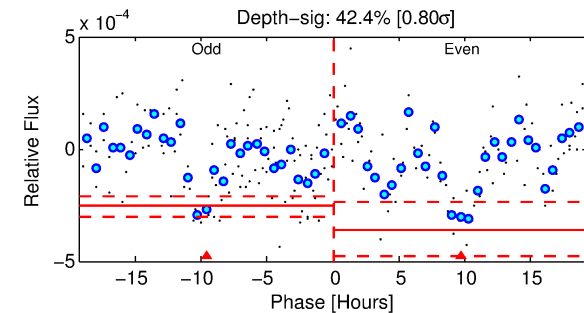
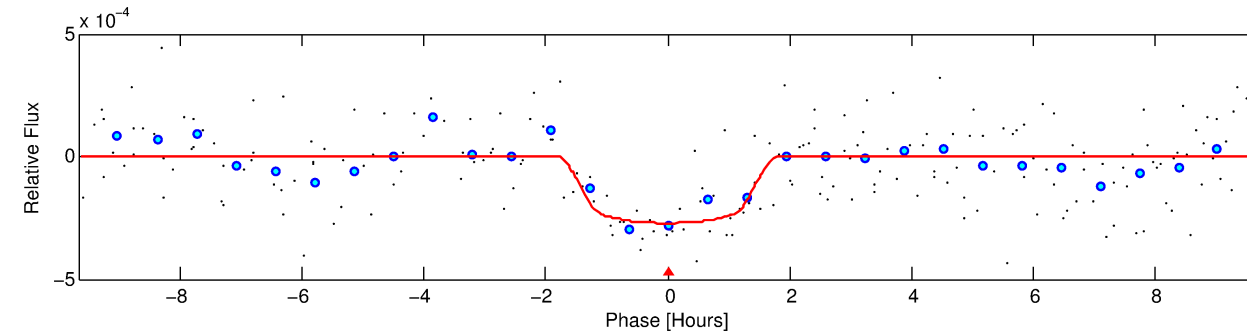
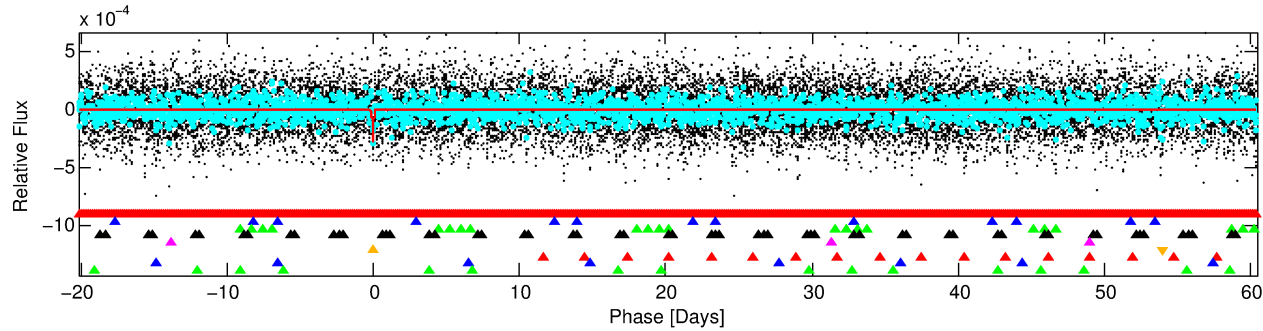
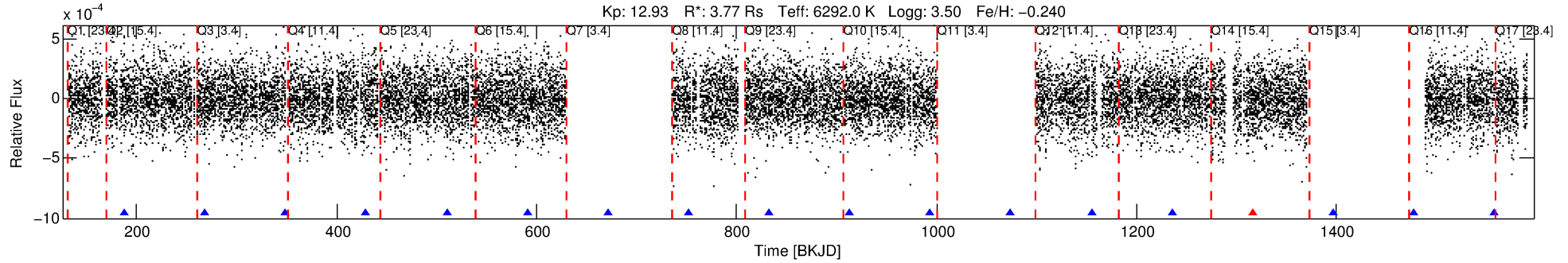
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096641-06

No Significant Match Found

DV One-Page Summary

KIC: 10096641 Candidate: 6 of 9 Period: 80.587 d



DV Fit Results:

Period = 80.58652 [0.00069] d
Epoch = 187.8919 [0.0060] BKJD
Rp/R* = 0.0177 [0.0061]
a/R* = 89.65 [164.24]
b = 0.90 [0.38]
Seff = 107.08 [71.93]
Teff = 820 [138] K
Rp = 7.29 [4.12] Re
a = 0.4314 [0.1809] AU
Ag = 397.17 [392.80] [1.01 σ]
Teffp = 5662 [1056] K [4.55 σ]

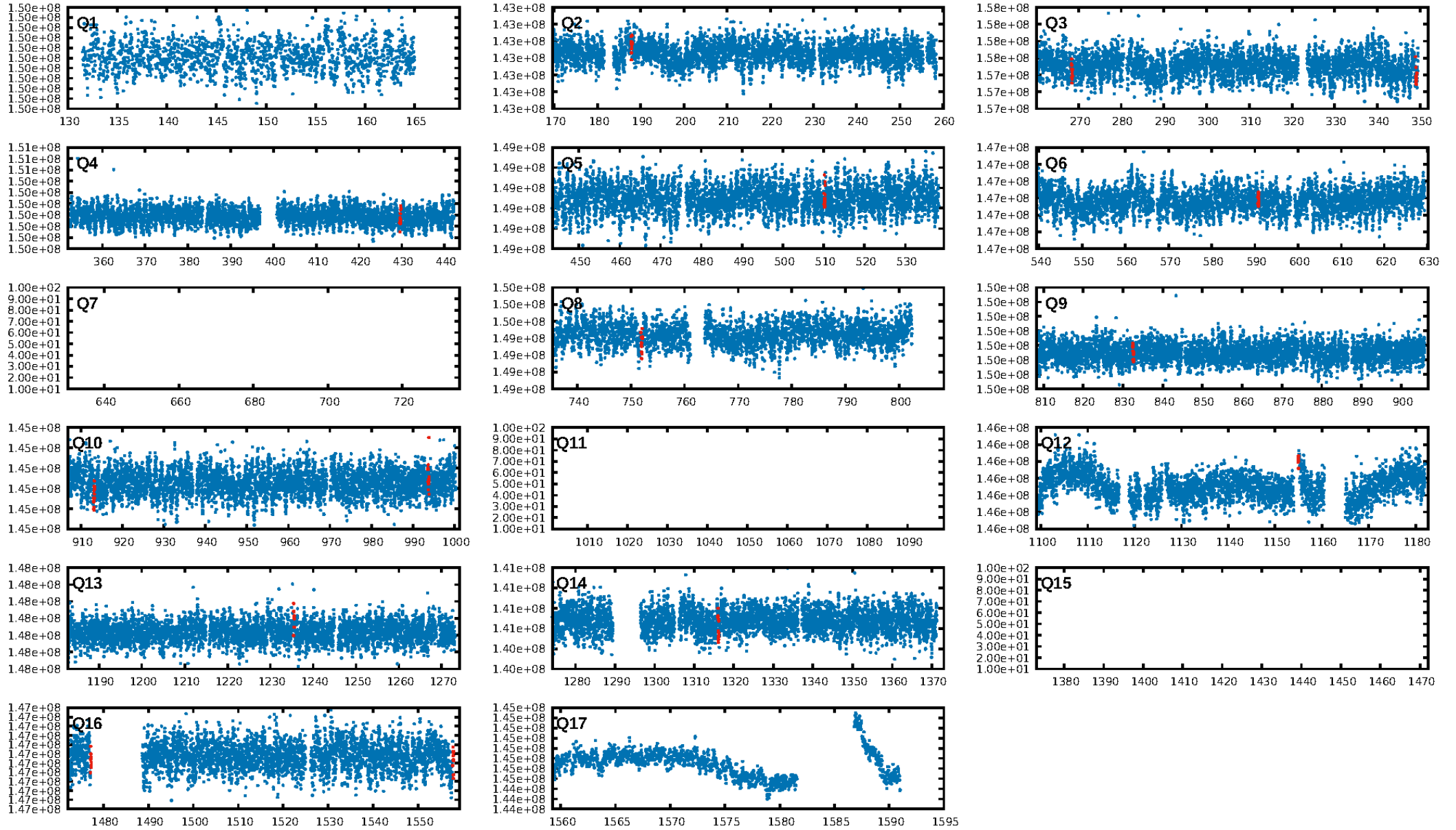
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [78.88 σ]
LongPeriod-sig: 100.0% [18.12 σ]
ModelChiSquare2-sig: 25.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.76e-09
RollingBand-fgt: 0.88 [7/8]
GhostDiagnostic-chr: -8.318
Centroid-sig: 0.1%
Centroid-so: 2.111 arcsec [2.48 σ]
OotOffset-rm: 0.731 arcsec [1.48 σ]
KicOffset-rm: 0.648 arcsec [1.29 σ]
OotOffset-st: 3/1/1/3 [8]
KicOffset-st: 3/1/1/3 [8]
DiffImageQuality-fgm: 0.38 [3/8]
DiffImageOverlap-fno: 0.50 [5/10]

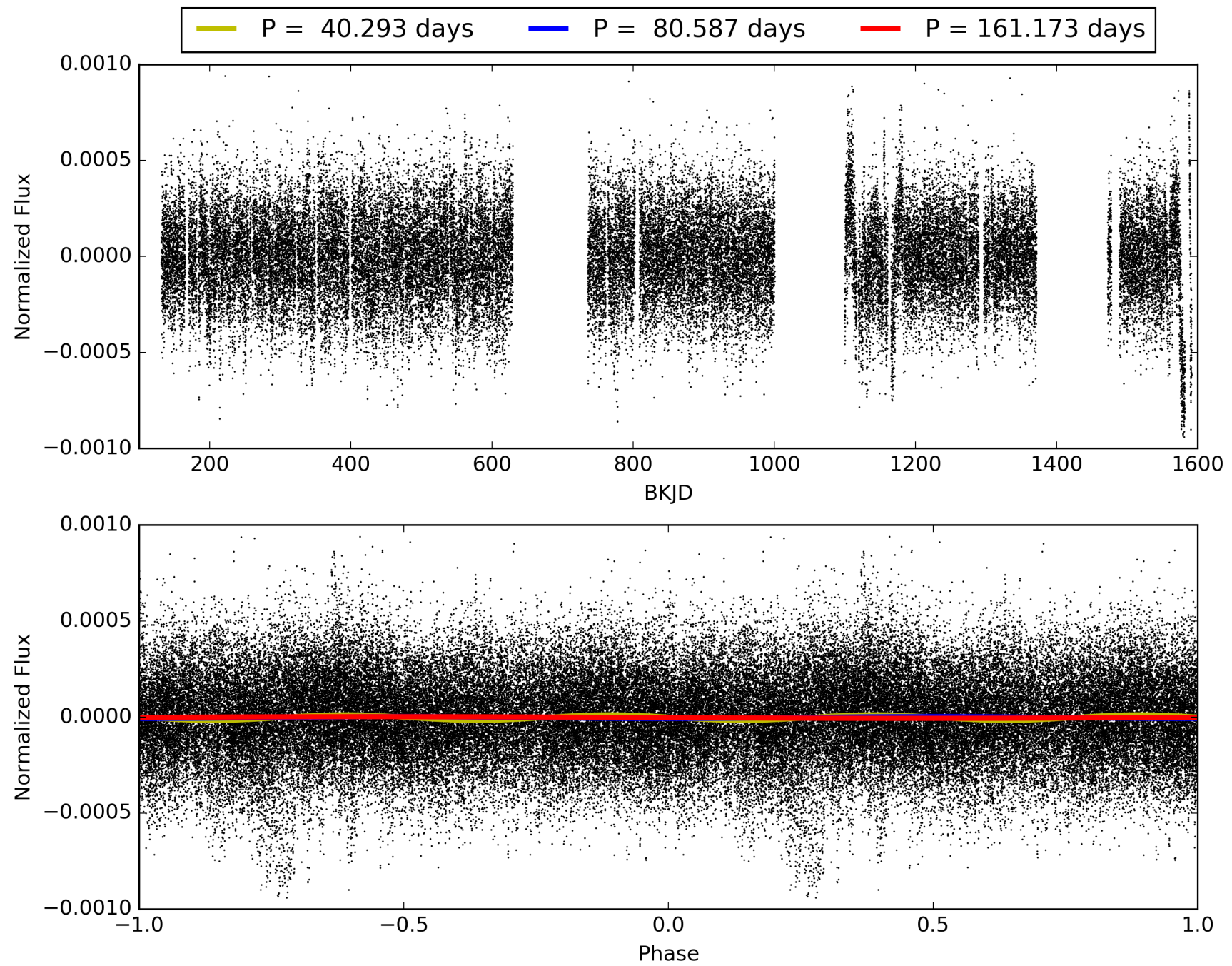
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:58:40 Z

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

TCE 010096641-06, PDC Light Curves

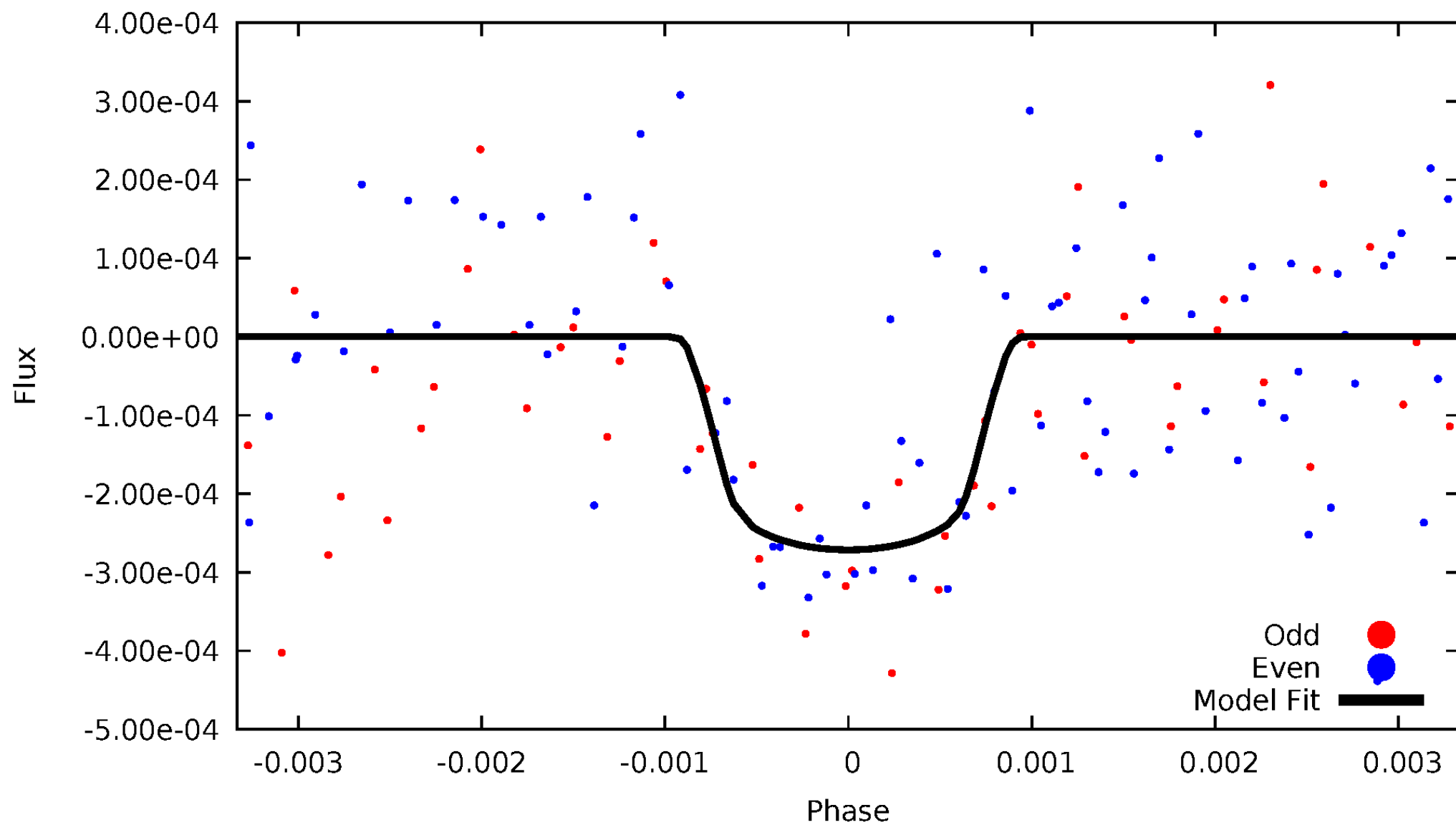


TCE 010096641-06



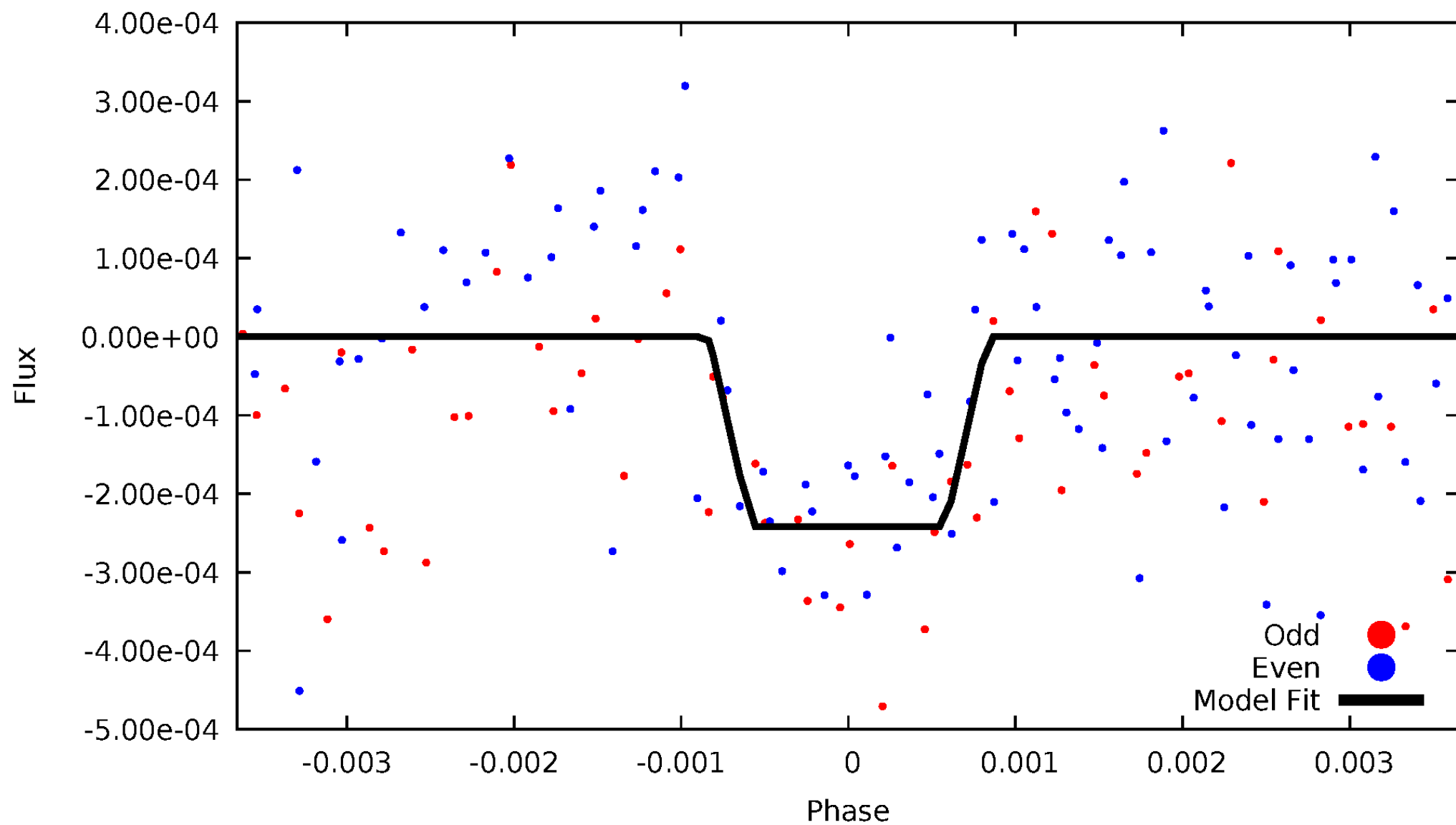
DV Odd/Even

TCE 010096641-06



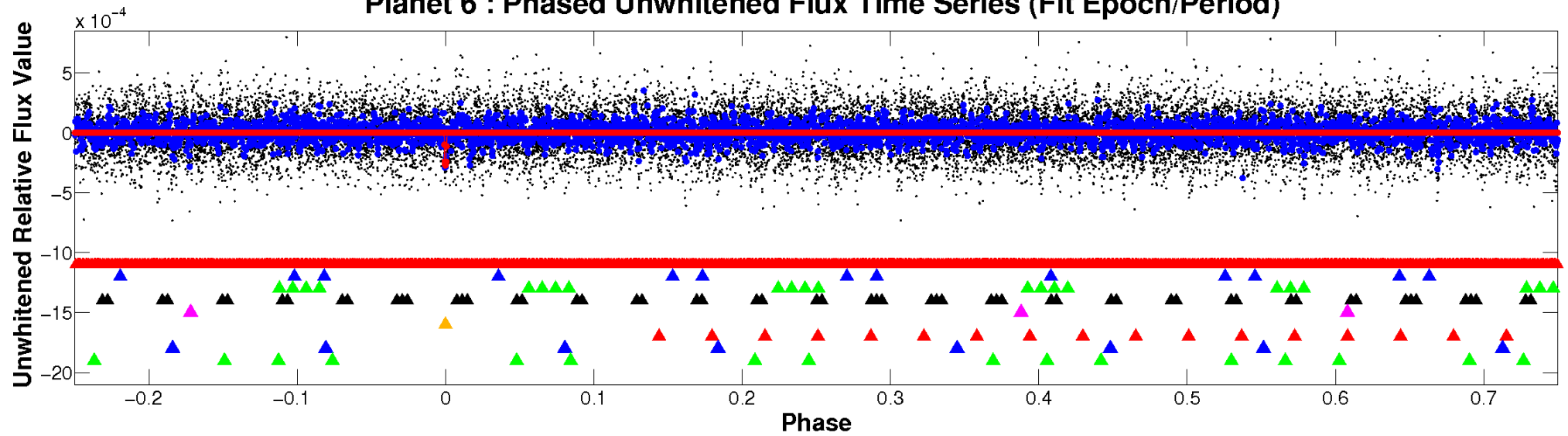
ALT Odd/Even

TCE 010096641-06

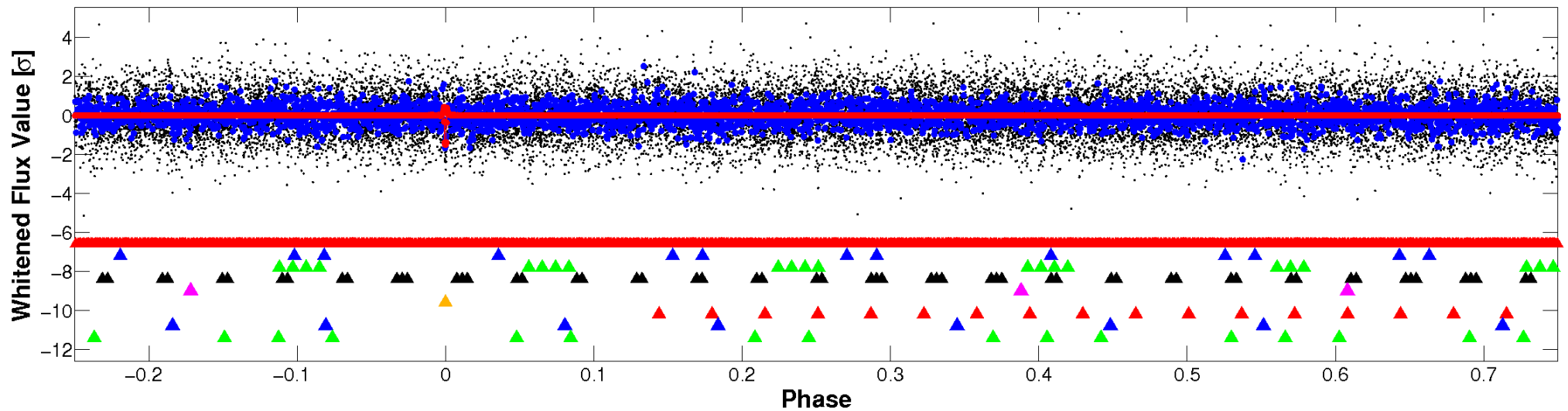


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

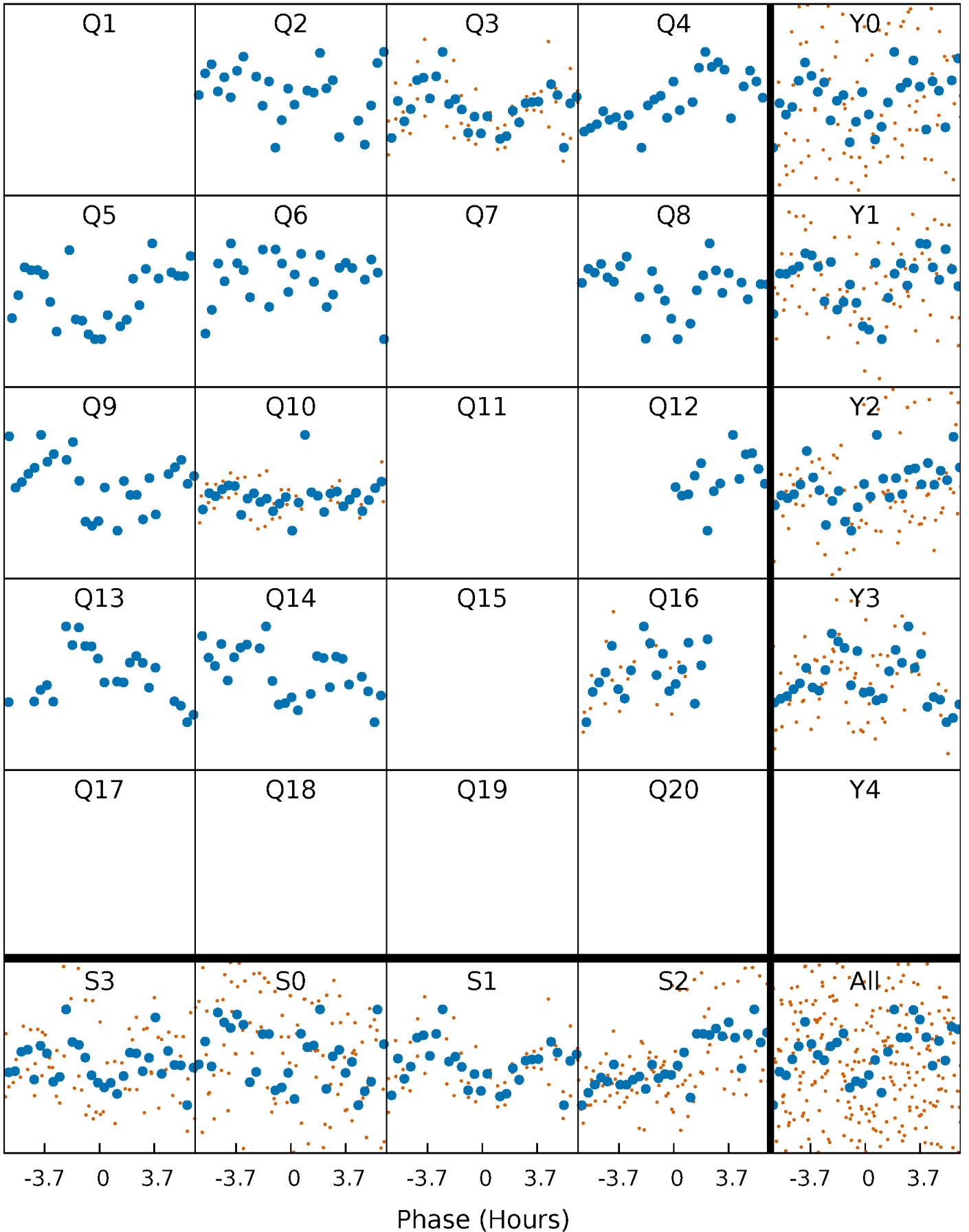


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



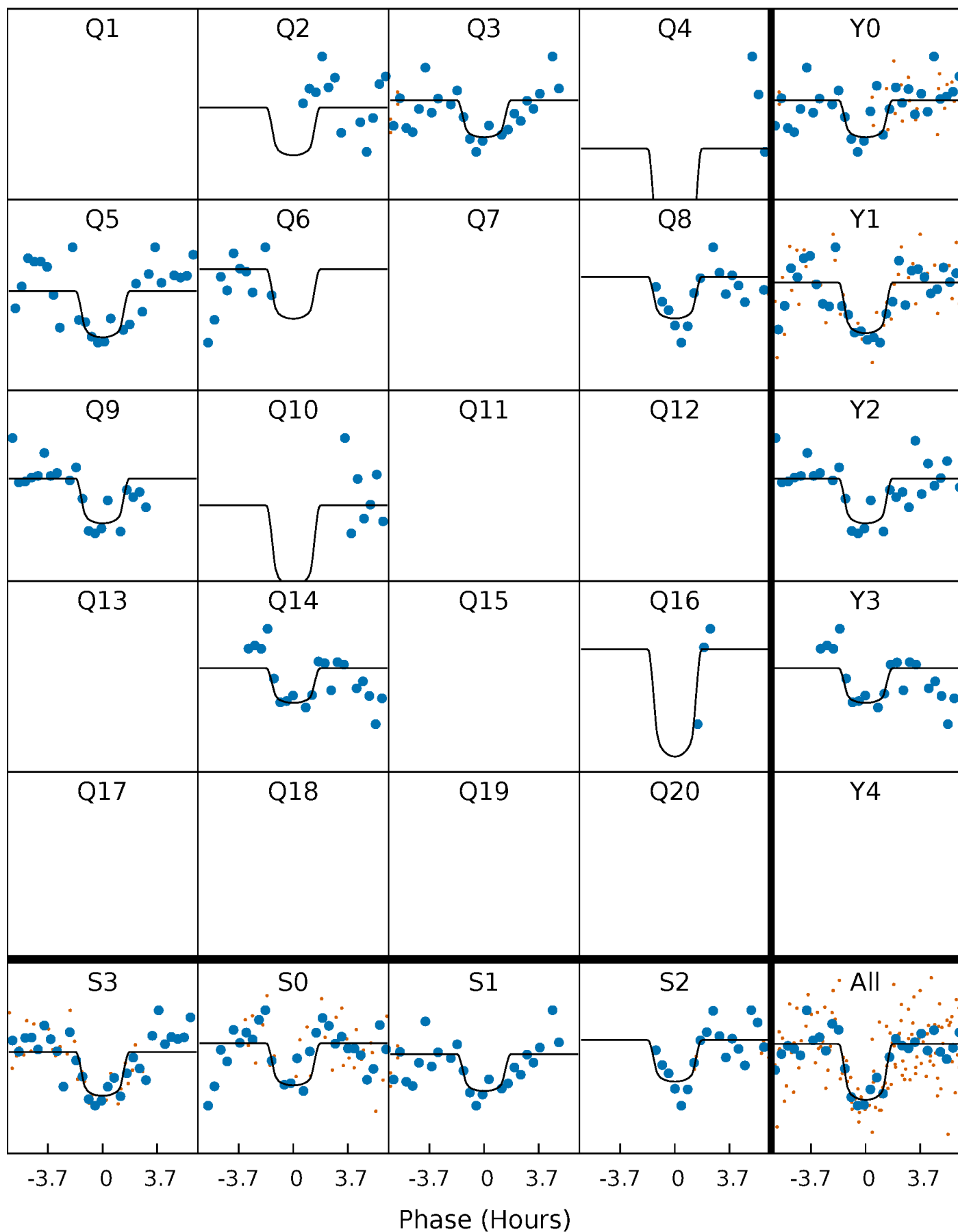
PDC Quarter-Phased Transit Curves

TCE 010096641-06 P= 80.586517 Days $T_0=187.891891$ (BKJD)



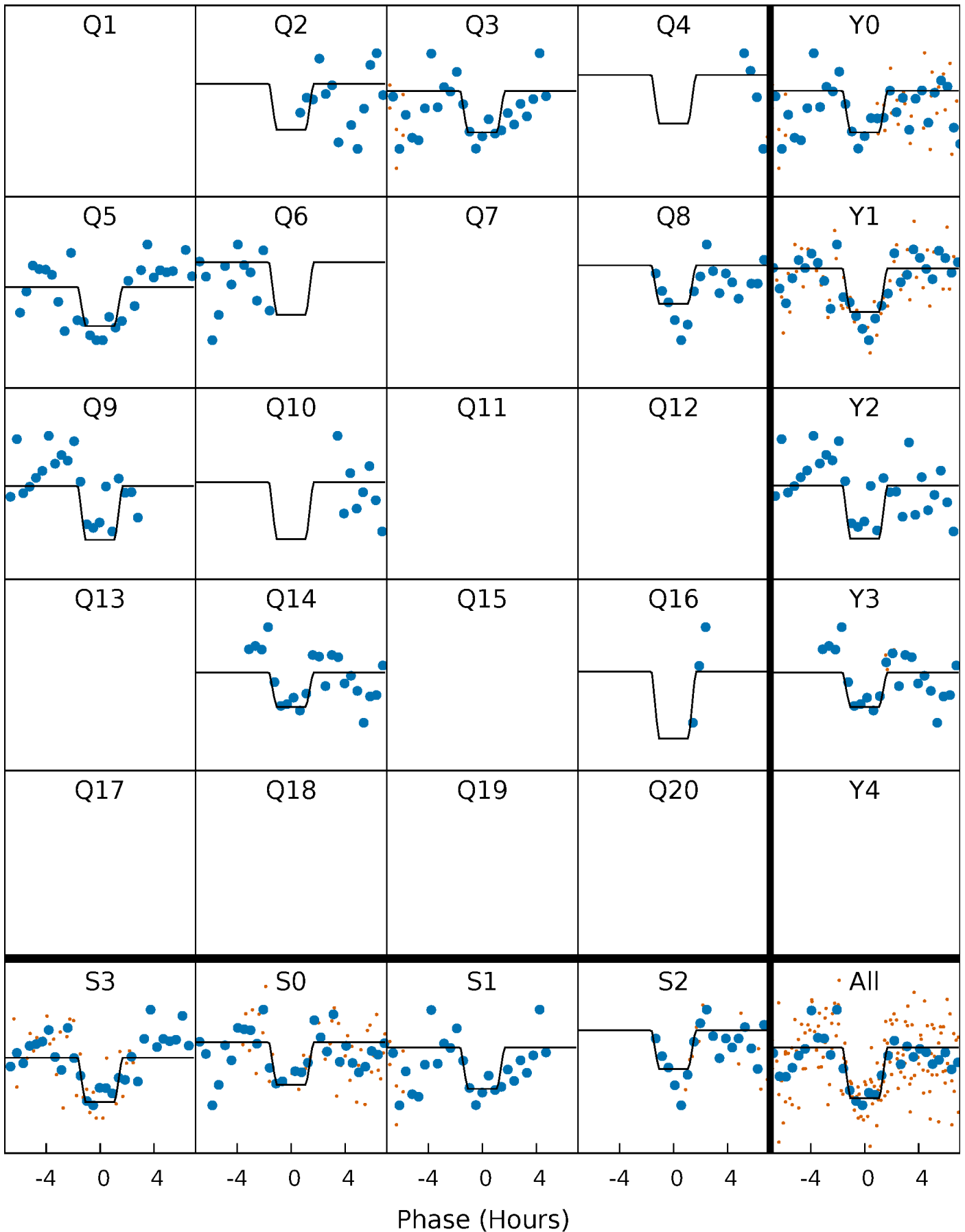
DV Quarter-Phased Transit Curves

TCE 010096641-06 P= 80.586517 Days $T_0=187.891891$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

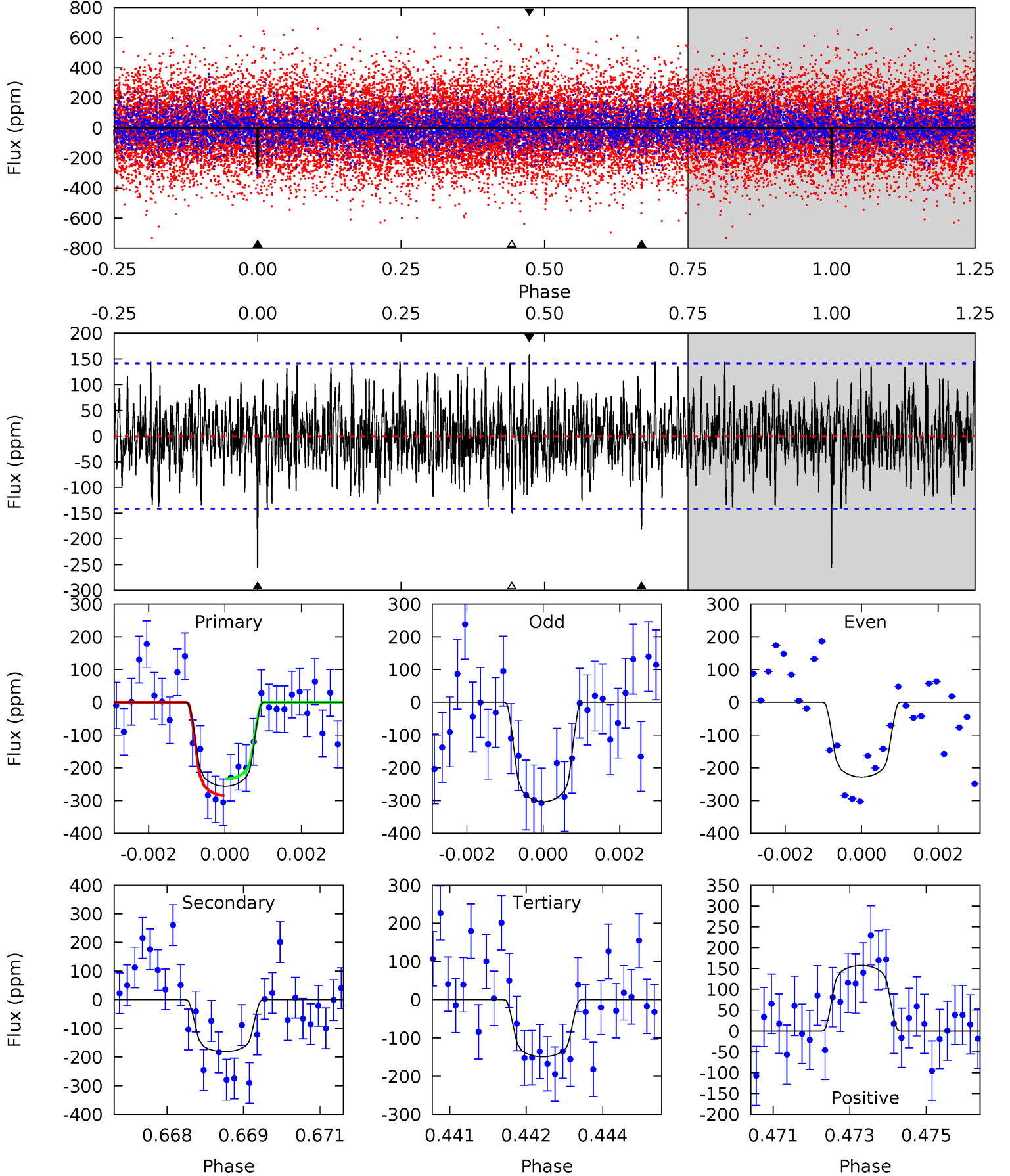
TCE 010096641-06 P= 80.586814 Days $T_0=187.892555$ (BKJD)



DV Model-Shift Uniqueness Test

010096641-06, $P = 80.586517$ Days, $E = 107.305374$ Days

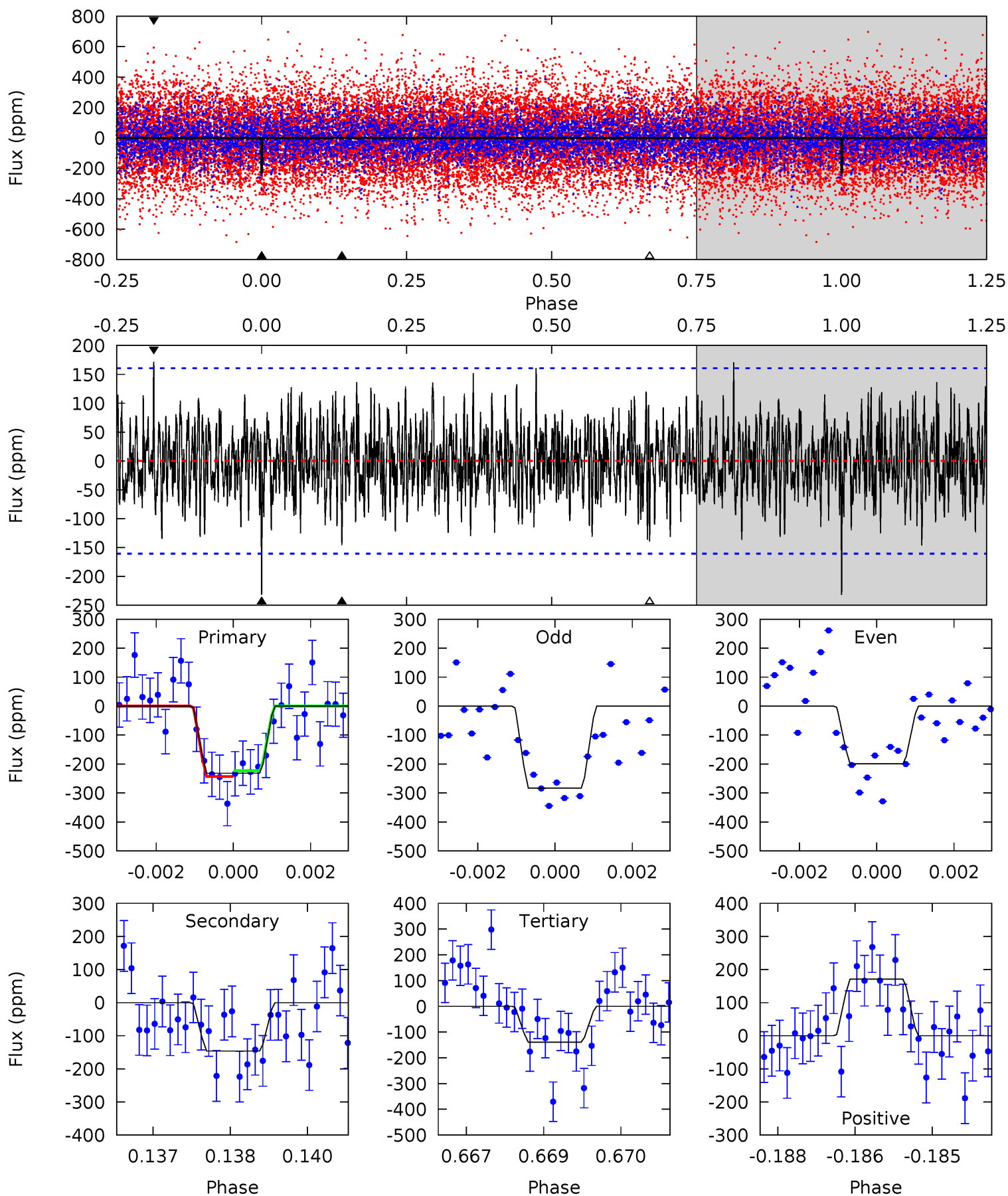
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.67	6.83	5.62	5.93	5.34	3.10	1.85	4.05	3.74	1.21	0.90	1.39	0.80	0.38	0.93



Alt Model-Shift Uniqueness Test

010096641-06, P = 80.586814 Days, E = 107.305741 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.75	4.89	4.65	5.71	5.37	3.15	1.63	3.10	2.04	0.24	-0.82	1.37	0.96	0.42	0.33



Stellar Parameters For KIC 010096641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6292^{+192}_{-173}	$3.503^{+0.384}_{-0.096}$	$-0.240^{+0.350}_{-0.300}$	$3.767^{+0.674}_{-1.685}$	$1.648^{+0.194}_{-0.421}$	$0.043^{+0.128}_{-0.016}$
	+3%/-3%	+11%/-3%	+146%/-125%	+18%/-45%	+12%/-26%	+296%/-38%
Source	PHO1	FLK73	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 010096641-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-181 ± 27	$6.62^{+2.88}_{-2.51}$	1119^{+70}_{-119}	5465^{+1297}_{-678}	419^{+602}_{-218}
Alt.	-146 ± 30	$5.89^{+2.67}_{-2.33}$	1124^{+75}_{-116}	5518^{+1490}_{-768}	420^{+714}_{-224}

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 $A_{\text{obs}} \gg 1.0$

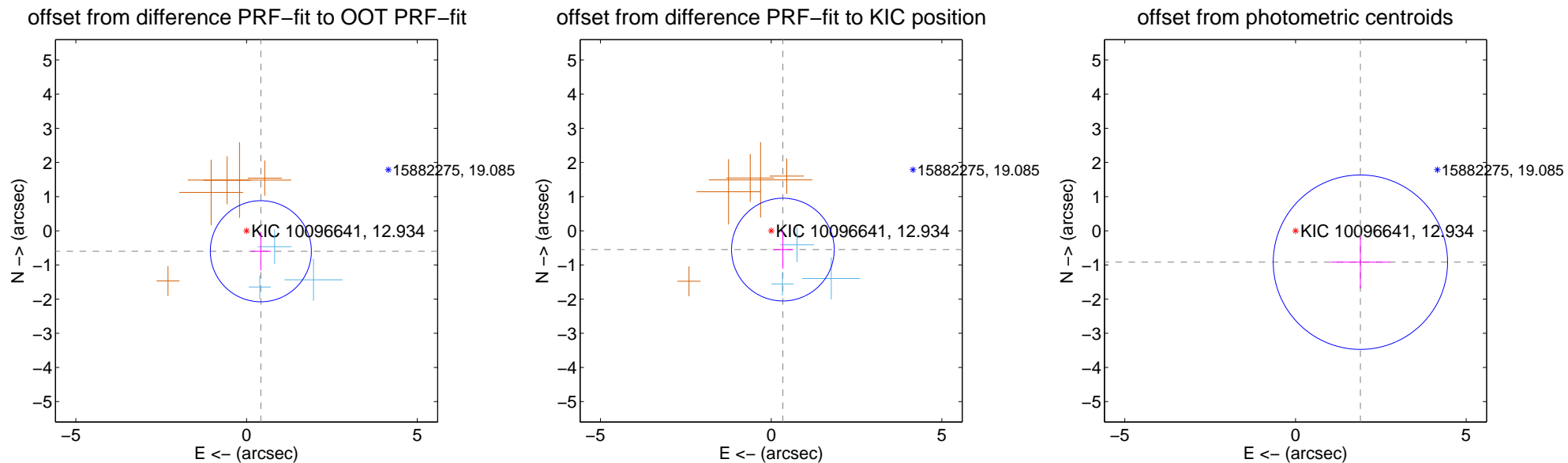
DV Centroid Data

Supplemental centroid analysis for 010096641-06. Kepler magnitude: 12.93. Transit SNR 7.84

There are 3 quarters with good PRF difference image offsets

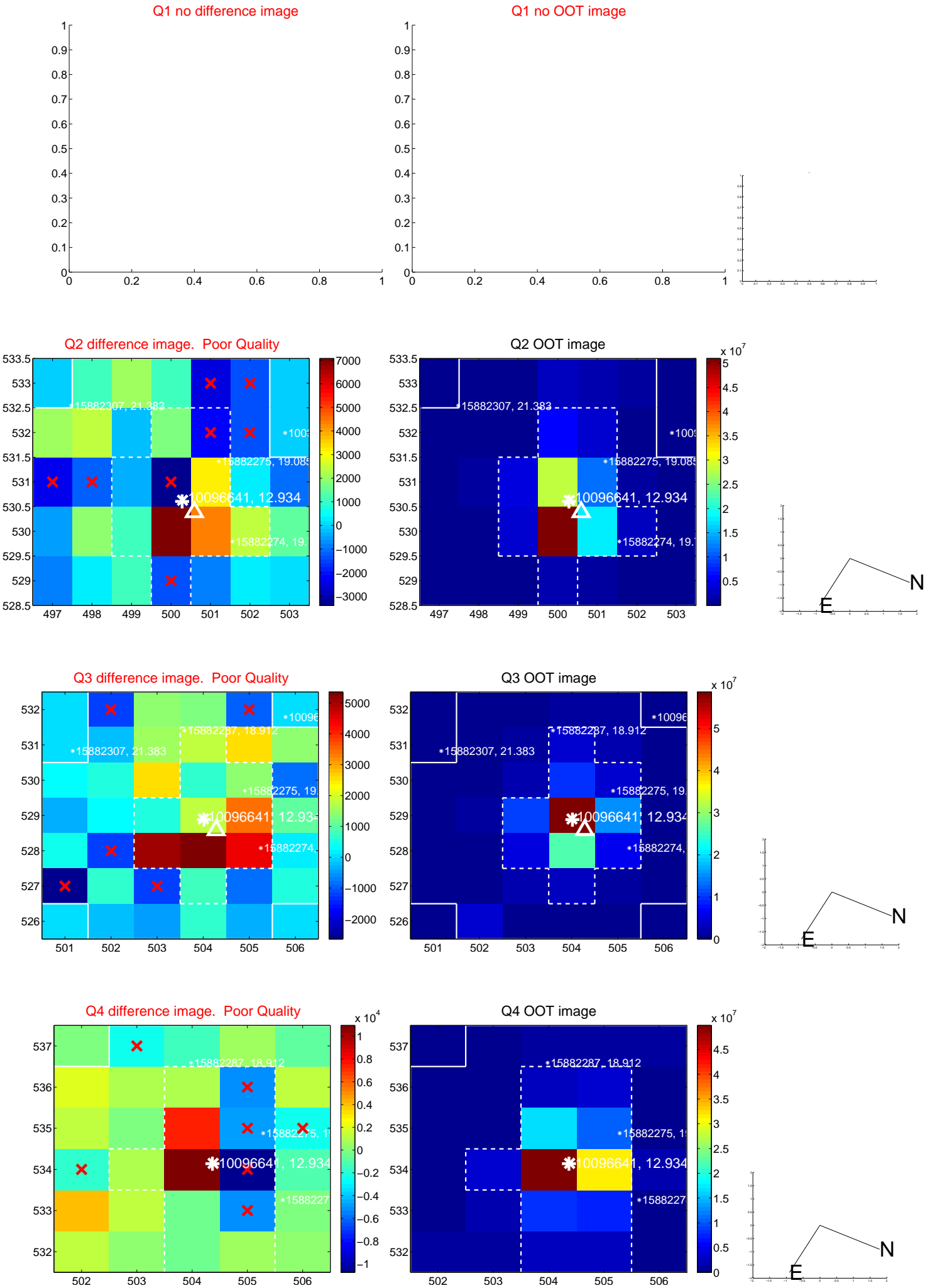
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.731 ± 0.493	1.48	-0.419 ± 0.293	-0.599 ± 0.566
PRF-fit source offset from KIC position	0.648 ± 0.501	1.29	-0.343 ± 0.292	-0.550 ± 0.562
photometric centroid source offset	2.11 ± 0.85	2.48	-1.90 ± 0.87	-0.92 ± 0.77

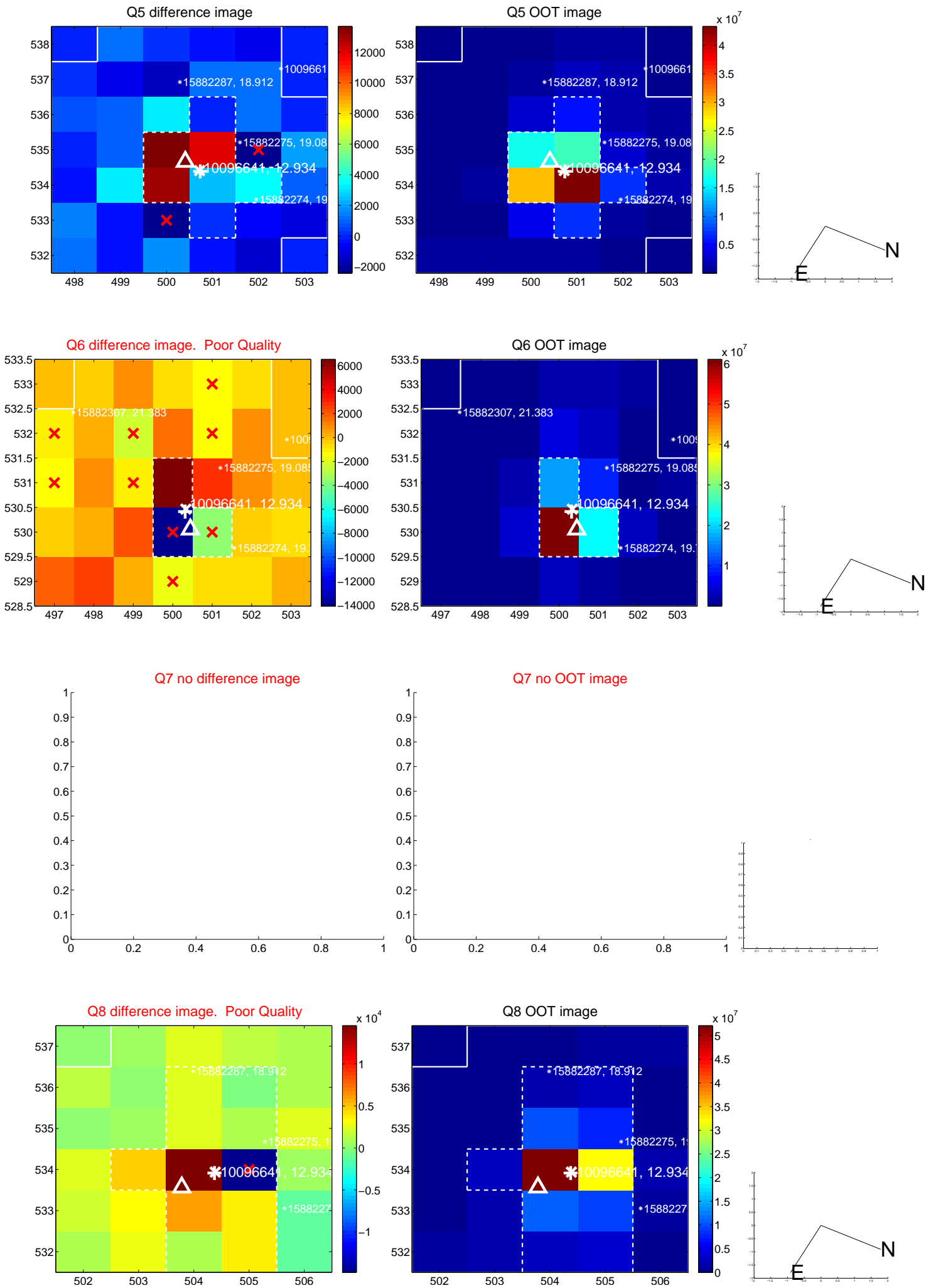


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

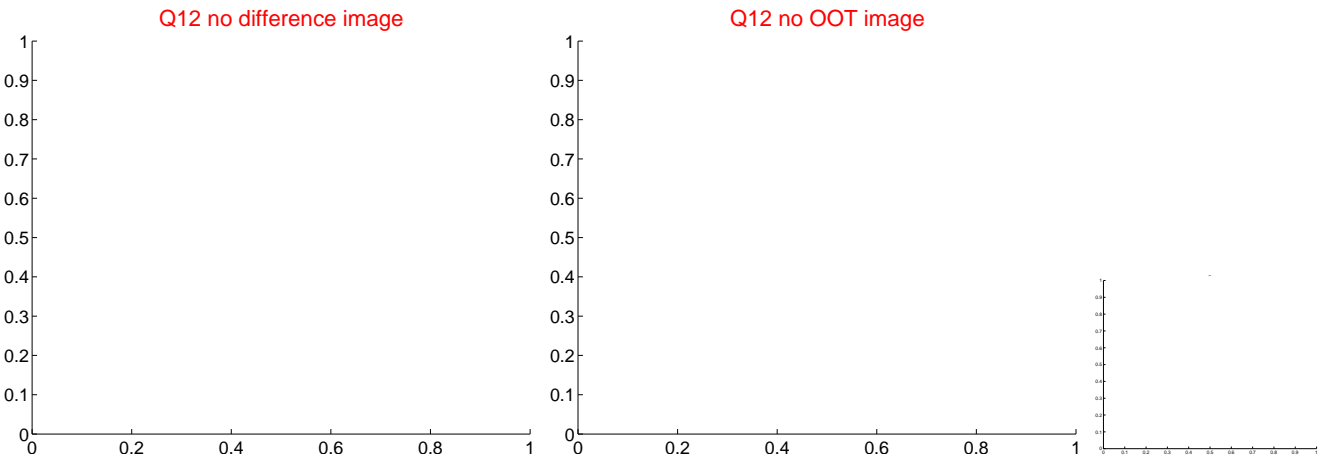
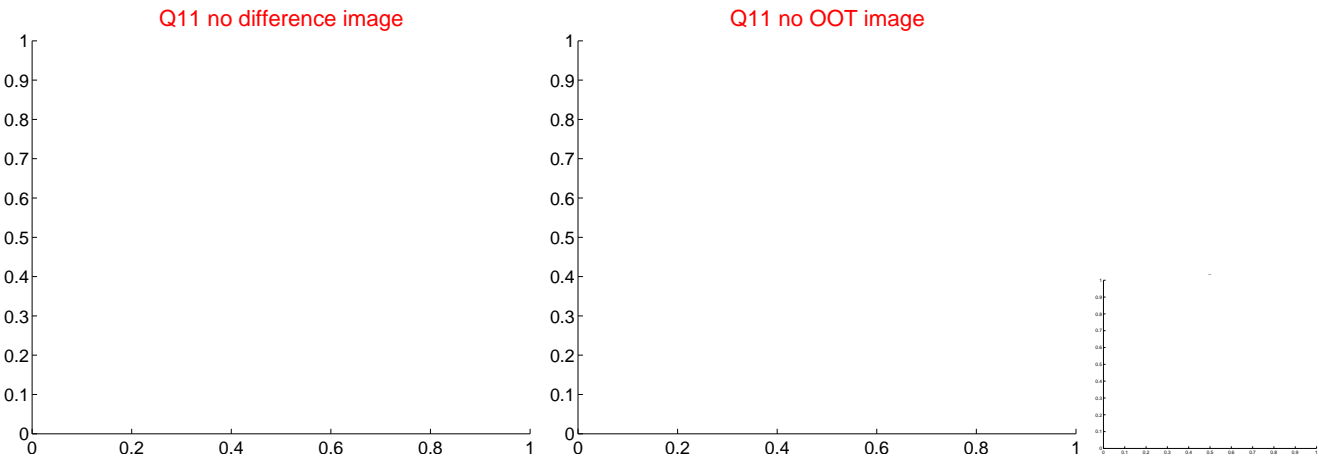
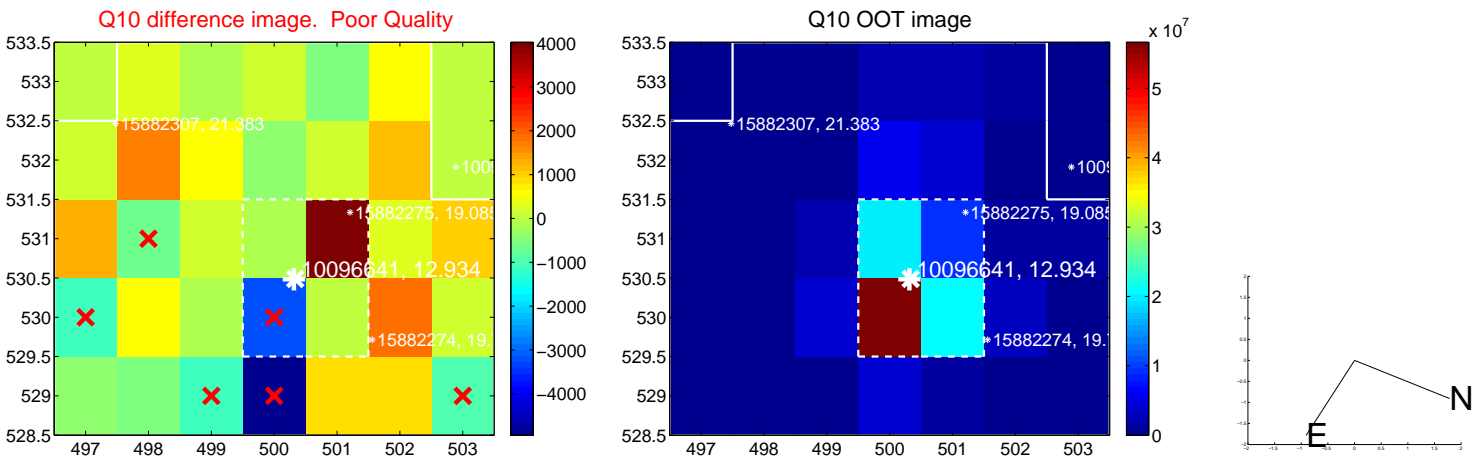
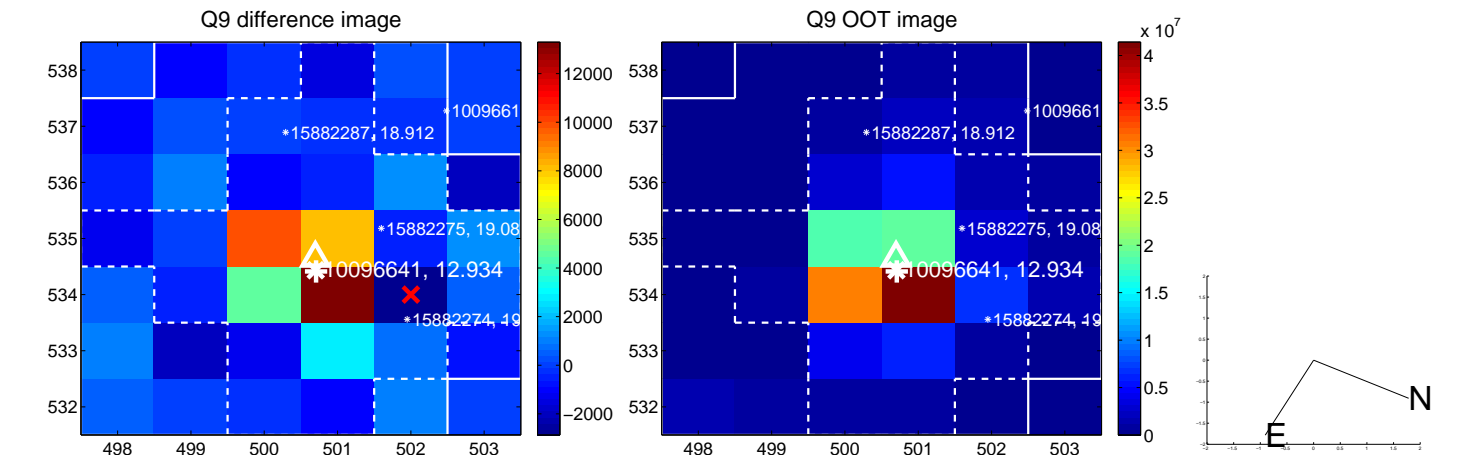
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



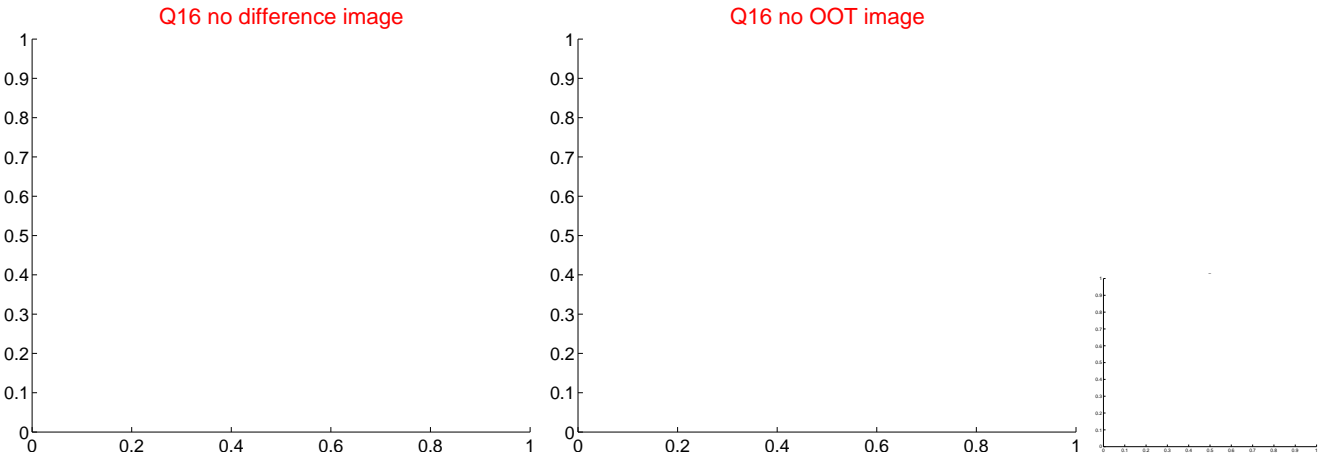
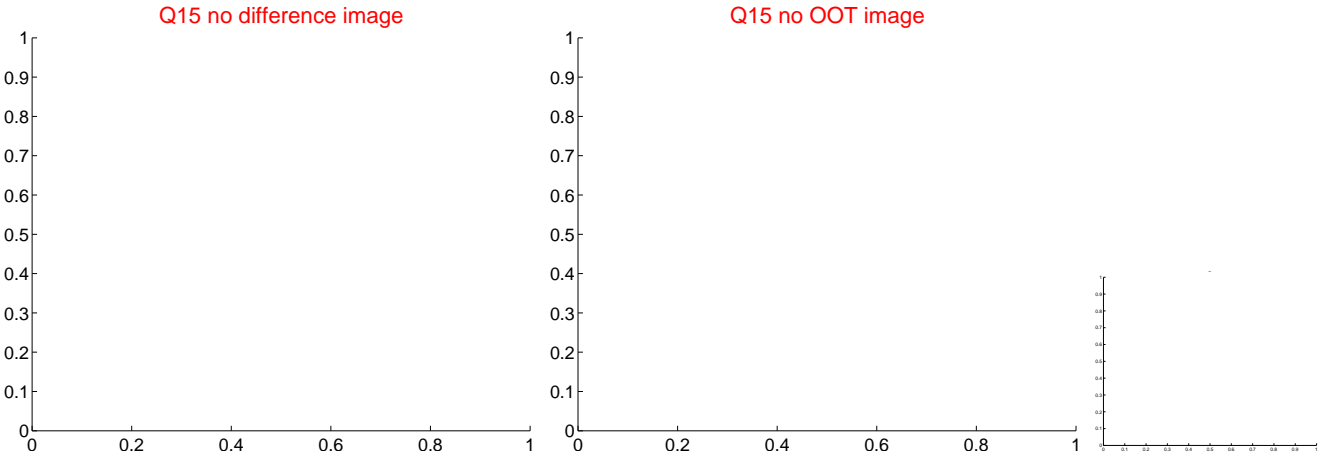
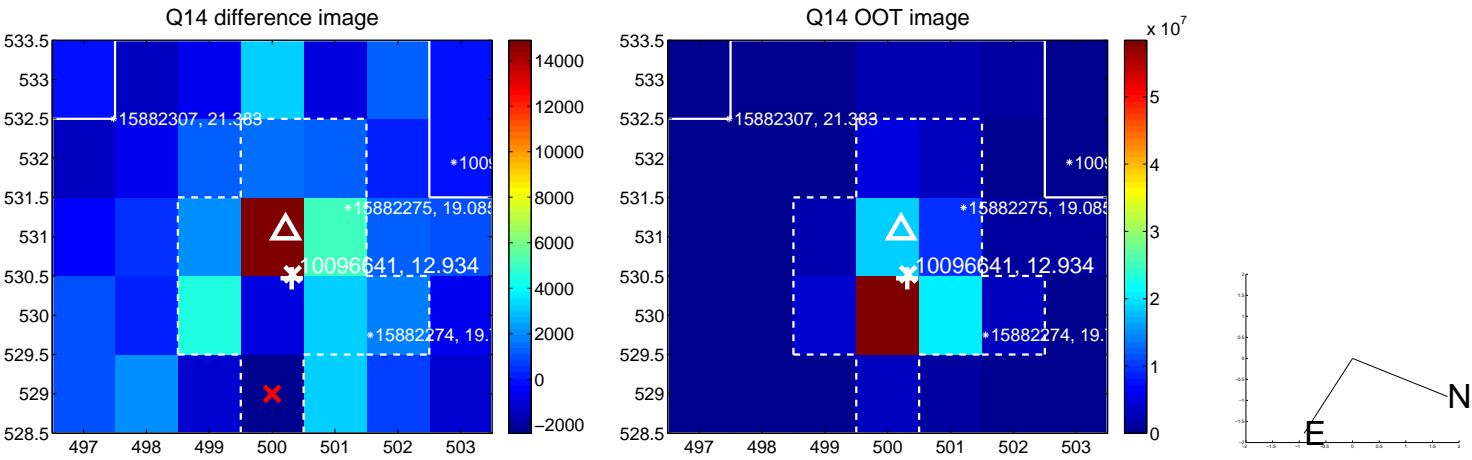
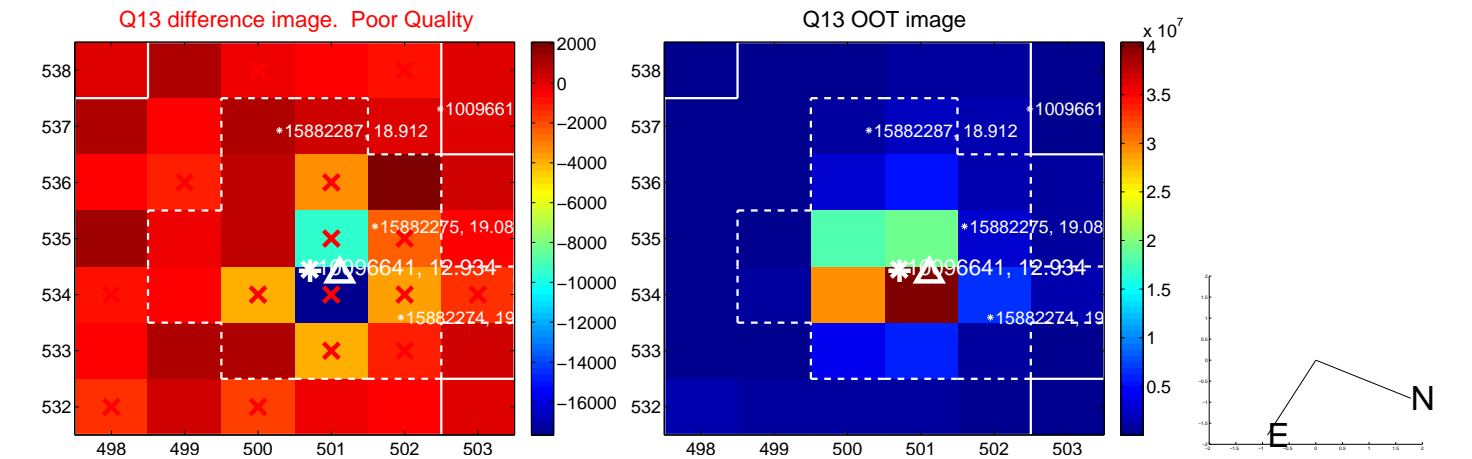
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



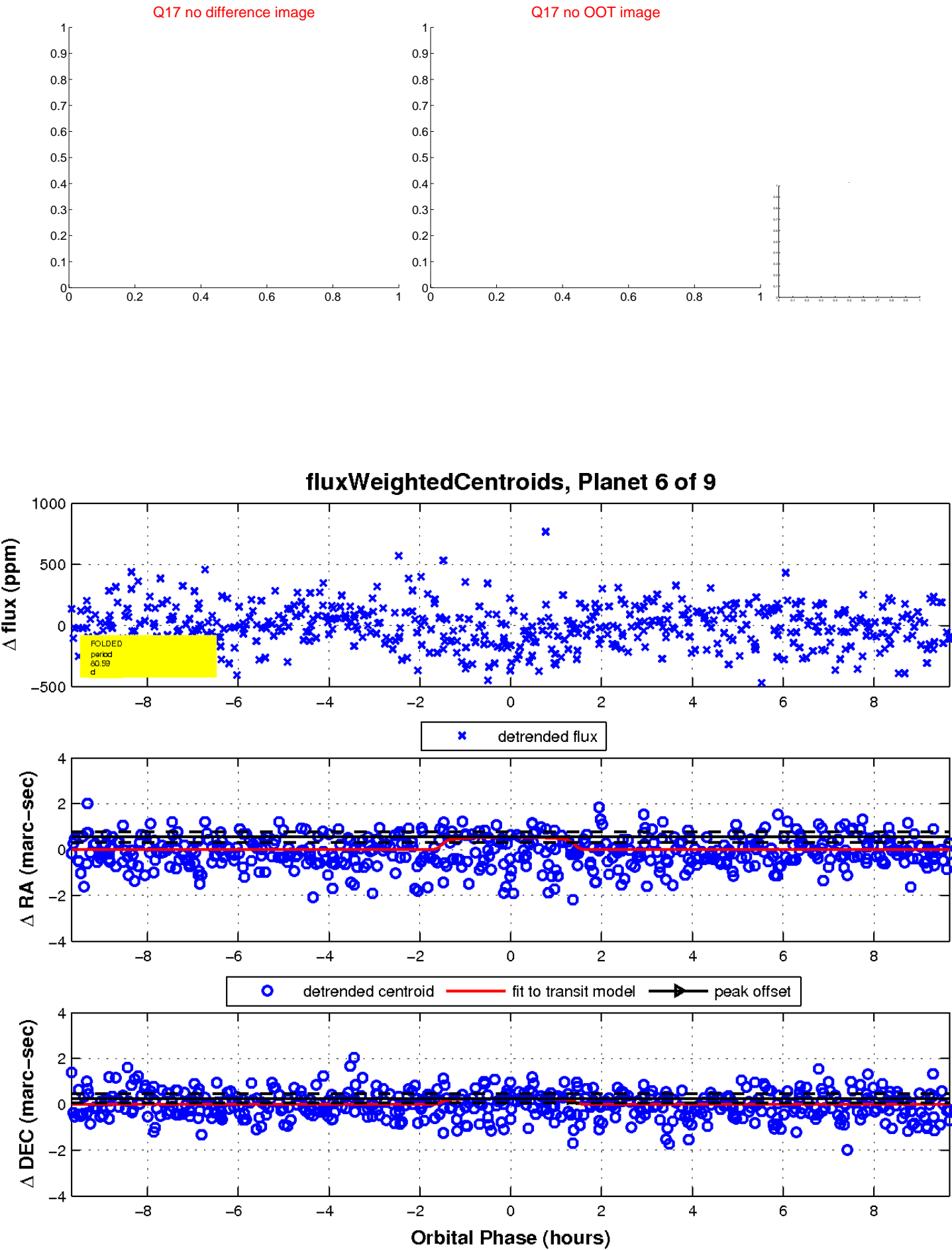
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

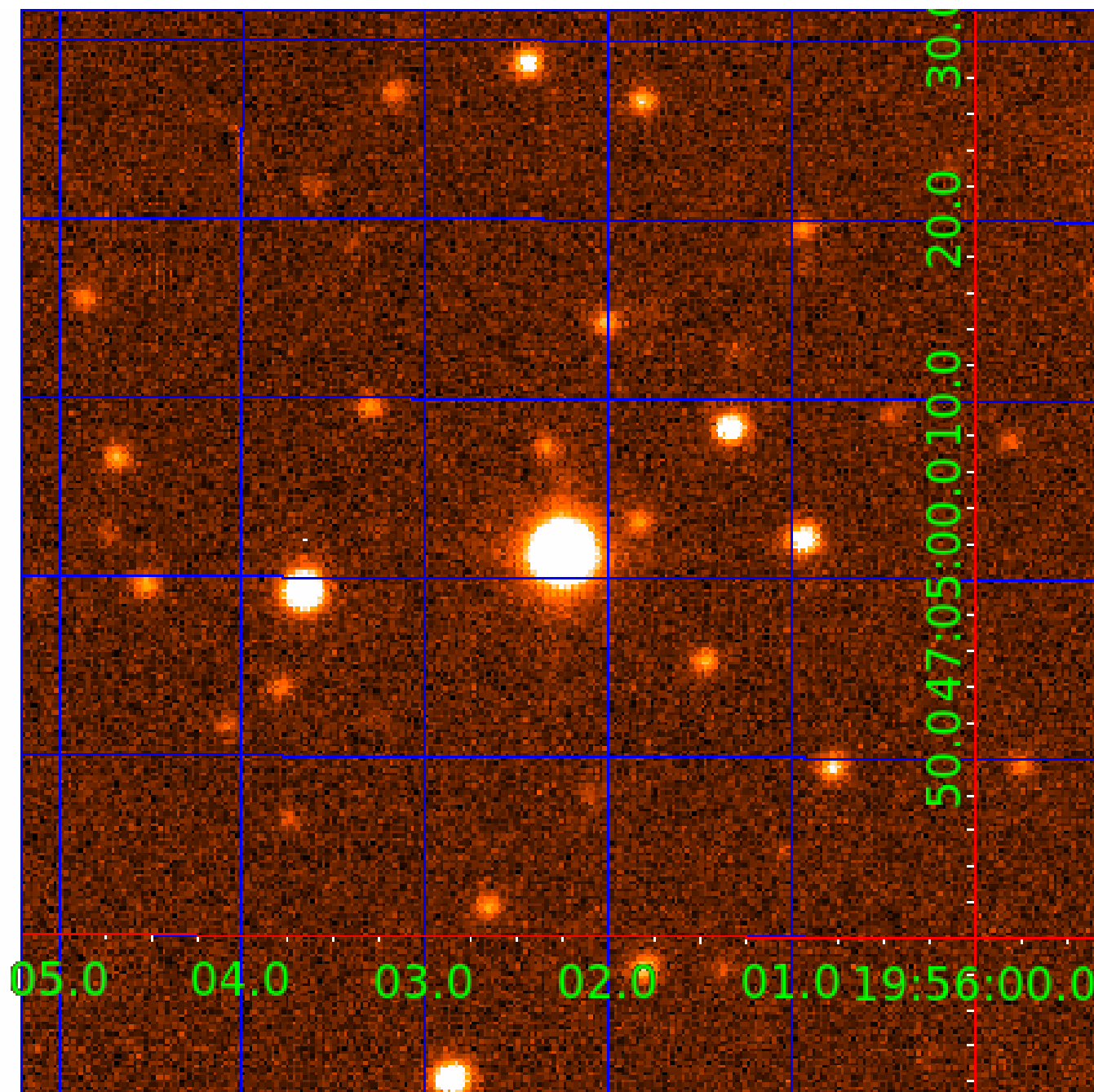


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010096641

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})
010096641-01	OBS	No	1.541084	131.971892	23.8	6.877	8.6	6.5	3.77	6292	2.14	20938.44
010096641-02	OBS	No	110.604124	201.856018	179.5	12.329	9.6	5.2	3.77	6292	5.56	70.20
010096641-03	OBS	No	67.034391	141.117890	315.5	2.570	7.9	8.0	3.77	6292	13.23	136.87
010096641-04	OBS	No	25.776244	137.530666	182.1	2.481	8.3	8.2	3.77	6292	5.88	489.50
010096641-05	OBS	No	385.198169	496.396434	354.1	4.389	7.8	7.5	3.77	6292	7.59	13.30
010096641-06	OBS	No	80.586517	187.891891	271.6	3.224	7.3	7.8	3.77	6292	7.29	107.08
010096641-07	OBS	No	83.464284	199.496903	435.5	2.032	7.3	7.8	3.77	6292	8.95	102.18
010096641-08	OBS	No	190.809615	215.693128	356.1	6.936	7.2	7.4	3.77	6292	9.27	33.93
010096641-09	OBS	No	93.528944	142.923973	242.3	2.943	7.1	7.0	3.77	6292	6.20	87.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010096641-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
010096641-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
010096641-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—HALO_GHOST
010096641-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010096641-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
010096641-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
010096641-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

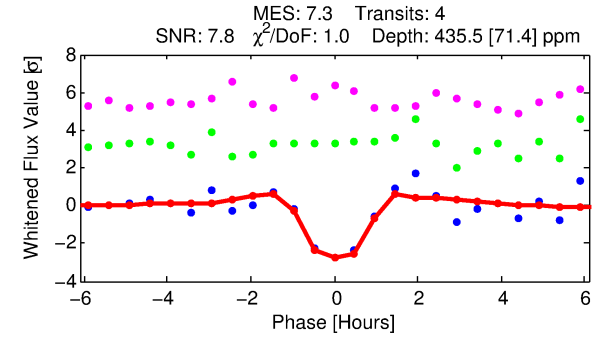
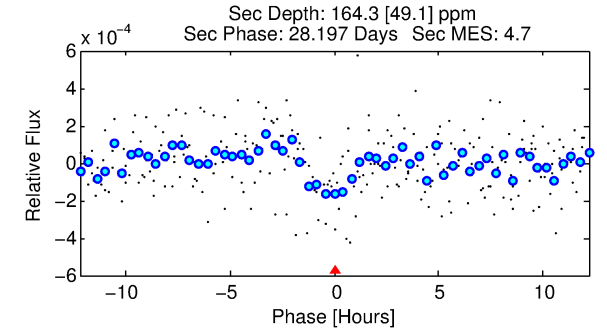
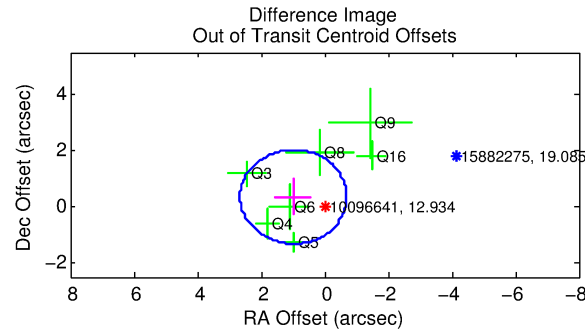
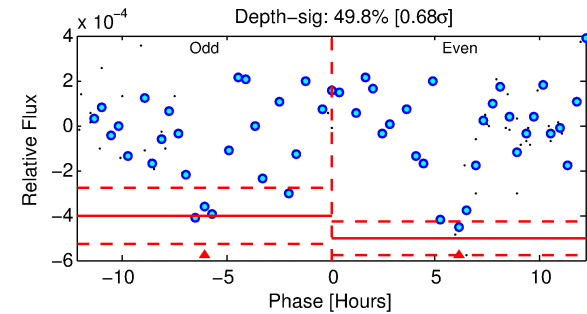
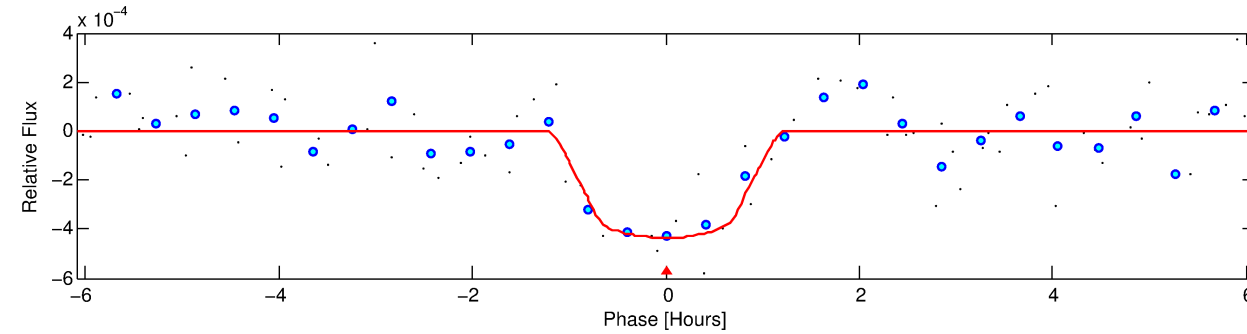
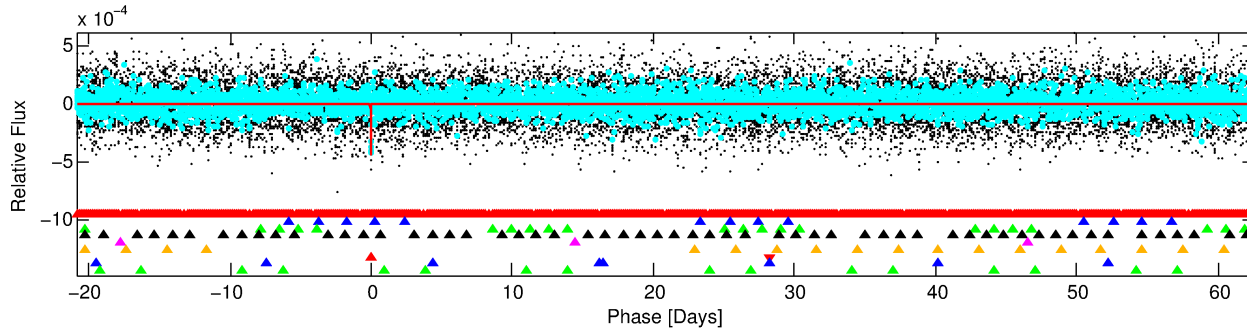
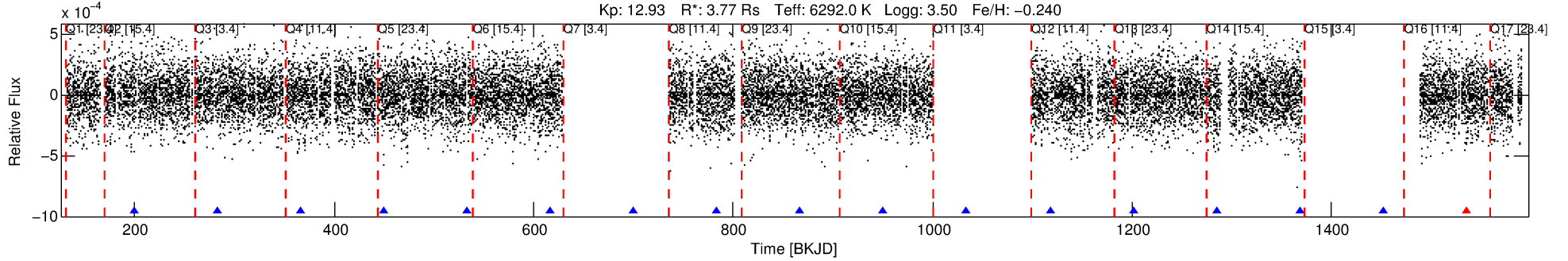
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096641-07

No Significant Match Found

DV One-Page Summary

KIC: 10096641 Candidate: 7 of 9 Period: 83.464 d



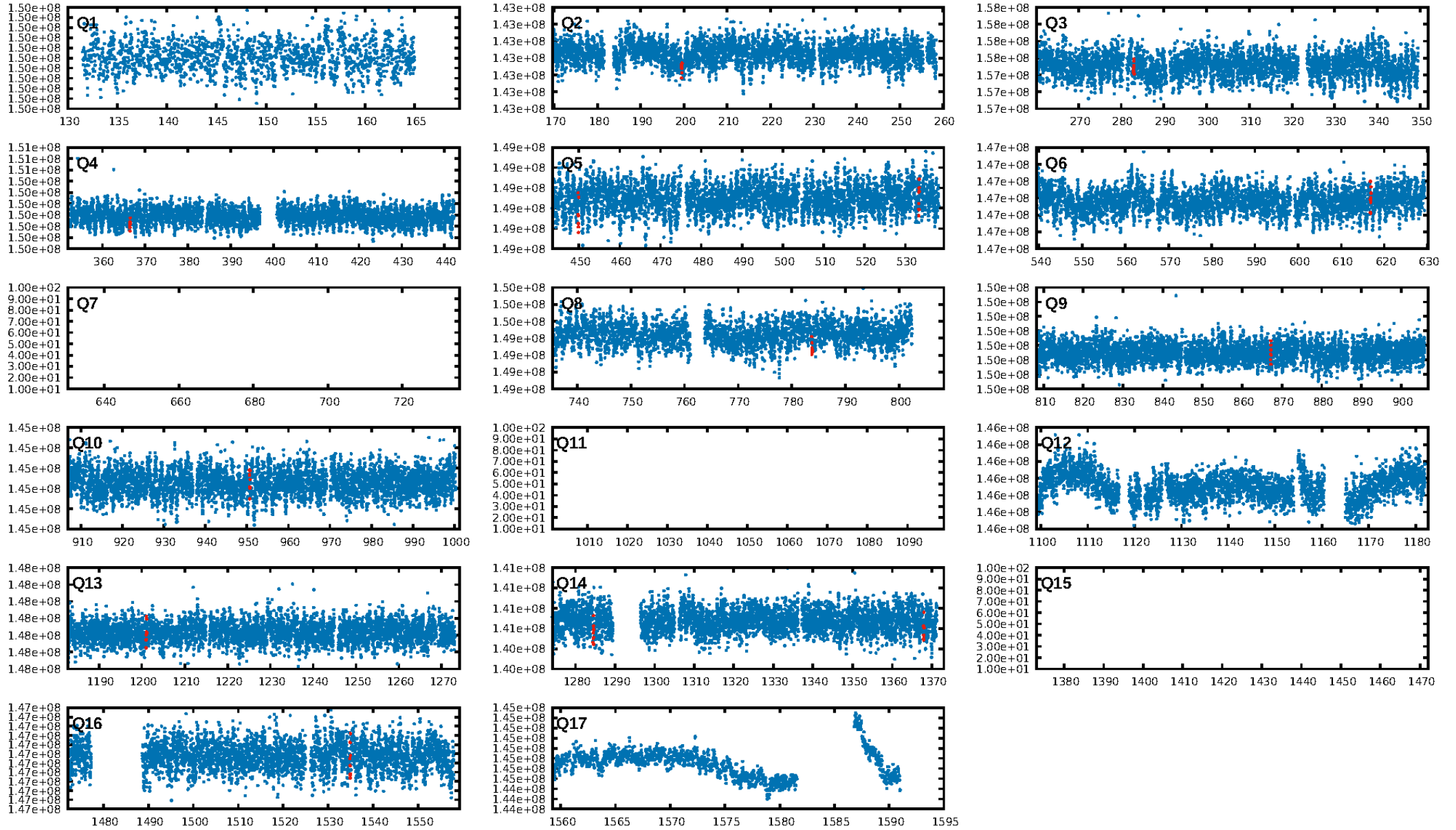
DV Fit Results:

Period = 83.46428 [0.00073] d
Epoch = 199.4969 [0.0078] BKJD
Rp/R* = 0.0218 [0.0352]
a/R* = 174.77 [1544.83]
b = 0.86 [2.78]
Seff = 102.18 [68.64]
Teq = 811 [136] K
Rp = 8.95 [15.02] Re
a = 0.4416 [0.1852] AU
Ag = 220.19 [729.94] [0.30 σ]
Teffp = 4828 [3924] K [1.02 σ]

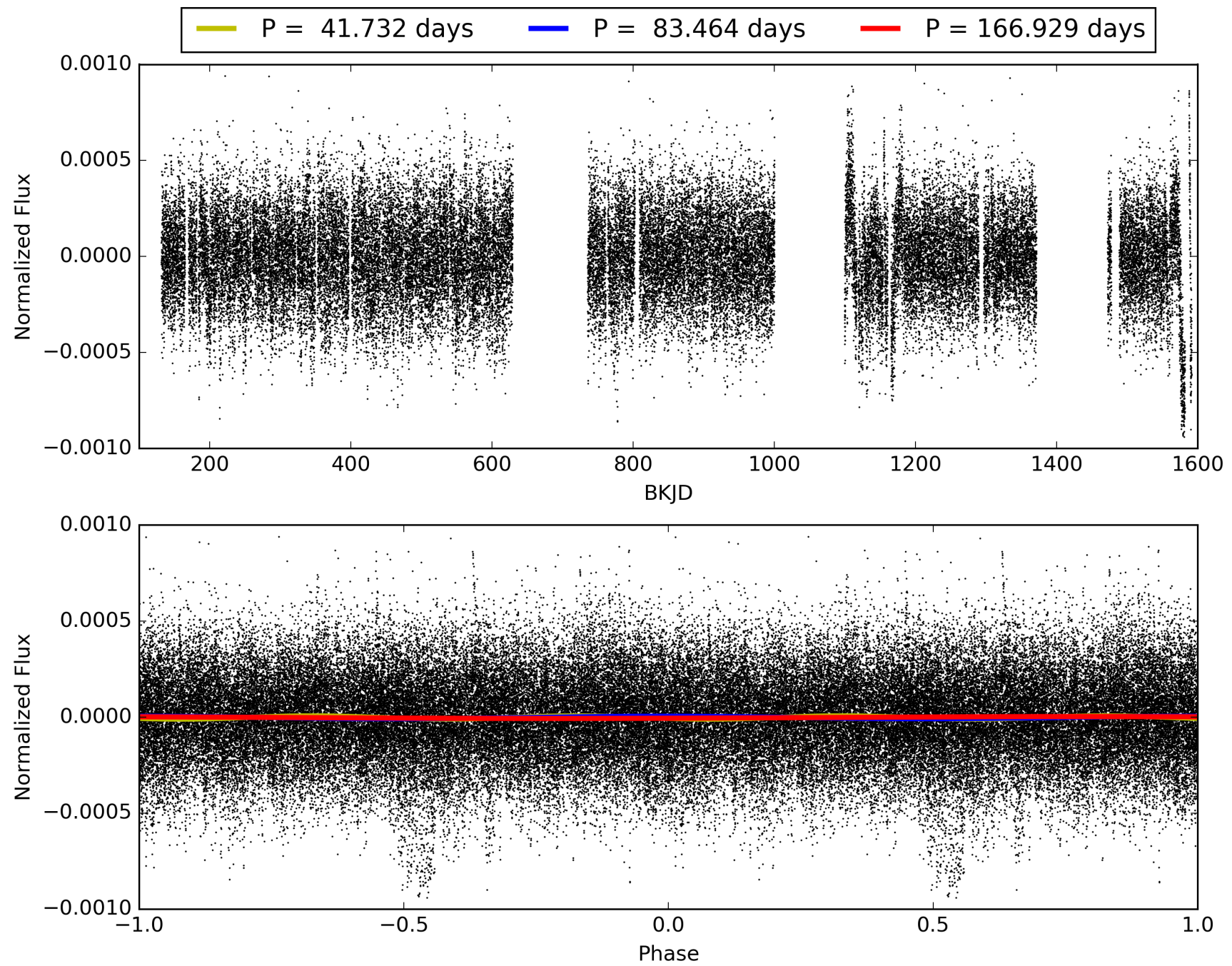
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.12 σ]
LongPeriod-sig: 100.0% [67.54 σ]
ModelChiSquare2-sig: 17.9%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 1.88e-09
RollingBand-fgt: 0.75 [3/4]
GhostDiagnostic-chr: 6.74
Centroid-sig: 6.2%
Centroid-so: 0.782 arcsec [1.26 σ]
OotOffset-rm: 1.045 arcsec [1.87 σ]
OotOffset-st: 1/1/3/2 [7]
KicOffset-rm: 1.131 arcsec [2.02 σ]
KicOffset-st: 1/1/3/2 [7]
DiffImageQuality-fgm: 0.71 [5/7]
DiffImageOverlap-fno: 0.30 [3/10]

TCE 010096641-07, PDC Light Curves

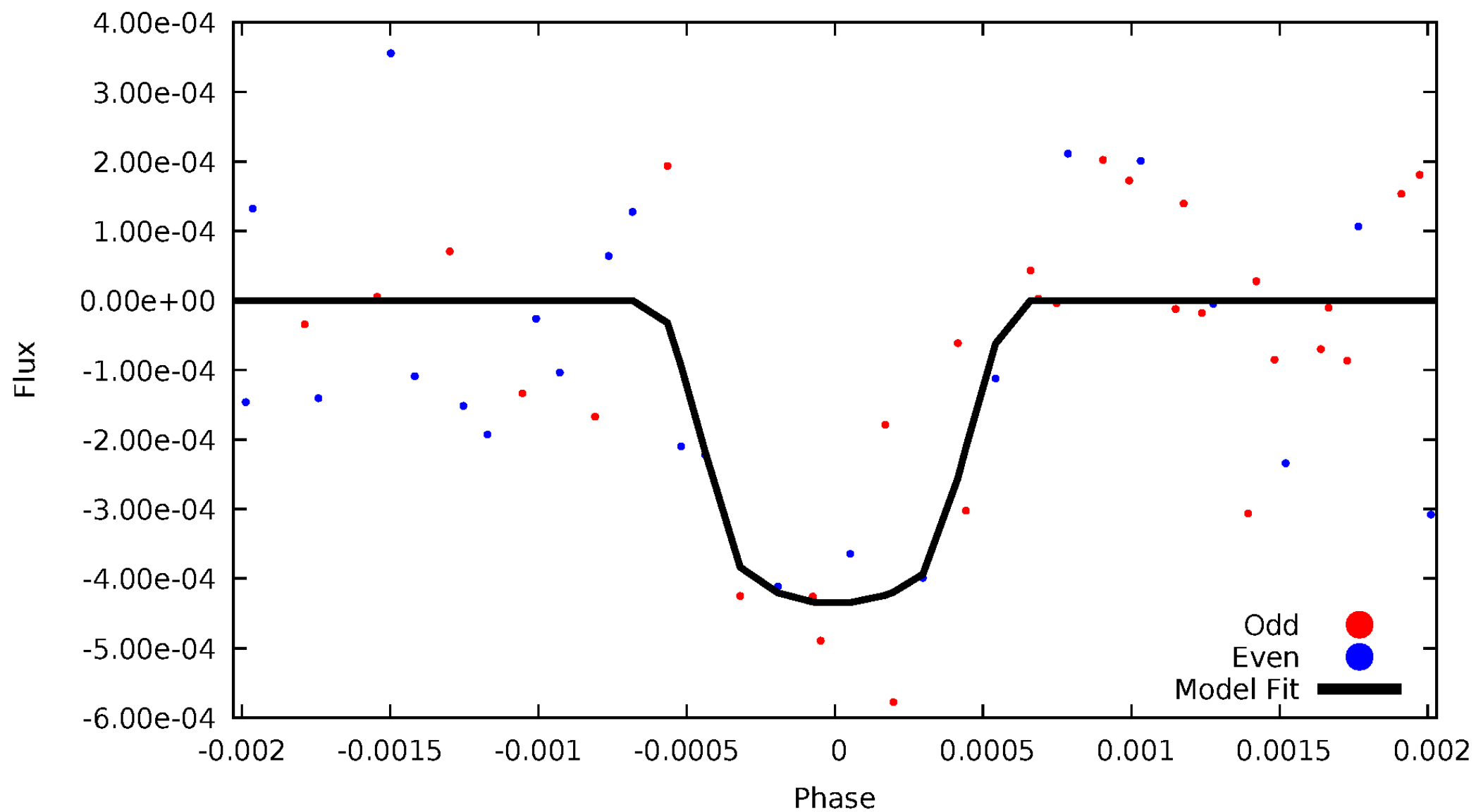


TCE 010096641-07



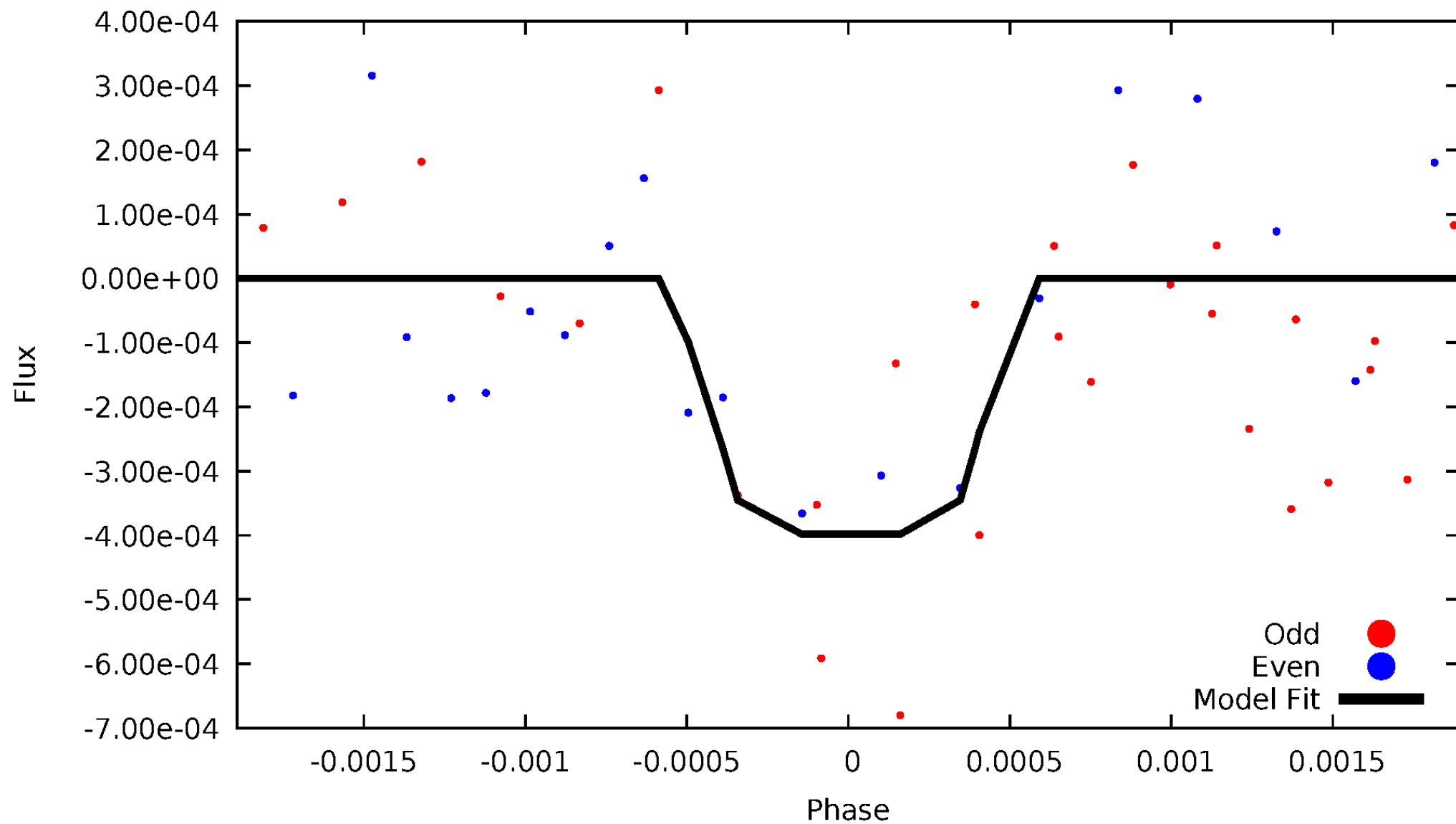
DV Odd/Even

TCE 010096641-07

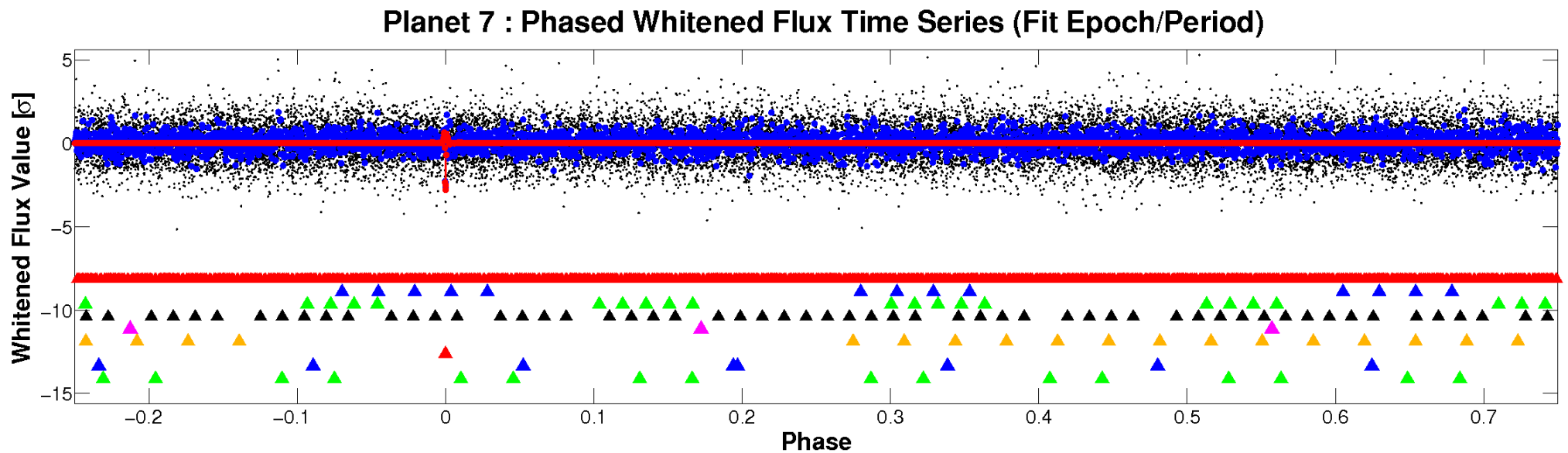
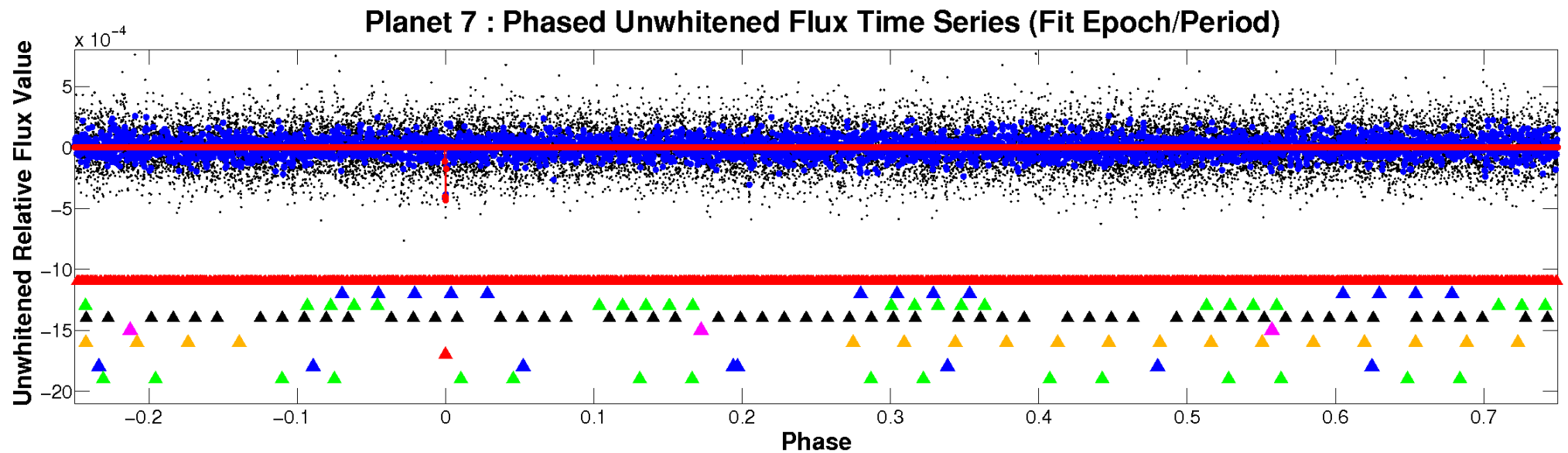


ALT Odd/Even

TCE 010096641-07

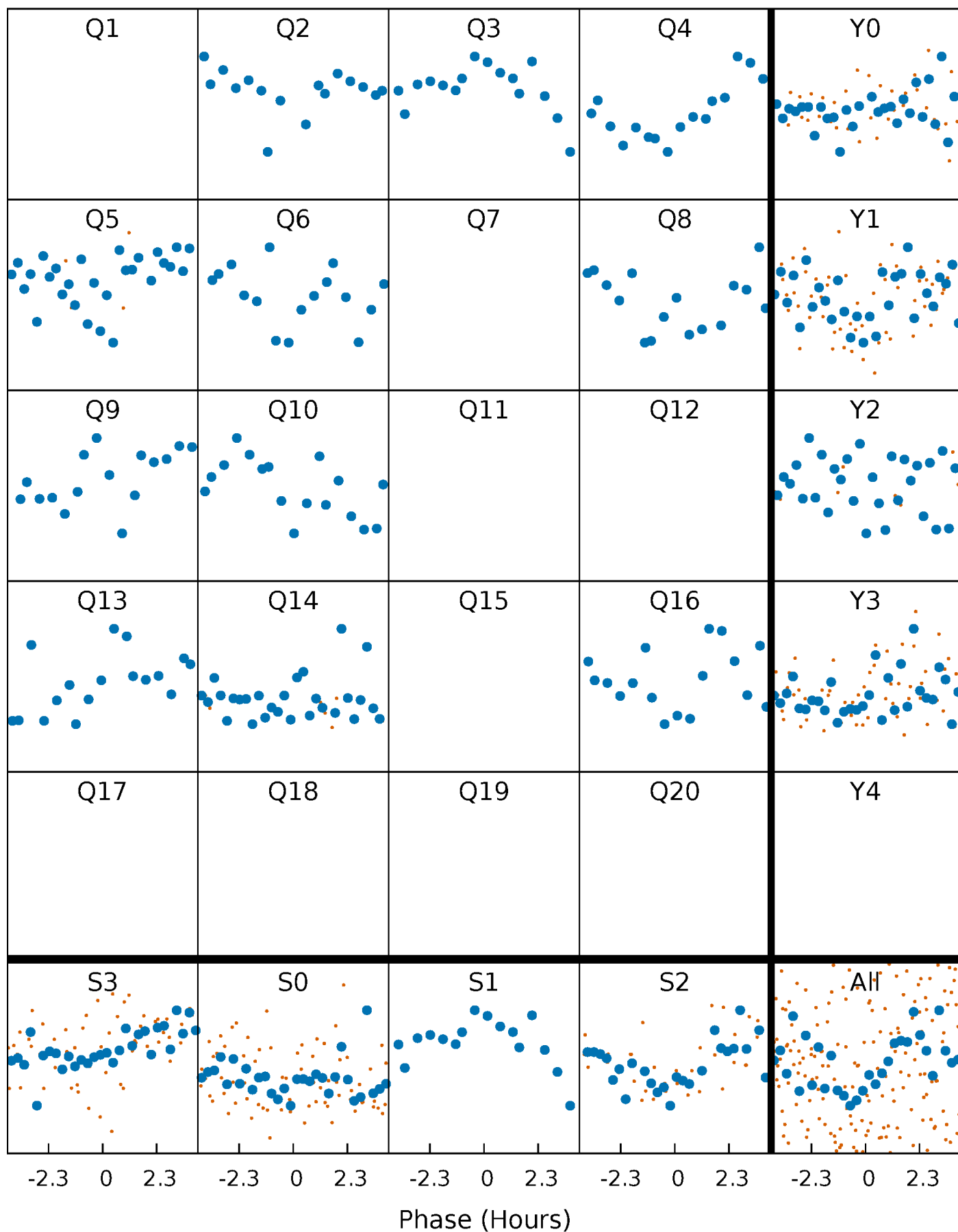


Non-Whitened Vs. Whitened Light Curve



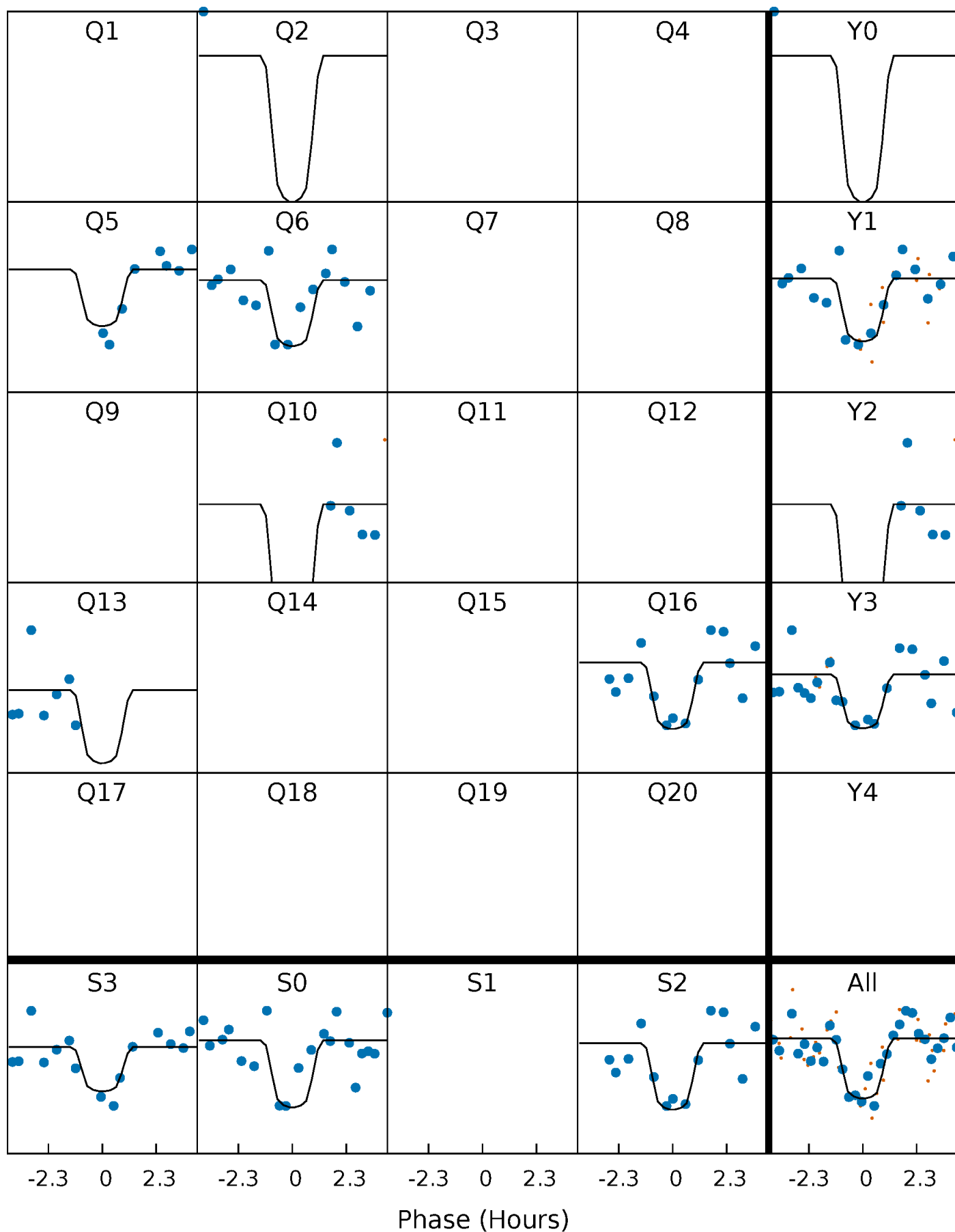
PDC Quarter-Phased Transit Curves

TCE 010096641-07 $P = 83.464284$ Days $T_0 = 199.496903$ (BKJD)



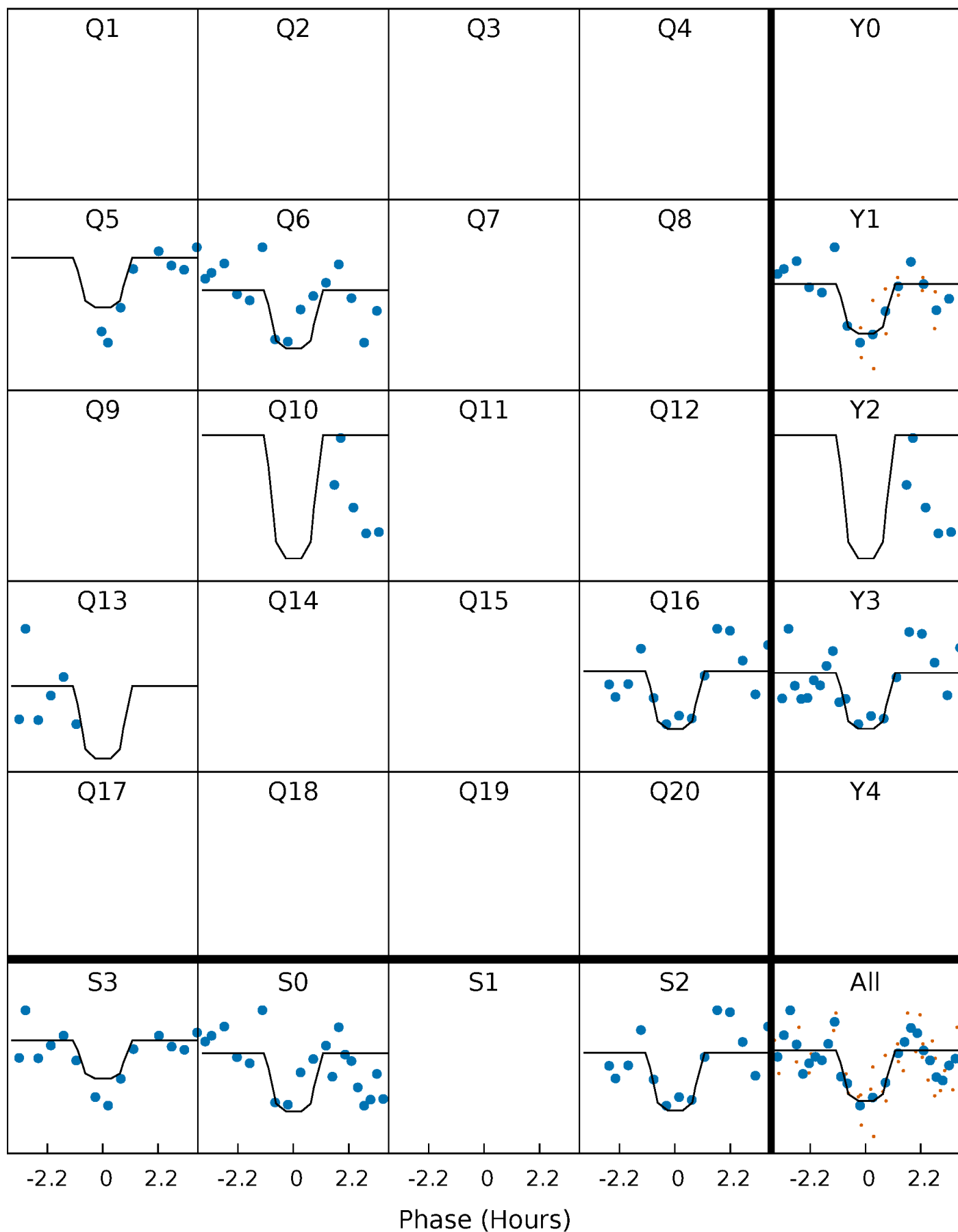
DV Quarter-Phased Transit Curves

TCE 010096641-07 $P = 83.464284$ Days $T_0 = 199.496903$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

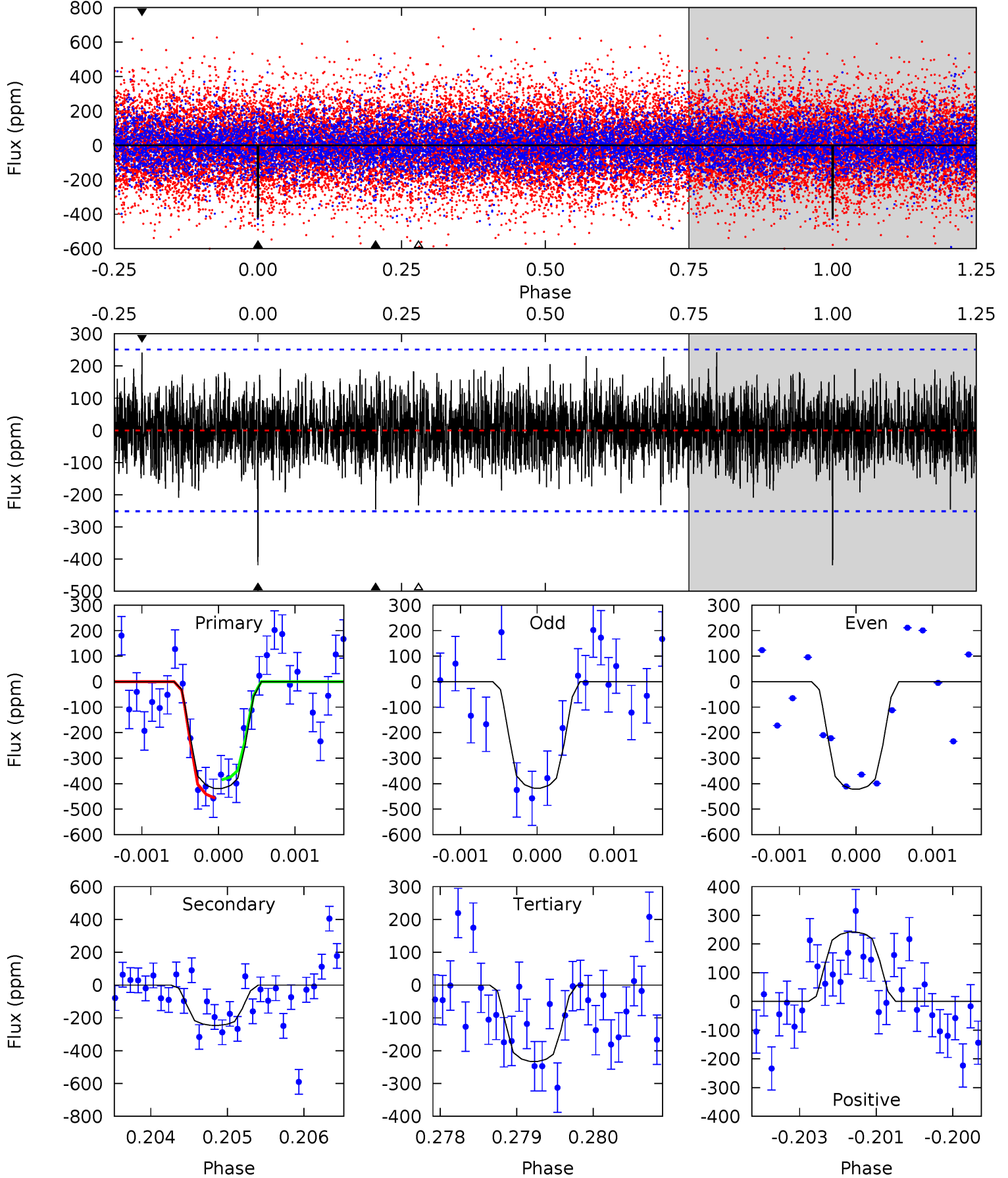
TCE 010096641-07 P= 83.463735 Days $T_0=199.501536$ (BKJD)



DV Model-Shift Uniqueness Test

010096641-07, P = 83.464284 Days, E = 116.032619 Days

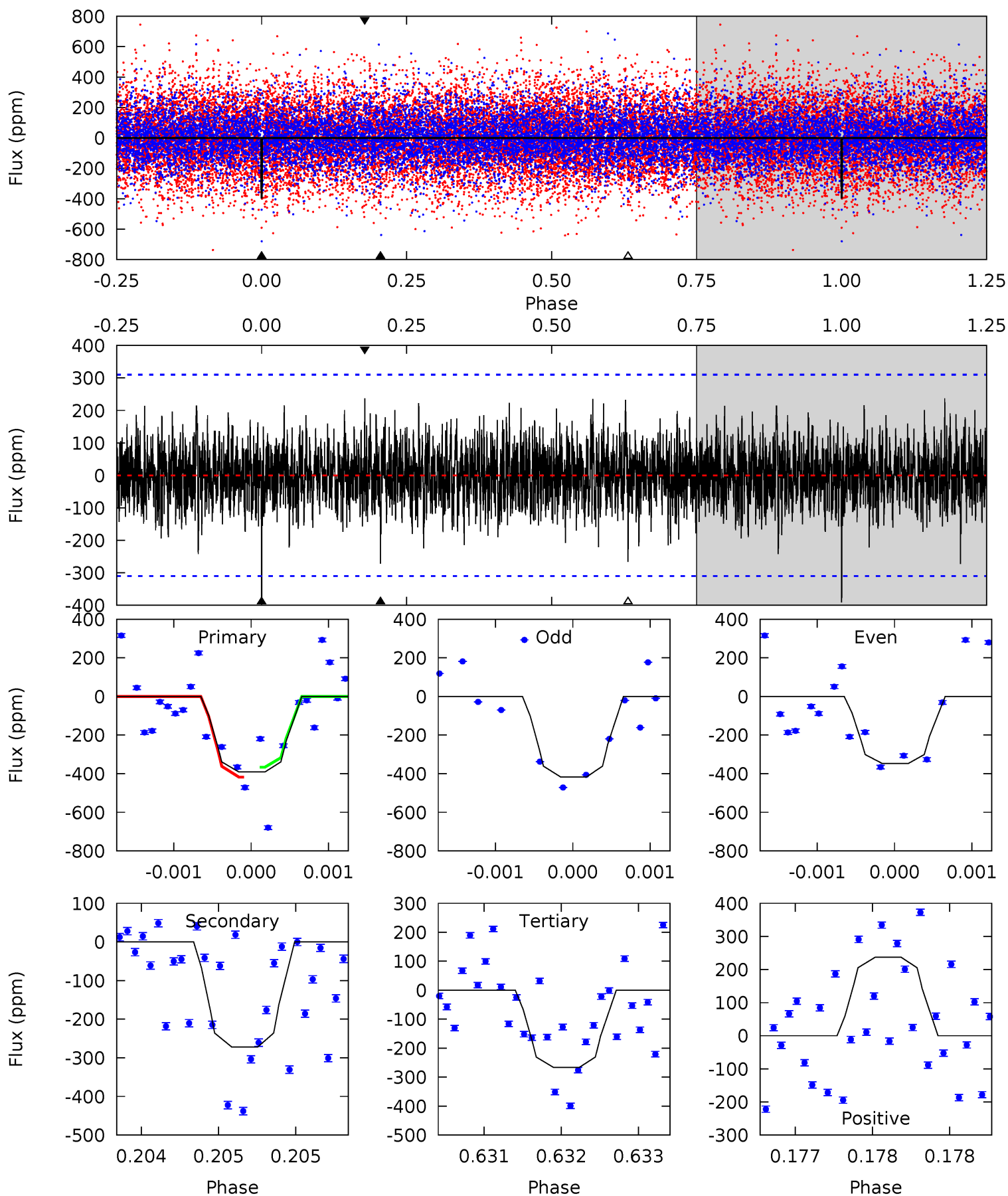
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.05	5.30	5.03	5.22	5.42	3.24	1.41	4.02	3.83	0.28	0.08	0.04	1.04	0.37	0.76



Alt Model-Shift Uniqueness Test

010096641-07, P = 83.463735 Days, E = 116.037801 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.90	4.80	4.70	4.18	5.47	3.32	1.23	2.20	2.72	0.10	0.62	0.60	1.21	0.38	0.45



Stellar Parameters For KIC 010096641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6292^{+192}_{-173}	$3.503^{+0.384}_{-0.096}$	$-0.240^{+0.350}_{-0.300}$	$3.767^{+0.674}_{-1.685}$	$1.648^{+0.194}_{-0.421}$	$0.043^{+0.128}_{-0.016}$
	+3%/-3%	+11%/-3%	+146%/-125%	+18%/-45%	+12%/-26%	+296%/-38%
Source	PHO1	FLK73	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 010096641-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-246 ± 46	$12.67^{+11.84}_{-8.40}$	1109^{+76}_{-117}	4493^{+2909}_{-934}	161^{+1166}_{-119}
Alt.	-272 ± 57	$12.33^{+11.45}_{-8.23}$	1099^{+82}_{-113}	4618^{+3303}_{-986}	194^{+1619}_{-144}

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 $A_{\text{obs}} \gg 1.0$

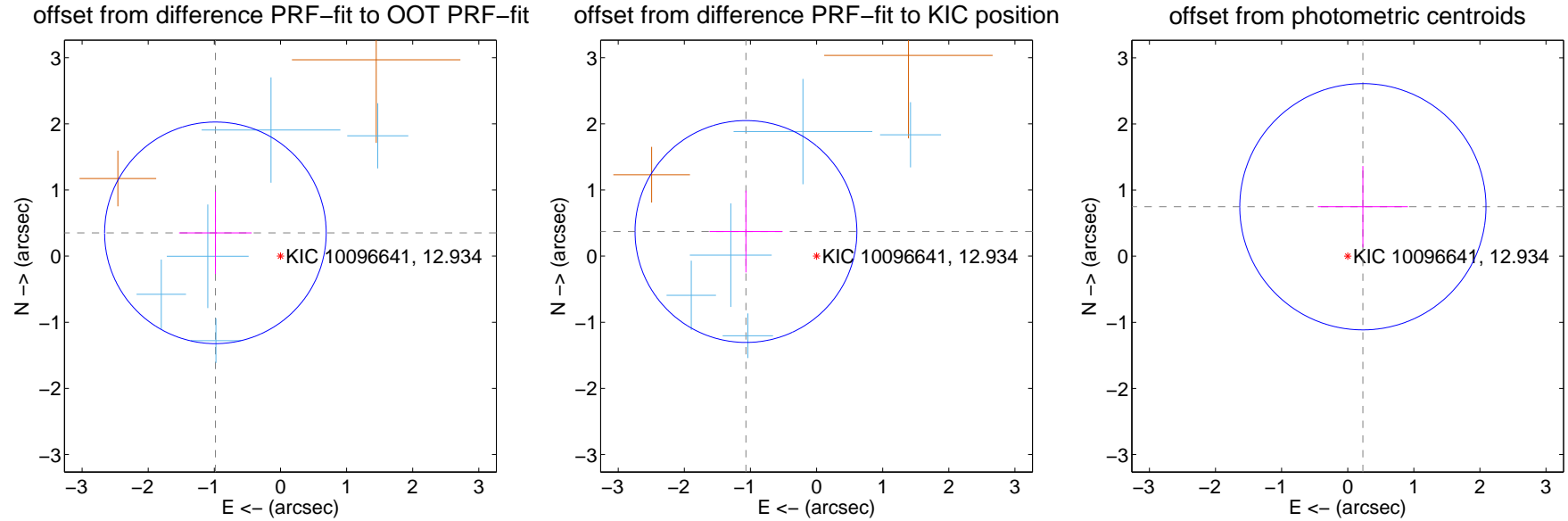
DV Centroid Data

Supplemental centroid analysis for 010096641-07. Kepler magnitude: 12.93. Transit SNR 7.82

There are 5 quarters with good PRF difference image offsets

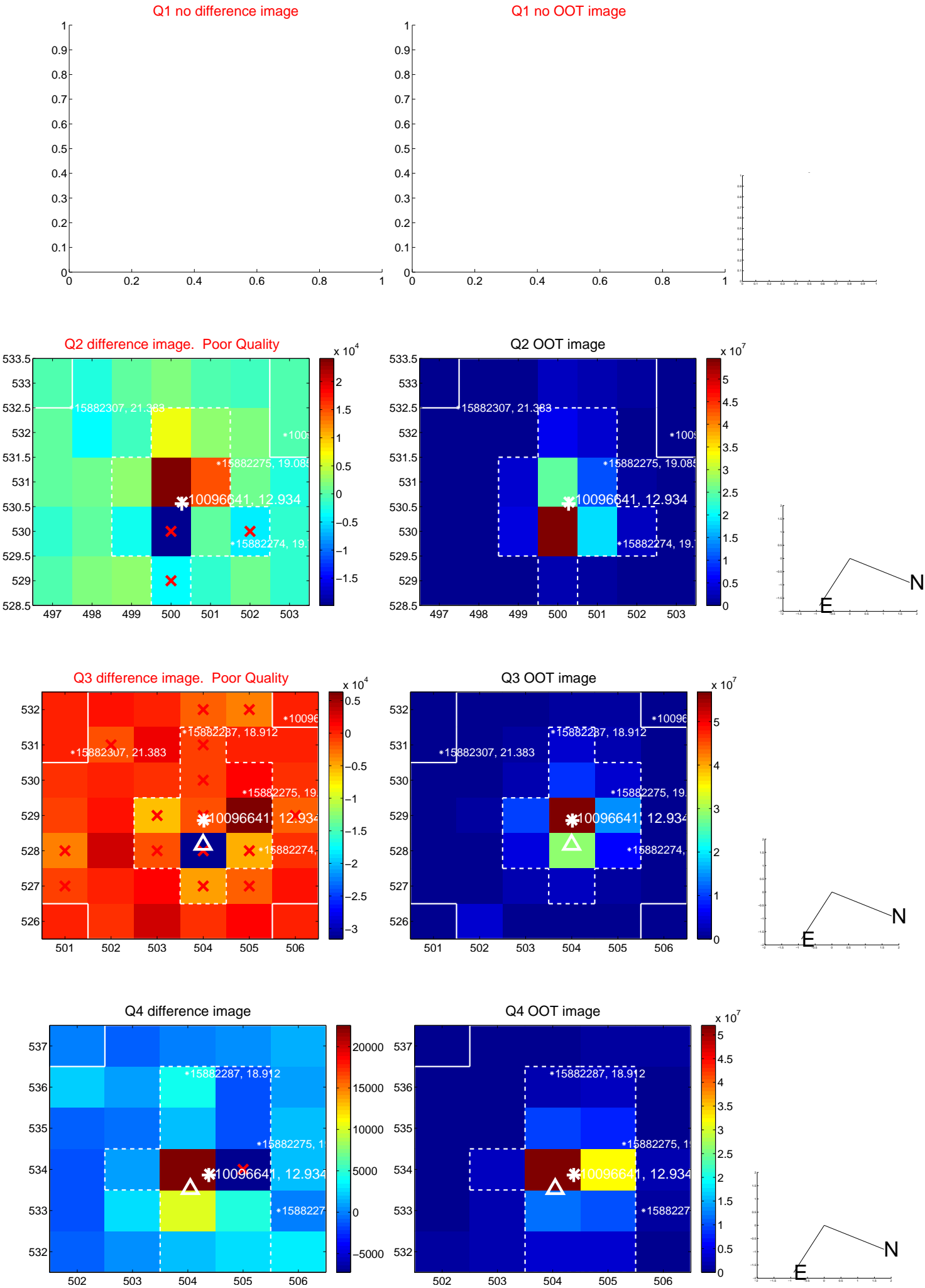
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.045 ± 0.559	1.87	0.984 ± 0.550	0.352 ± 0.623
PRF-fit source offset from KIC position	1.131 ± 0.559	2.02	1.068 ± 0.552	0.372 ± 0.618
photometric centroid source offset	0.78 ± 0.62	1.26	-0.23 ± 0.68	0.75 ± 0.61

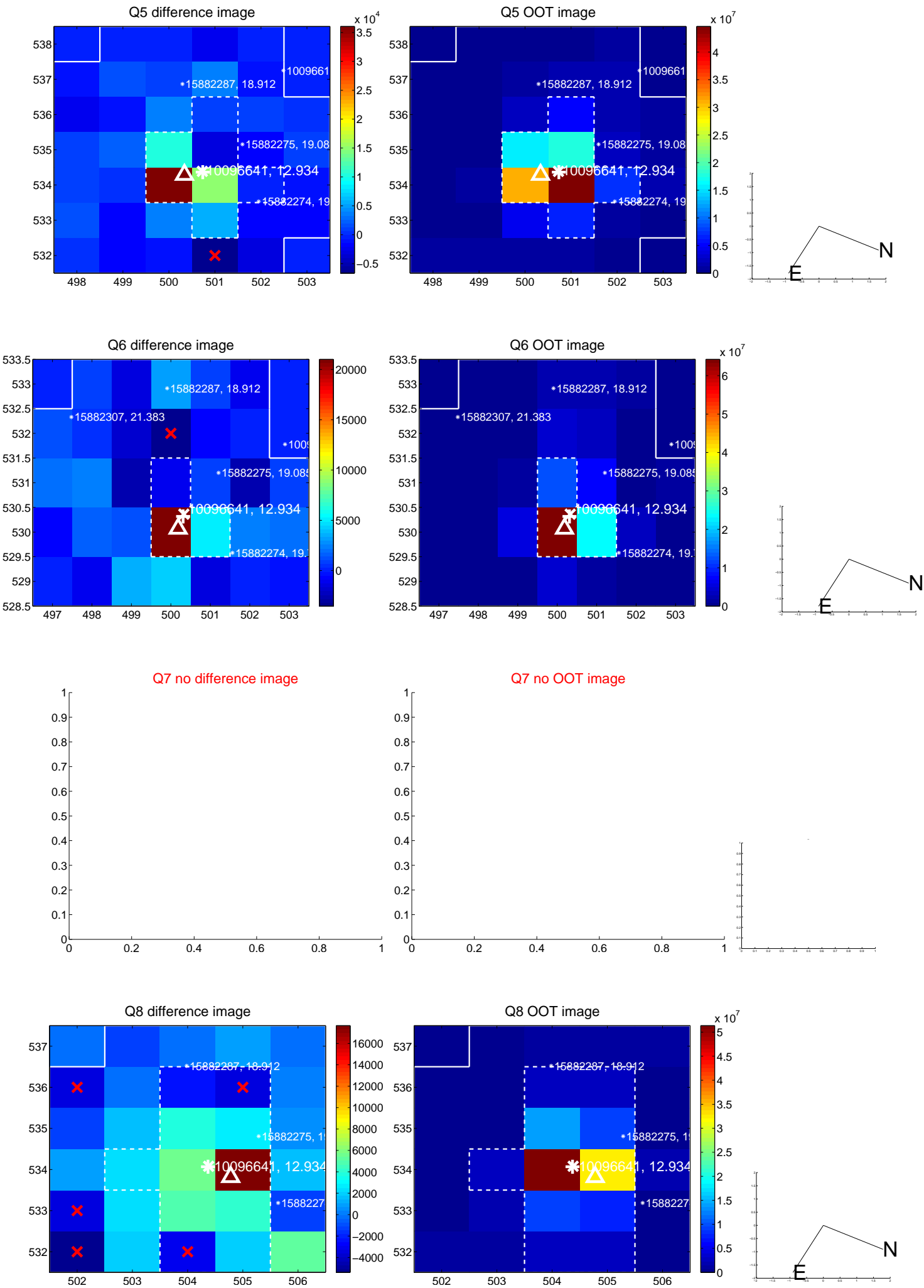


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

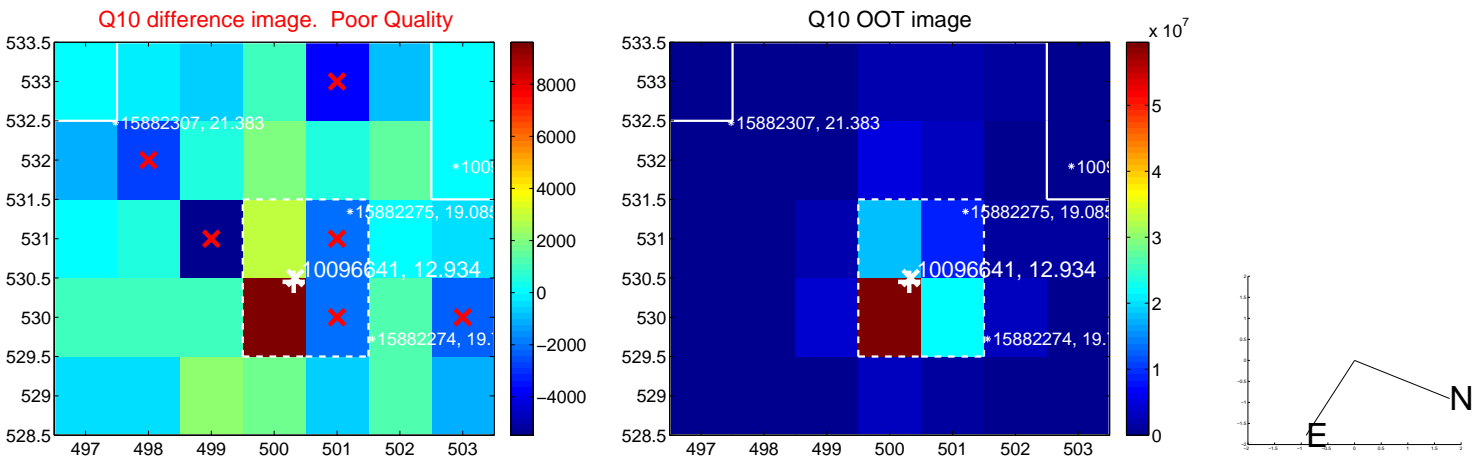
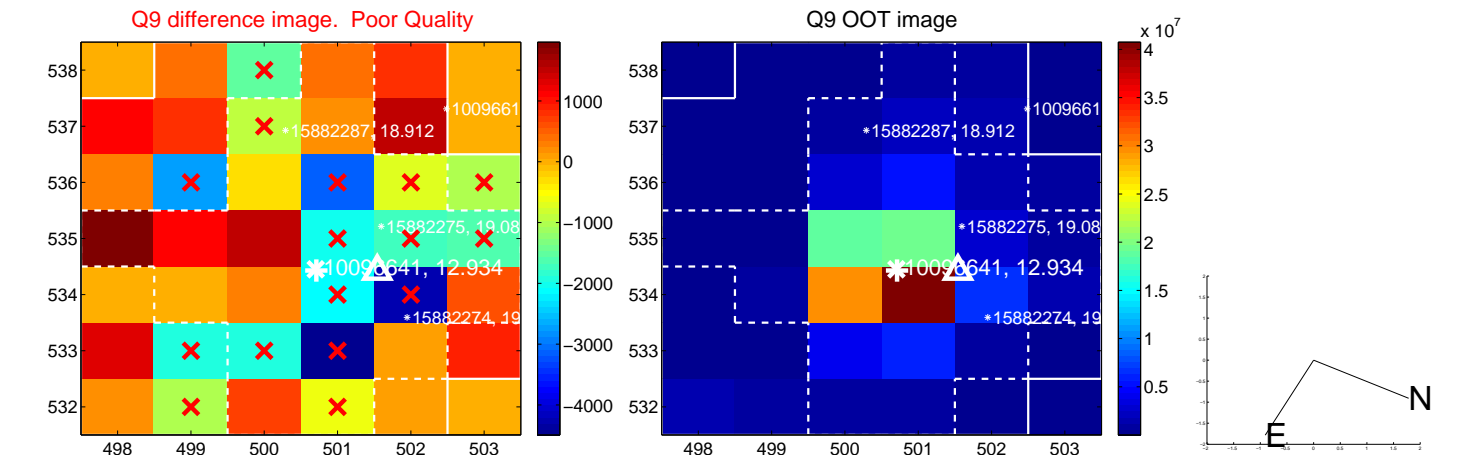
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



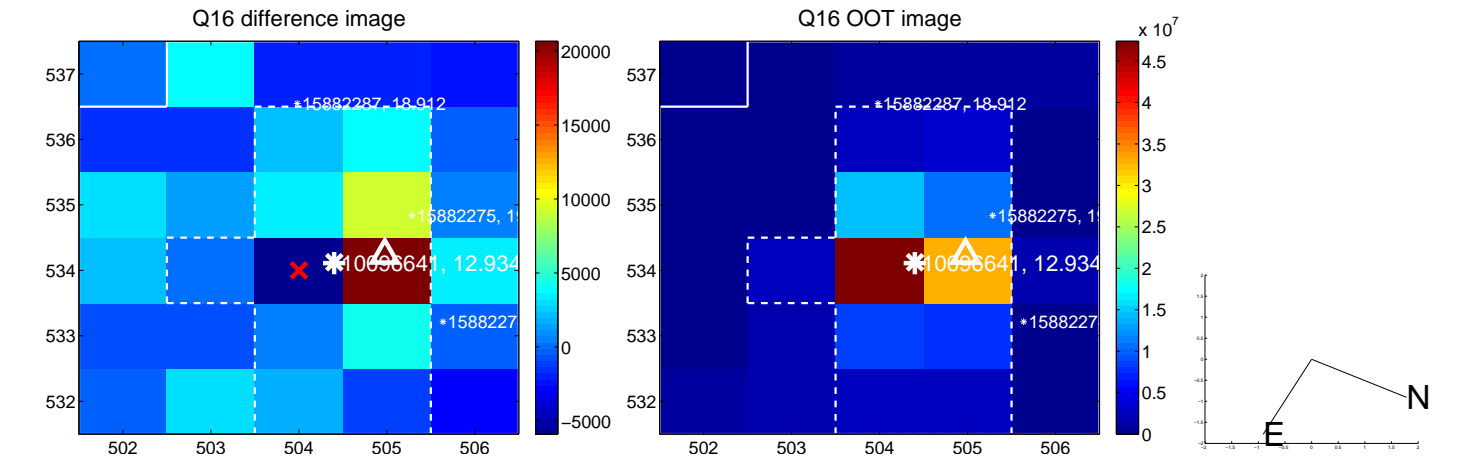
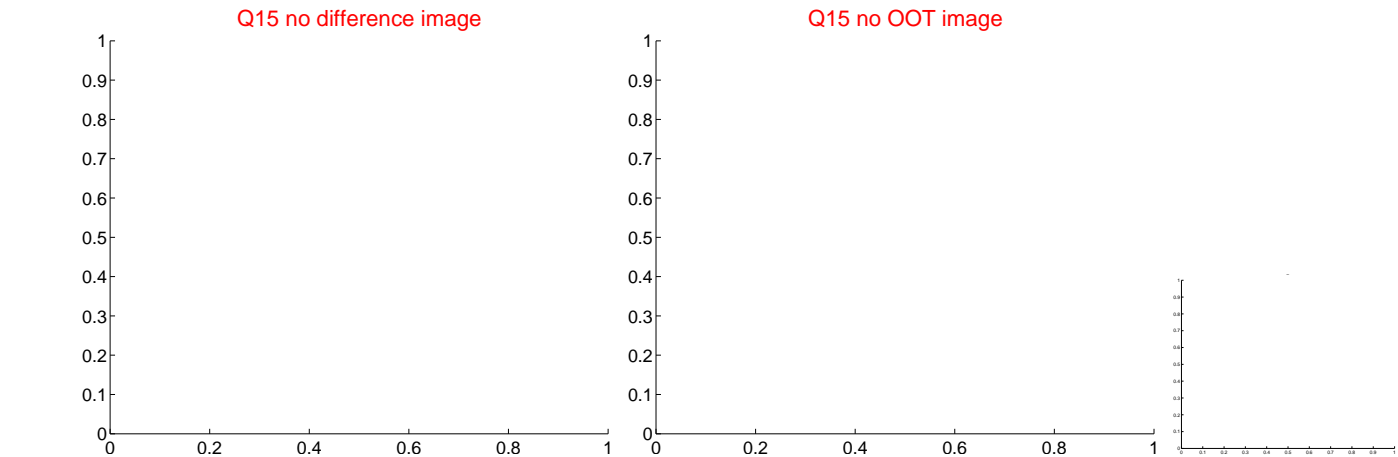
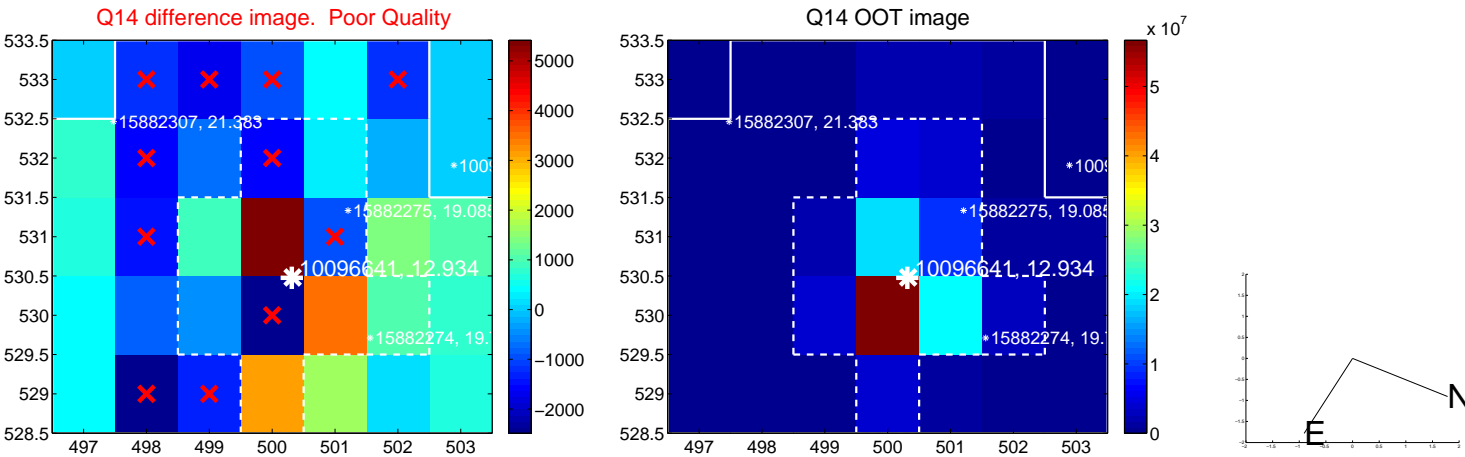
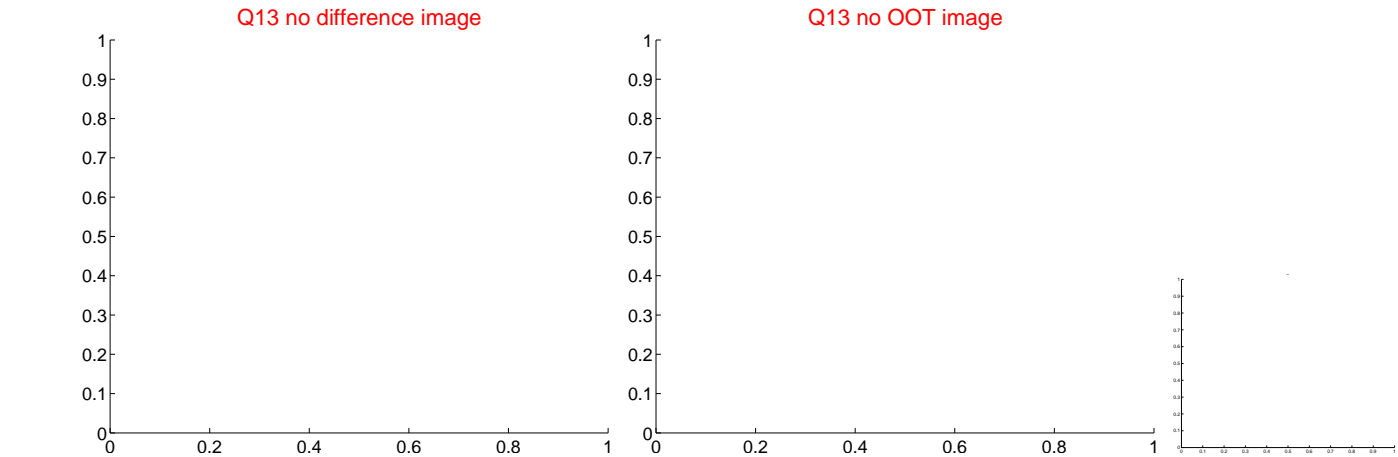
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



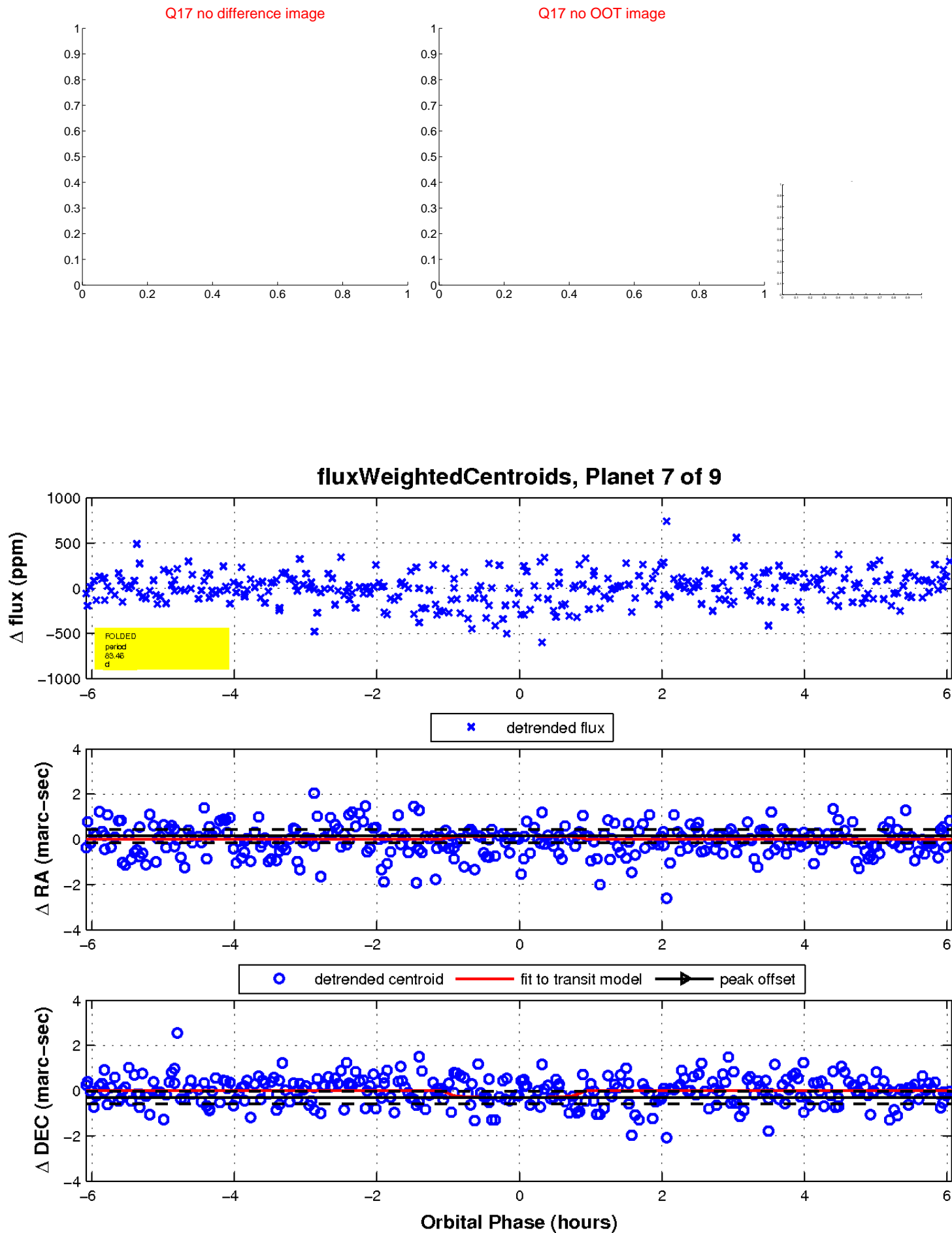
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

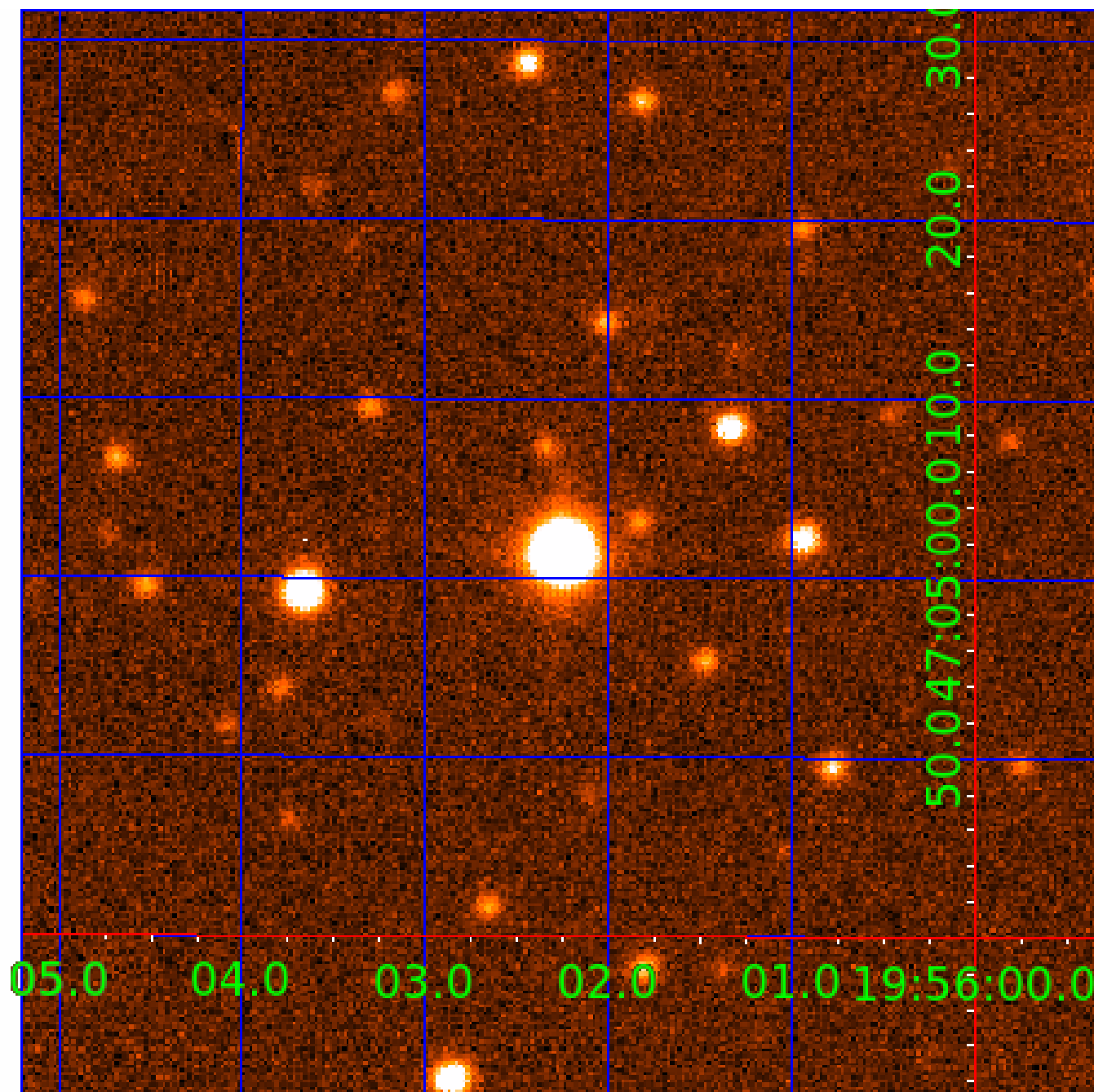


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010096641

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})
010096641-01	OBS	No	1.541084	131.971892	23.8	6.877	8.6	6.5	3.77	6292	2.14	20938.44
010096641-02	OBS	No	110.604124	201.856018	179.5	12.329	9.6	5.2	3.77	6292	5.56	70.20
010096641-03	OBS	No	67.034391	141.117890	315.5	2.570	7.9	8.0	3.77	6292	13.23	136.87
010096641-04	OBS	No	25.776244	137.530666	182.1	2.481	8.3	8.2	3.77	6292	5.88	489.50
010096641-05	OBS	No	385.198169	496.396434	354.1	4.389	7.8	7.5	3.77	6292	7.59	13.30
010096641-06	OBS	No	80.586517	187.891891	271.6	3.224	7.3	7.8	3.77	6292	7.29	107.08
010096641-07	OBS	No	83.464284	199.496903	435.5	2.032	7.3	7.8	3.77	6292	8.95	102.18
010096641-08	OBS	No	190.809615	215.693128	356.1	6.936	7.2	7.4	3.77	6292	9.27	33.93
010096641-09	OBS	No	93.528944	142.923973	242.3	2.943	7.1	7.0	3.77	6292	6.20	87.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010096641-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
010096641-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
010096641-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—HALO_GHOST
010096641-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010096641-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
010096641-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
010096641-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

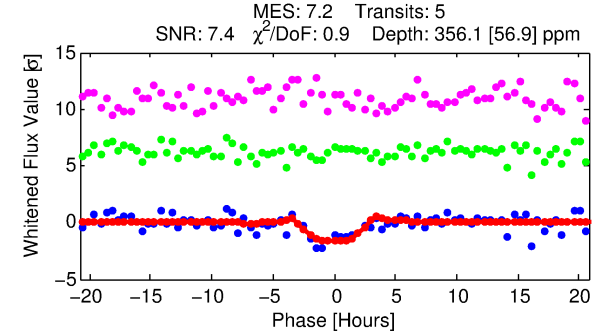
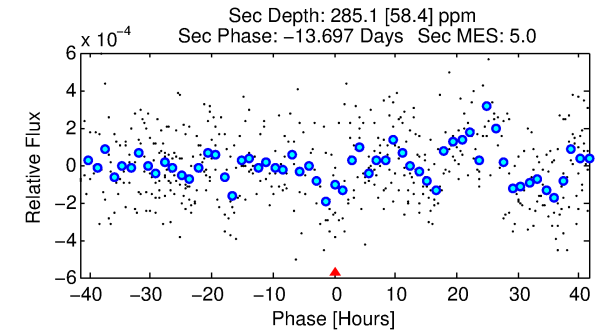
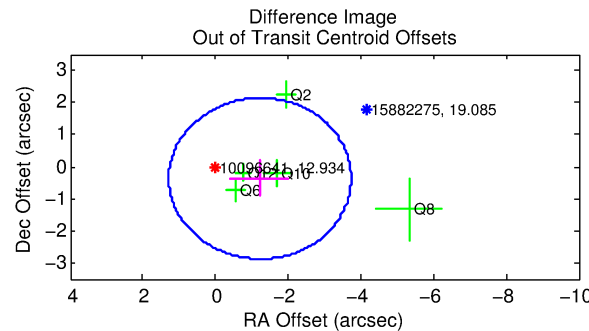
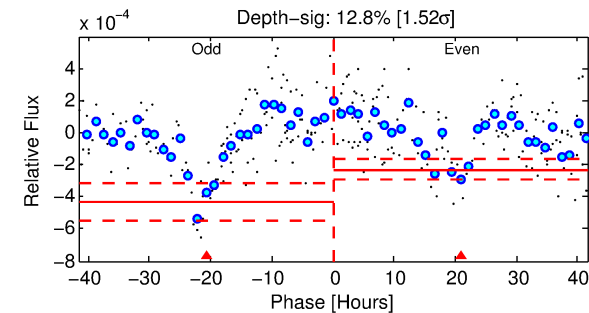
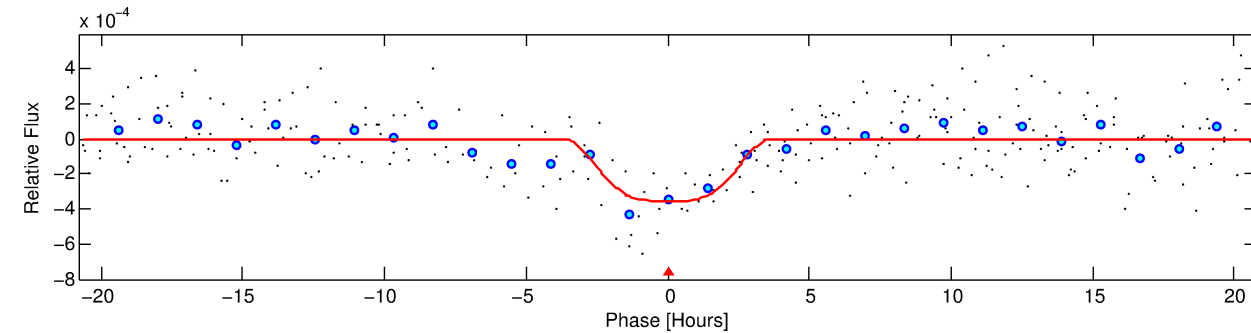
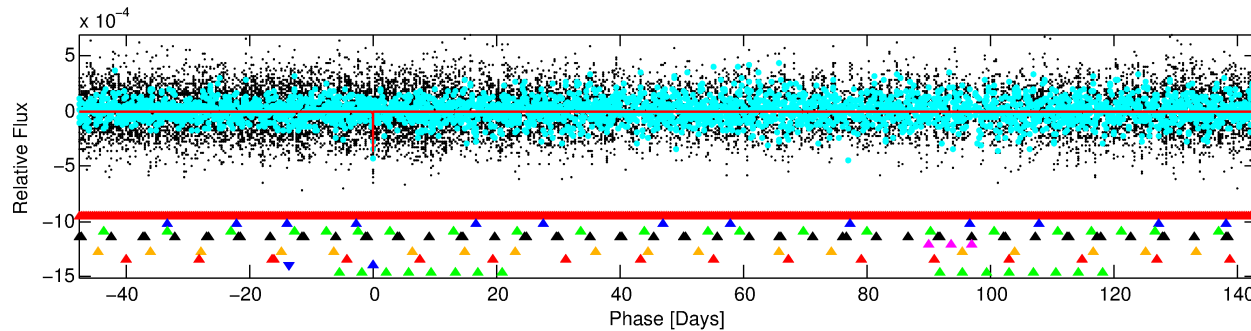
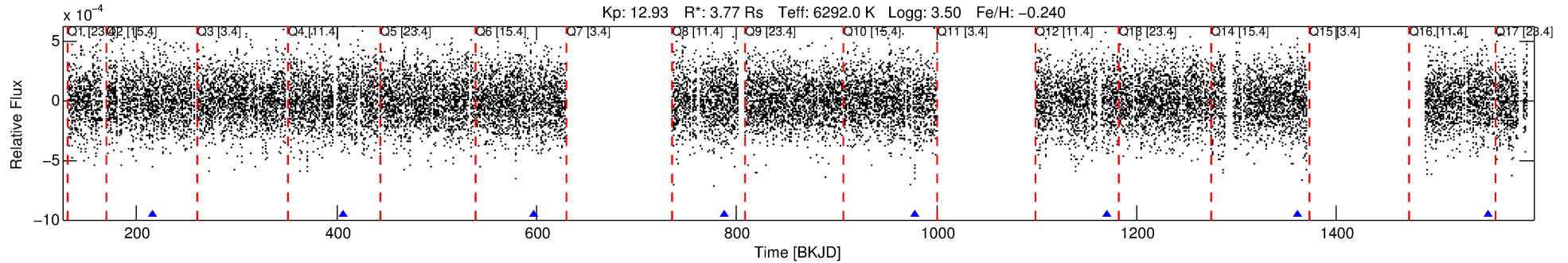
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096641-08

No Significant Match Found

DV One-Page Summary

KIC: 10096641 Candidate: 8 of 9 Period: 190.810 d



DV Fit Results:

Period = 190.80961 [0.00461] d
Epoch = 215.6931 [0.0199] BKJD
Rp/R* = 0.0225 [0.0023]
a/R* = 66.52 [13.33]
b = 0.97 [0.01]
Seff = 33.93 [22.79]
Teq = 615 [103] K
Rp = 9.27 [4.25] Re
a = 0.7664 [0.3213] AU
Ag = 1072.89 [772.79] [1.39σ]
Teffp = 5446 [425] K [11.05σ]

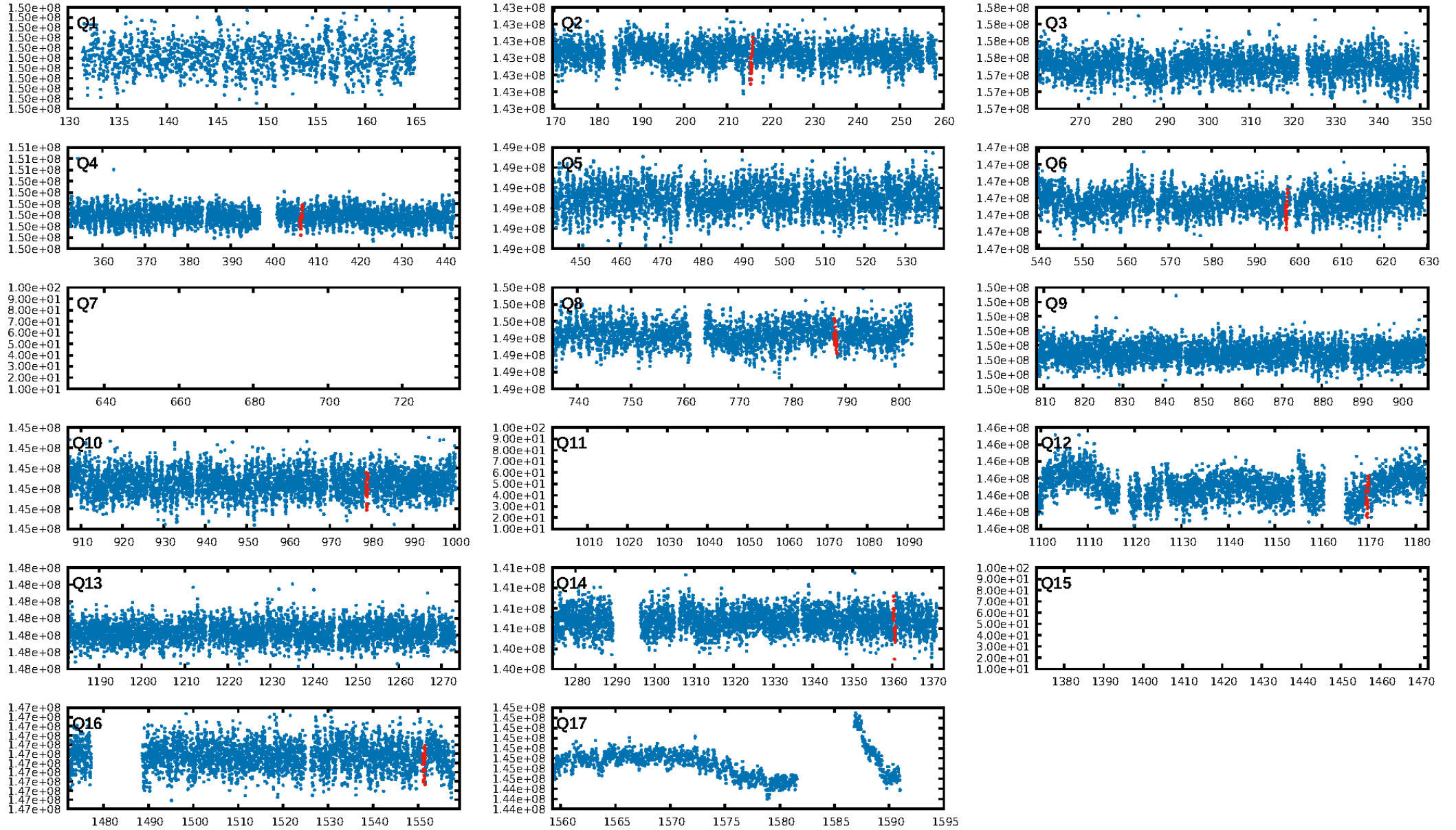
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [136.08σ]
LongPeriod-sig: 100.0% [568.37σ]
ModelChiSquare2-sig: 58.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.65e-08
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 15.66
Centroid-sig: 39.2%
Centroid-so: 0.427 arcsec [0.67σ]
OotOffset-rm: 1.277 arcsec [1.53σ]
KicOffset-rm: 1.160 arcsec [1.49σ]
OotOffset-st: 3/0/2/0 [5]
KicOffset-st: 3/0/2/0 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.00 [0/8]

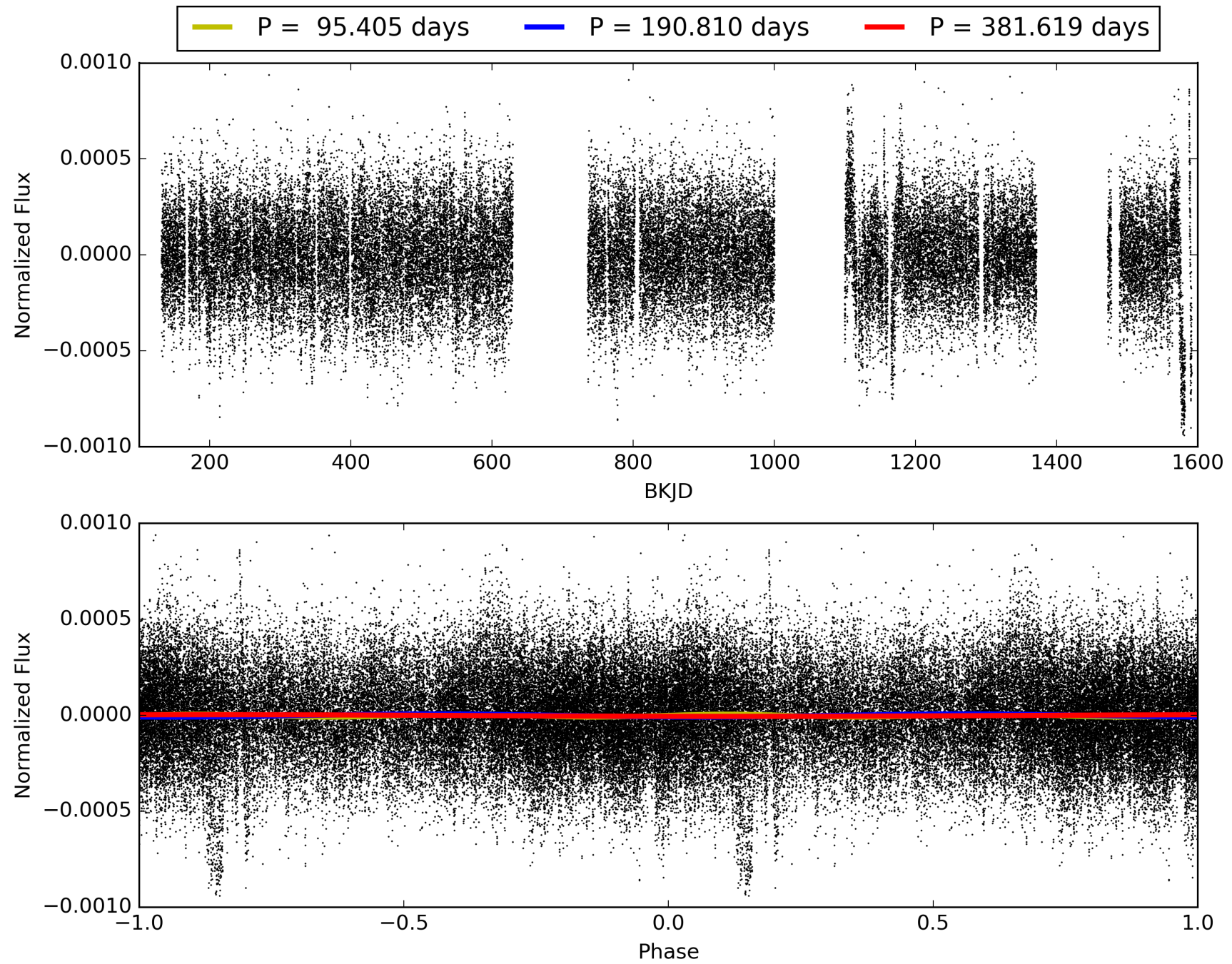
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:58:51 Z

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

TCE 010096641-08, PDC Light Curves

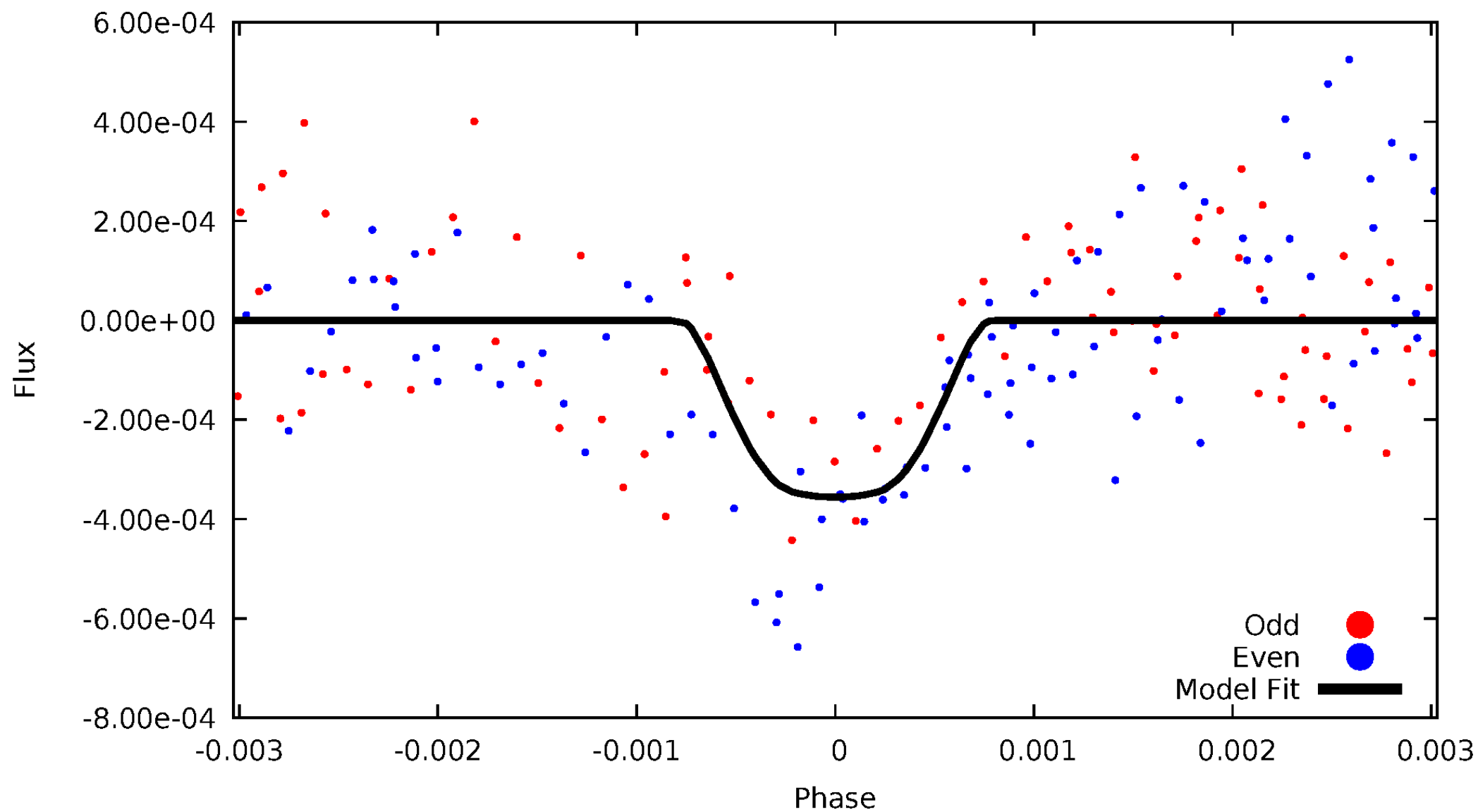


TCE 010096641-08



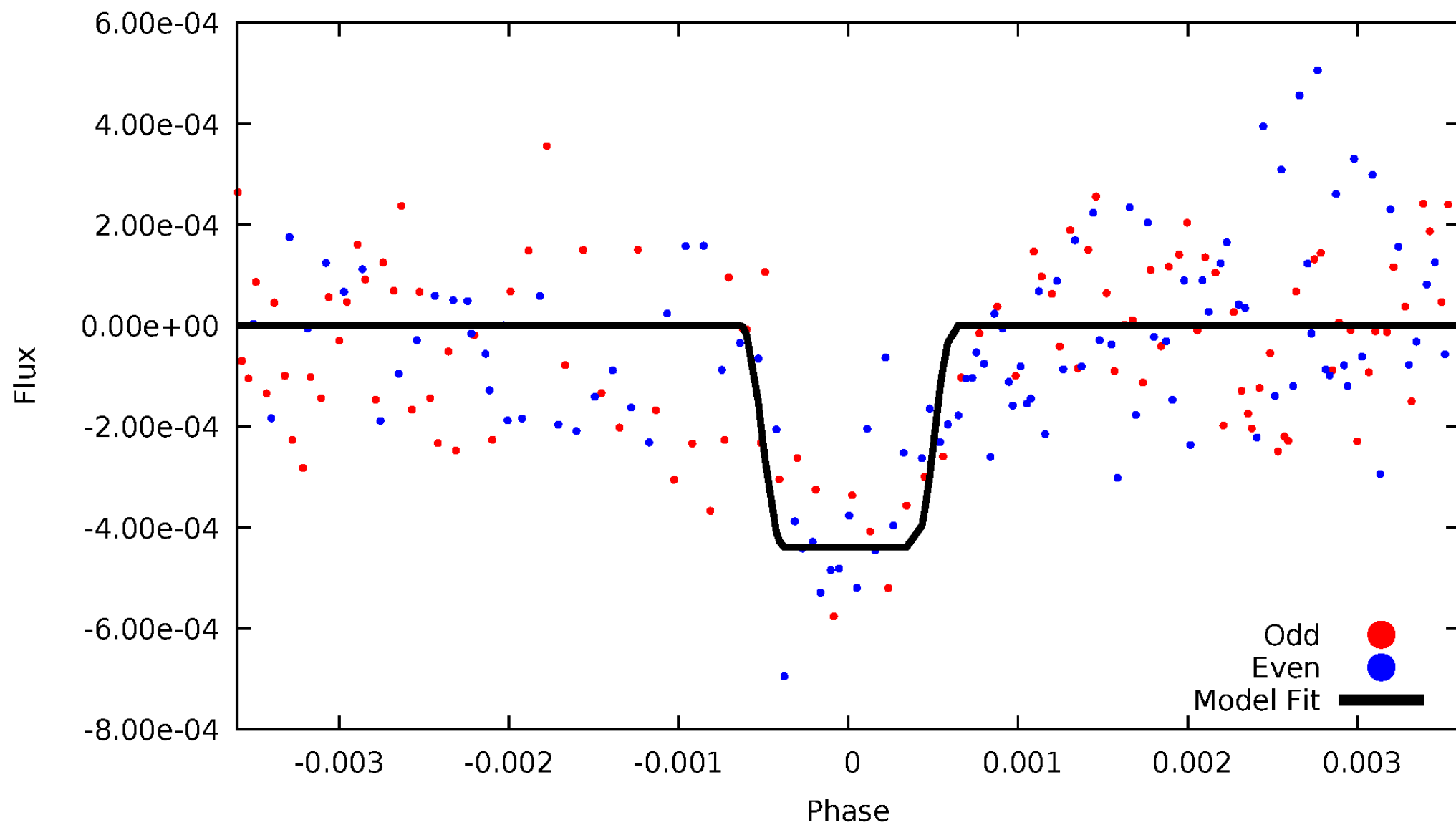
DV Odd/Even

TCE 010096641-08



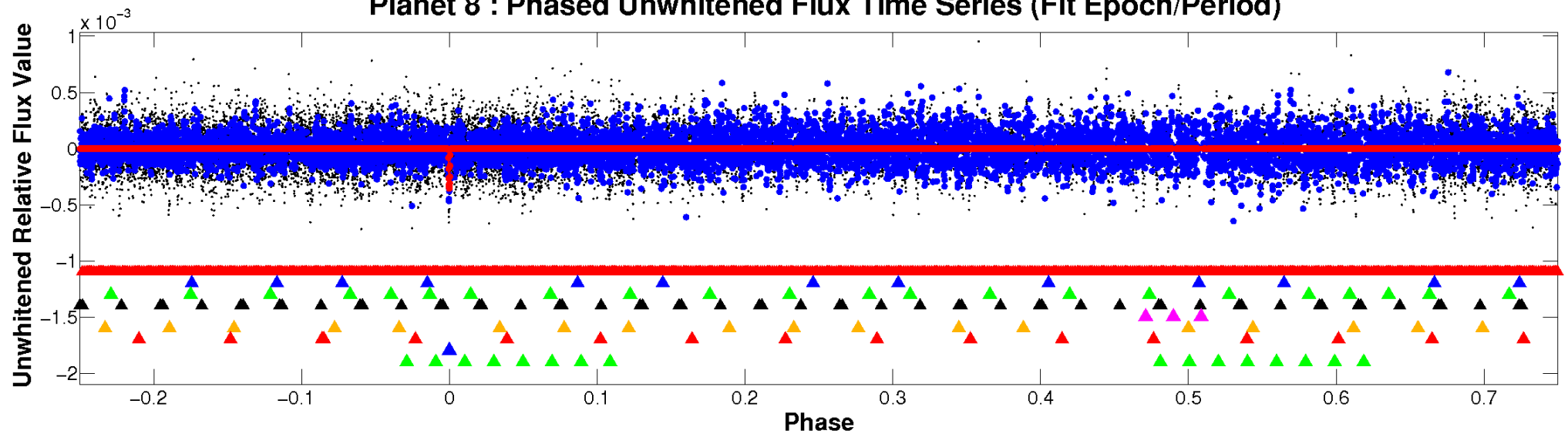
ALT Odd/Even

TCE 010096641-08

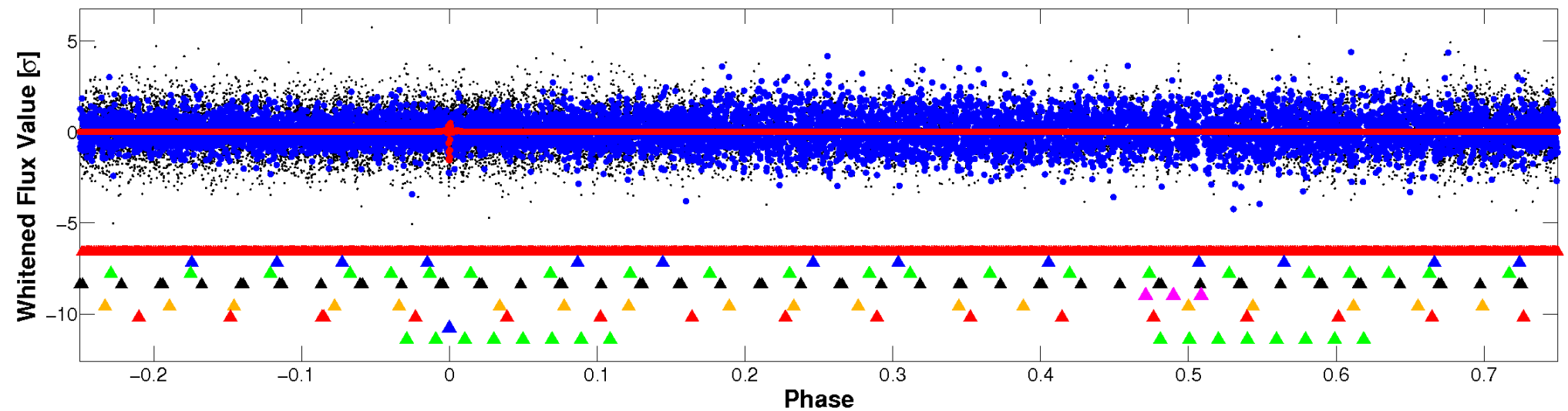


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

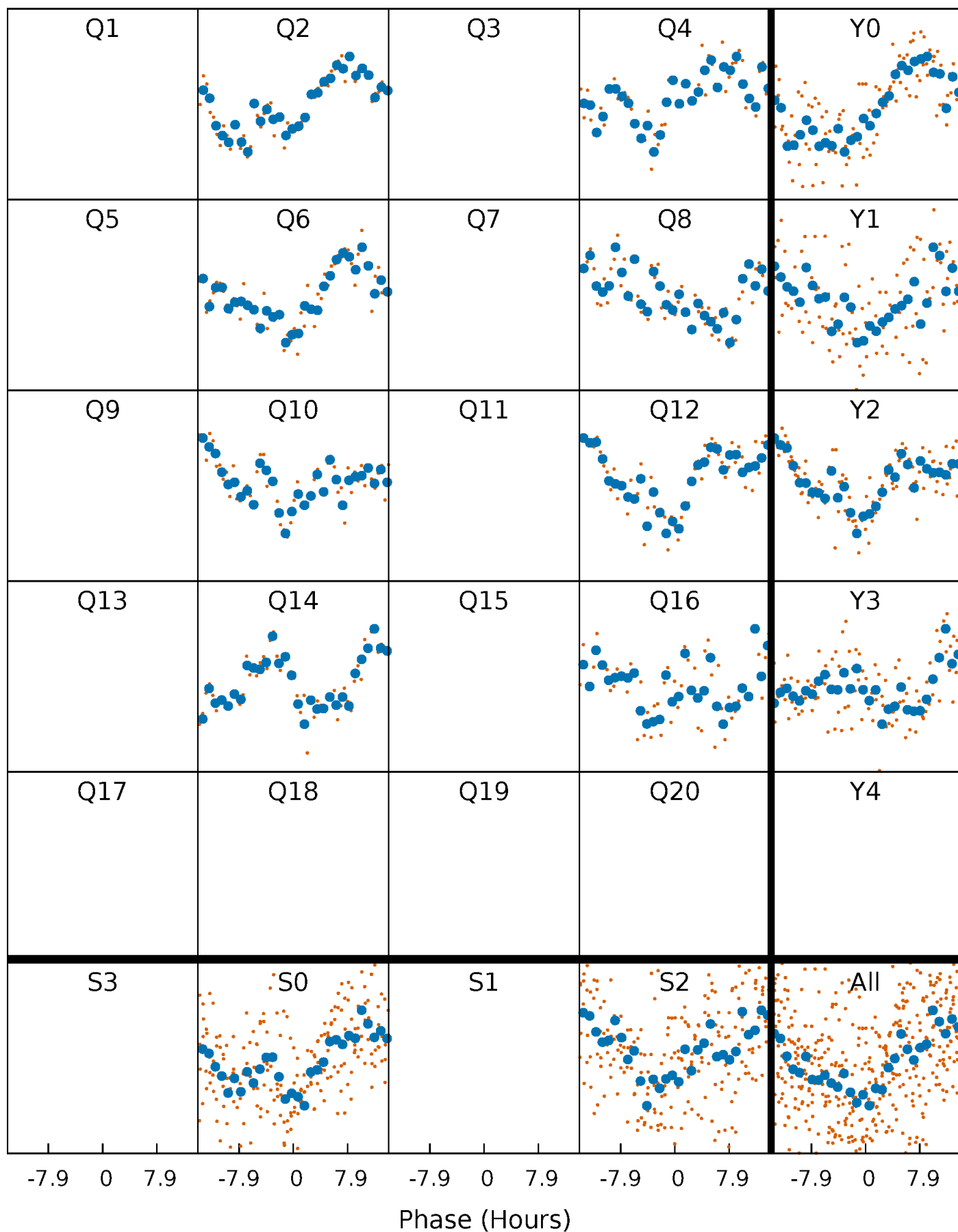


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



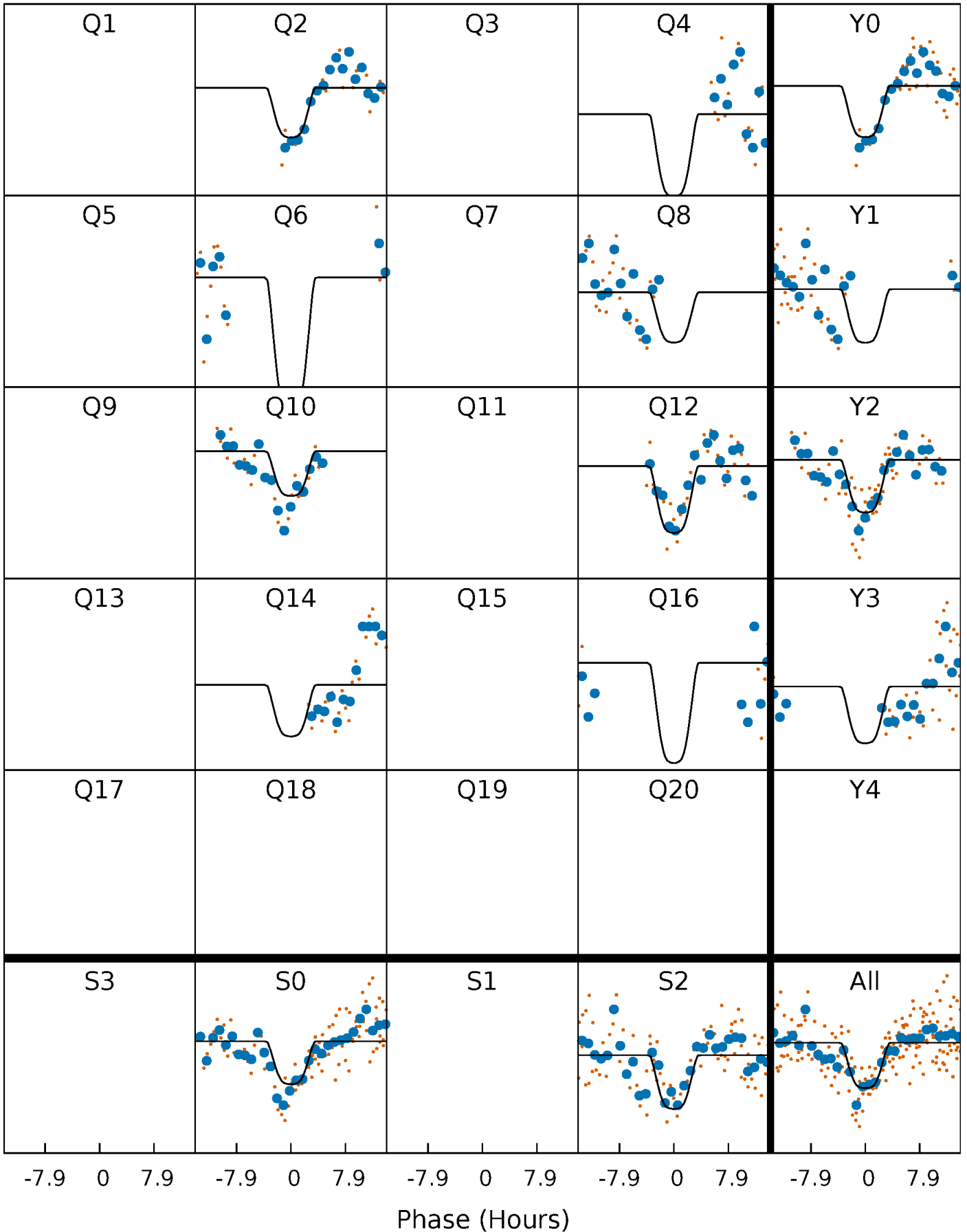
PDC Quarter-Phased Transit Curves

TCE 010096641-08 $P=190.809615$ Days $T_0=215.693128$ (BKJD)



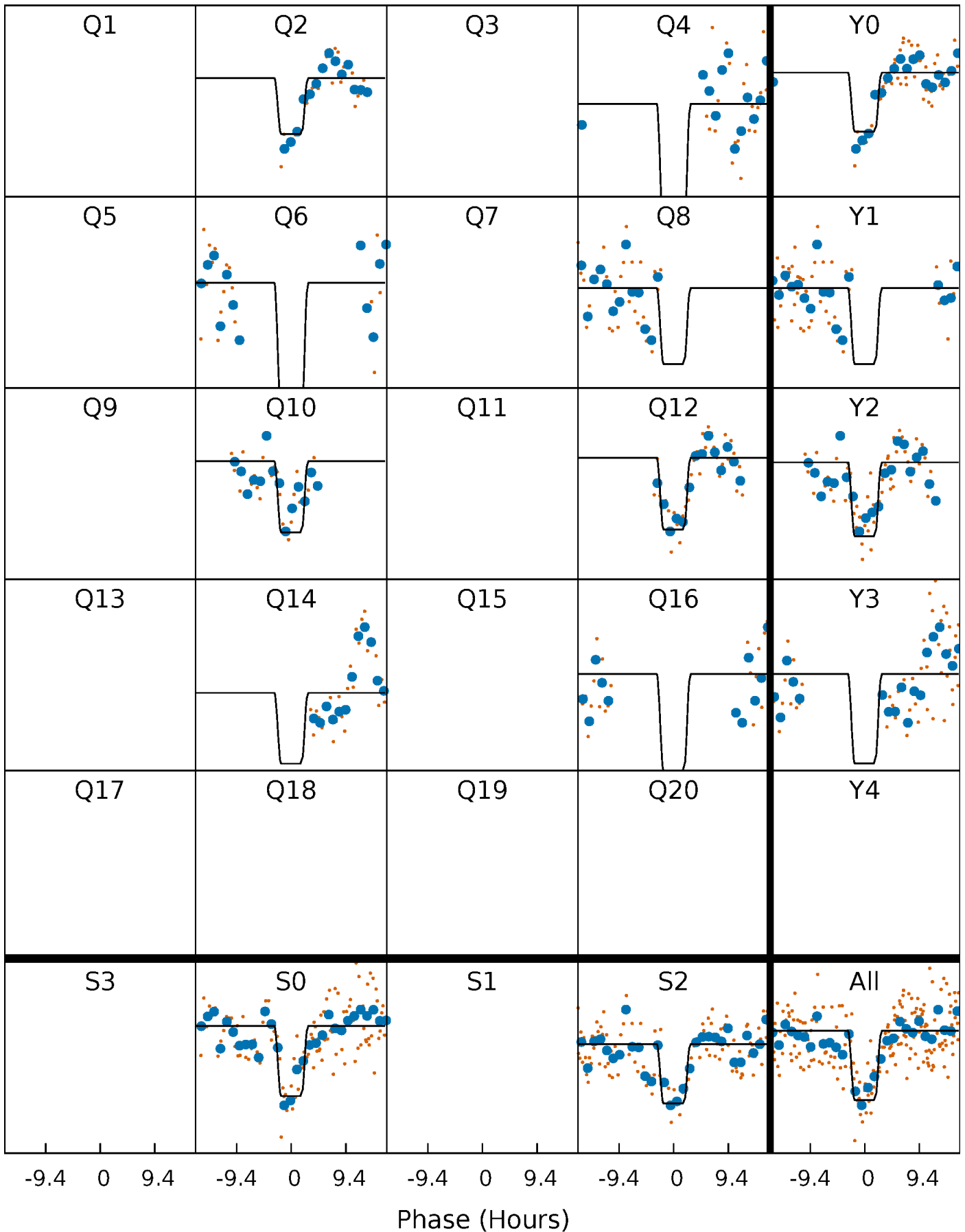
DV Quarter-Phased Transit Curves

TCE 010096641-08 $P=190.809615$ Days $T_0=215.693128$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

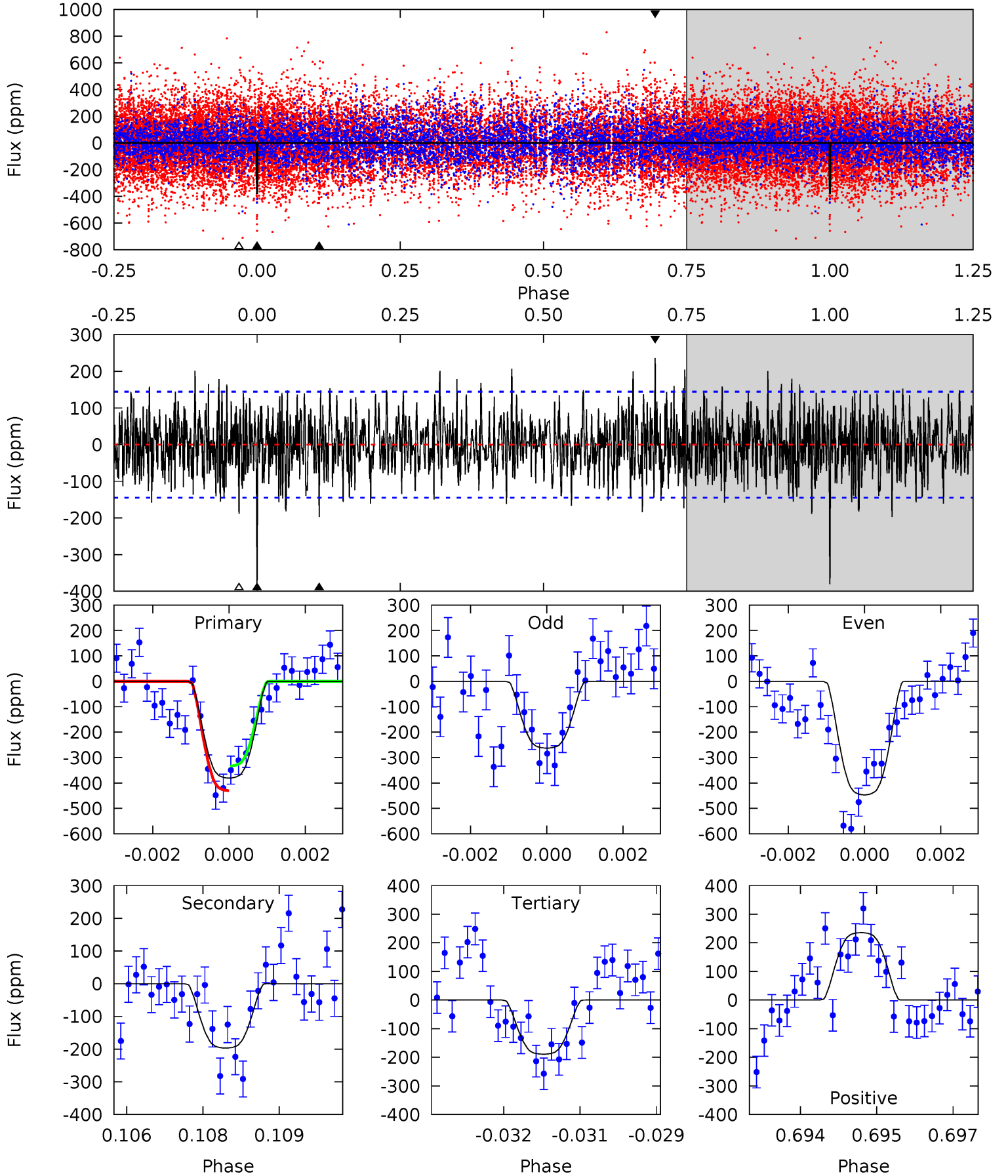
TCE 010096641-08 P=190.800942 Days $T_0=215.711281$ (BKJD)



DV Model-Shift Uniqueness Test

010096641-08, $P = 190.809615$ Days, $E = 24.883513$ Days

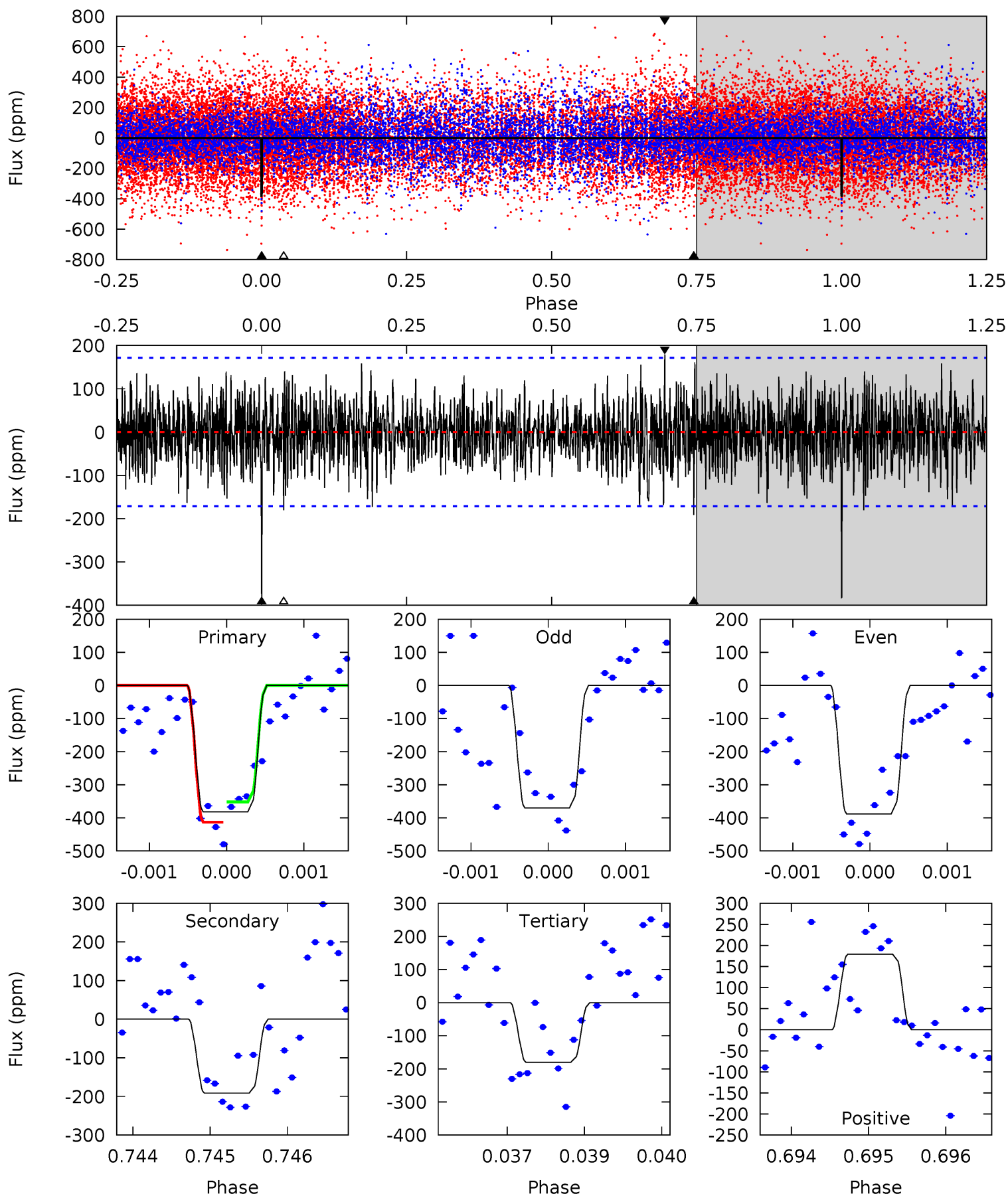
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	7.31	7.03	8.75	5.37	3.17	2.37	7.11	5.39	0.28	-1.44	3.33	0.78	0.38	1.79



Alt Model-Shift Uniqueness Test

010096641-08, P = 190.800942 Days, E = 24.910339 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	6.04	5.70	5.67	5.41	3.23	1.65	6.36	6.39	0.34	0.38	0.28	0.72	0.32	0.96



Stellar Parameters For KIC 010096641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6292^{+192}_{-173}	$3.503^{+0.384}_{-0.096}$	$-0.240^{+0.350}_{-0.300}$	$3.767^{+0.674}_{-1.685}$	$1.648^{+0.194}_{-0.421}$	$0.043^{+0.128}_{-0.016}$
	+3%/-3%	+11%/-3%	+146%/-125%	+18%/-45%	+12%/-26%	+296%/-38%
Source	PHO1	FLK73	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 010096641-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-197 ± 27	$8.64^{+1.77}_{-1.92}$	840^{+54}_{-87}	5042^{+323}_{-278}	840^{+483}_{-256}
Alt.	-191 ± 32	$8.02^{+1.72}_{-1.82}$	839^{+58}_{-94}	5180^{+349}_{-308}	952^{+630}_{-294}

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 $A_{obs} \gg 1.0$

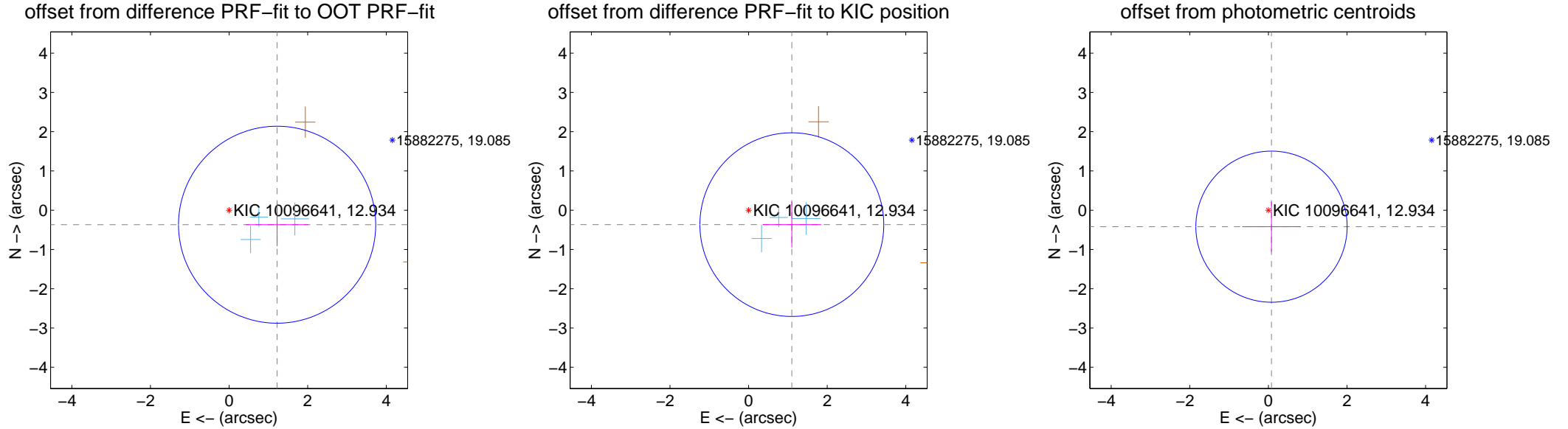
DV Centroid Data

Supplemental centroid analysis for 010096641-08. Kepler magnitude: 12.93. Transit SNR 7.42

There are 3 quarters with good PRF difference image offsets

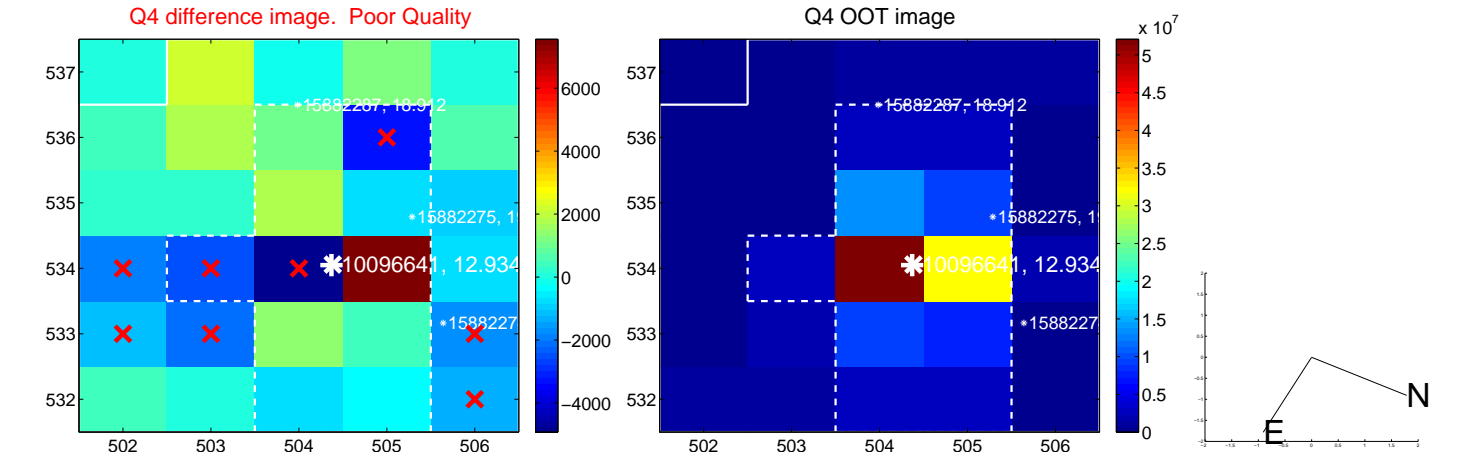
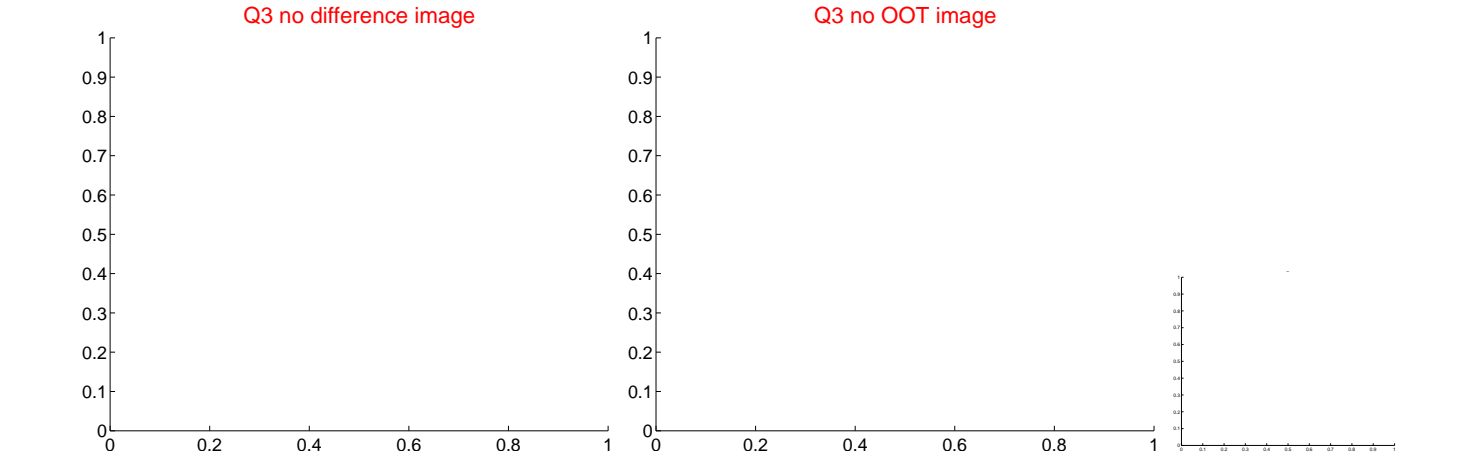
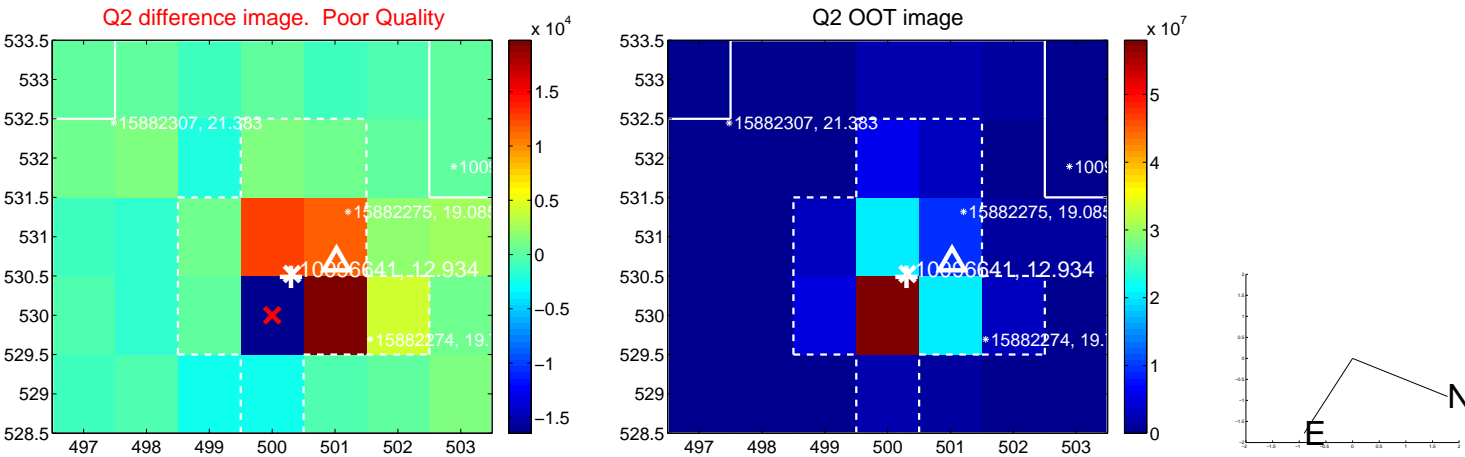
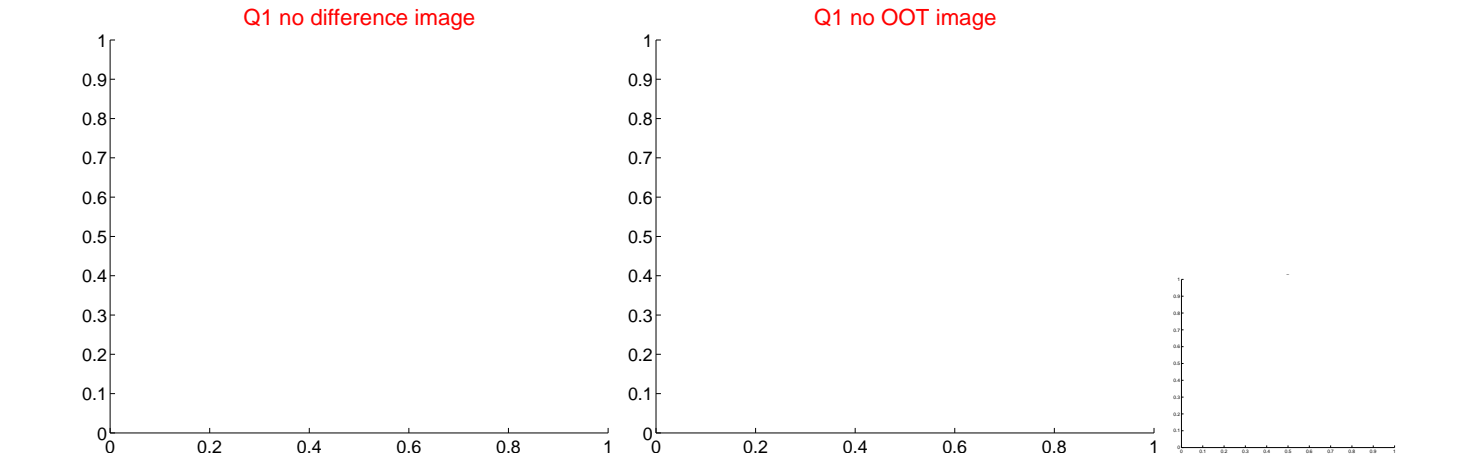
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.277 ± 0.836	1.53	-1.222 ± 0.796	-0.370 ± 0.545
PRF-fit source offset from KIC position	1.160 ± 0.780	1.49	-1.100 ± 0.746	-0.367 ± 0.584
photometric centroid source offset	0.43 ± 0.64	0.67	-0.08 ± 0.74	-0.42 ± 0.64

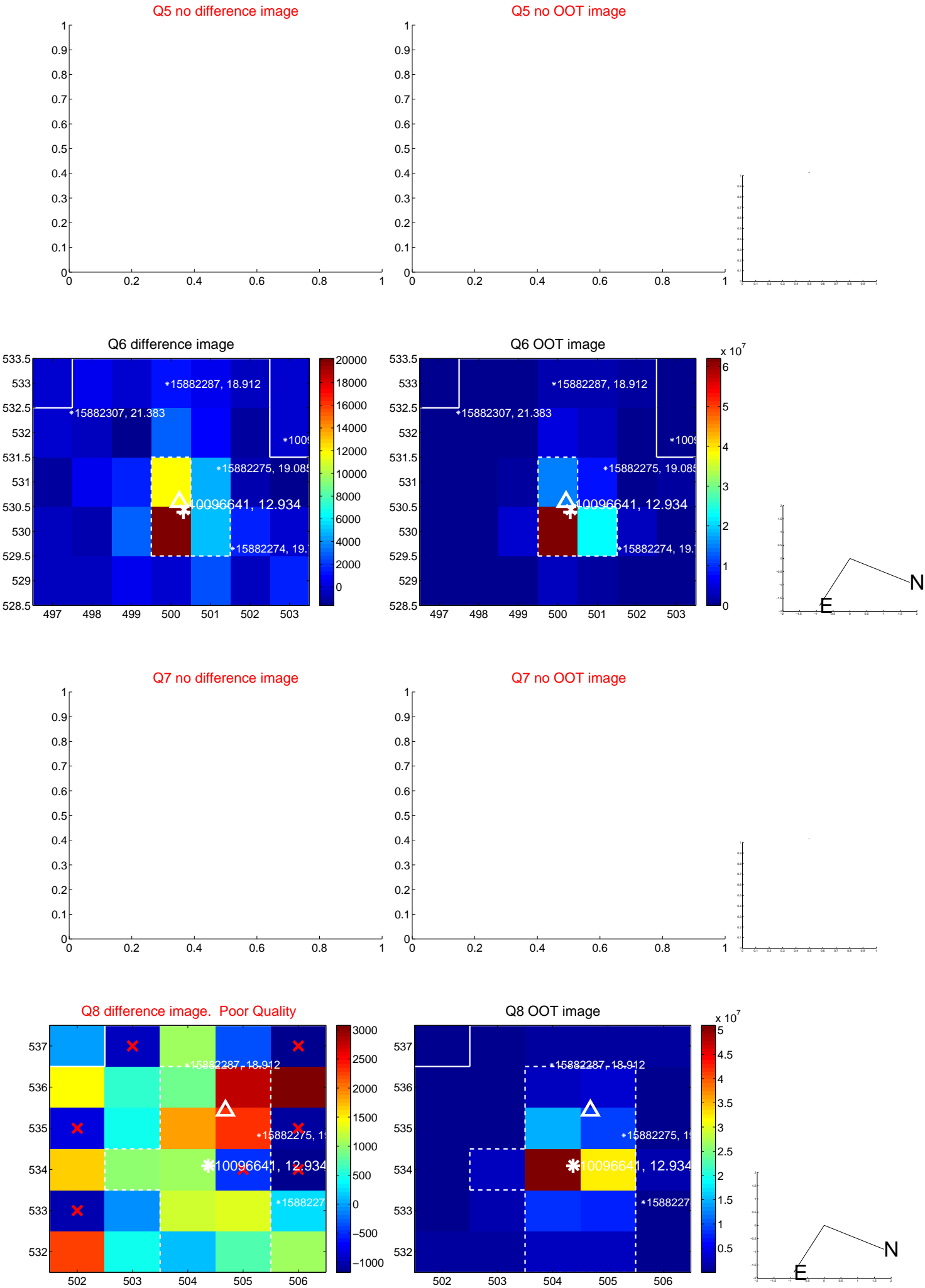


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

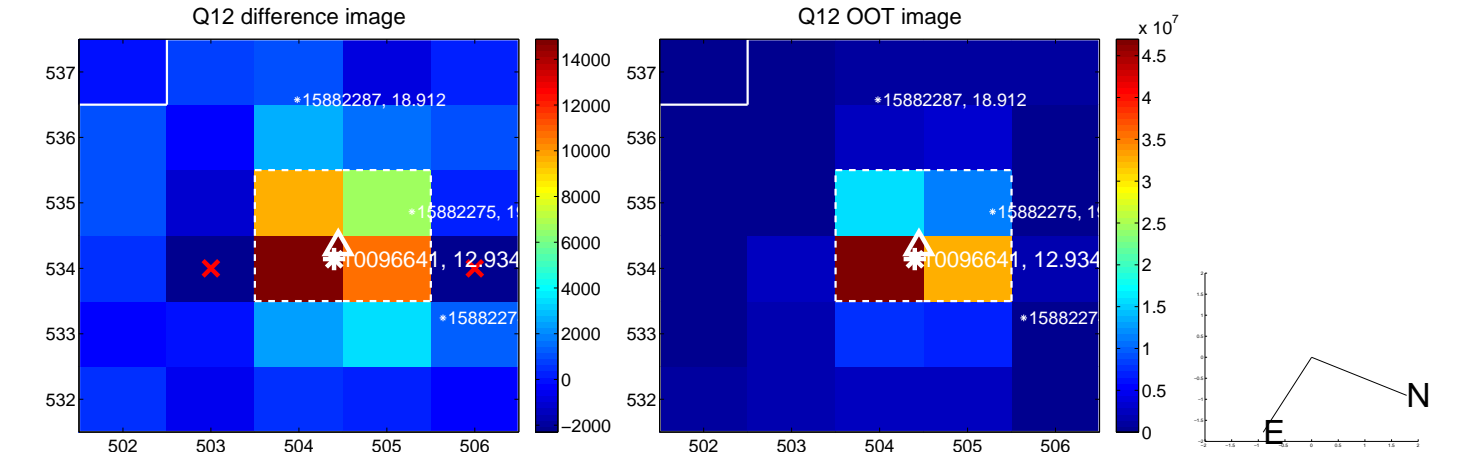
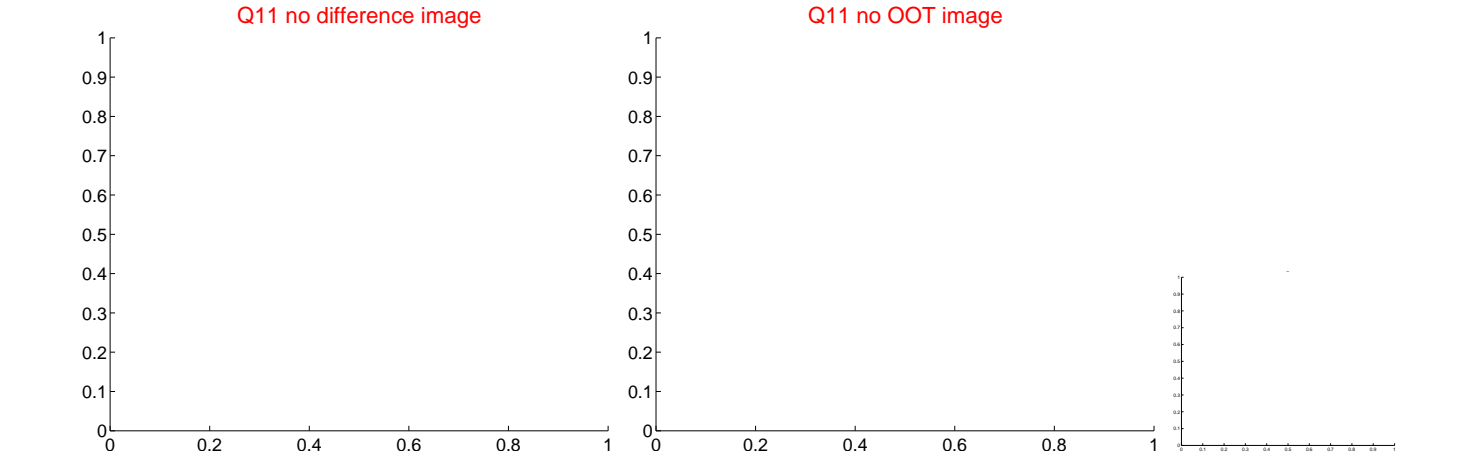
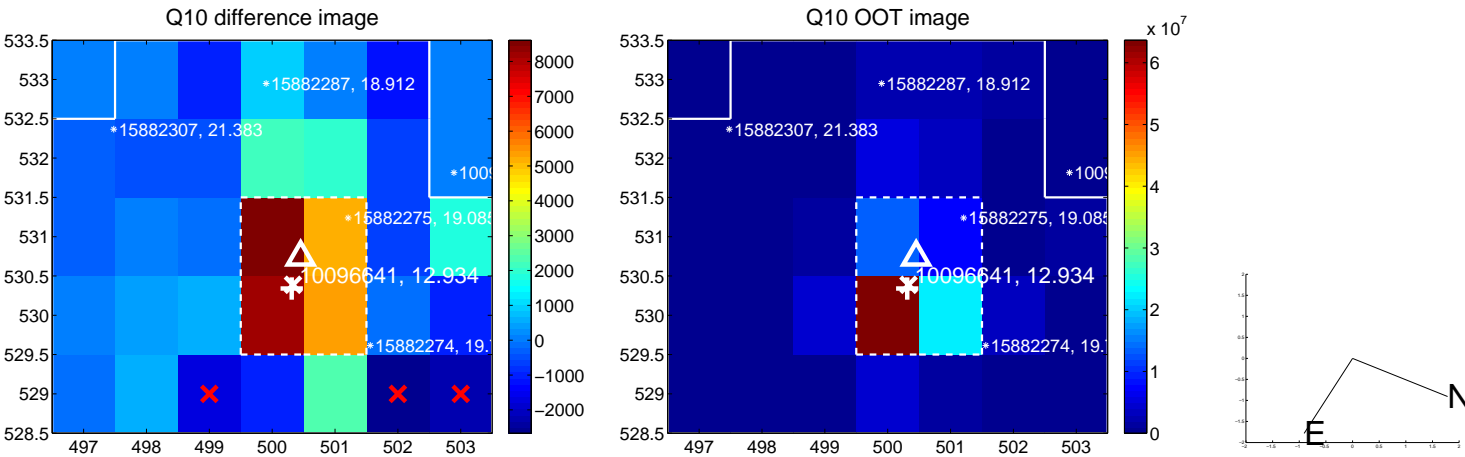
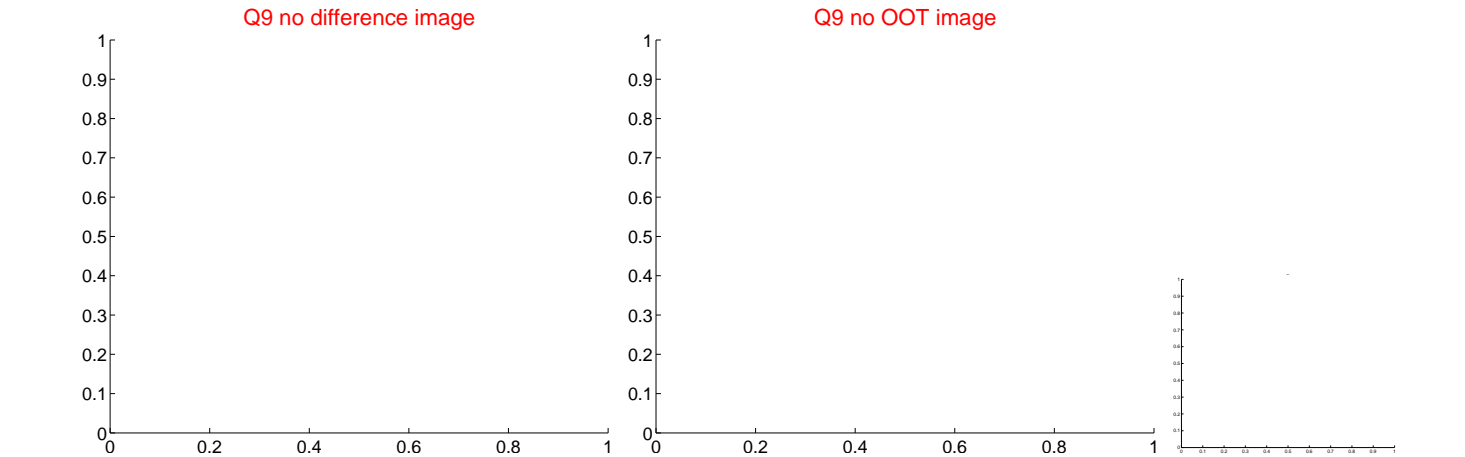
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



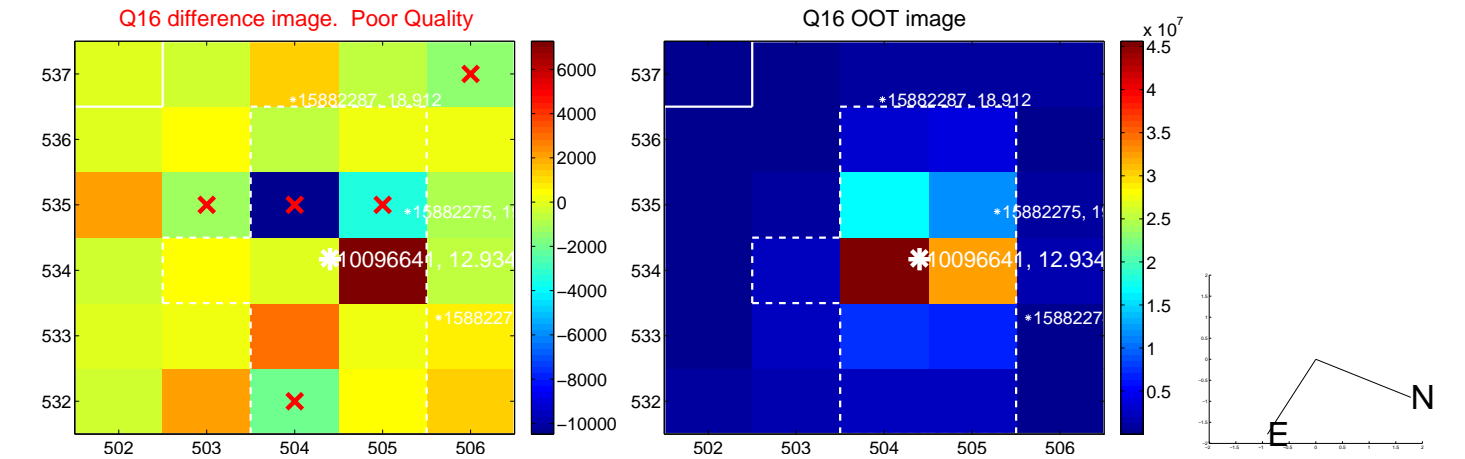
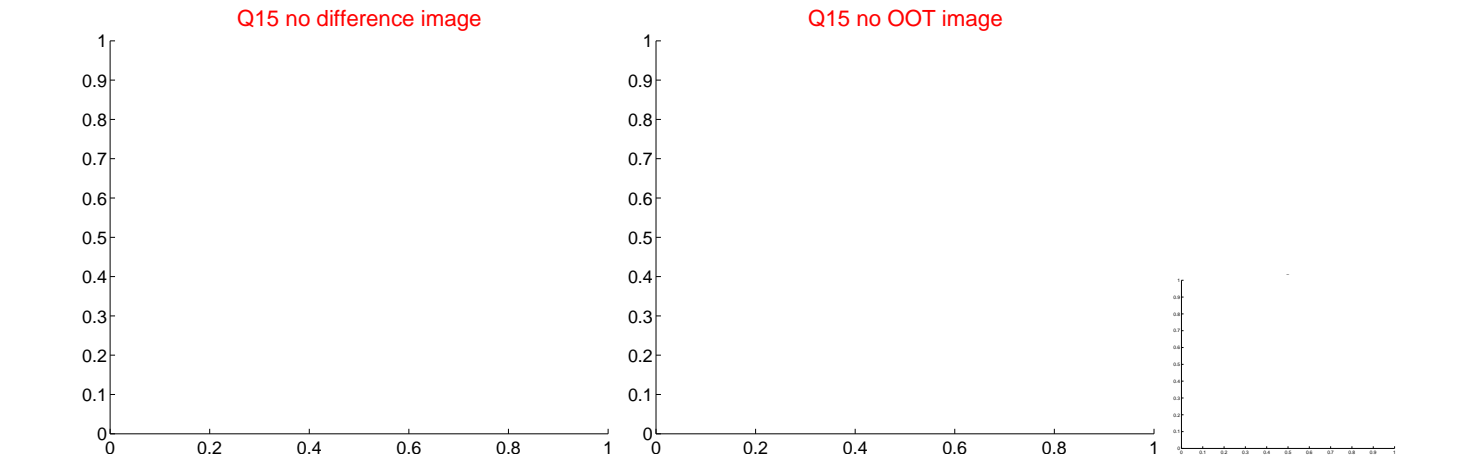
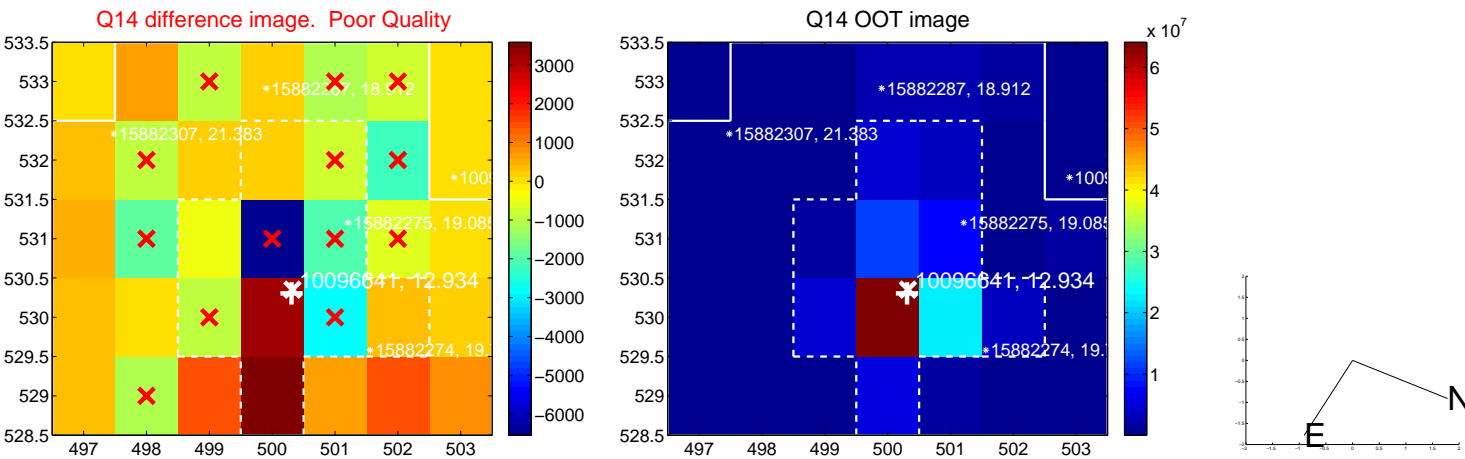
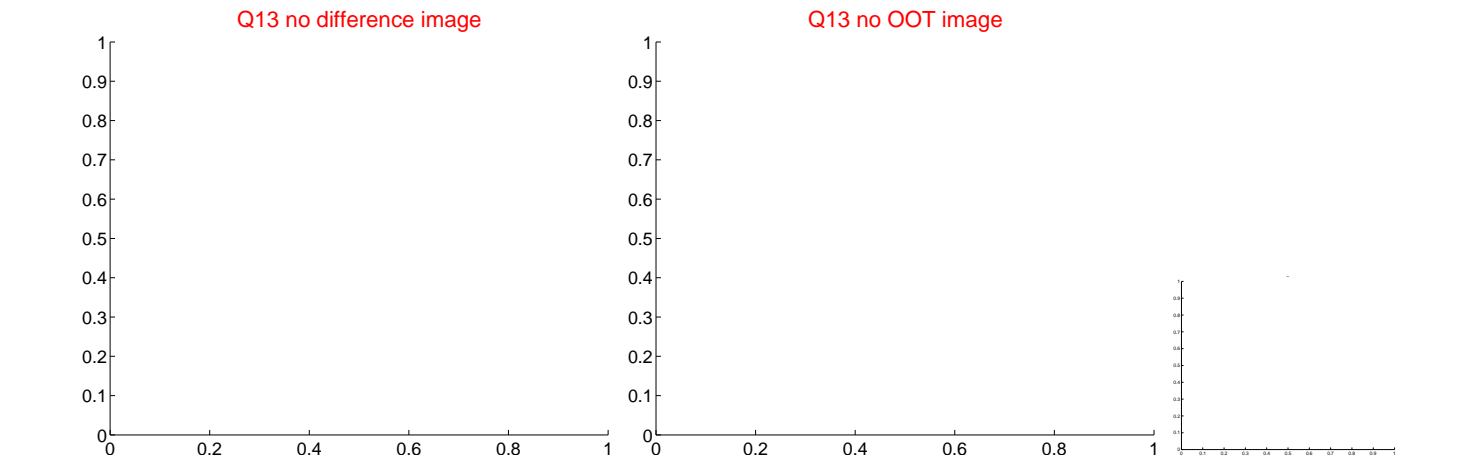
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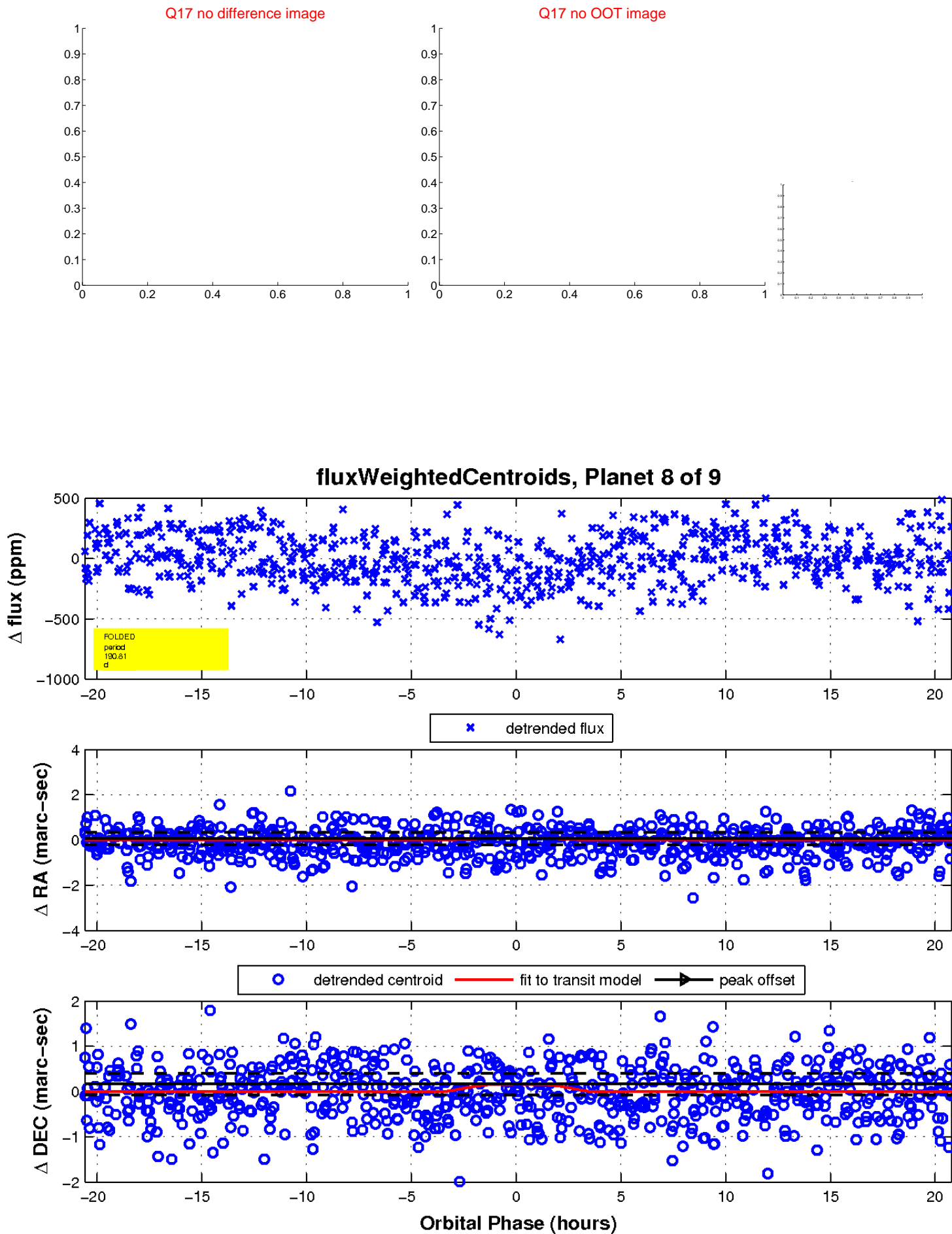
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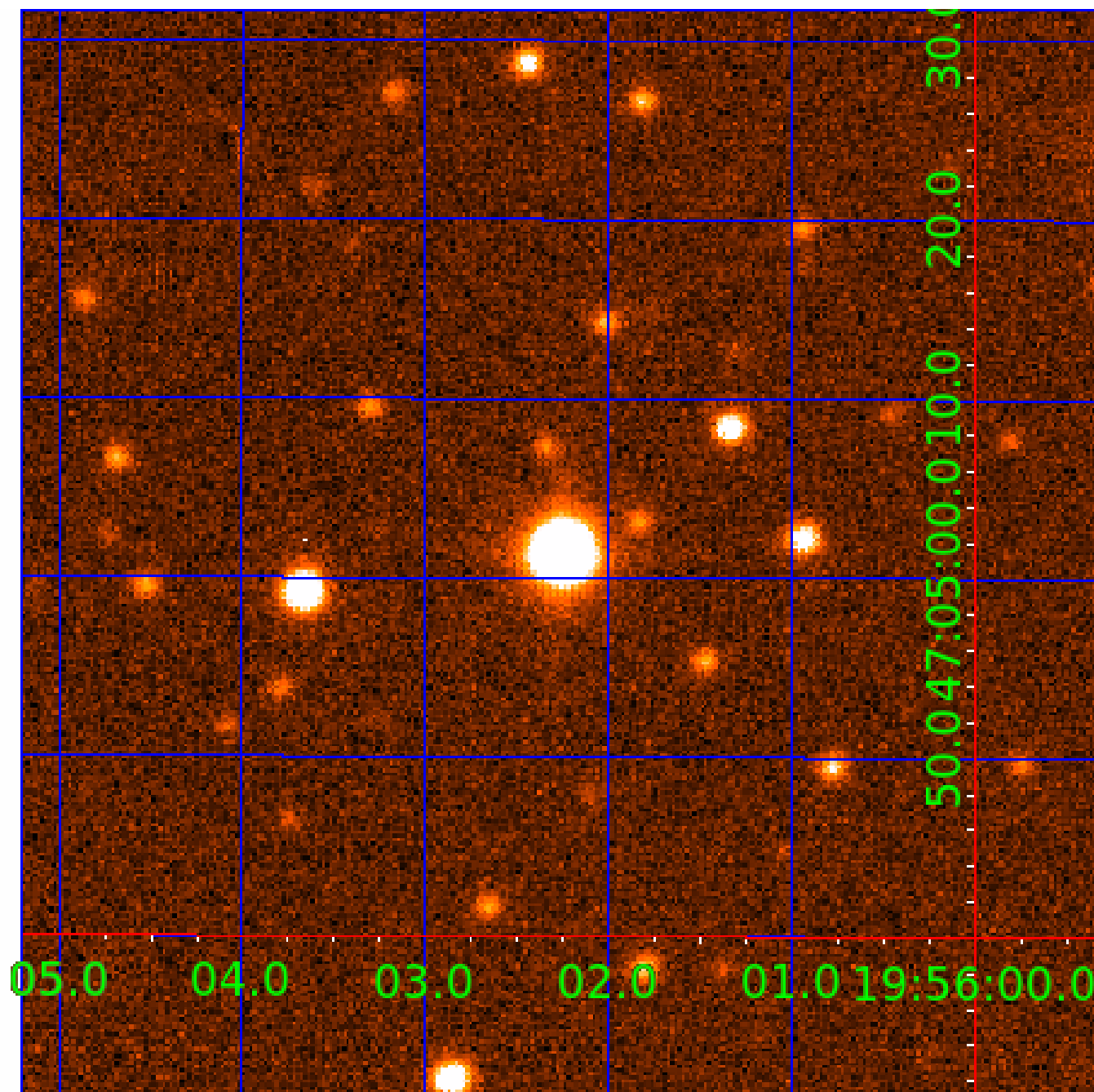


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UKIRT Image

Declination



KIC 010096641

Q1-17 DR25 TCE Parameters

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010096641-06	OBS	No	80.586517	187.891891	271.6	3.224	7.3	7.8	3.77	6292	7.29	107.08
010096641-07	OBS	No	83.464284	199.496903	435.5	2.032	7.3	7.8	3.77	6292	8.95	102.18
010096641-08	OBS	No	190.809615	215.693128	356.1	6.936	7.2	7.4	3.77	6292	9.27	33.93
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Robovetter Results

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010096641-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
010096641-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-04	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—HALO_GHOST
010096641-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010096641-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
010096641-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
010096641-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
010096641-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

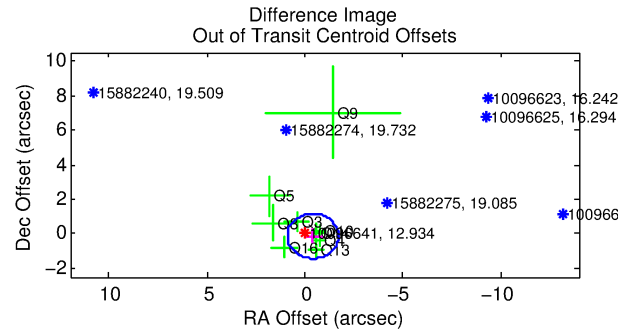
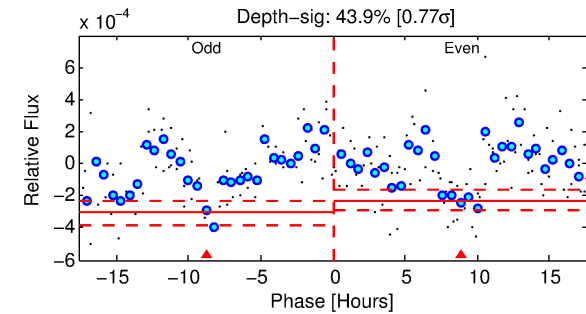
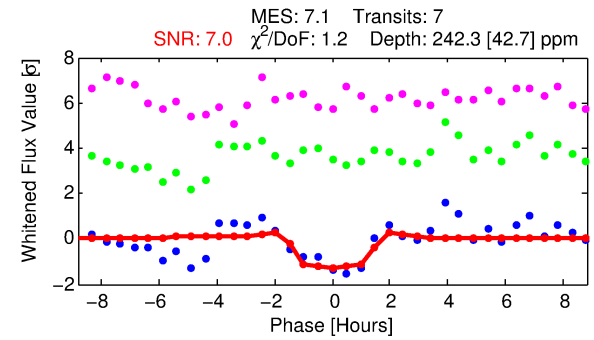
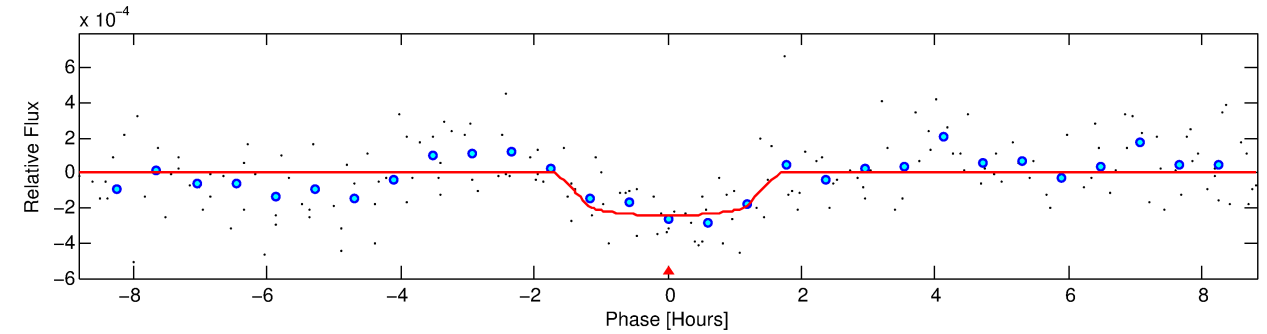
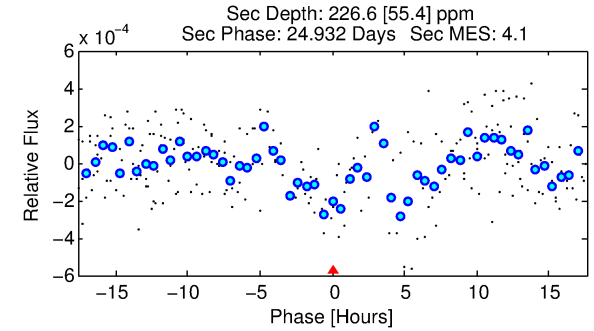
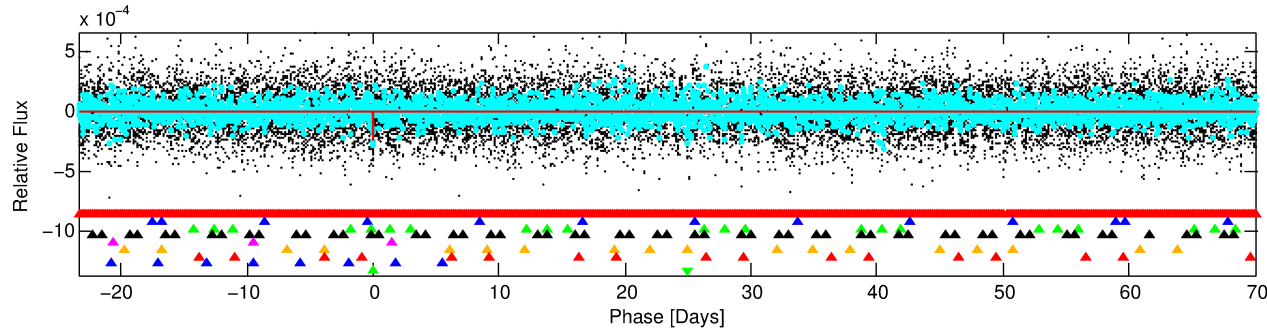
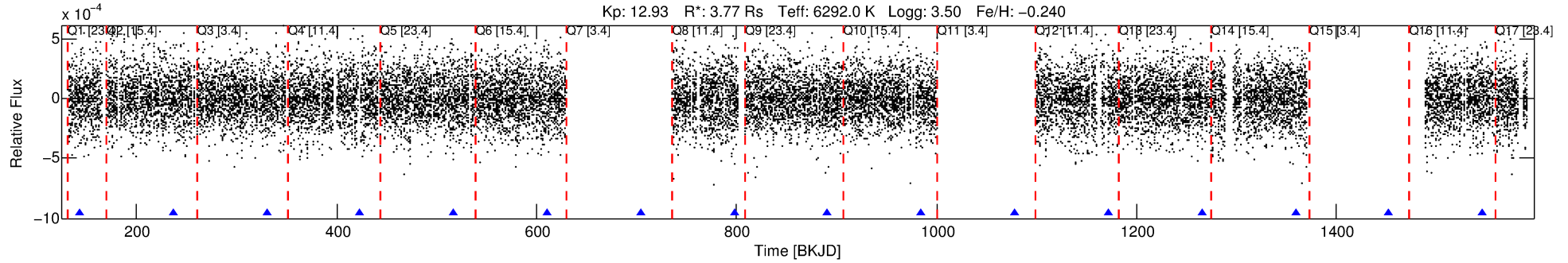
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096641-09

No Significant Match Found

DV One-Page Summary

KIC: 10096641 Candidate: 9 of 9 Period: 93.529 d



DV Fit Results:

Period = 93.52894 [0.00123] d
Epoch = 142.9240 [0.0122] BKJD
Rp/R* = 0.0151 [0.0146]
a/R* = 189.98 [966.87]
b = 0.65 [4.63]
Seff = 87.79 [58.98]
Teq = 781 [131] K
Rp = 6.20 [6.62] Re
a = 0.4764 [0.1998] AU
Ag = 735.89 [1517.45] [0.48σ]
Teffp = 6285 [3075] K [1.79σ]

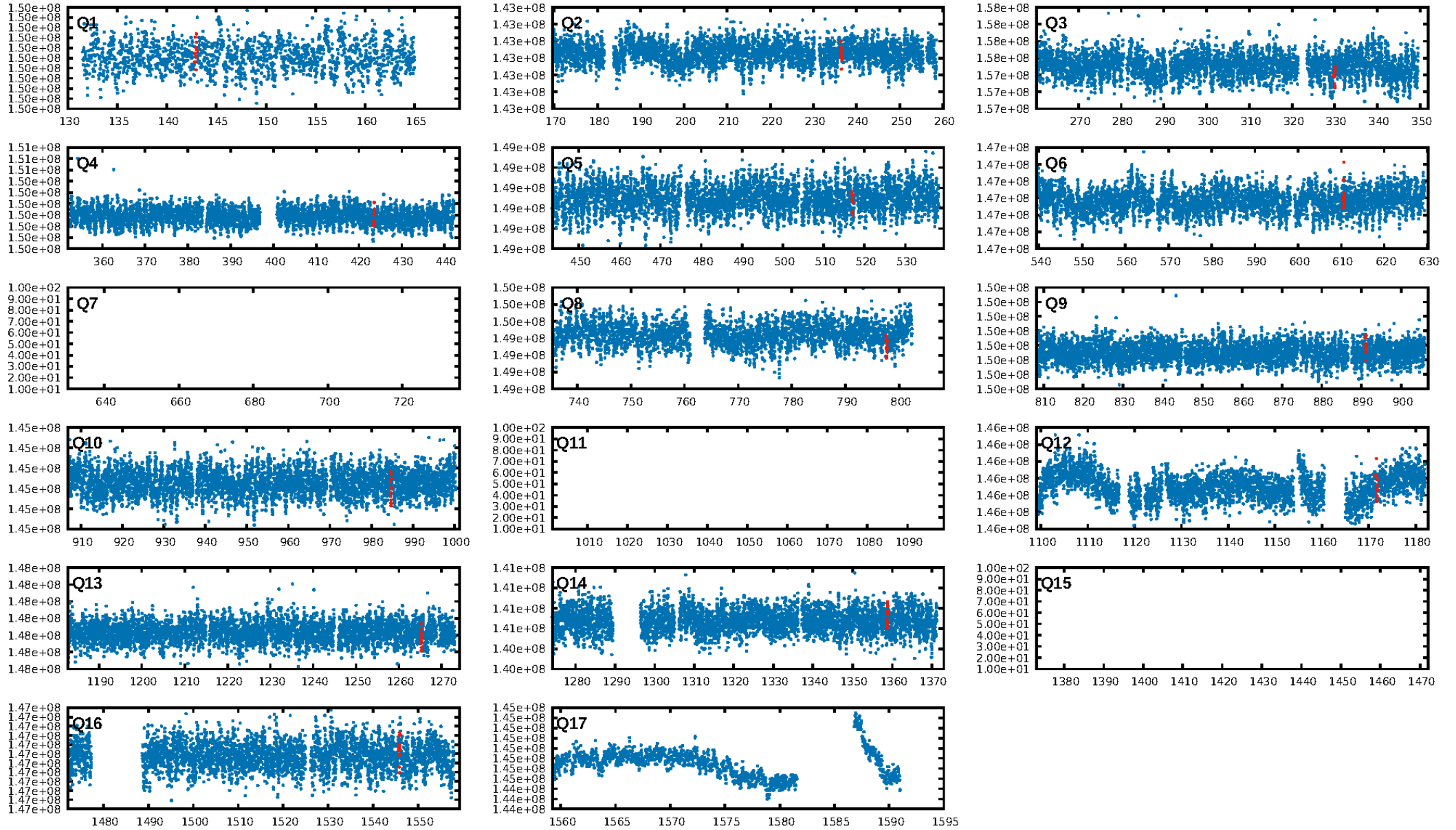
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [67.54σ]
LongPeriod-sig: 100.0% [32.33σ]
ModelChiSquare2-sig: 52.3%
ModelChiSquareGof-sig: 99.0%
Bootstrap-pfa: 8.77e-09
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -68.38
Centroid-sig: 0.1%
Centroid-so: 1.970 arcsec [2.08σ]
OotOffset-rm: 0.420 arcsec [0.97σ]
OotOffset-st: 2/1/3/3 [9]
KicOffset-rm: 0.305 arcsec [0.71σ]
KicOffset-st: 2/1/3/3 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.42 [5/12]

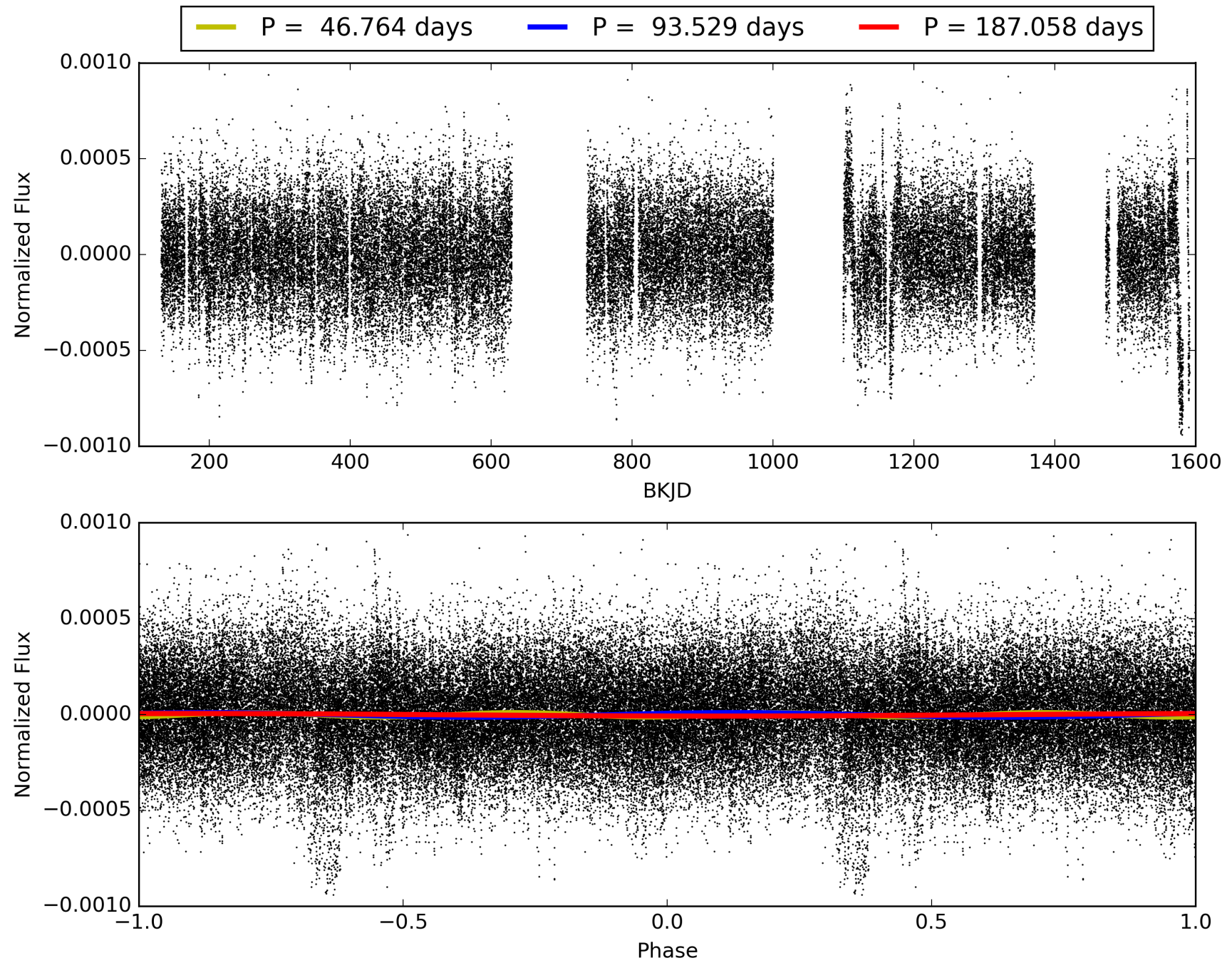
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:58:56 Z

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

TCE 010096641-09, PDC Light Curves

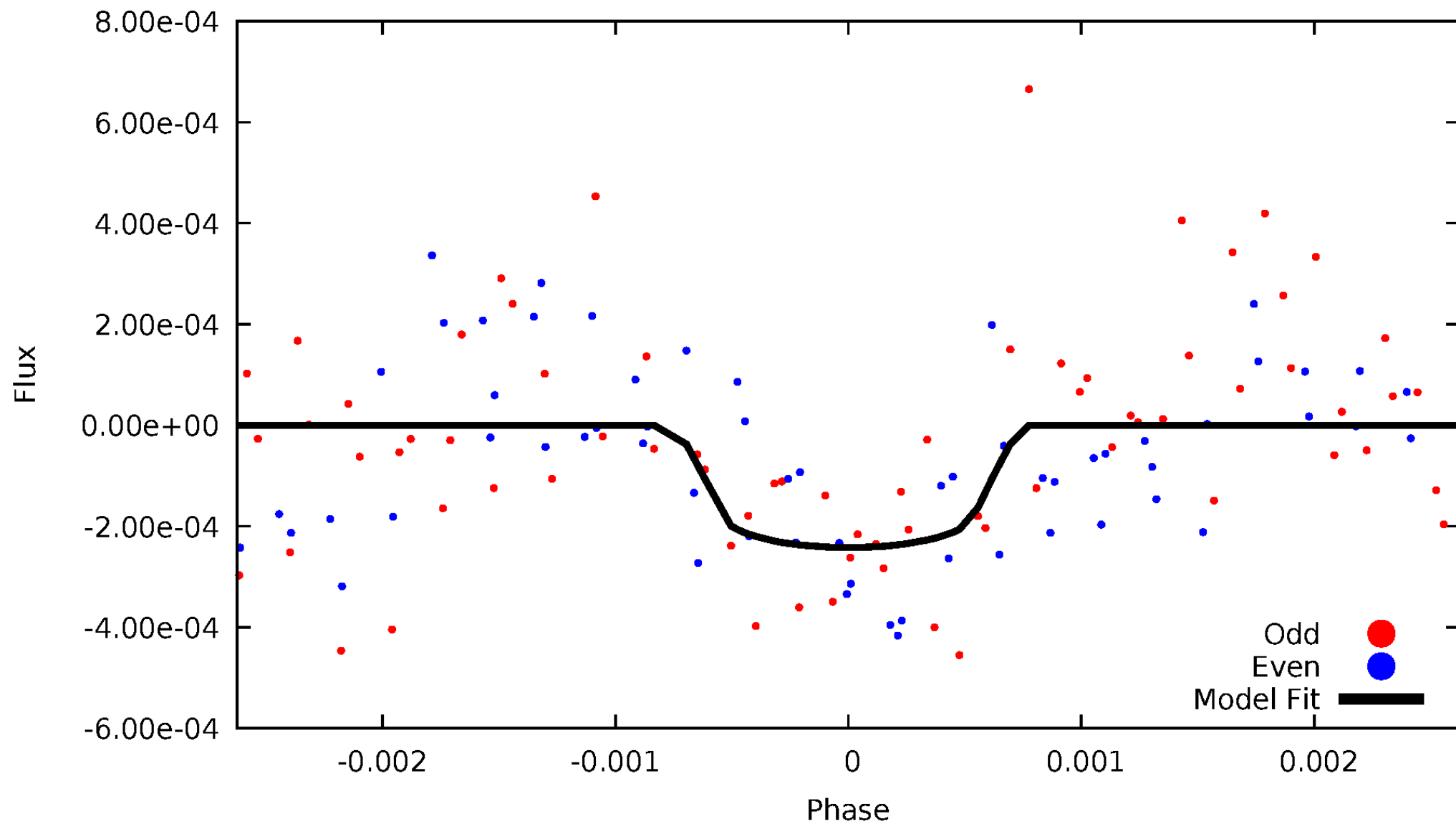


TCE 010096641-09



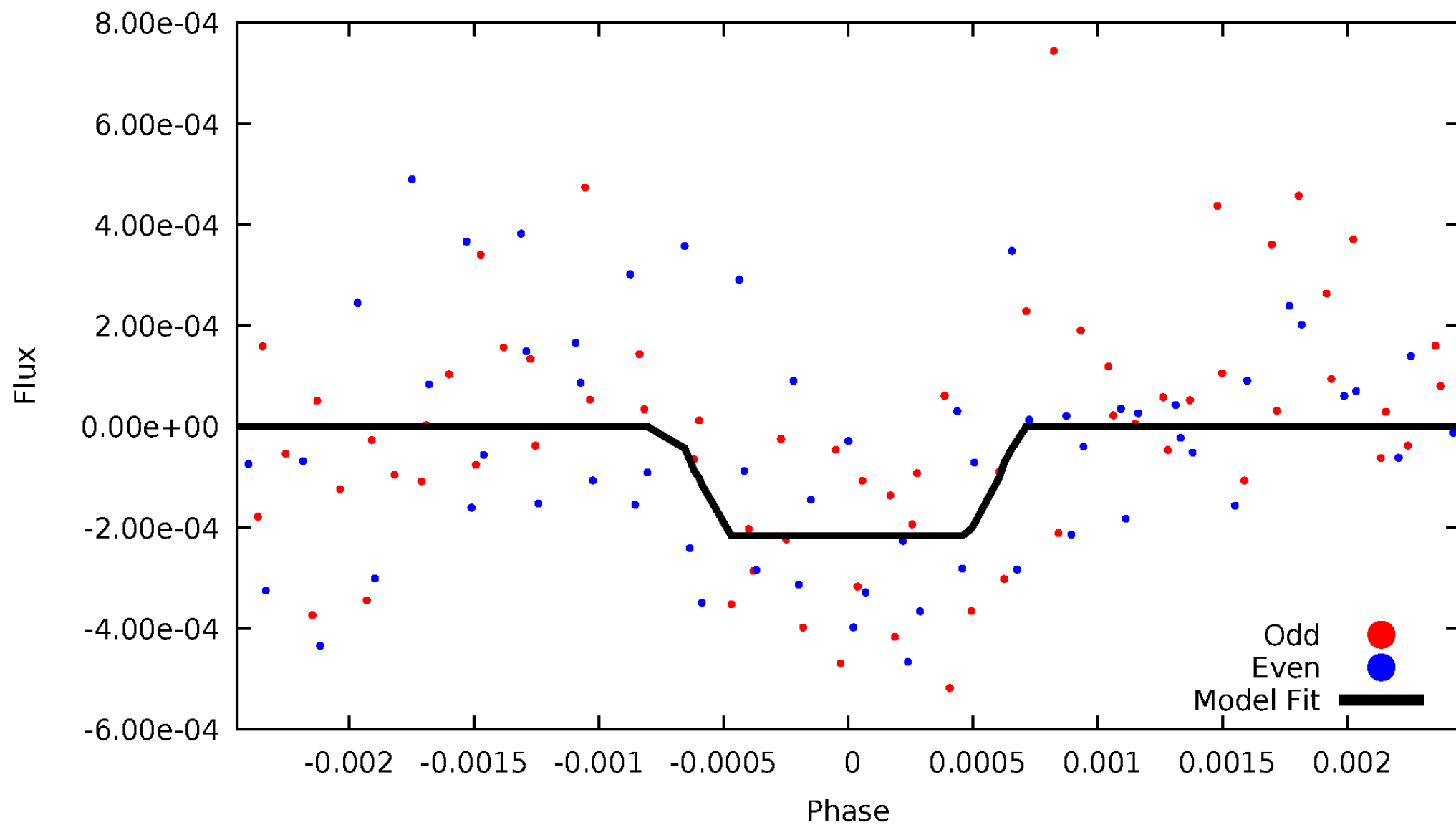
DV Odd/Even

TCE 010096641-09



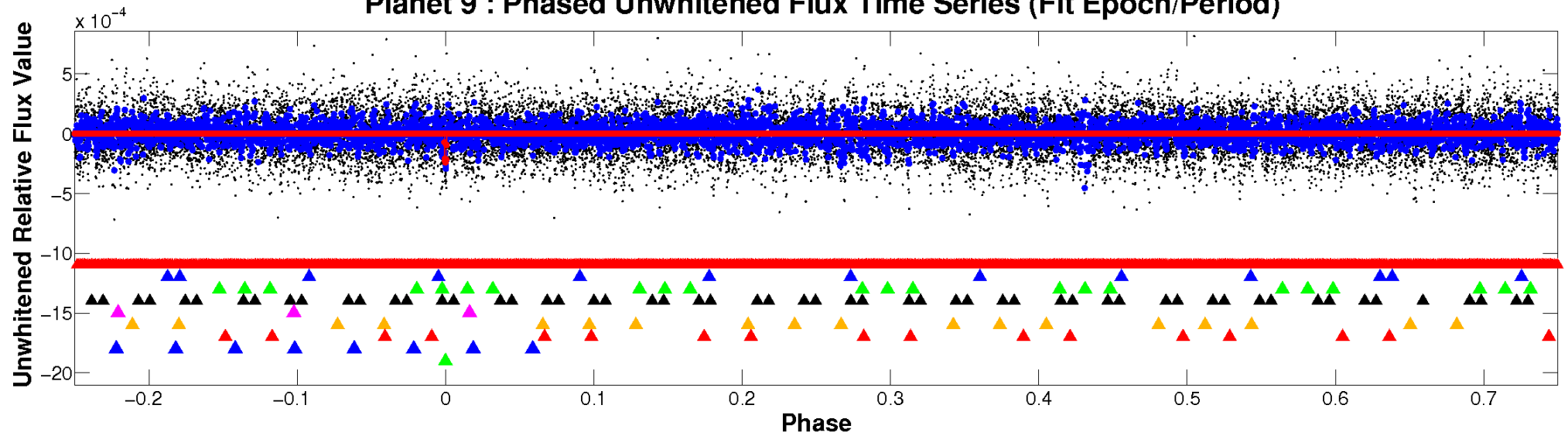
ALT Odd/Even

TCE 010096641-09

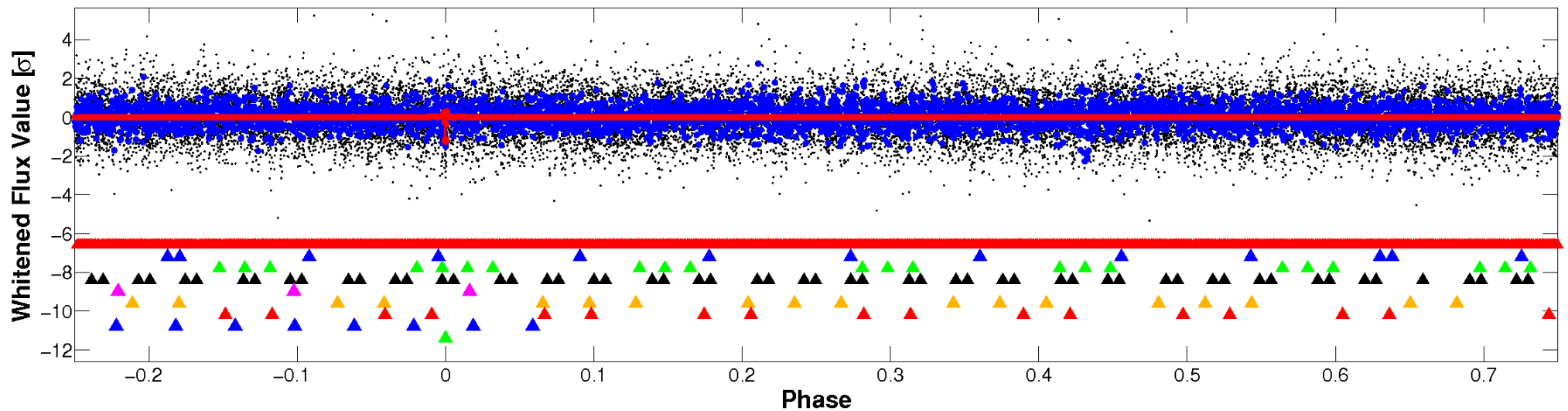


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

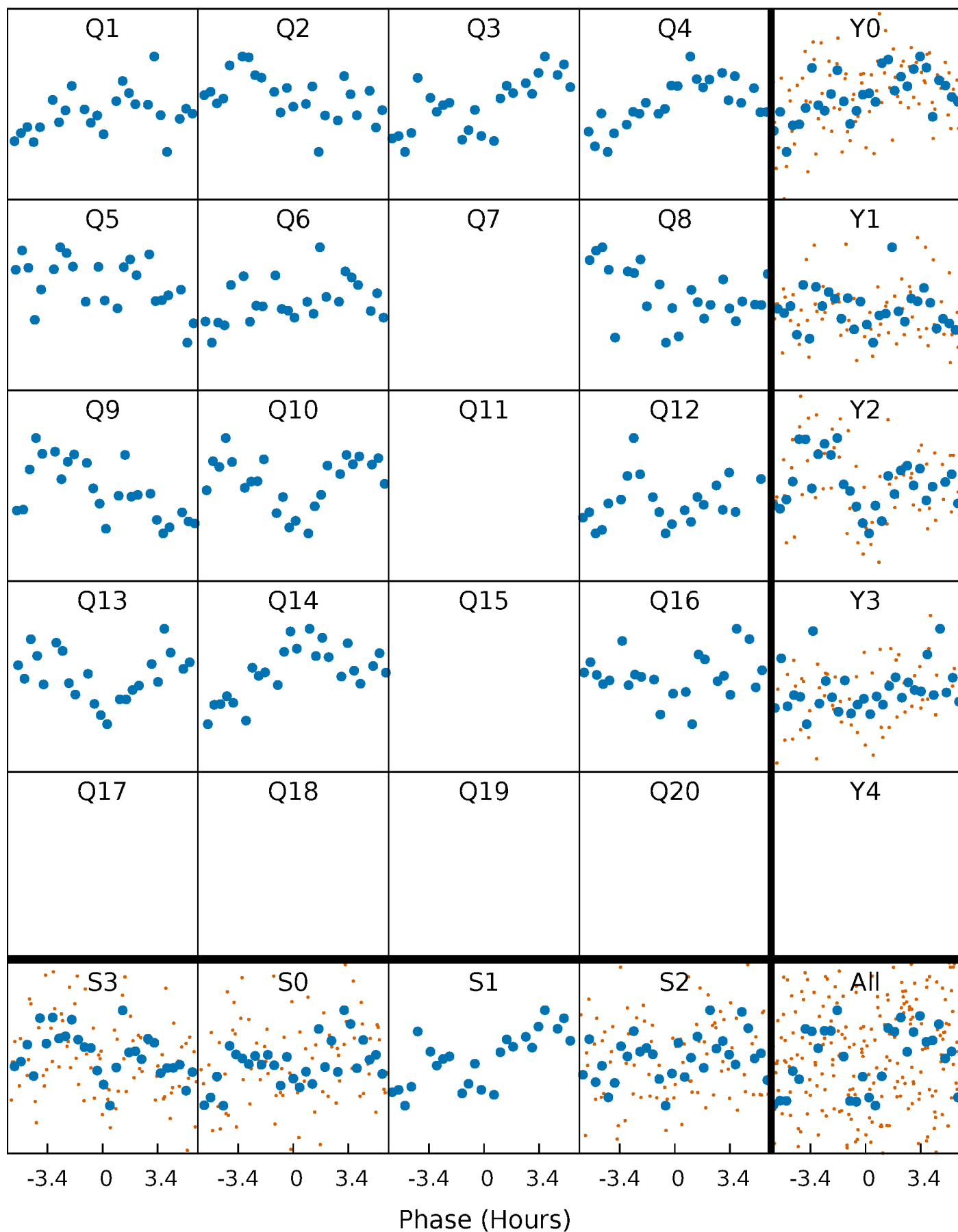


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



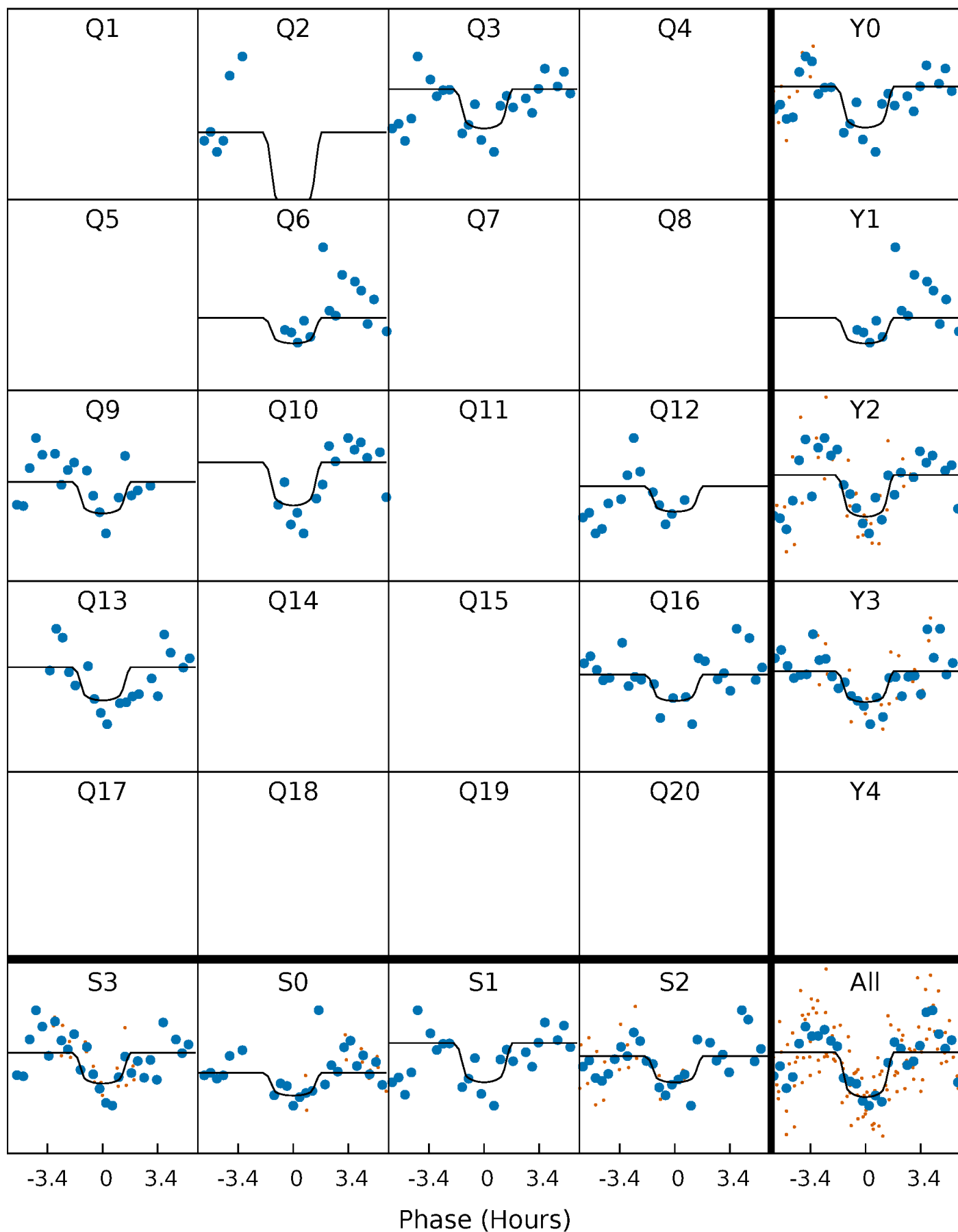
PDC Quarter-Phased Transit Curves

TCE 010096641-09 $P = 93.528944$ Days $T_0 = 142.923973$ (BKJD)



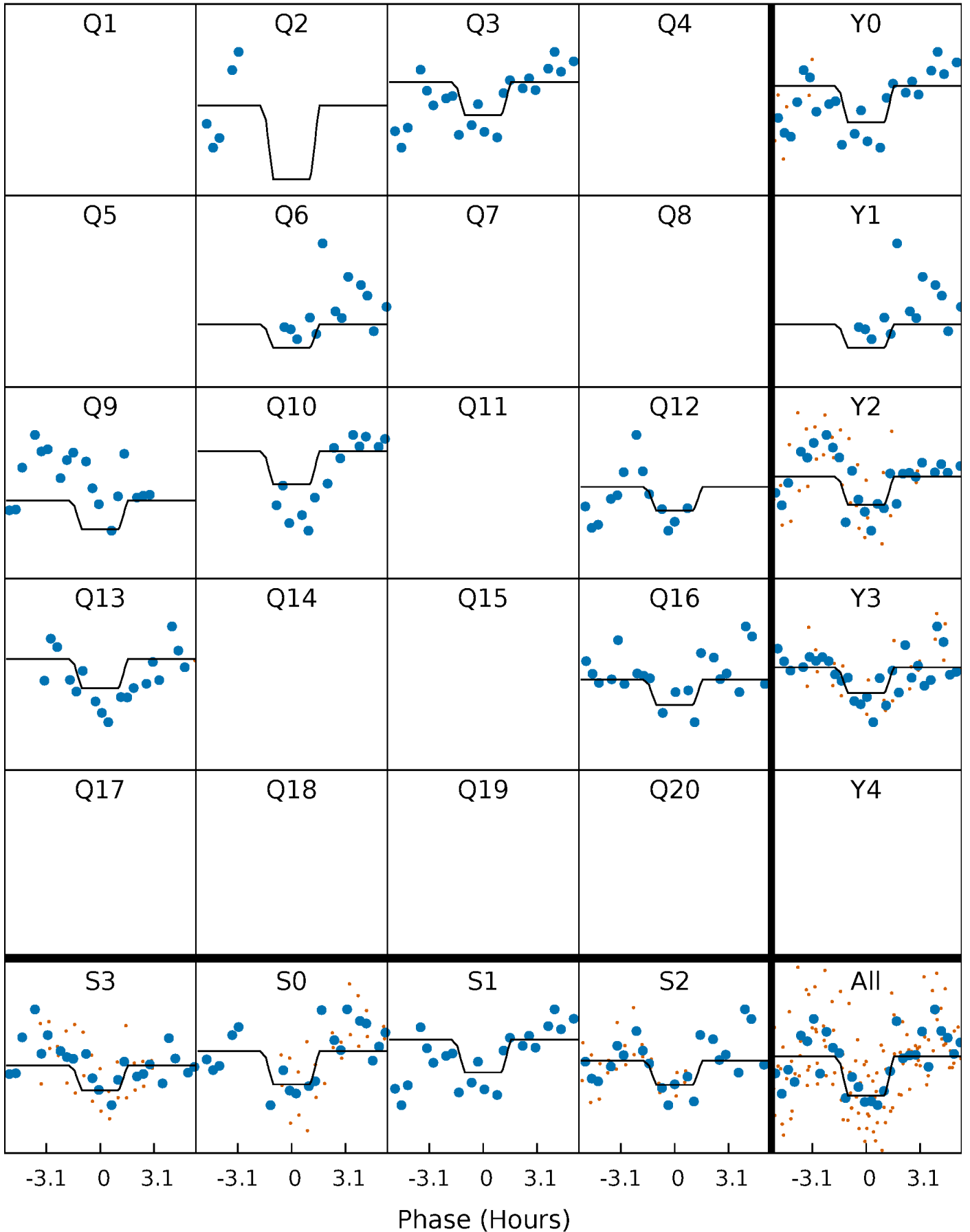
DV Quarter-Phased Transit Curves

TCE 010096641-09 $P = 93.528944$ Days $T_0 = 142.923973$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

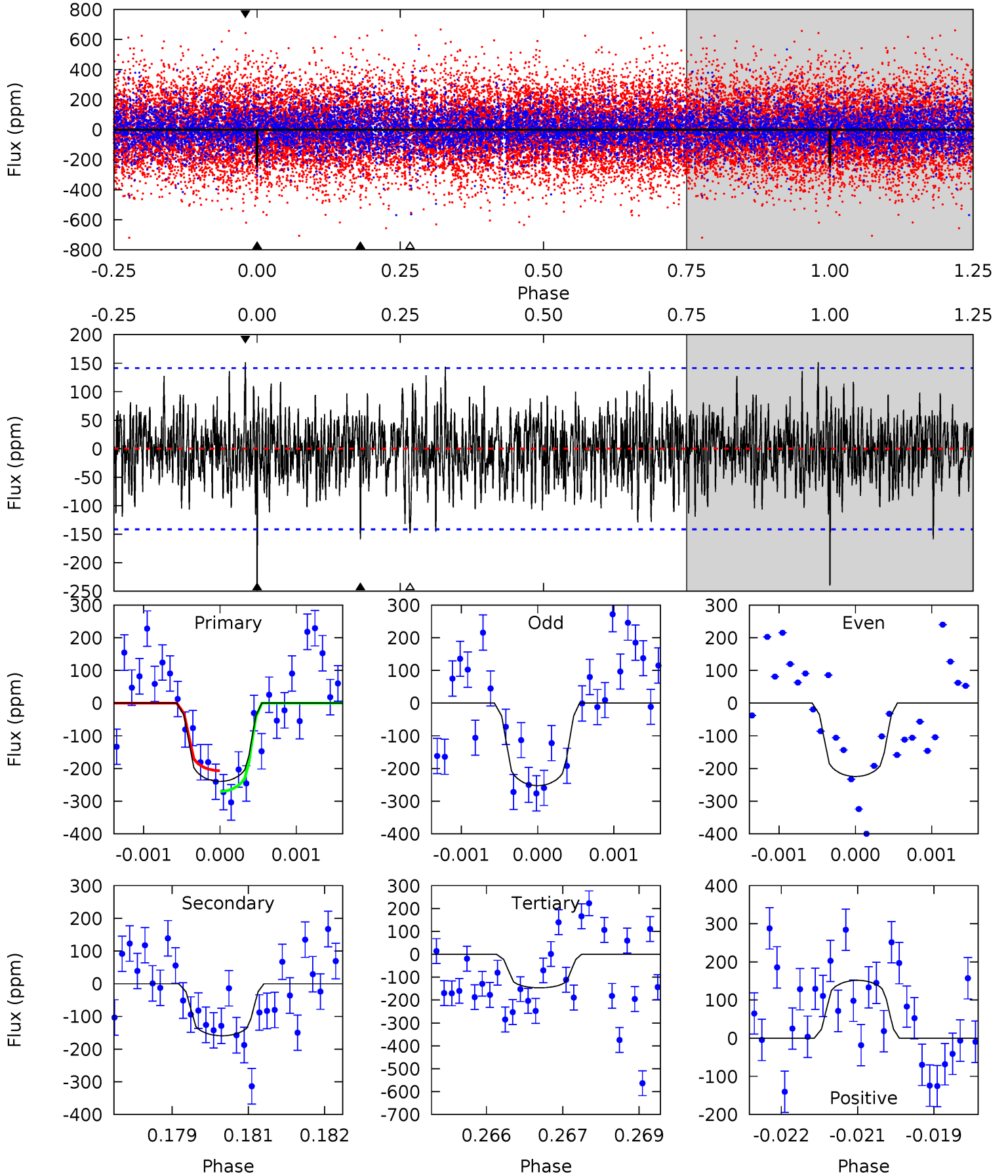
TCE 010096641-09 $P = 93.529233$ Days $T_0 = 142.918023$ (BKJD)



DV Model-Shift Uniqueness Test

010096641-09, P = 93.528944 Days, E = 49.395029 Days

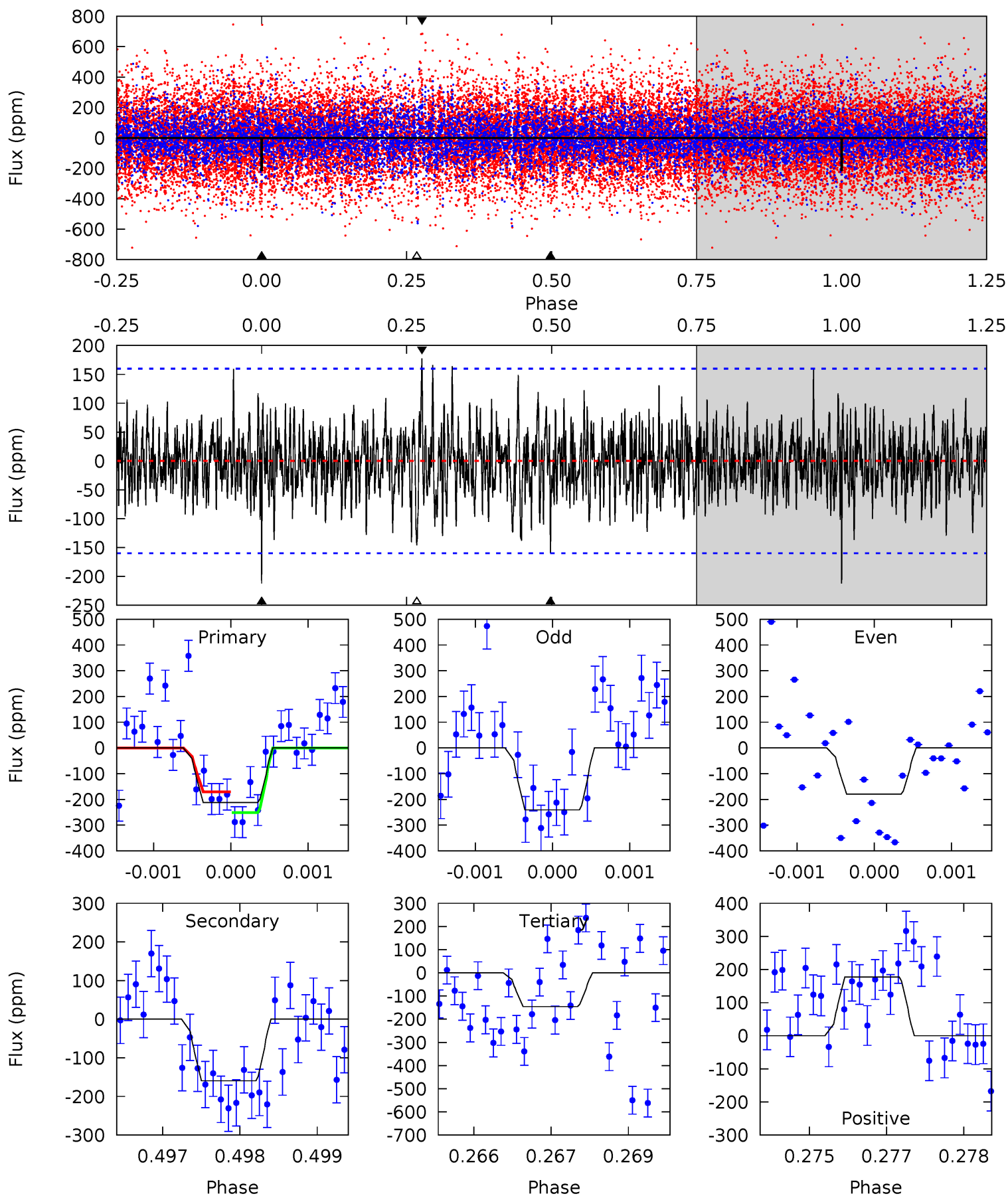
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.11	6.05	5.58	5.77	5.38	3.18	1.69	3.54	3.35	0.48	0.29	0.54	0.96	0.39	1.20



Alt Model-Shift Uniqueness Test

010096641-09, P = 93.529233 Days, E = 49.388790 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.18	5.39	4.93	6.00	5.40	3.21	1.56	2.25	1.18	0.46	-0.61	1.03	0.77	0.46	1.36



Stellar Parameters For KIC 010096641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6292^{+192}_{-173}	$3.503^{+0.384}_{-0.096}$	$-0.240^{+0.350}_{-0.300}$	$3.767^{+0.674}_{-1.685}$	$1.648^{+0.194}_{-0.421}$	$0.043^{+0.128}_{-0.016}$
	+3%/-3%	+11%/-3%	+146%/-125%	+18%/-45%	+12%/-26%	+296%/-38%
Source	PHO1	FLK73	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 010096641-09 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-159 ± 26	$6.40^{+5.68}_{-3.96}$	1072^{+73}_{-116}	5414^{+3554}_{-1158}	467^{+2682}_{-331}
Alt.	-159 ± 30	$6.54^{+5.53}_{-3.90}$	1068^{+63}_{-112}	5370^{+3501}_{-1167}	474^{+2454}_{-347}

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

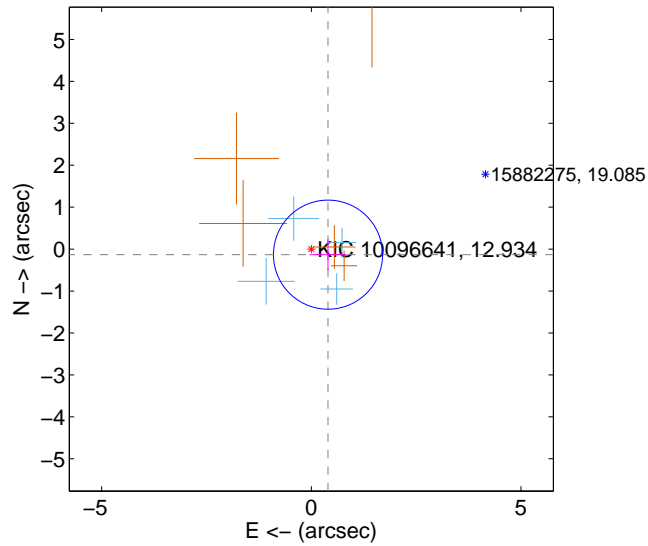
Supplemental centroid analysis for 010096641-09. Kepler magnitude: 12.93. Transit SNR 6.99

There are 4 quarters with good PRF difference image offsets

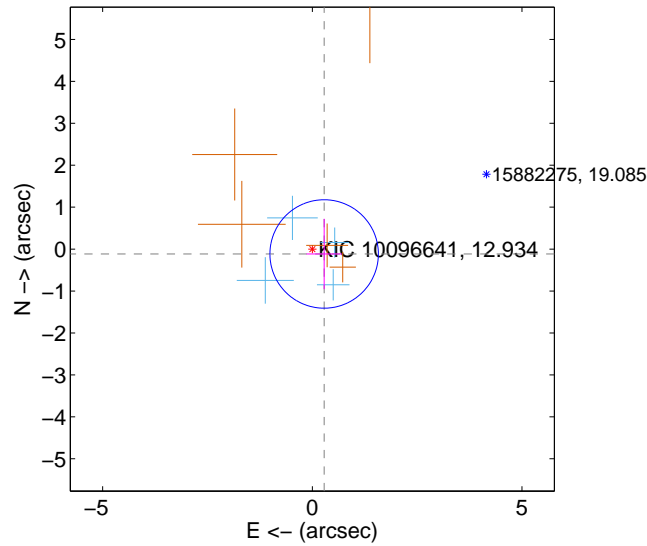
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.420 ± 0.434	0.97	-0.399 ± 0.440	-0.132 ± 0.371
PRF-fit source offset from KIC position	0.305 ± 0.431	0.71	-0.282 ± 0.422	-0.116 ± 0.838
photometric centroid source offset	1.97 ± 0.95	2.08	1.26 ± 1.04	1.52 ± 0.88

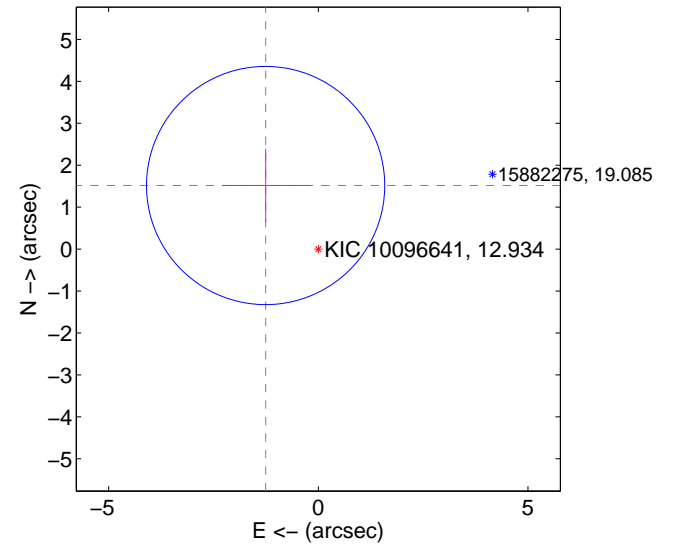
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

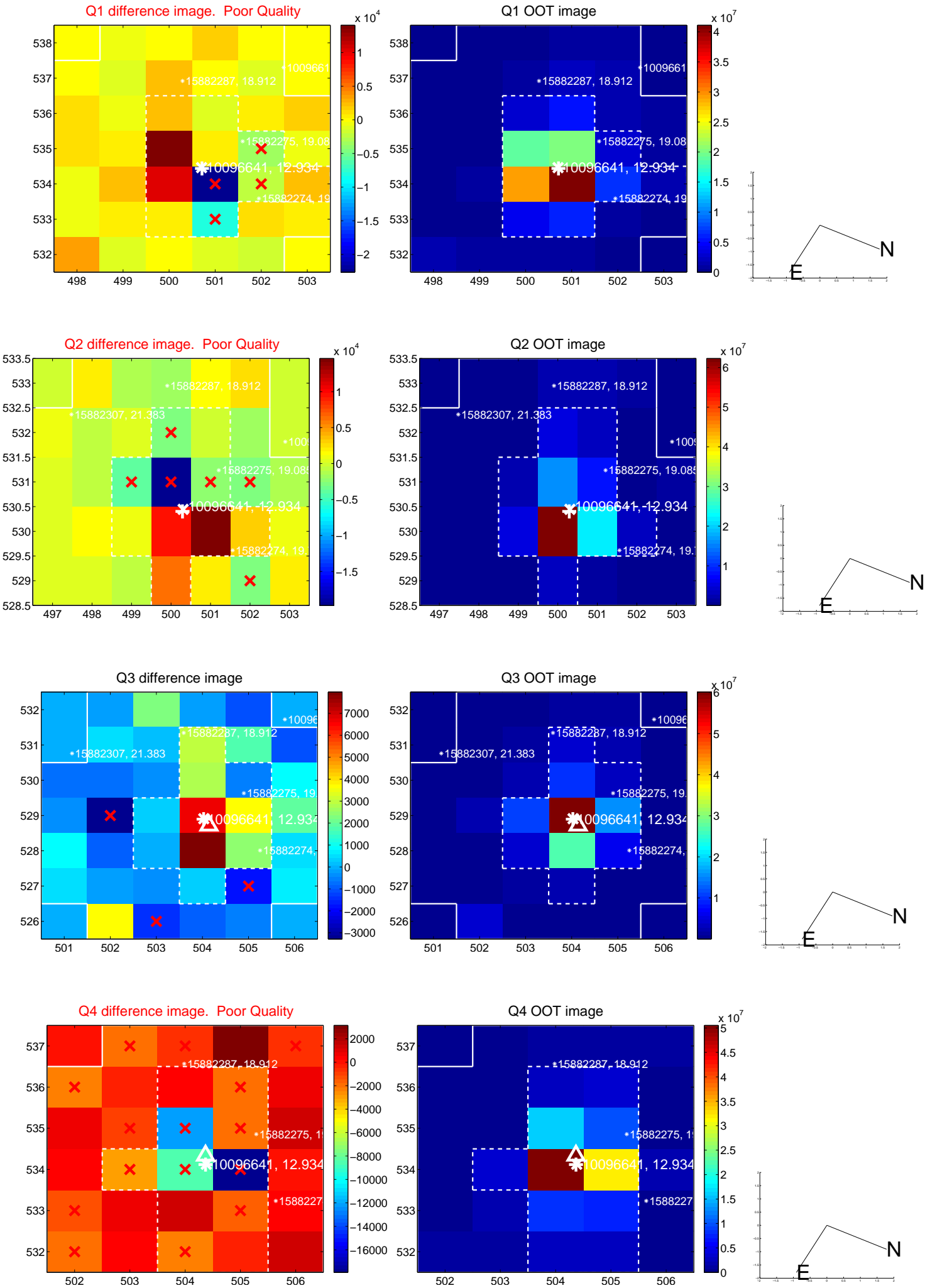


offset from photometric centroids

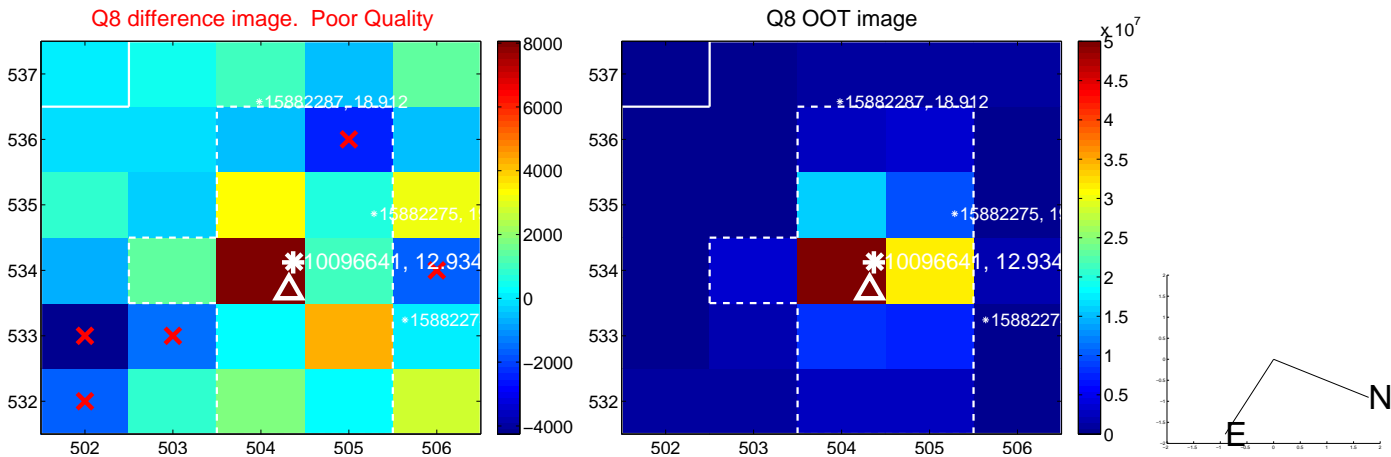
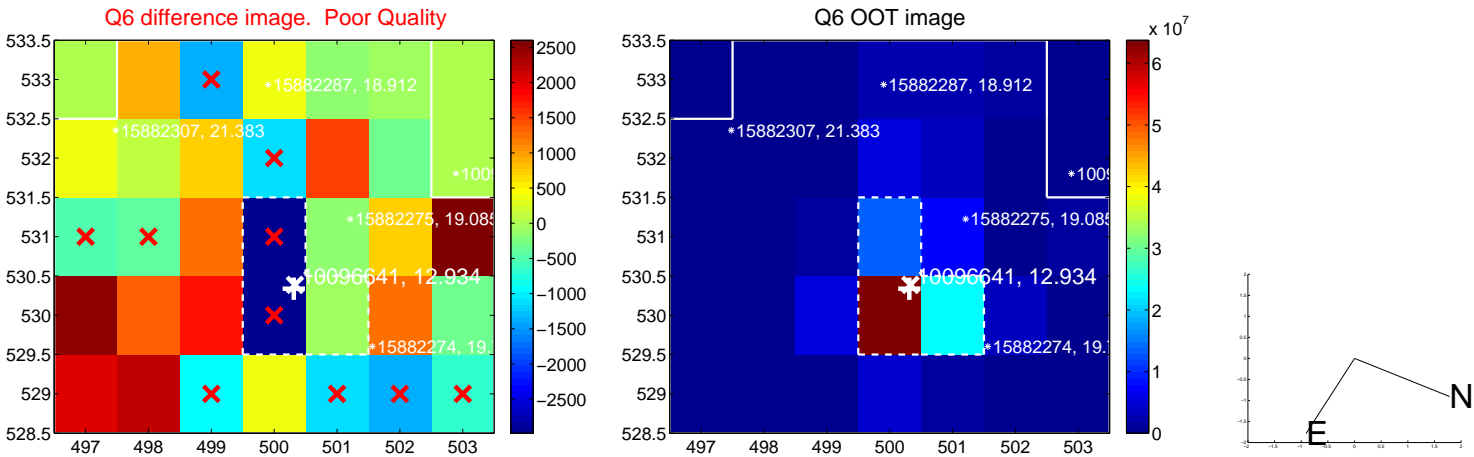
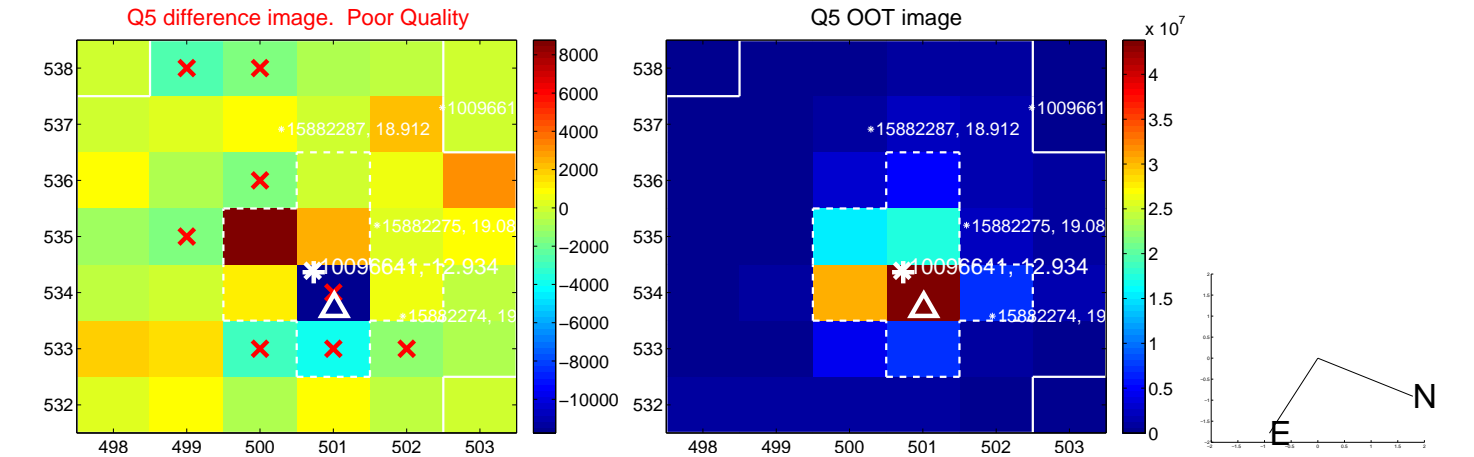


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

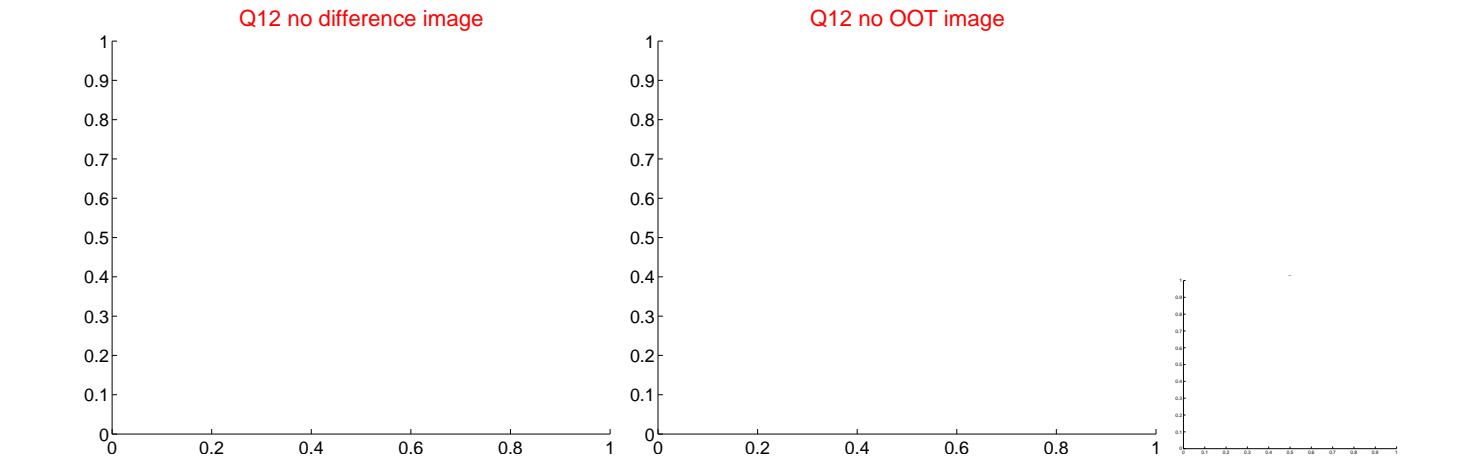
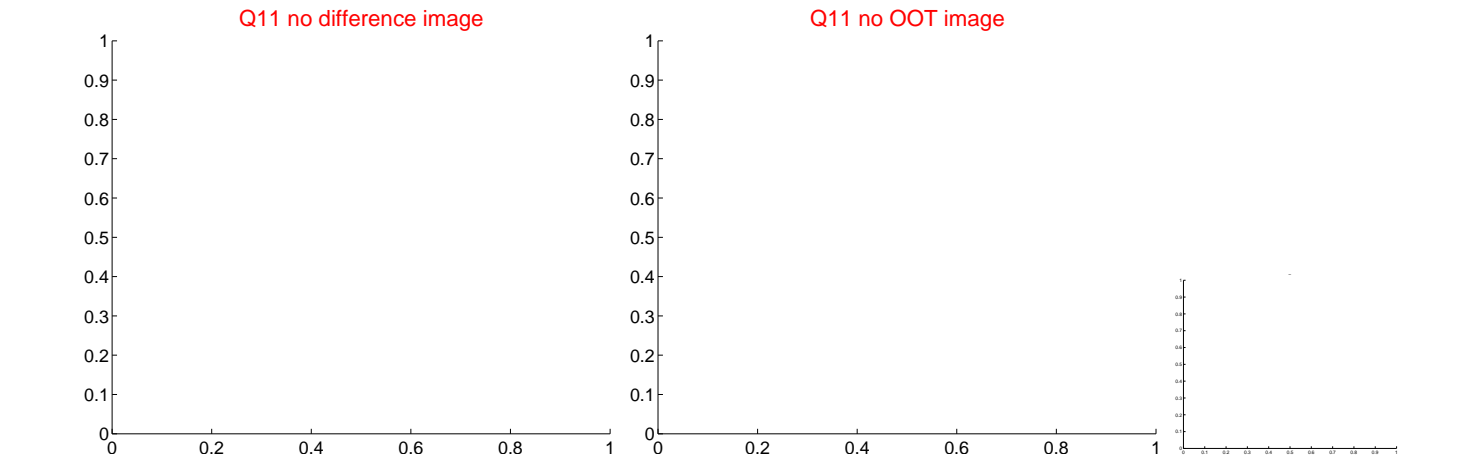
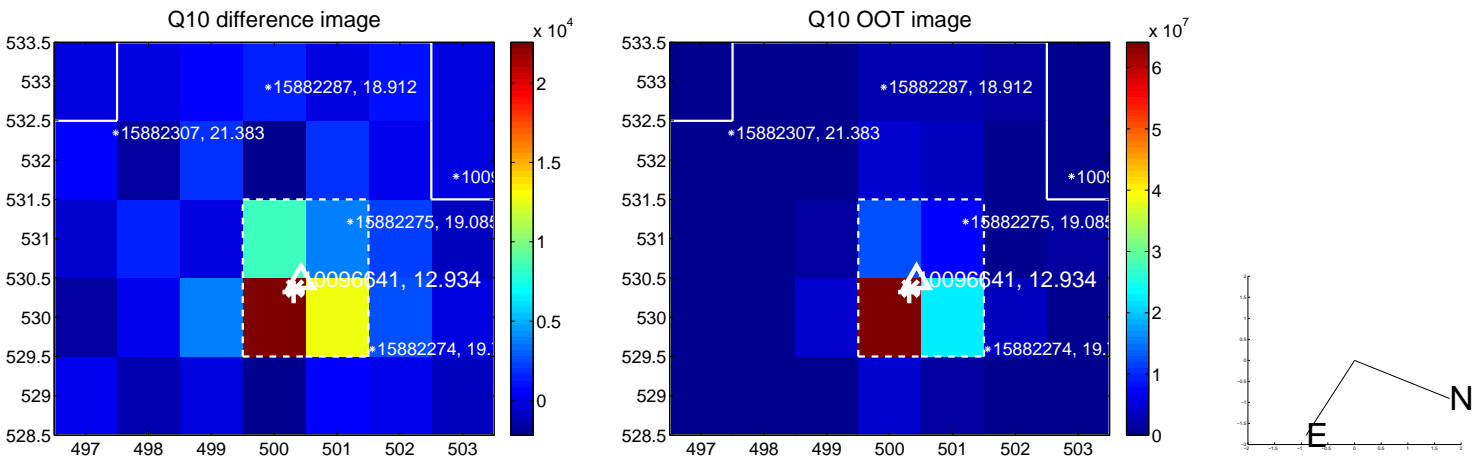
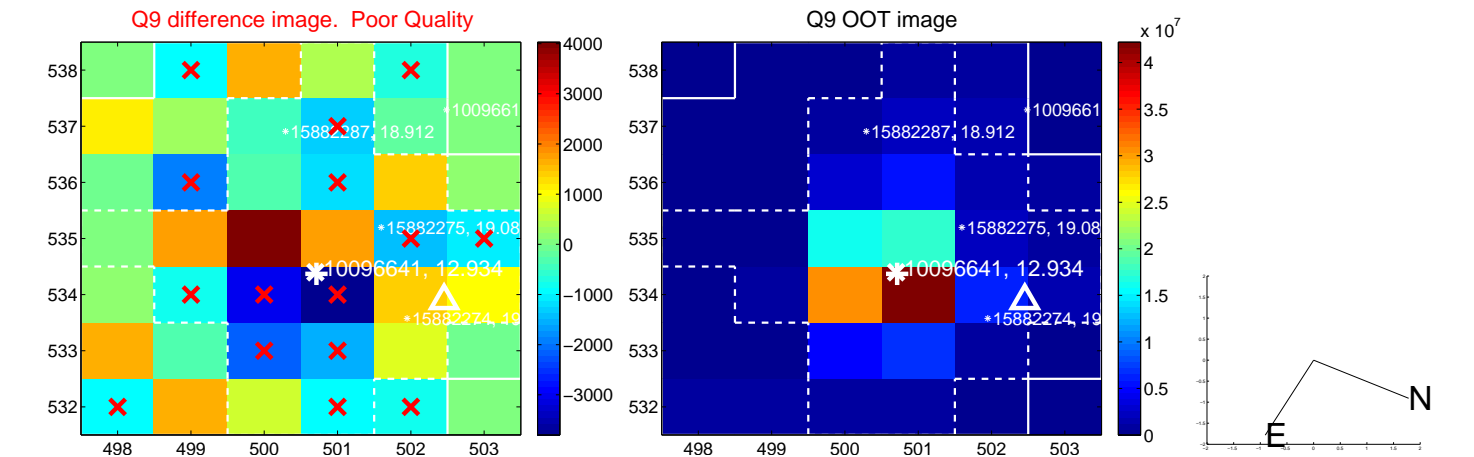
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



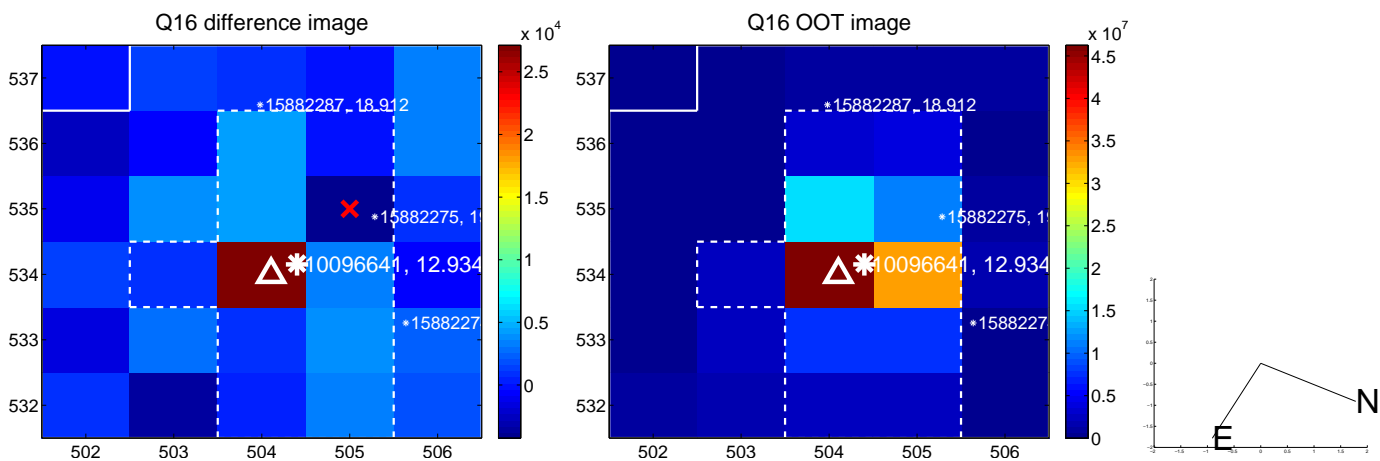
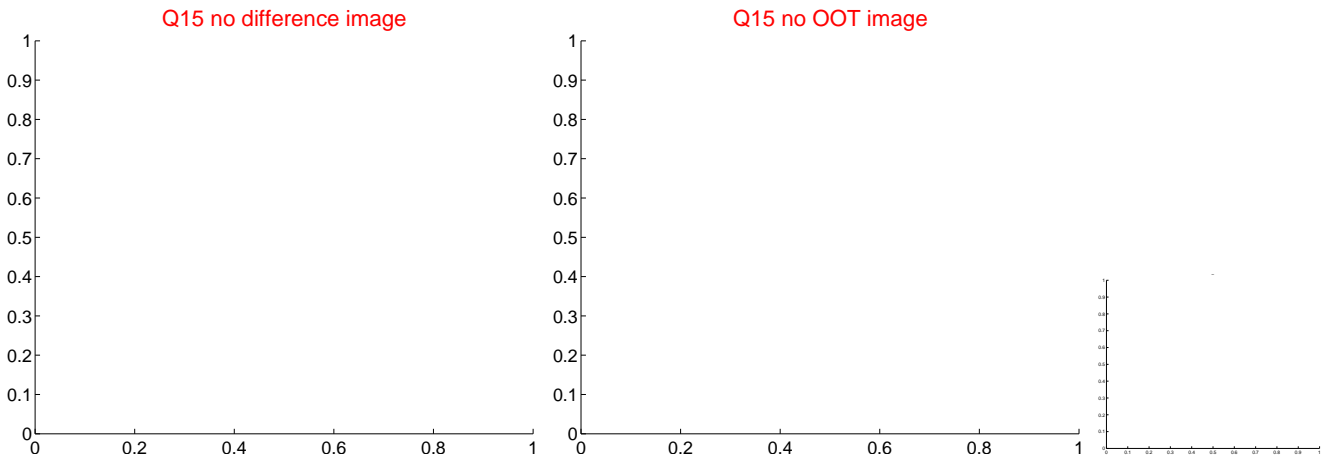
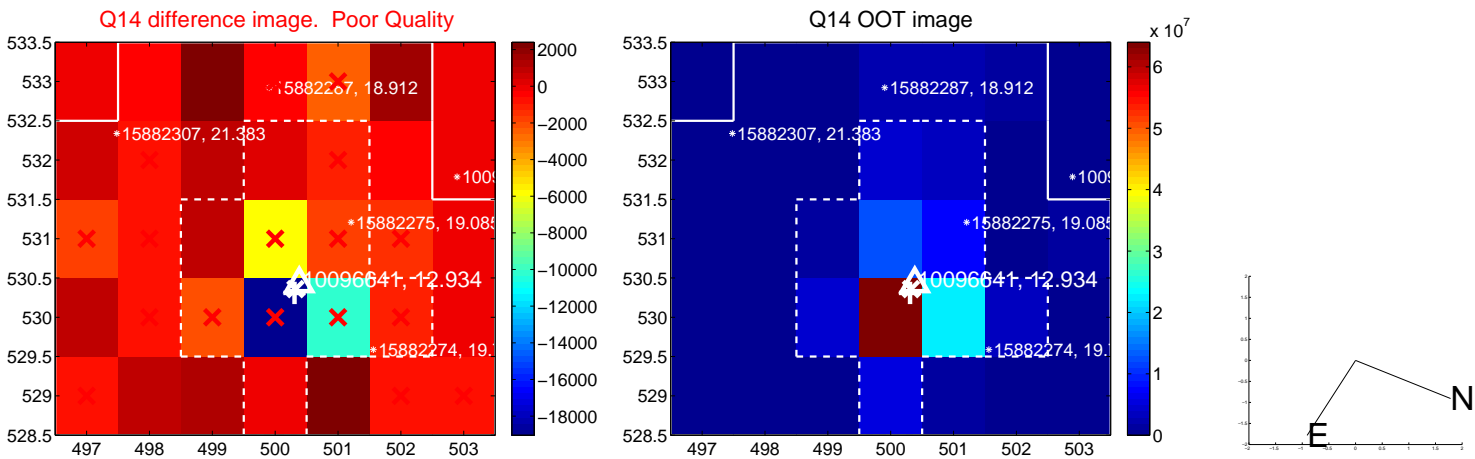
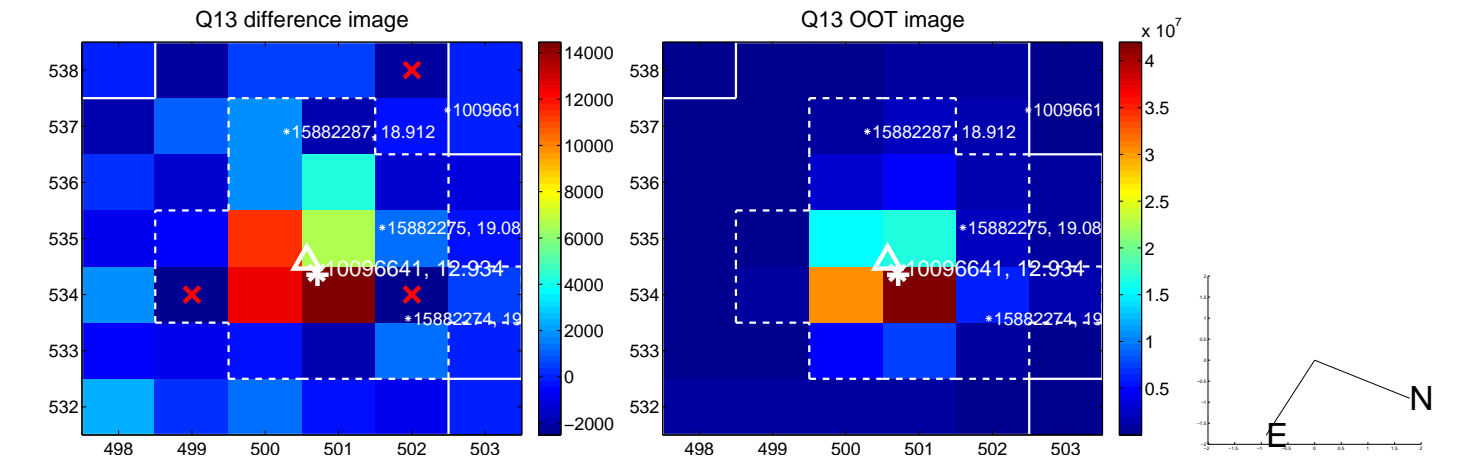
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



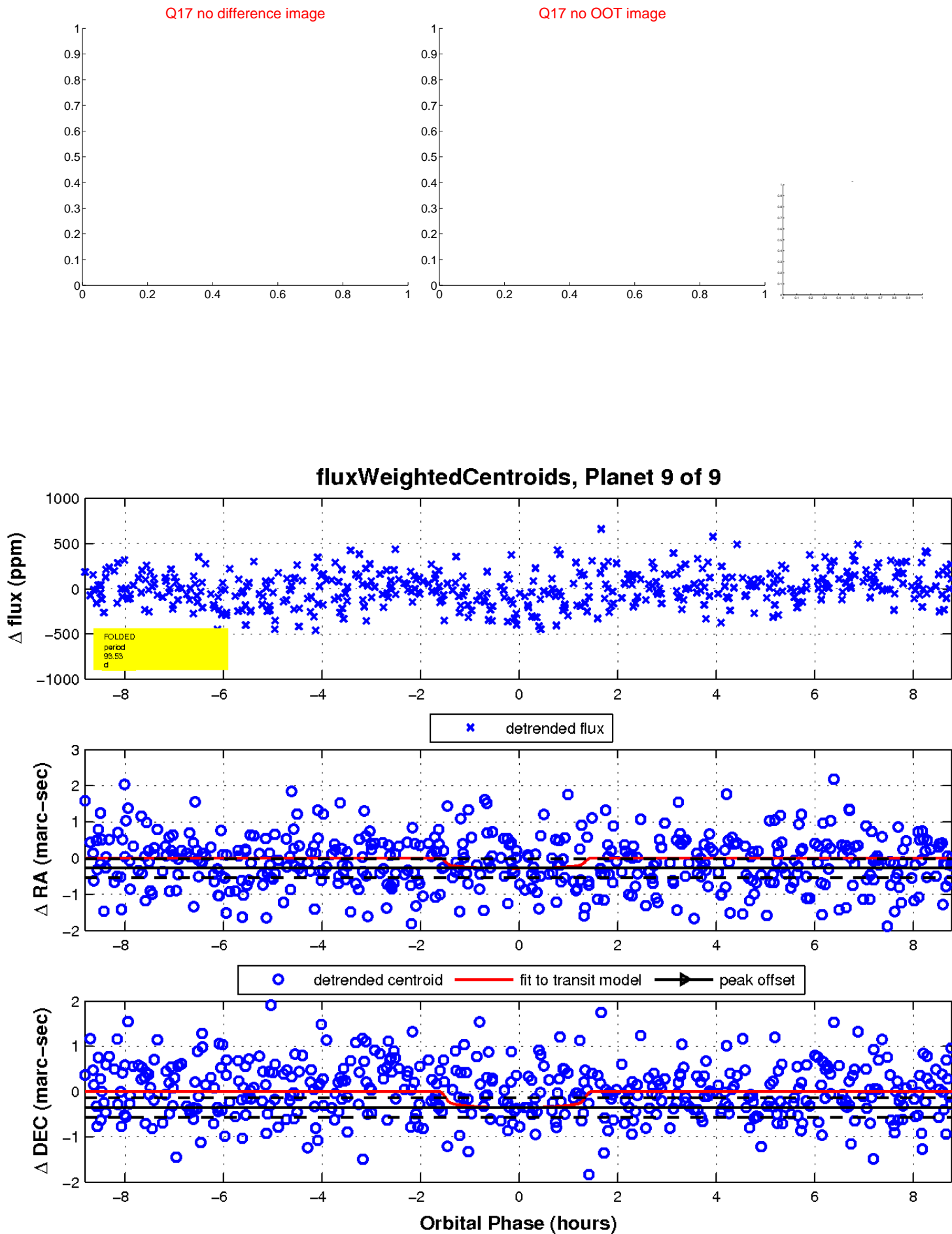
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

