

KIC 005372081

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})
005372081-01	OBS	No	1.532264	132.484753	3.2	9.907	8.2	1.7	1.01	6340	0.21	2091.00
005372081-02	OBS	No	173.251831	188.728132	64.3	47.095	17.8	3.8	1.01	6340	0.94	3.82
005372081-03	OBS	No	49.261082	157.953926	273.2	2.217	9.1	9.4	1.01	6340	2.12	20.45
005372081-04	OBS	No	49.904496	150.438465	362.3	1.877	9.3	9.0	1.01	6340	2.12	20.10
005372081-05	OBS	No	58.781787	190.236355	217.5	5.313	8.9	9.0	1.01	6340	1.66	16.16
005372081-06	OBS	No	39.420992	168.821592	338.0	1.185	8.2	9.5	1.01	6340	2.31	27.53
005372081-07	OBS	No	10.724962	140.794691	108.8	3.825	9.3	10.9	1.01	6340	1.24	156.17
005372081-08	OBS	No	127.948282	185.844319	300.7	11.956	7.8	7.5	1.01	6340	1.79	5.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005372081-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005372081-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005372081-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005372081-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
005372081-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005372081-06	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005372081-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005372081-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

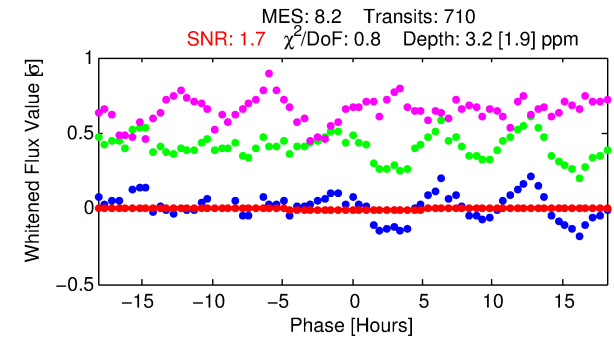
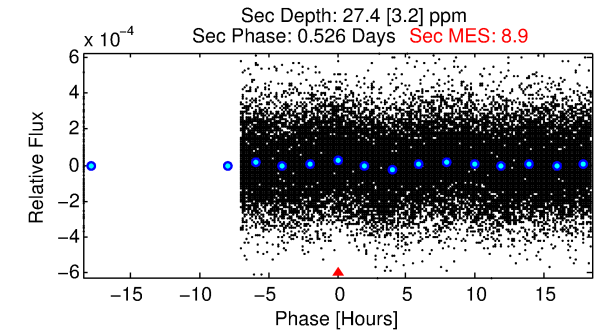
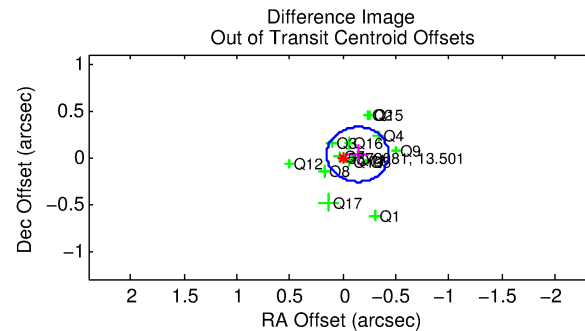
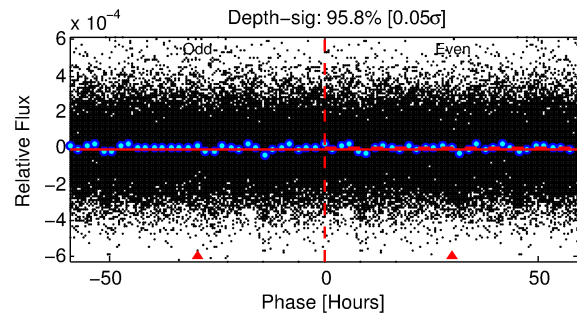
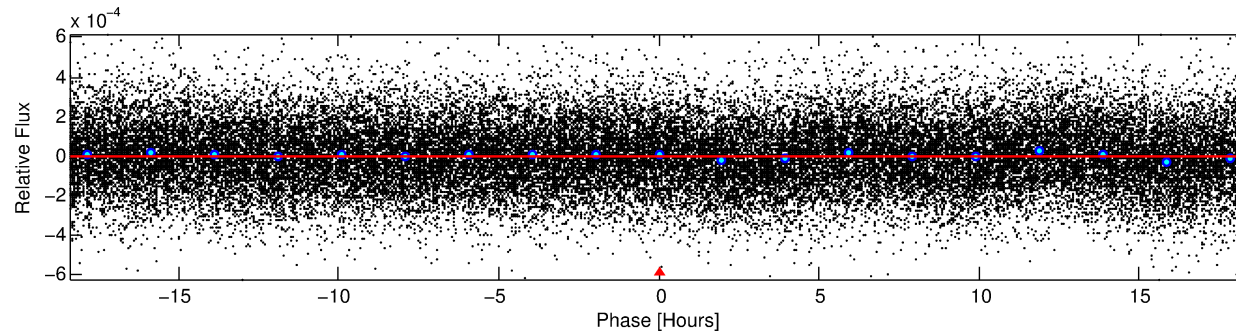
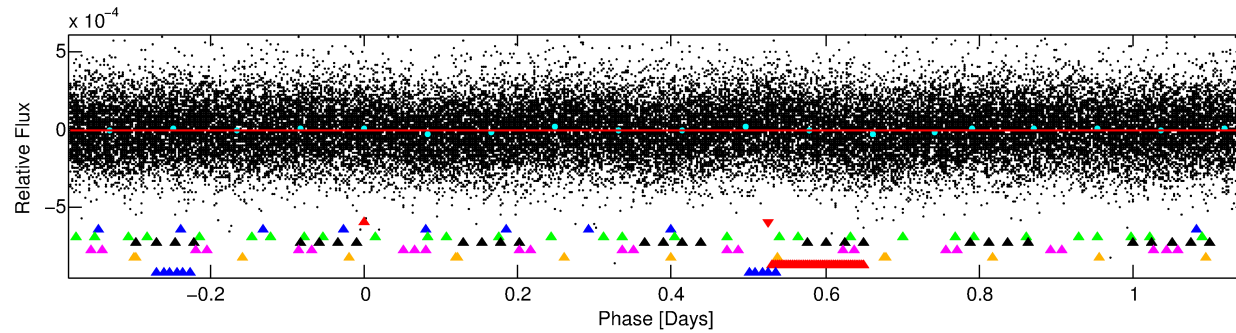
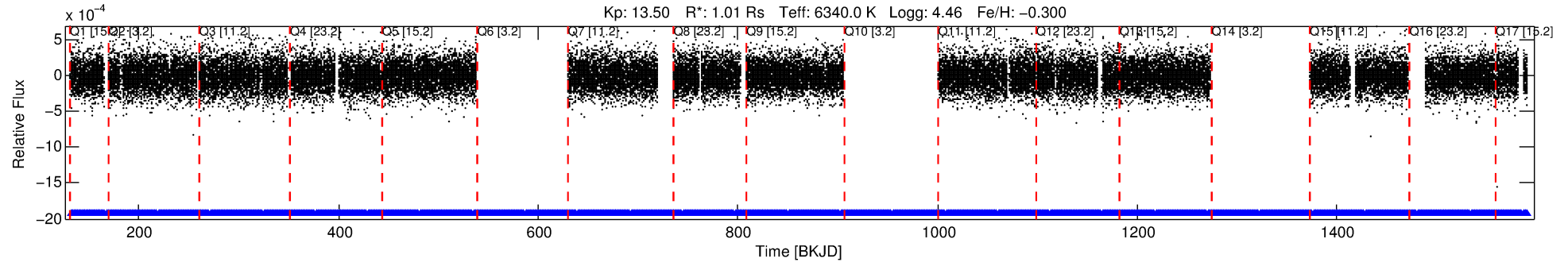
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005372081-01

No Significant Match Found

DV One-Page Summary

KIC: 5372081 Candidate: 1 of 8 Period: 1.532 d



DV Fit Results:

Period = 1.53226 [0.00015] d
Epoch = 132.4848 [0.0443] BKJD
Rp/R* = 0.0019 [0.0032]
a/R* = 1.07 [1.35]
b = 0.90 [1.97]
Seff = 2091.00 [761.55]
Teq = 1724 [157] K
Rp = 0.21 [0.35] Re
a = 0.0266 [0.0063] AU
Ag = 235.59 [778.19] [0.30 σ]
Teffp = 10445 [8584] K [1.02 σ]

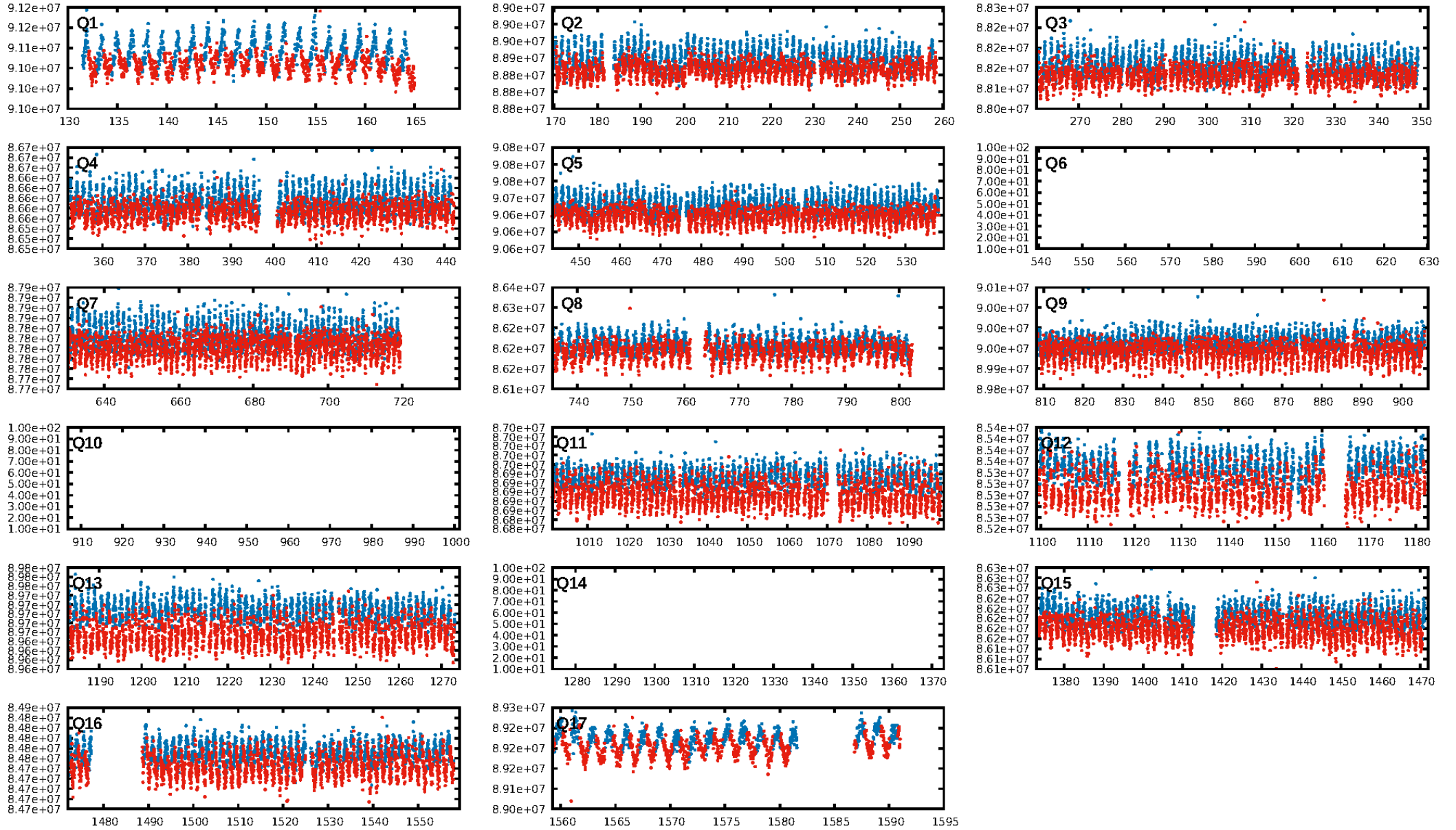
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [20.78 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.69e-12
RollingBand-fgt: 1.00 [671/671]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.145 arcsec [1.49 σ]
KicOffset-rm: 0.194 arcsec [1.89 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

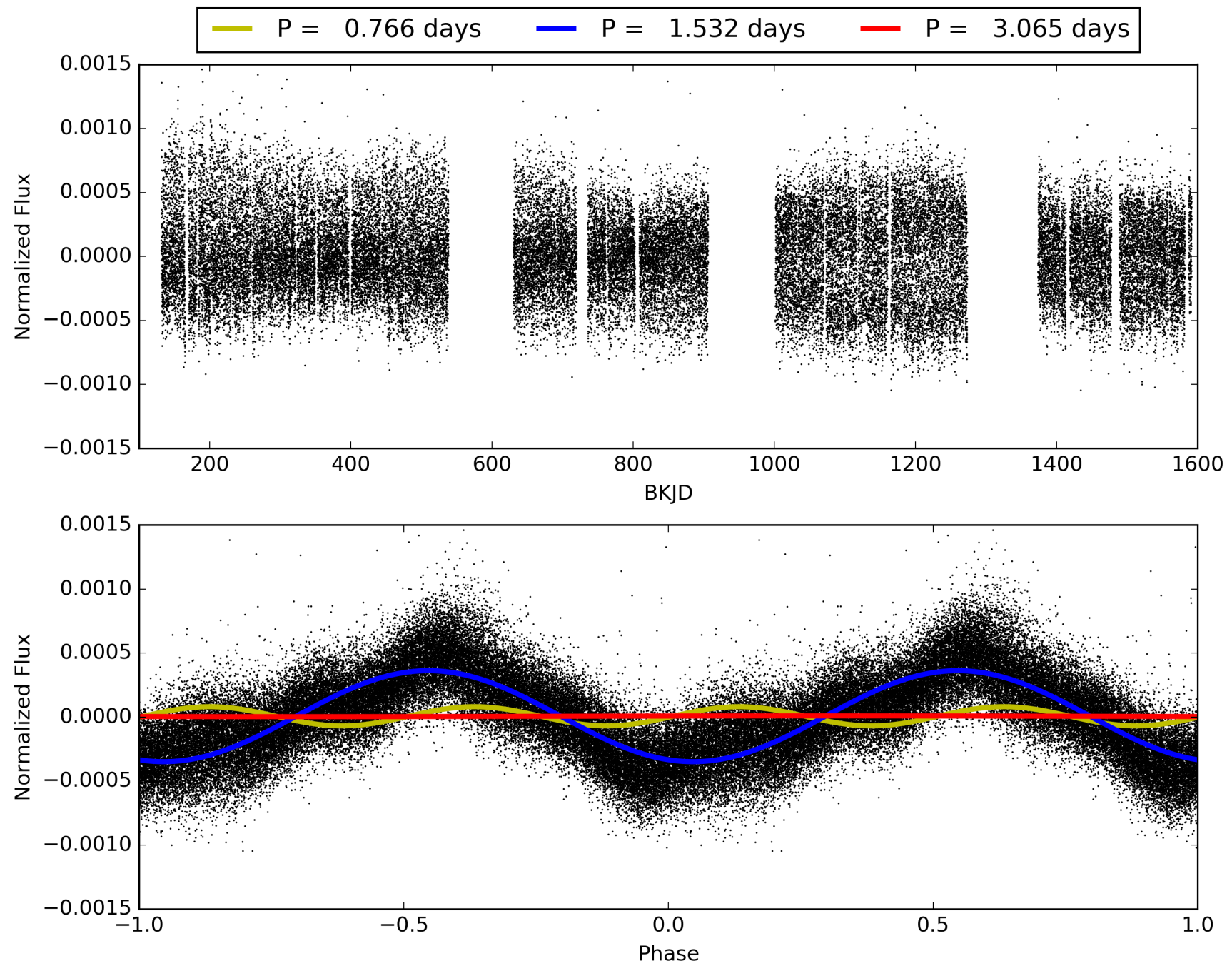
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005372081-01, PDC Light Curves

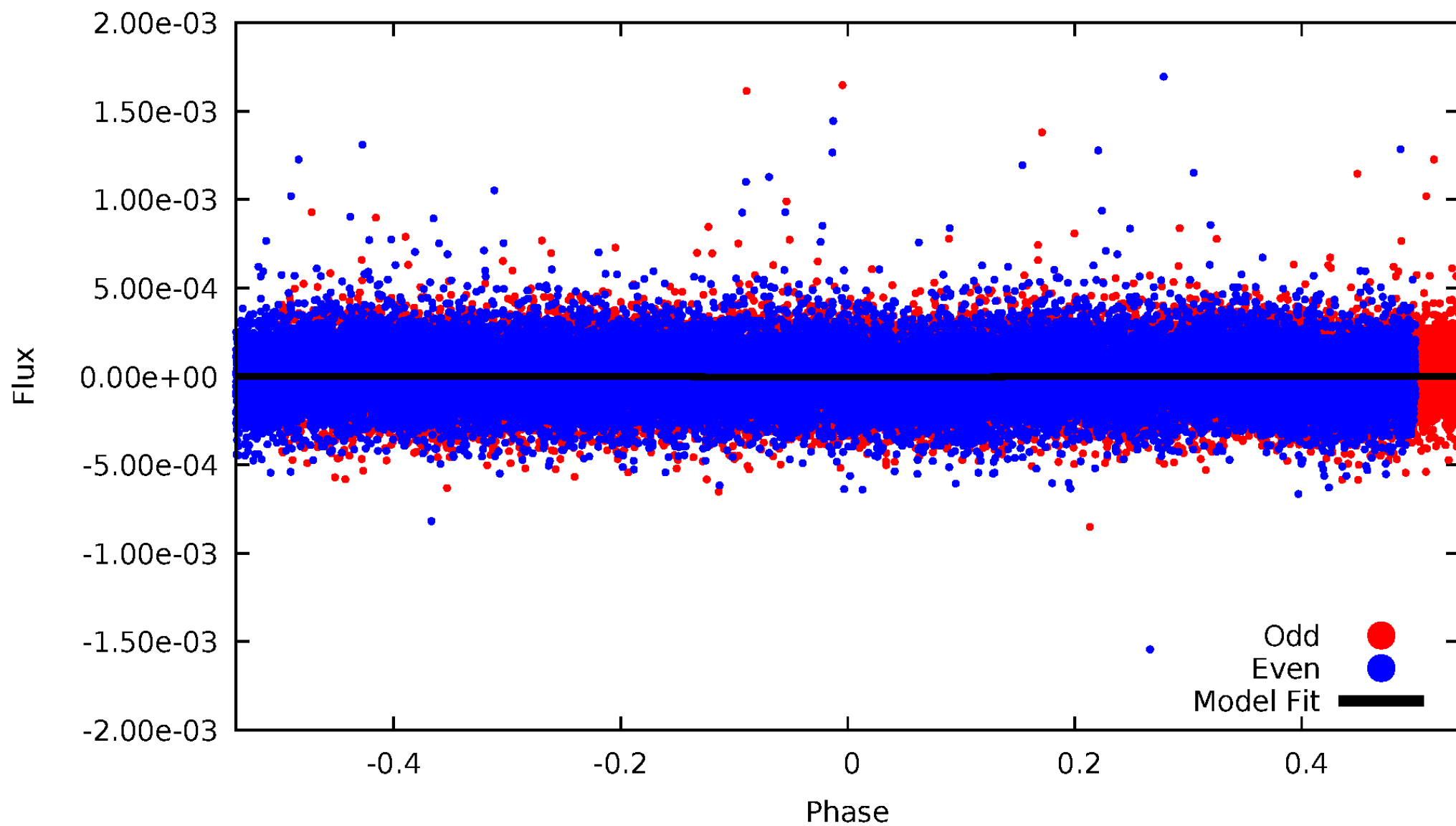


TCE 005372081-01



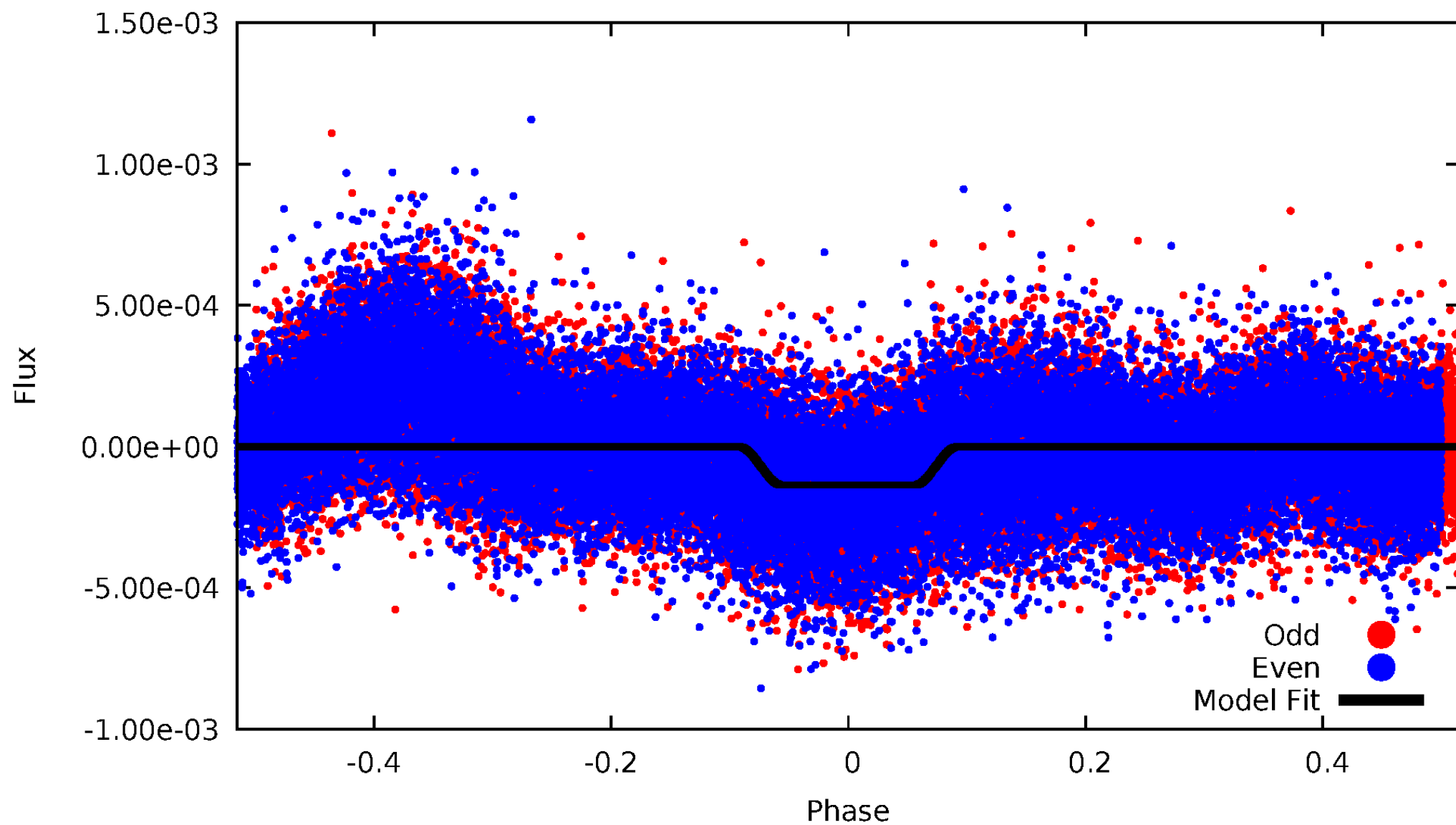
DV Odd/Even

TCE 005372081-01

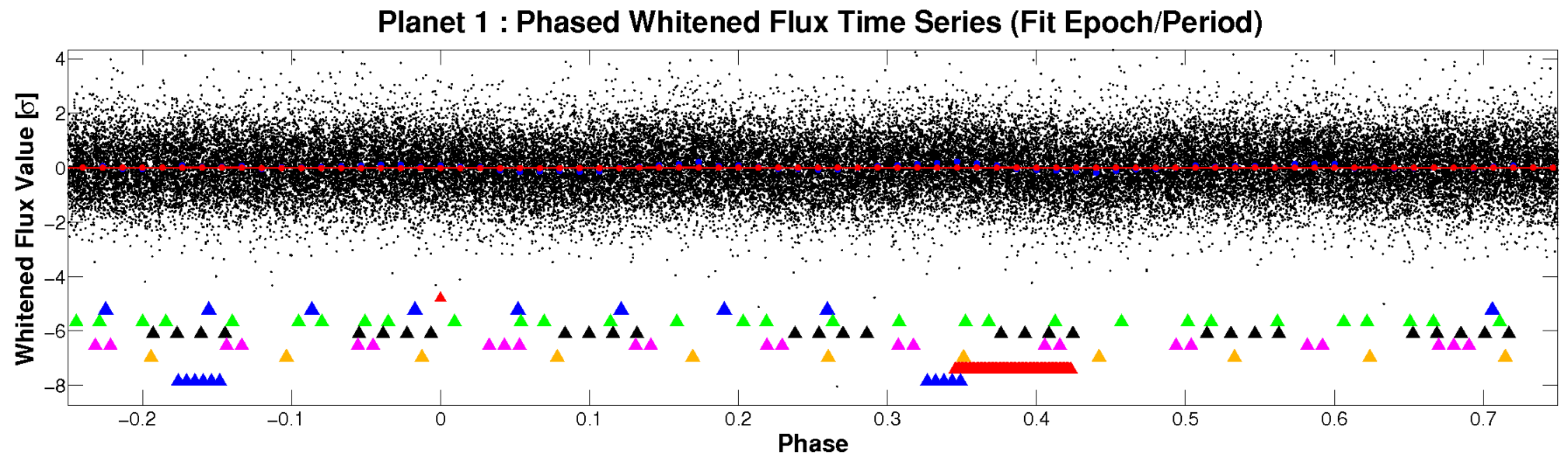
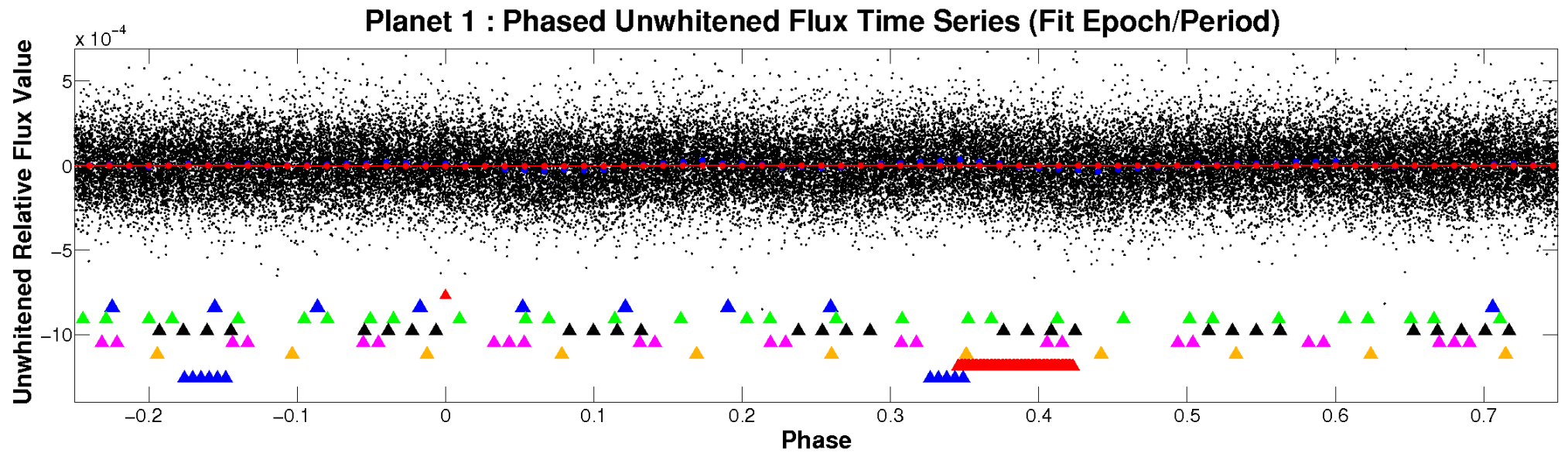


ALT Odd/Even

TCE 005372081-01

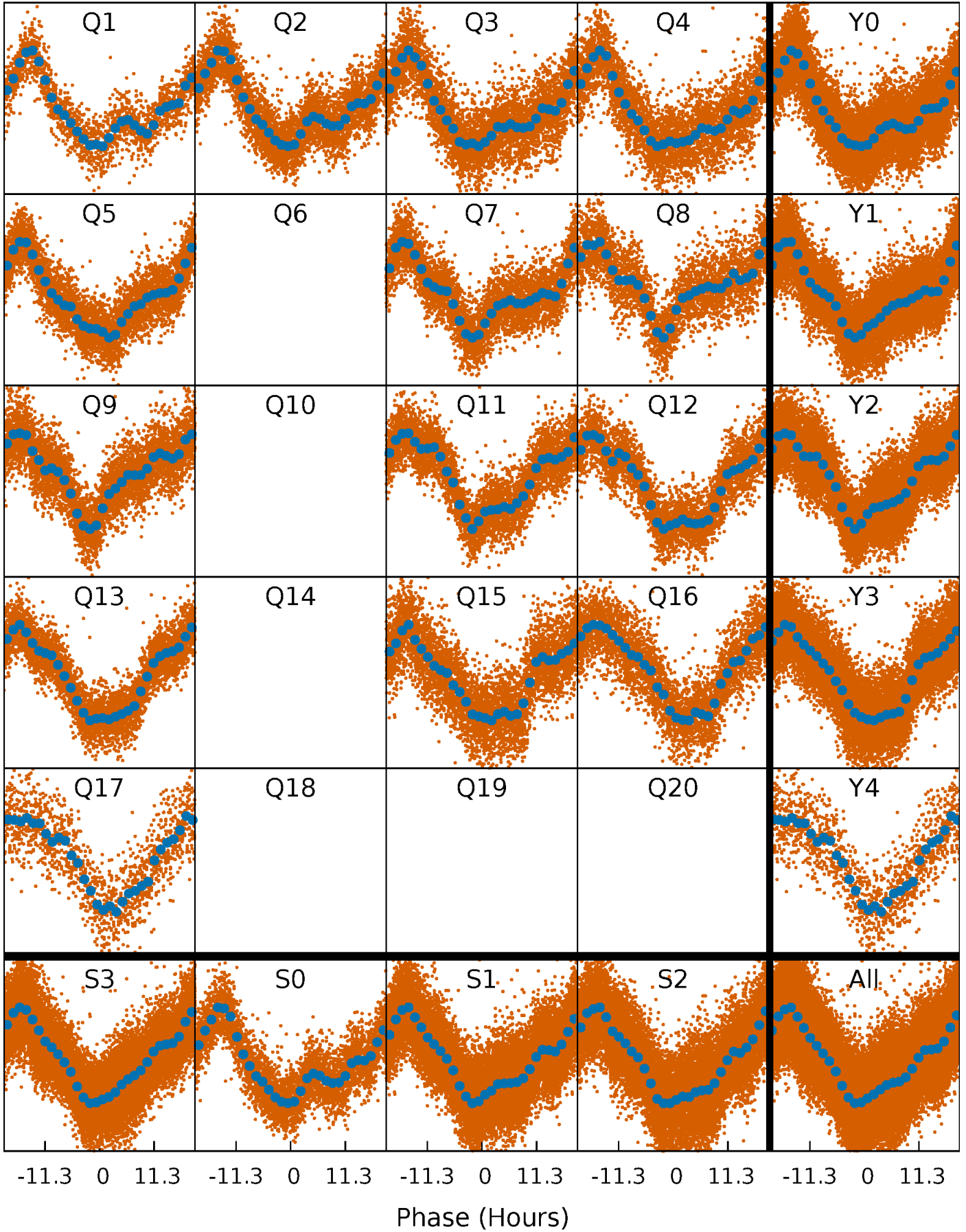


Non-Whitened Vs. Whitened Light Curve



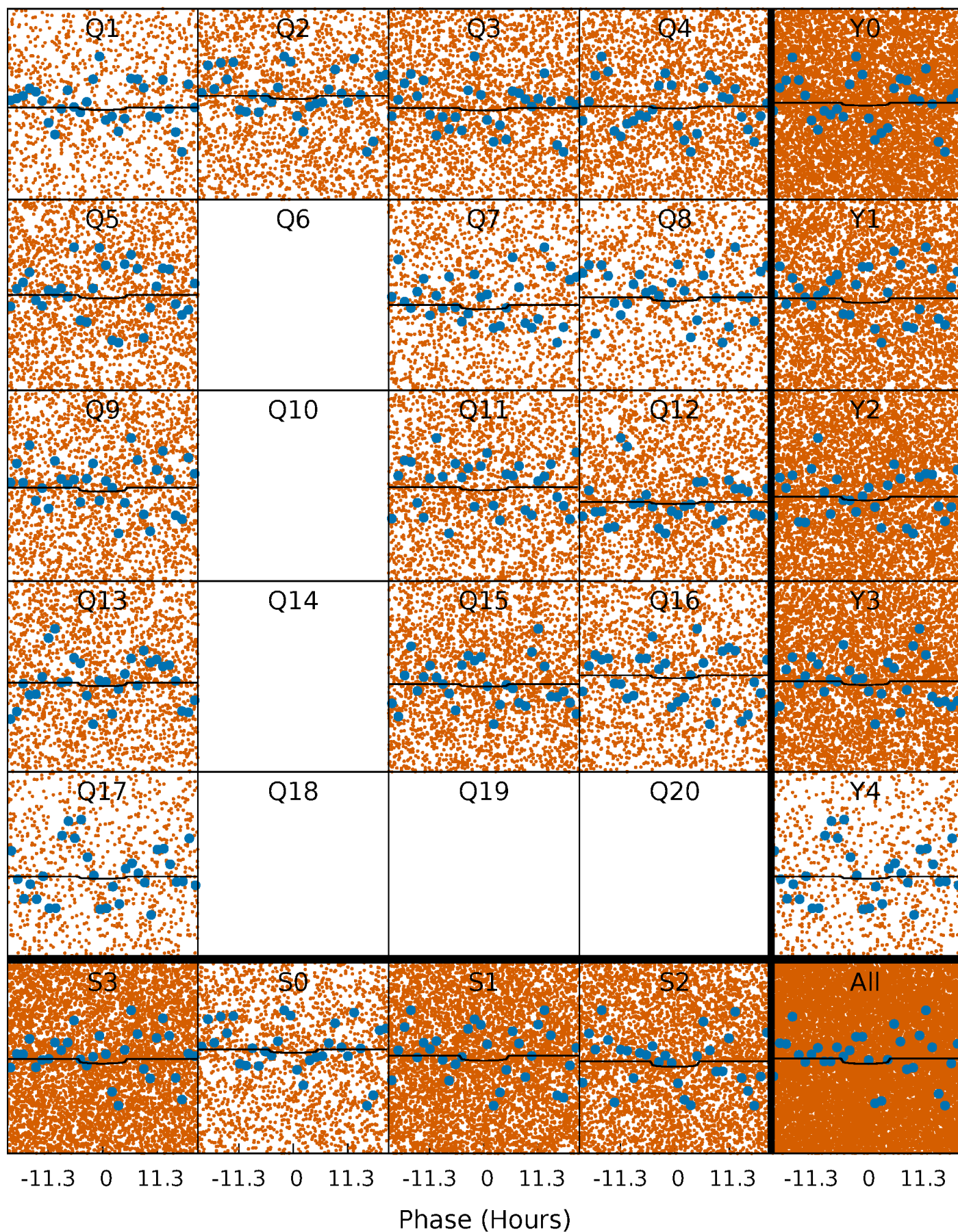
PDC Quarter-Phased Transit Curves

TCE 005372081-01 P= 1.532264 Days $T_0=132.484753$ (BKJD)



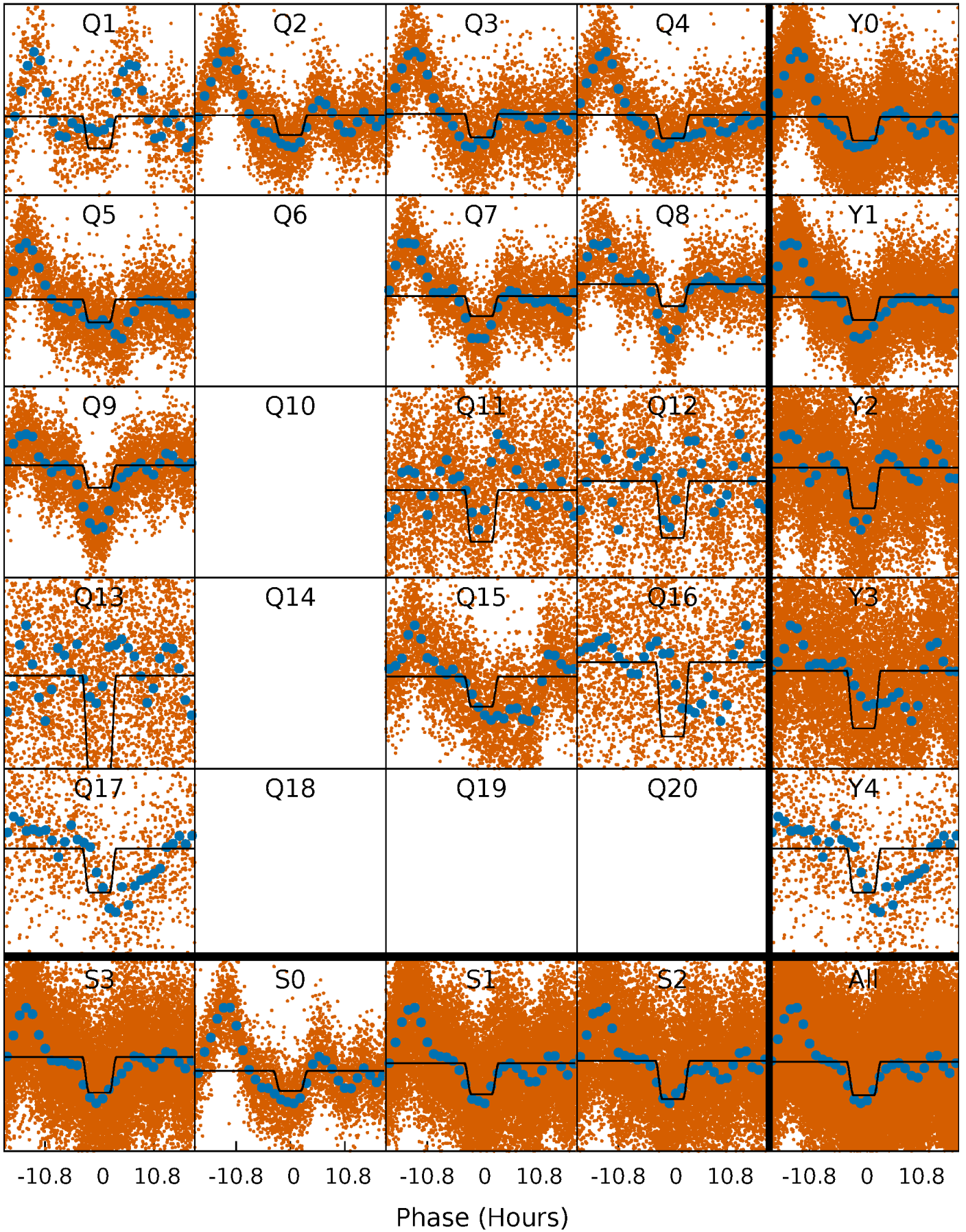
DV Quarter-Phased Transit Curves

TCE 005372081-01 P= 1.532264 Days $T_0=132.484753$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

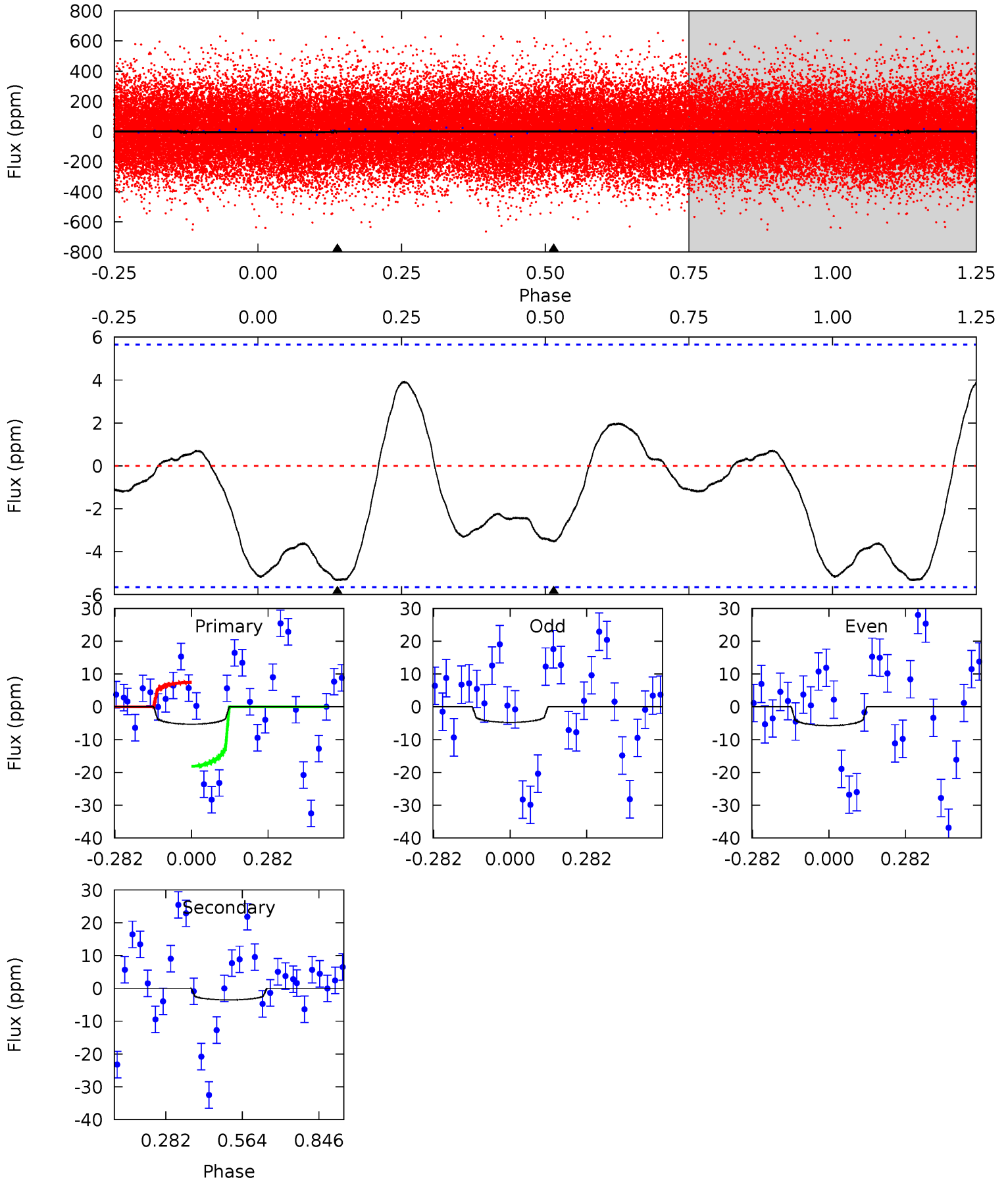
TCE 005372081-01 P= 1.532219 Days $T_0=132.432643$ (BKJD)



DV Model-Shift Uniqueness Test

005372081-01, P = 1.532264 Days, E = 130.952489 Days

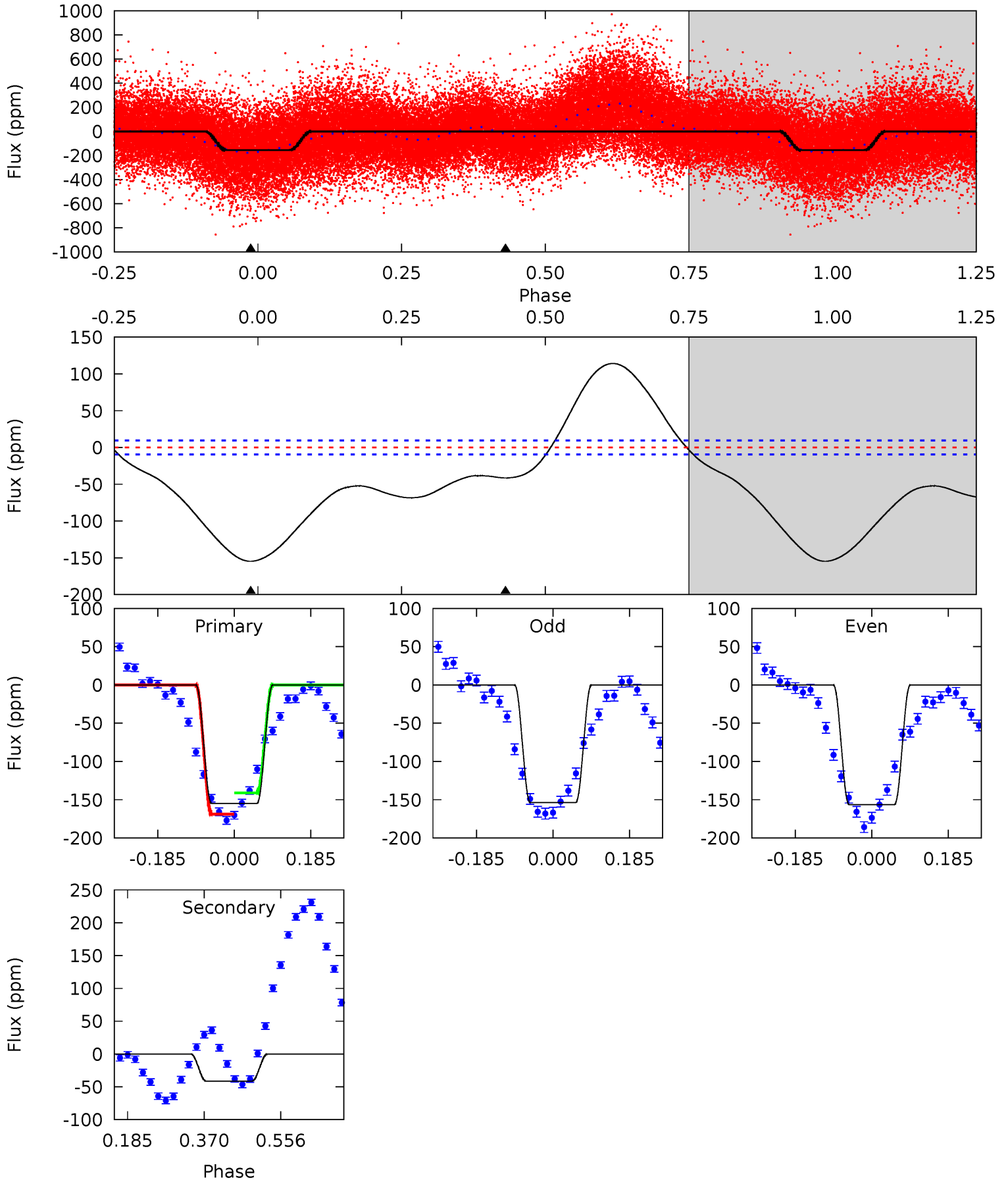
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.09	2.70	0	0	4.34	1.08	0.41	4.09	4.09	2.70	2.70	0.38	4.98	0.42	4.09



Alt Model-Shift Uniqueness Test

005372081-01, P = 1.532219 Days, E = 130.900424 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.8	19.2	0	0	4.43	1.32	28.7	71.8	71.8	19.2	19.2	0.61	1.03	0.42	7.89



Stellar Parameters For KIC 005372081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6340^{+151}_{-189}	$4.457^{+0.050}_{-0.188}$	$-0.300^{+0.250}_{-0.350}$	$1.010^{+0.284}_{-0.122}$	$1.066^{+0.133}_{-0.146}$	$1.458^{+0.381}_{-0.734}$
	+2%/-3%	+1%/-4%	+83%/-117%	+28%/-12%	+12%/-14%	+26%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005372081-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 1	$0.34^{+0.32}_{-0.23}$	2459^{+162}_{-110}	5040^{+4594}_{-1251}	11^{+107}_{-9}
Alt.	-41 ± 2	$1.36^{+0.42}_{-0.41}$	2457^{+171}_{-110}	4761^{+822}_{-444}	$8.484^{+9.116}_{-3.368}$

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 $A_{obs} \gg 1.0$

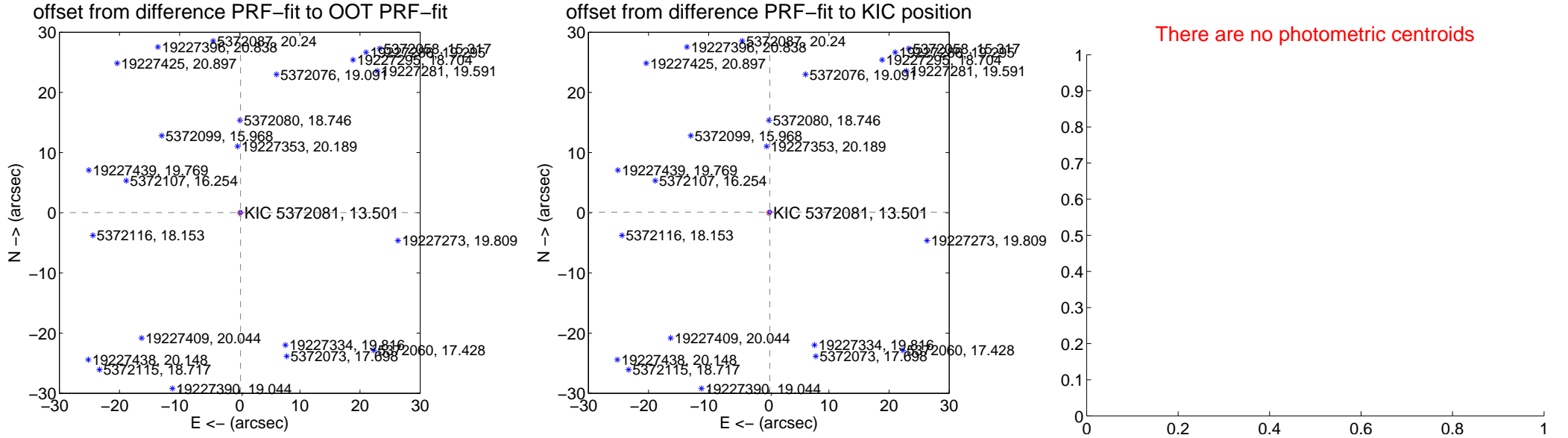
DV Centroid Data

Supplemental centroid analysis for 005372081-01. Kepler magnitude: 13.50. Transit SNR 1.67

There are 14 quarters with good PRF difference image offsets

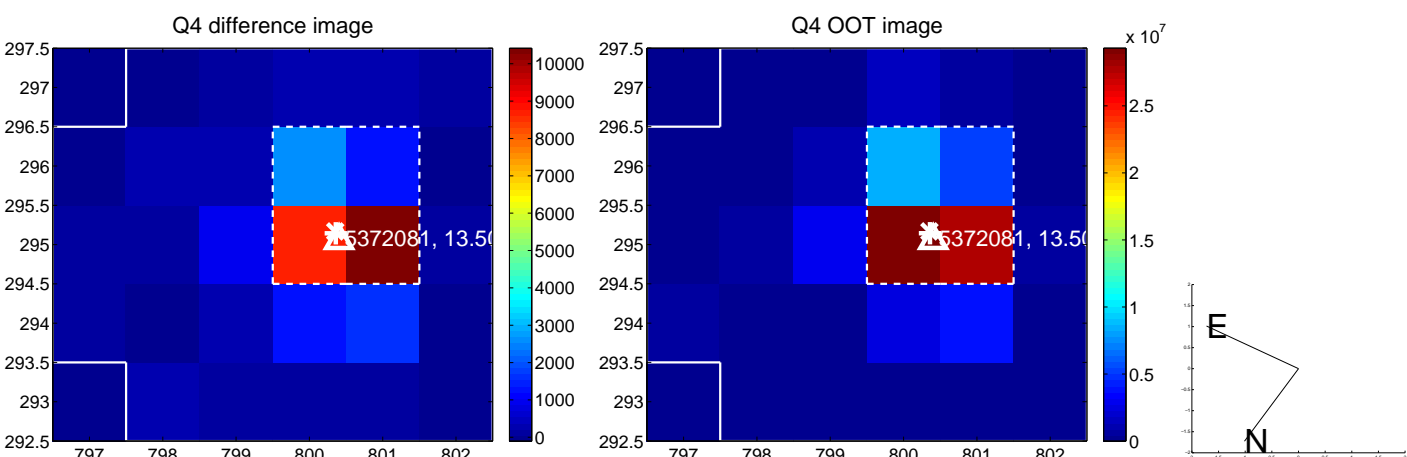
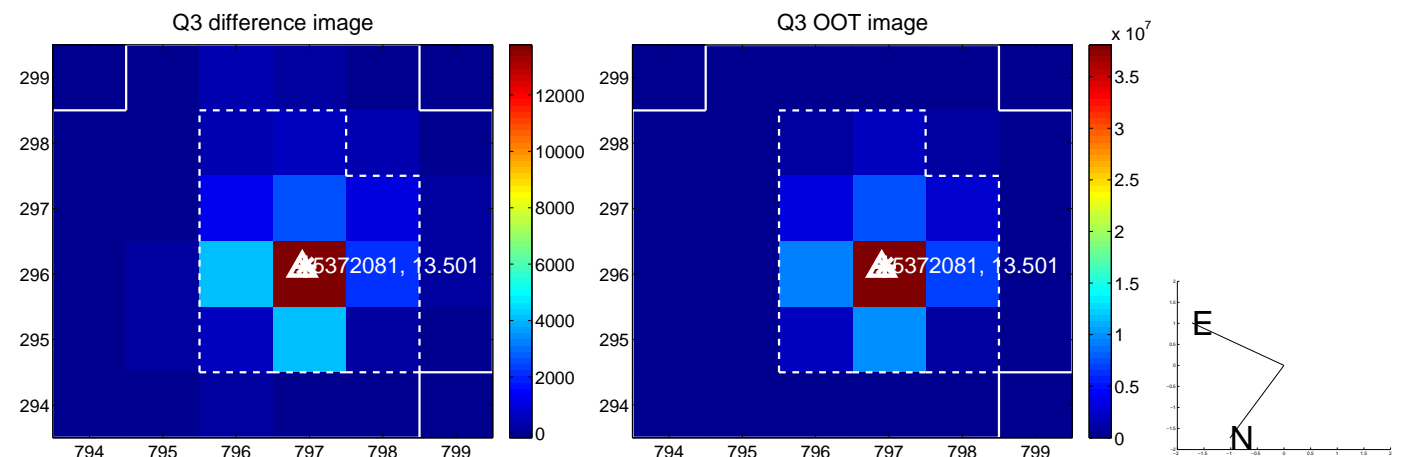
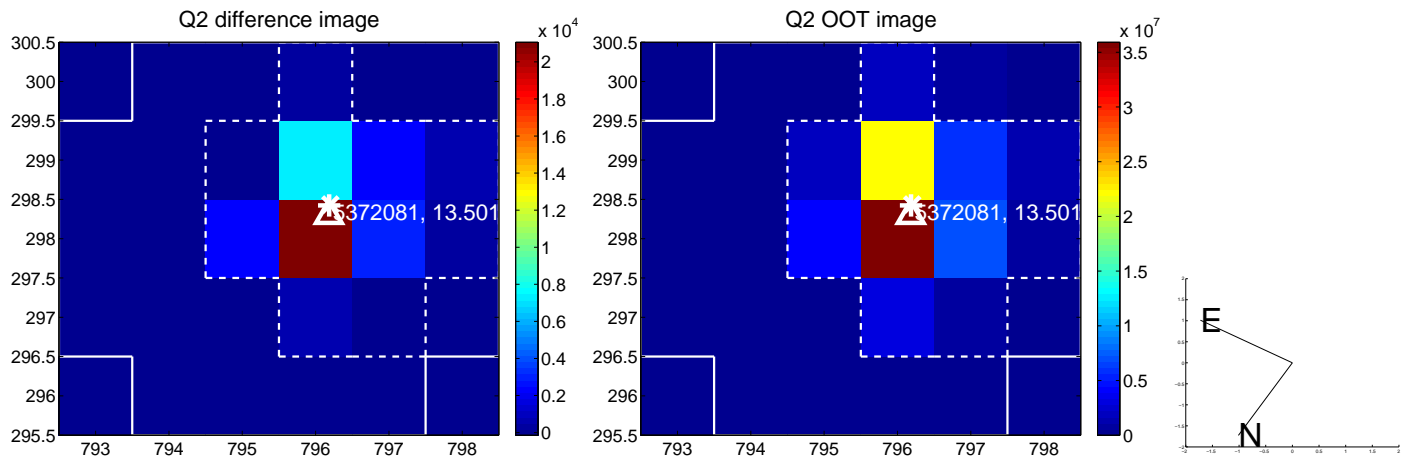
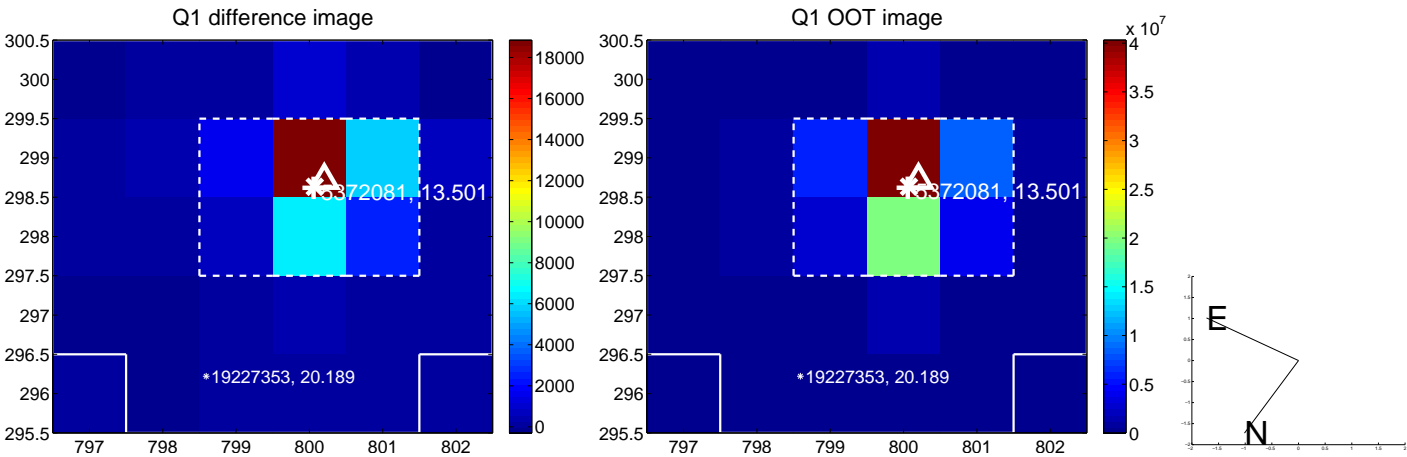
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.145 ± 0.097	1.49	-0.141 ± 0.094	0.031 ± 0.102
PRF-fit source offset from KIC position	0.194 ± 0.102	1.89	-0.163 ± 0.093	0.105 ± 0.102
photometric centroid source offset	—	—	—	—

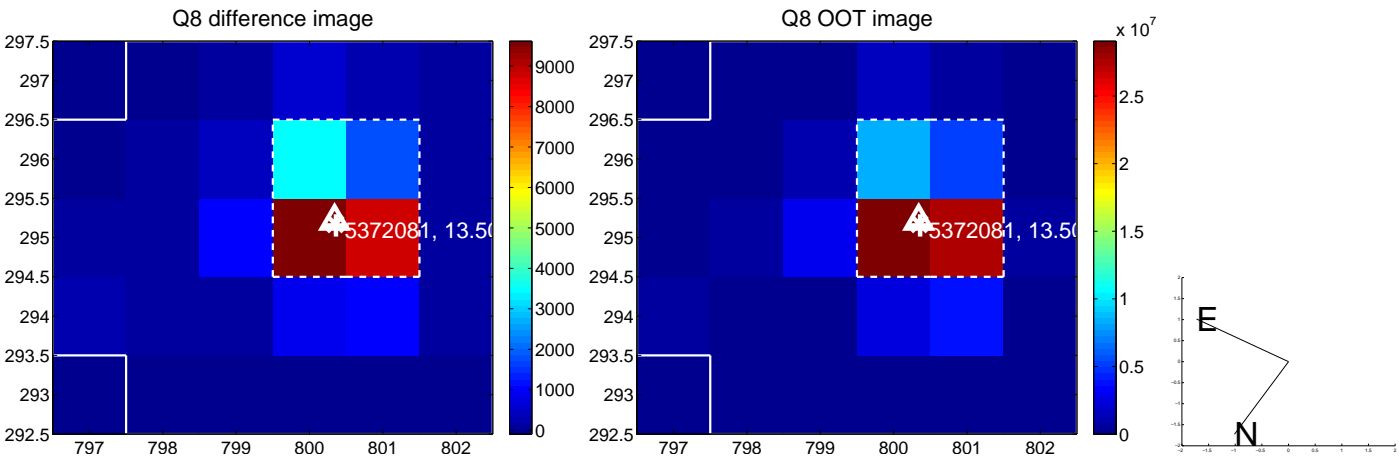
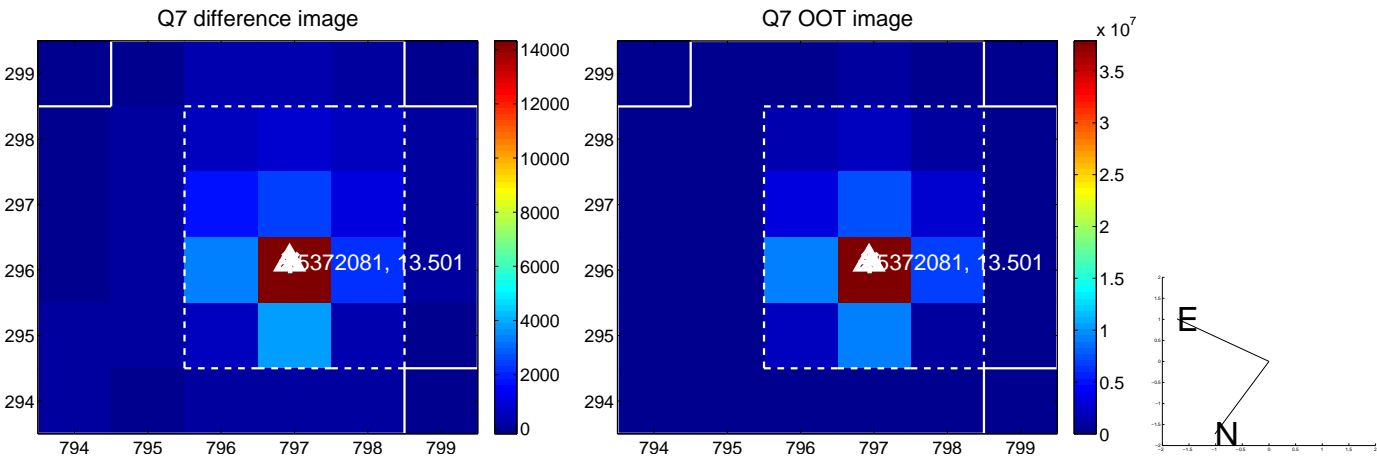
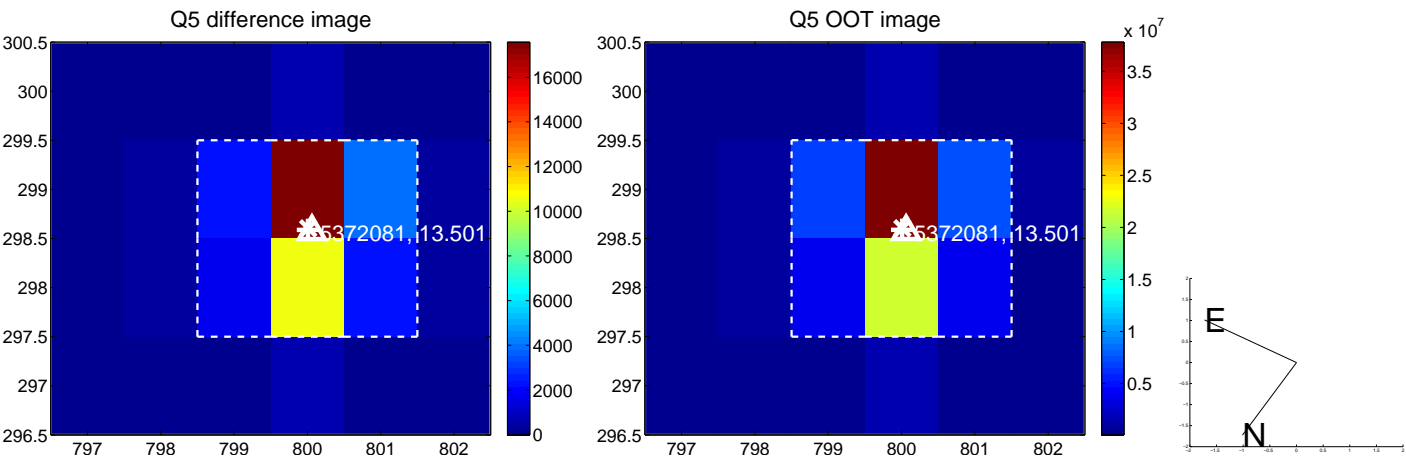


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

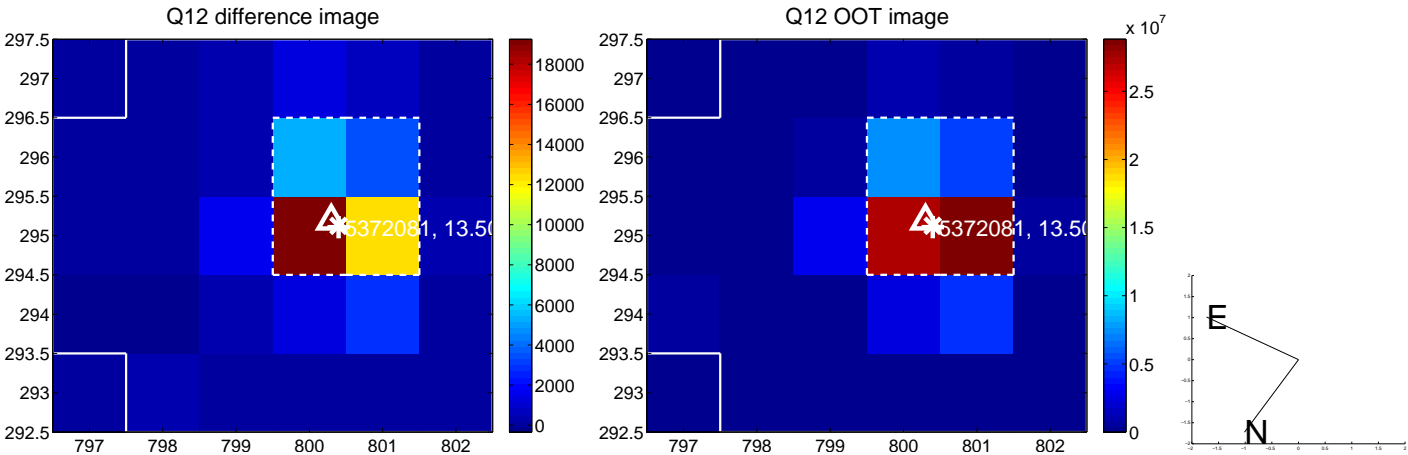
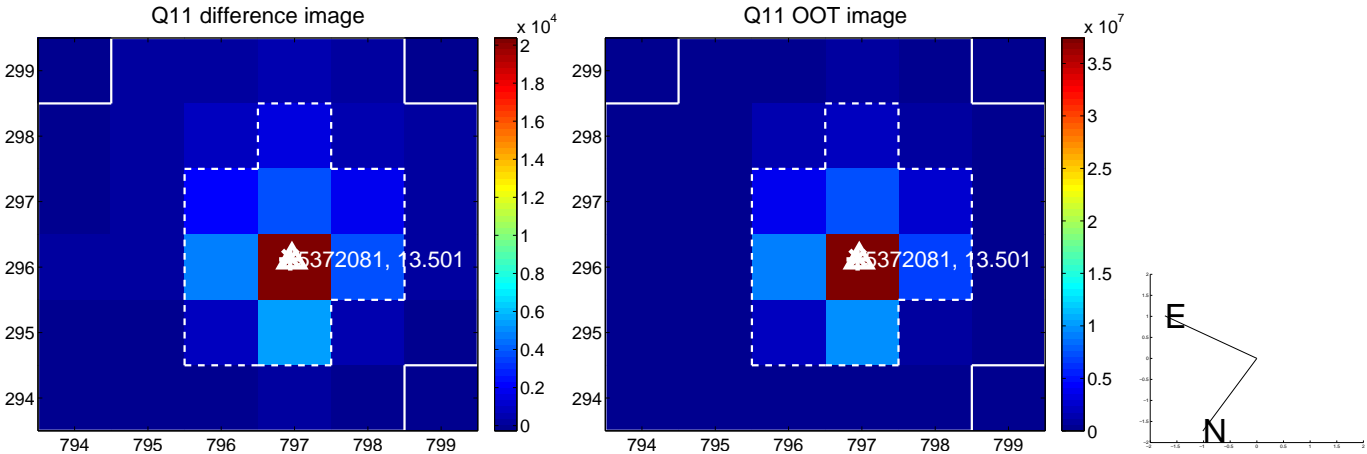
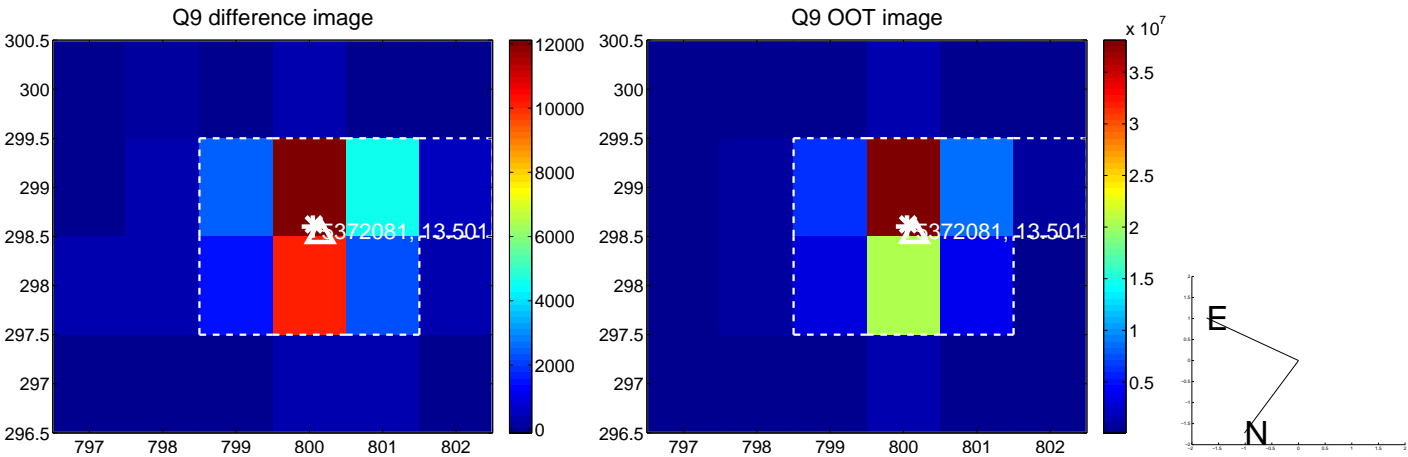
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



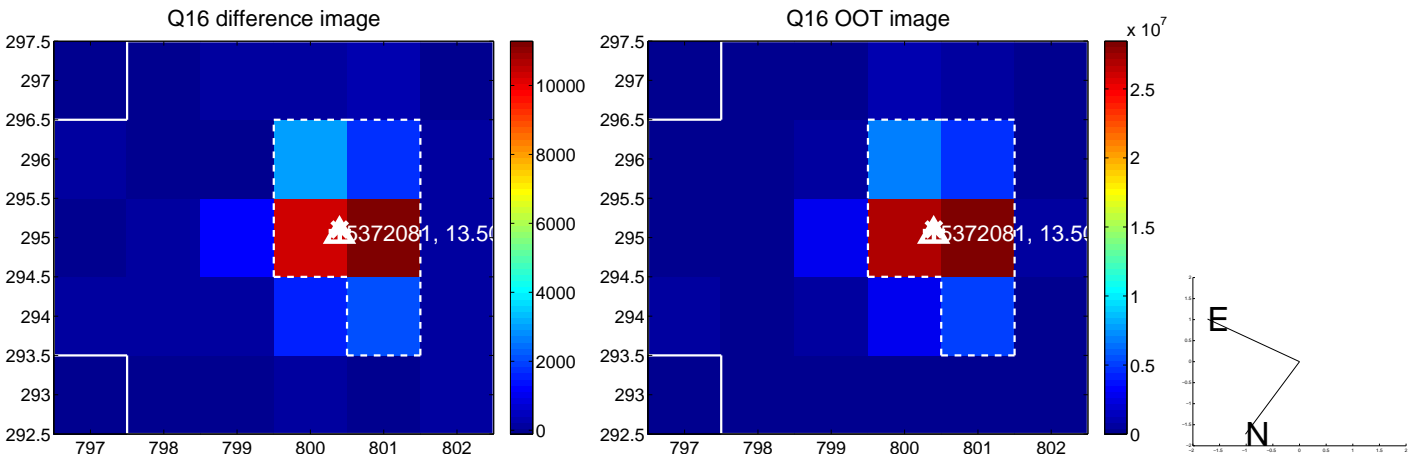
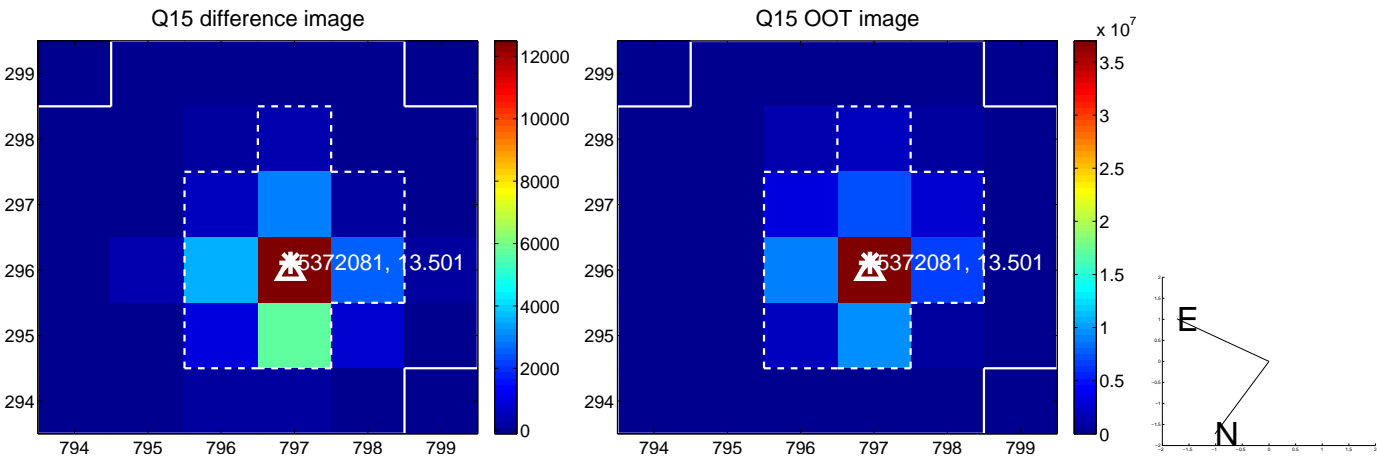
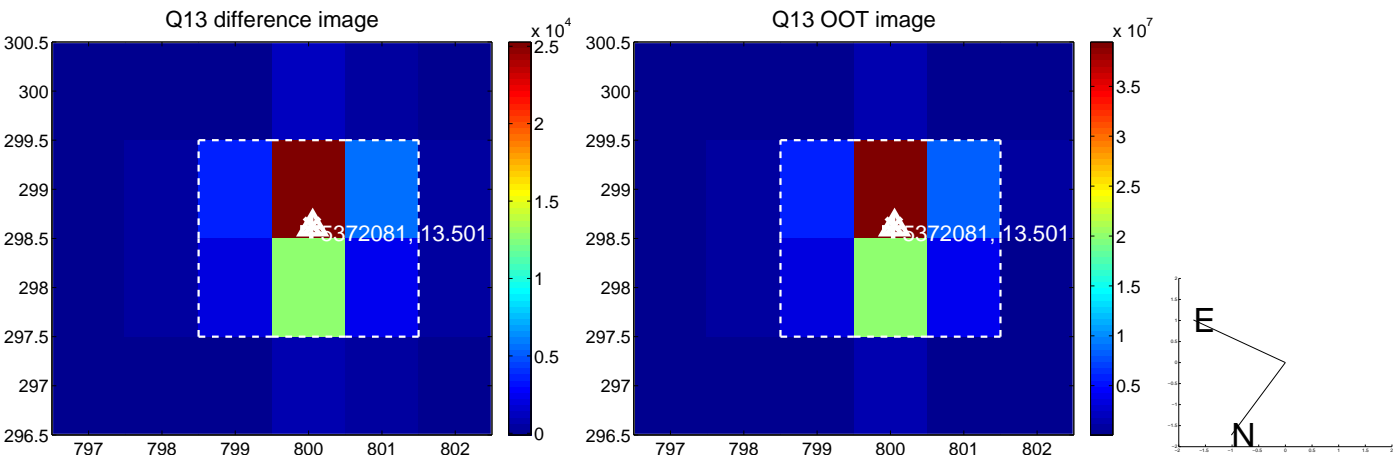
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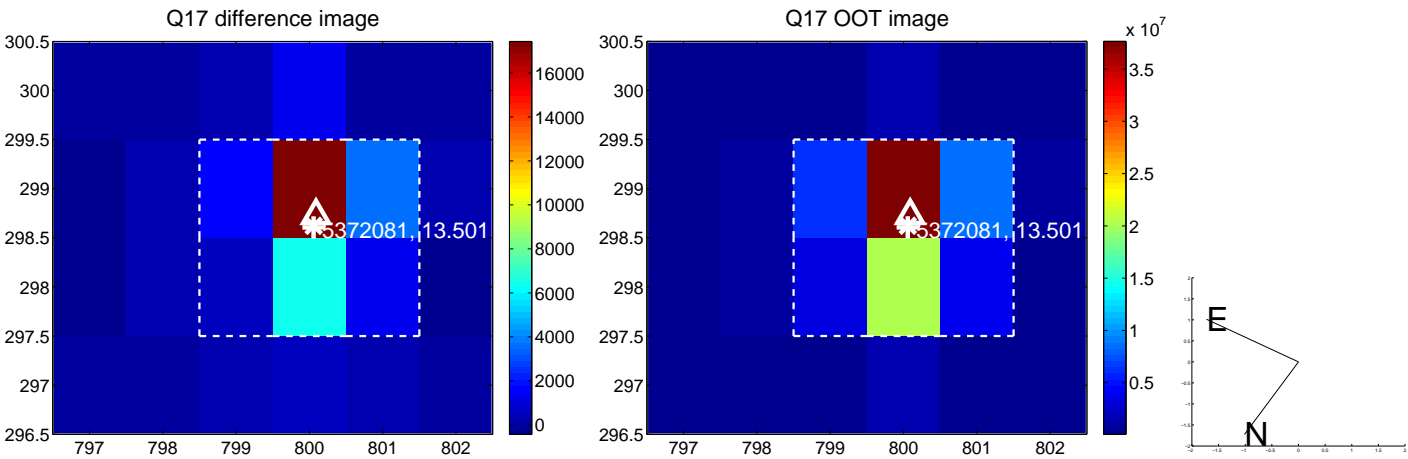
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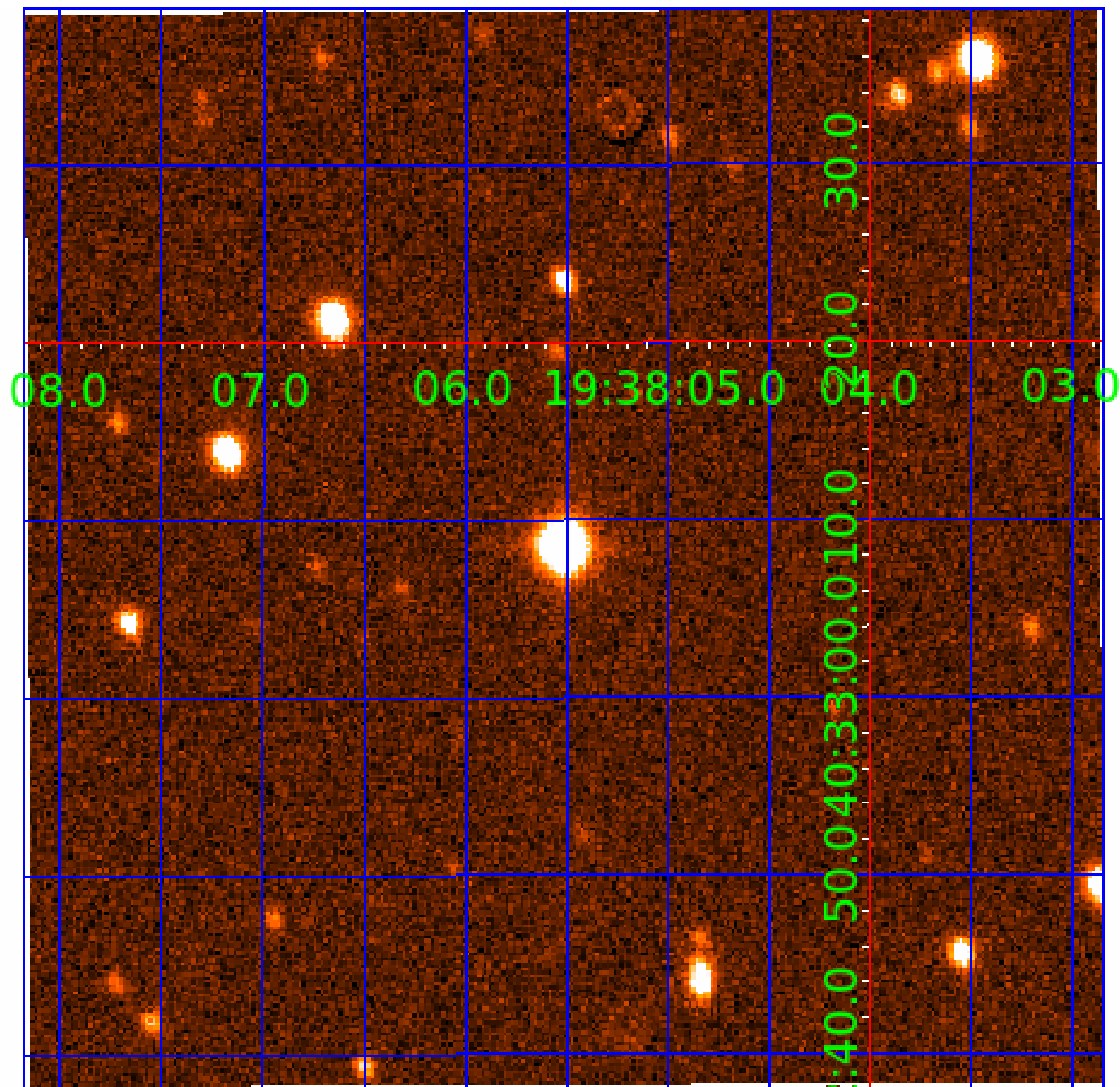
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 005372081

Q1-17 DR25 TCE Parameters

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005372081-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005372081-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005372081-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
005372081-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005372081-06	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005372081-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005372081-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

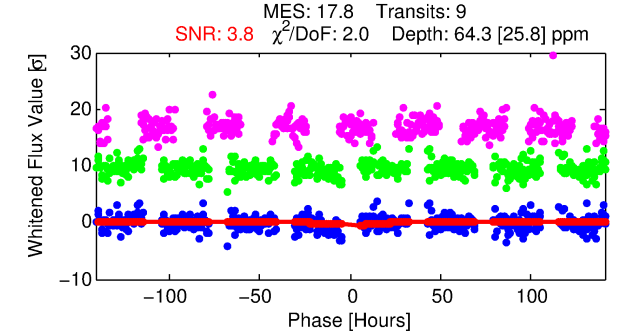
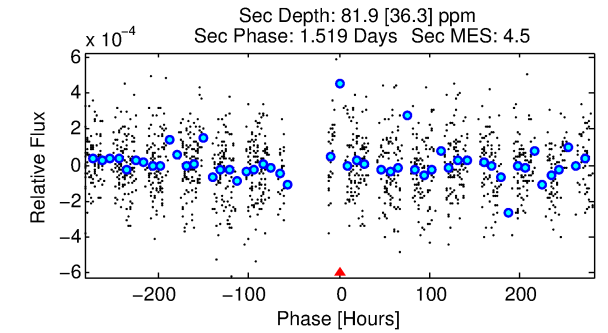
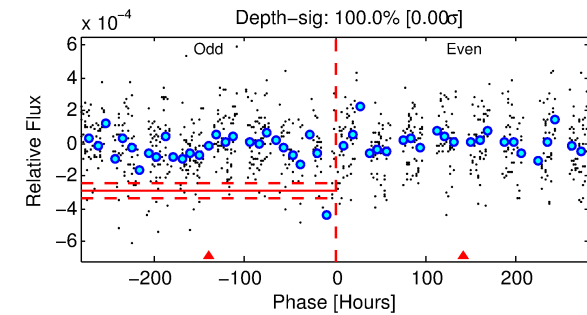
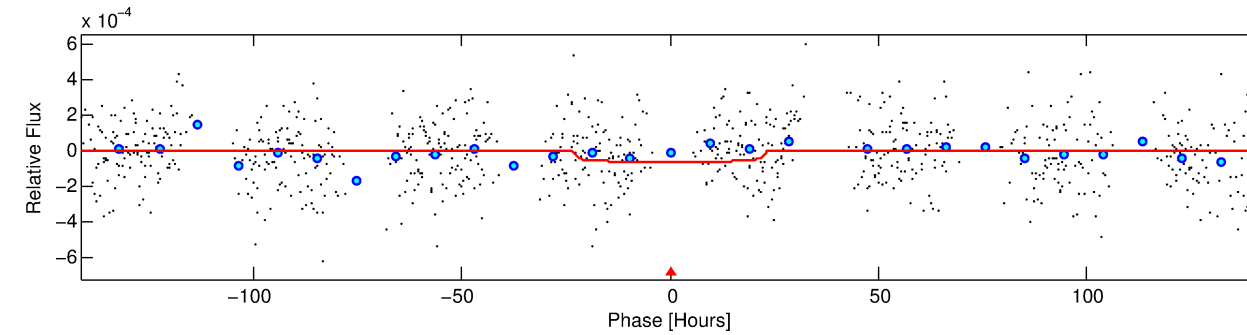
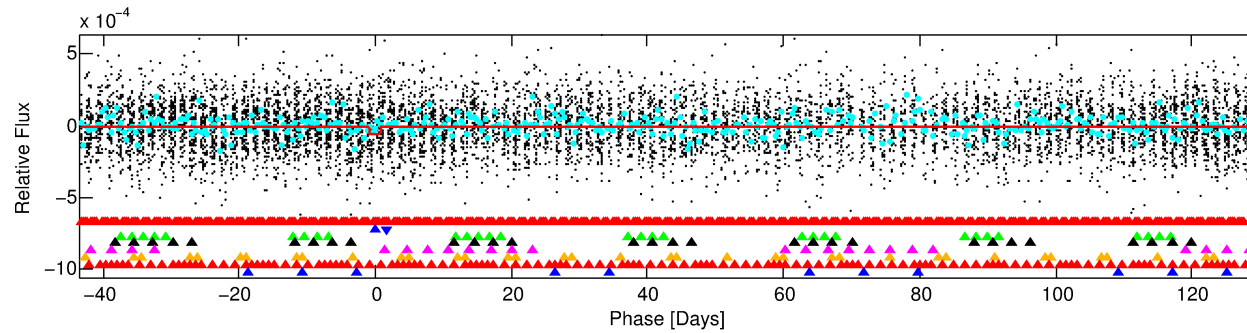
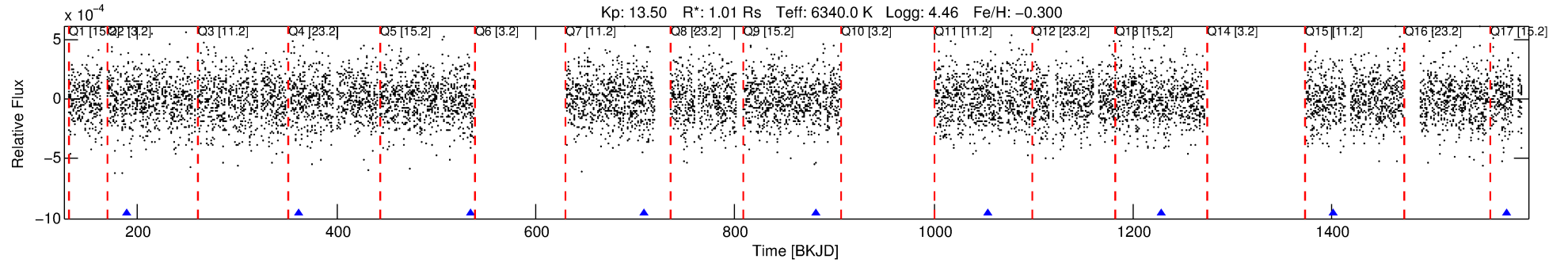
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005372081-02

No Significant Match Found

DV One-Page Summary

KIC: 5372081 Candidate: 2 of 8 Period: 173.252 d



DV Fit Results:

Period = 173.25183 [0.08734] d
Epoch = 188.7281 [0.3840] BKJD
Rp/R* = 0.0085 [0.0026]
a/R* = 13.53 [17.83]
b = 0.89 [0.30]
Seff = 3.82 [1.39]
Teq = 357 [32] K
Rp = 0.94 [0.39] Re
a = 0.6214 [0.1470] AU
Ag = 19792.38 [16370.53] [1.21σ]
Teffp = 6539 [1245] K [4.96σ]

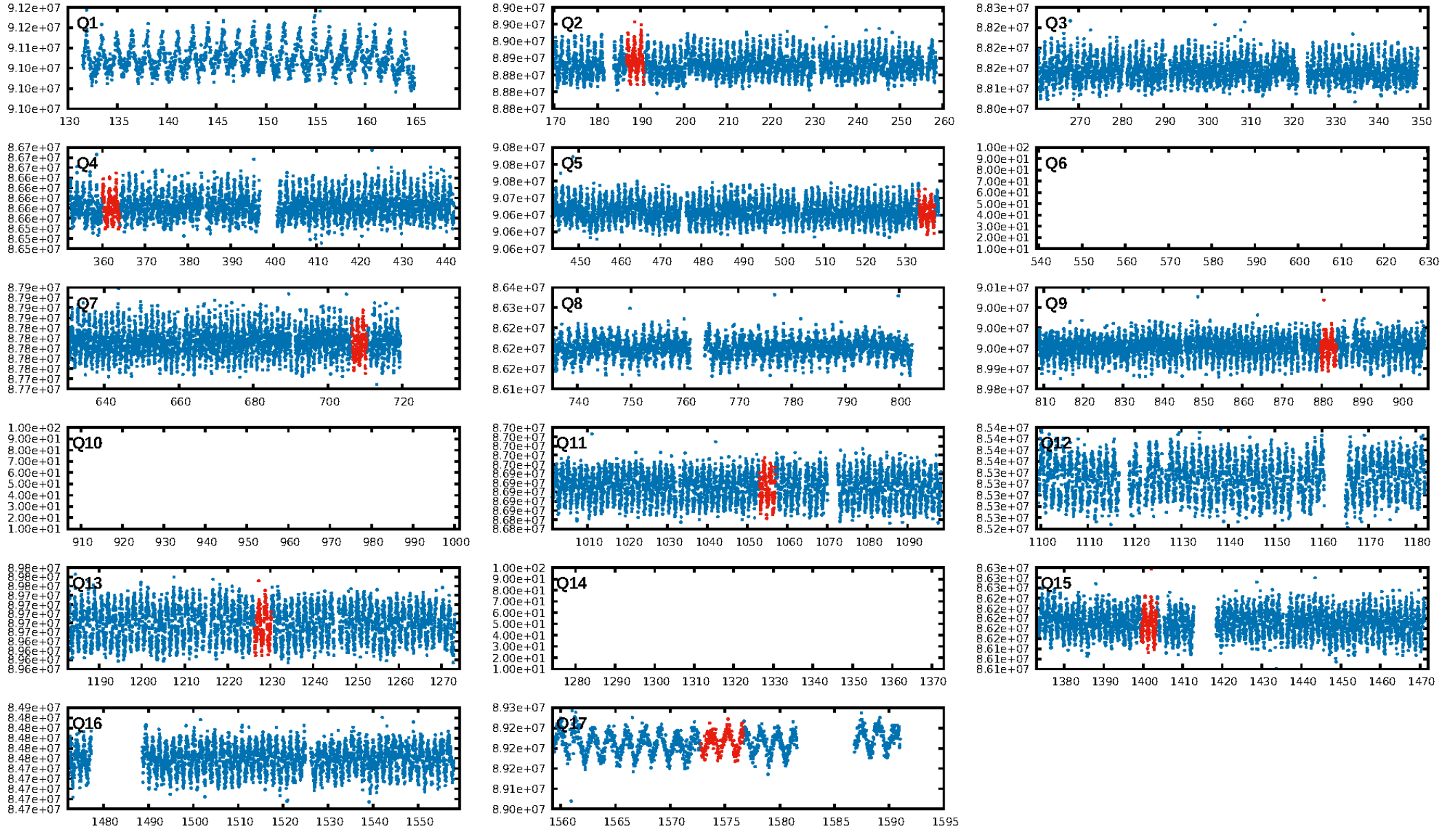
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.38σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.43e-42
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -0.3048
Centroid-sig: 14.1%
Centroid-so: 2.044 arcsec [1.37σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/5]

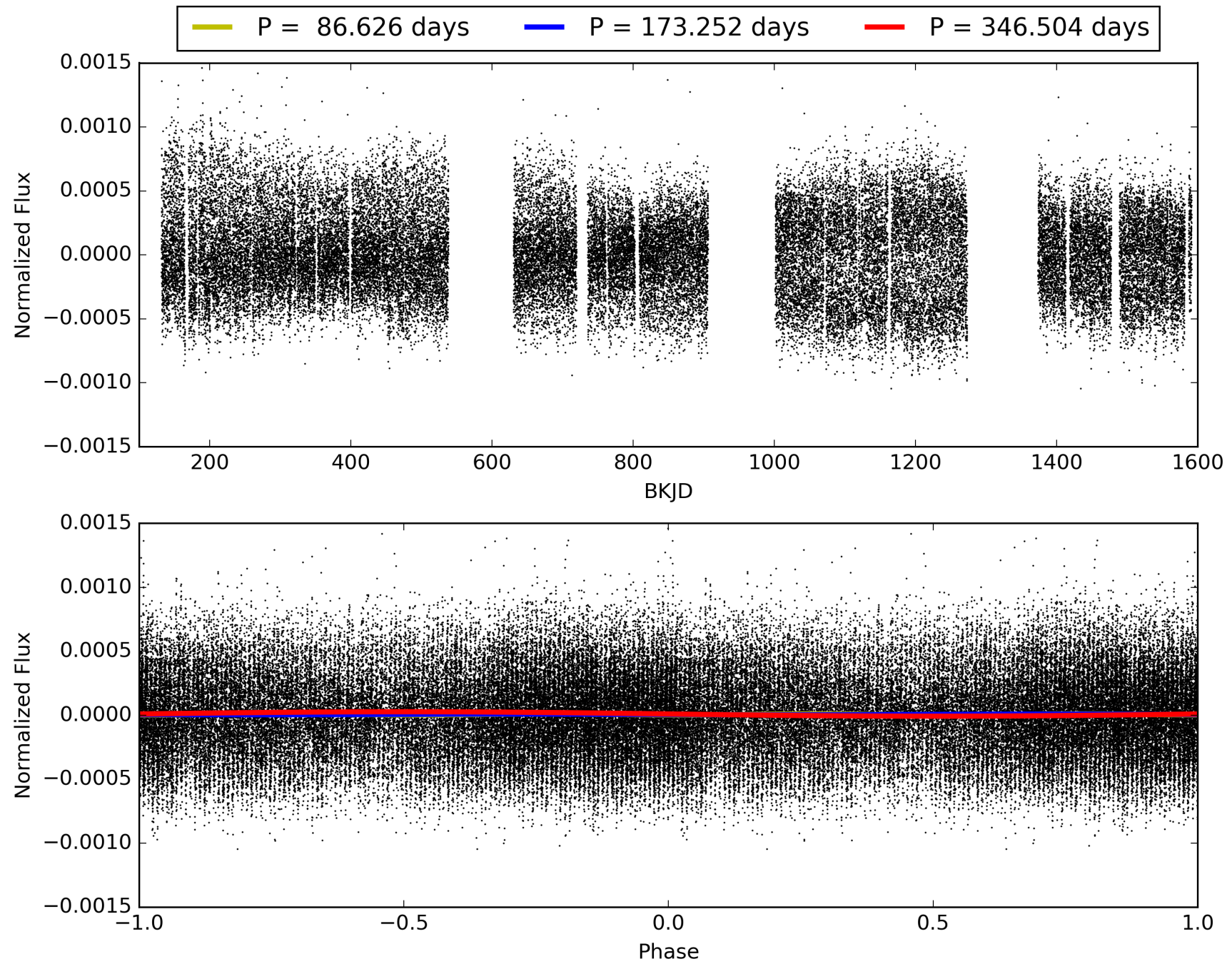
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:11:28 Z

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

TCE 005372081-02, PDC Light Curves

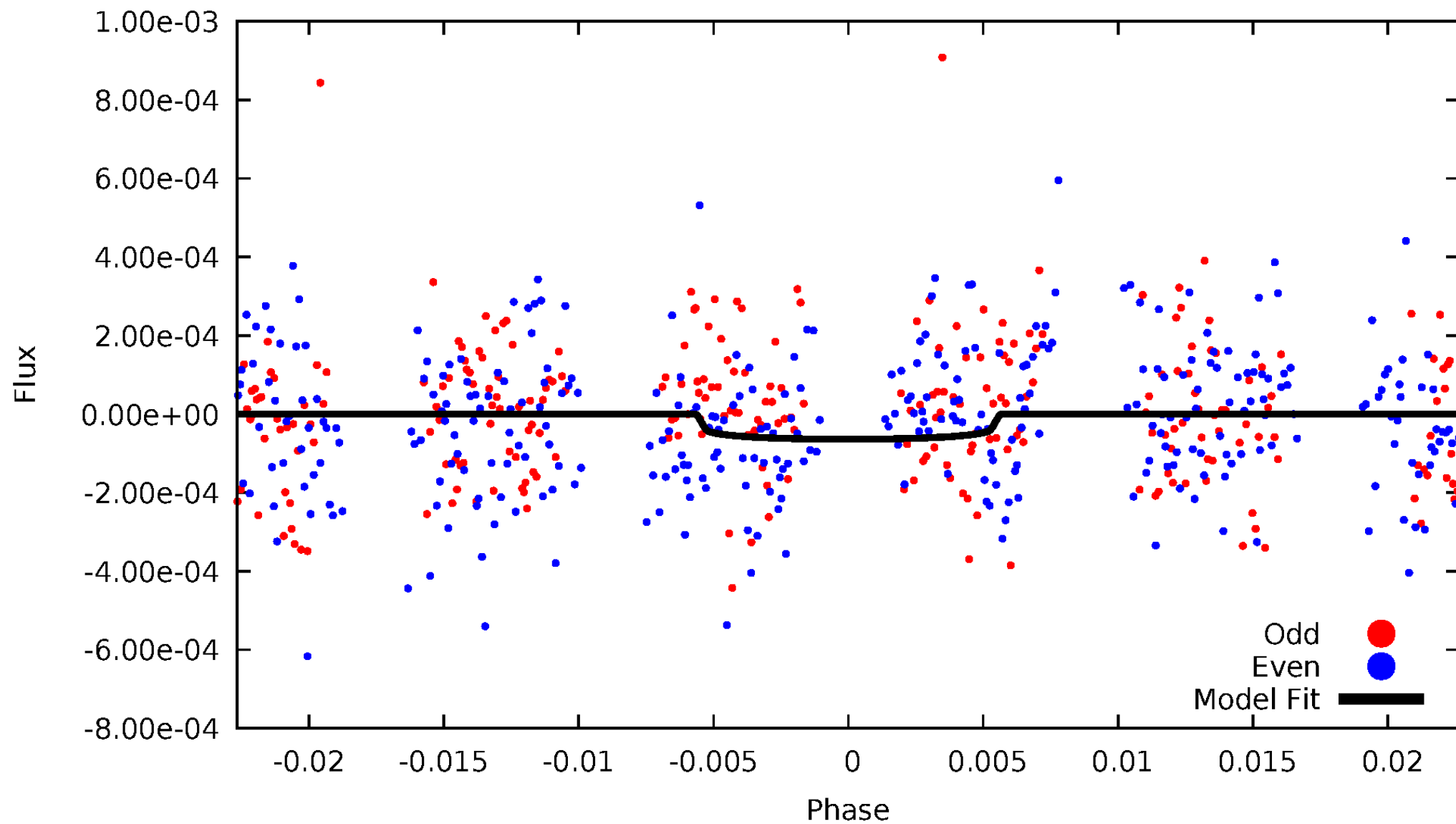


TCE 005372081-02



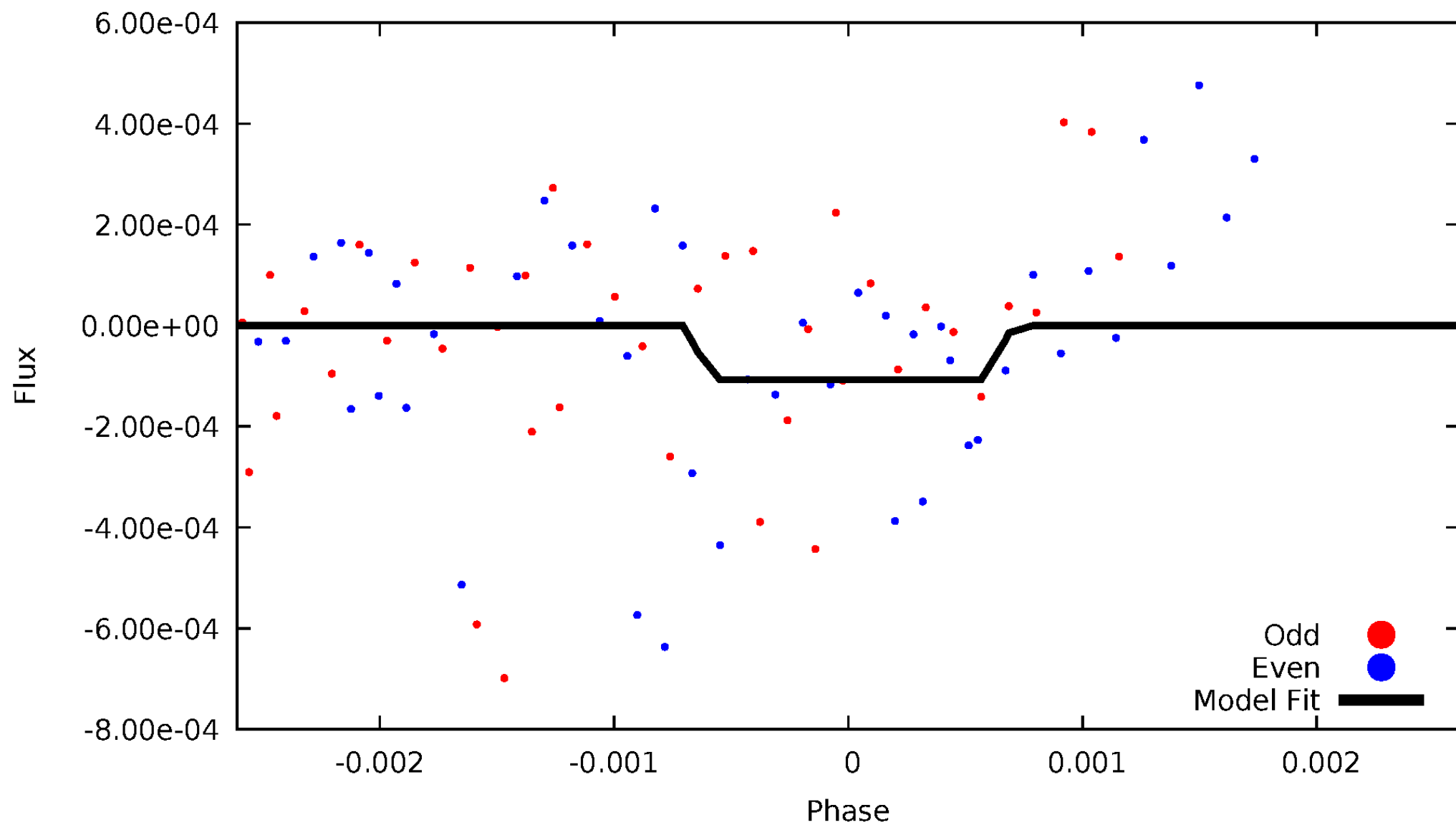
DV Odd/Even

TCE 005372081-02



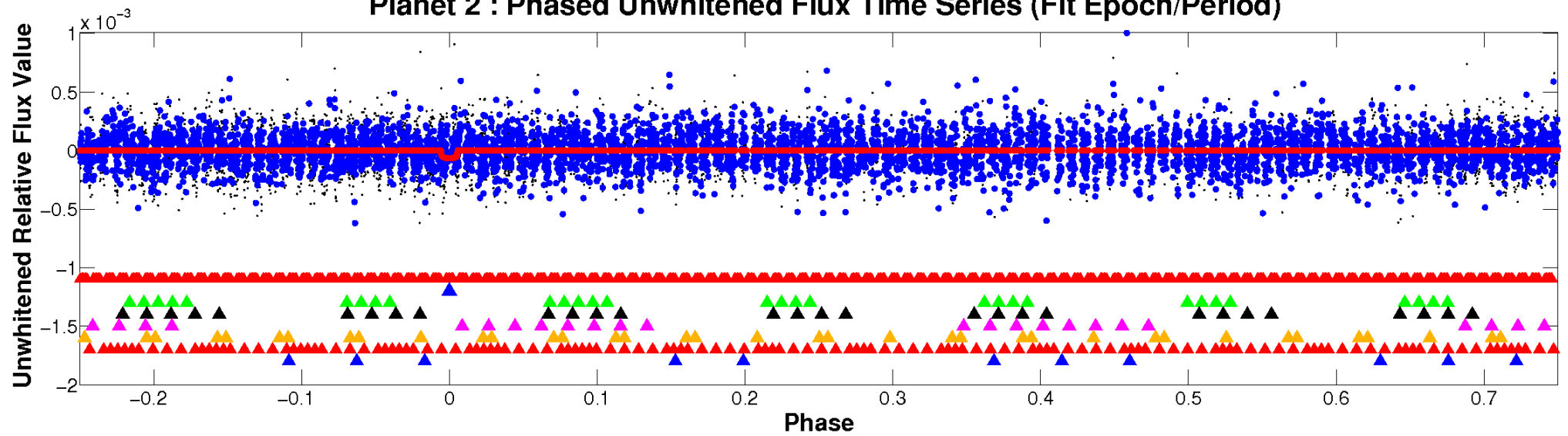
ALT Odd/Even

TCE 005372081-02

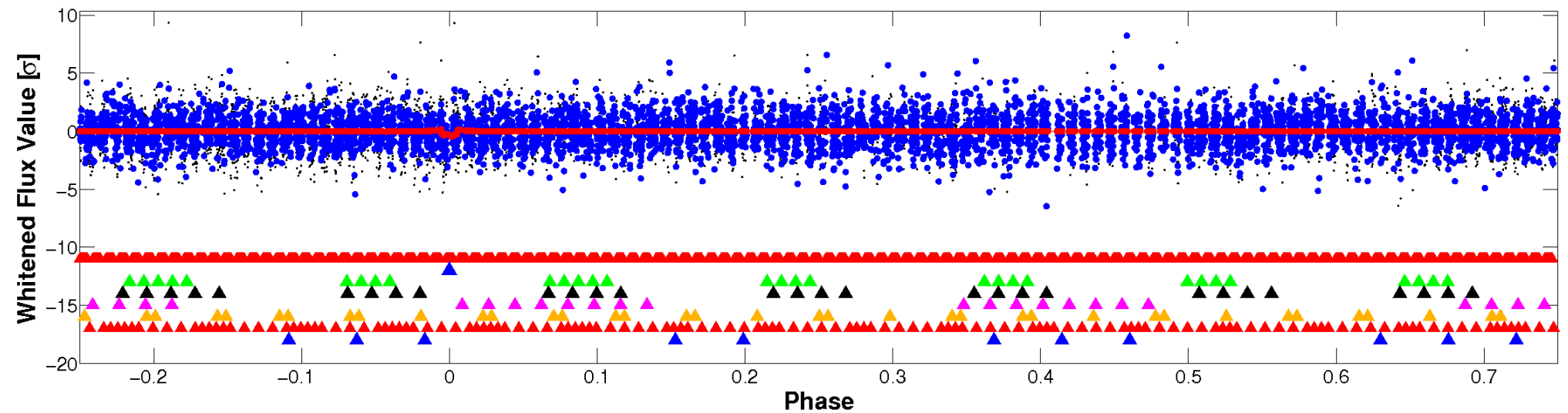


Non-Whitened Vs. Whitened Light Curve

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

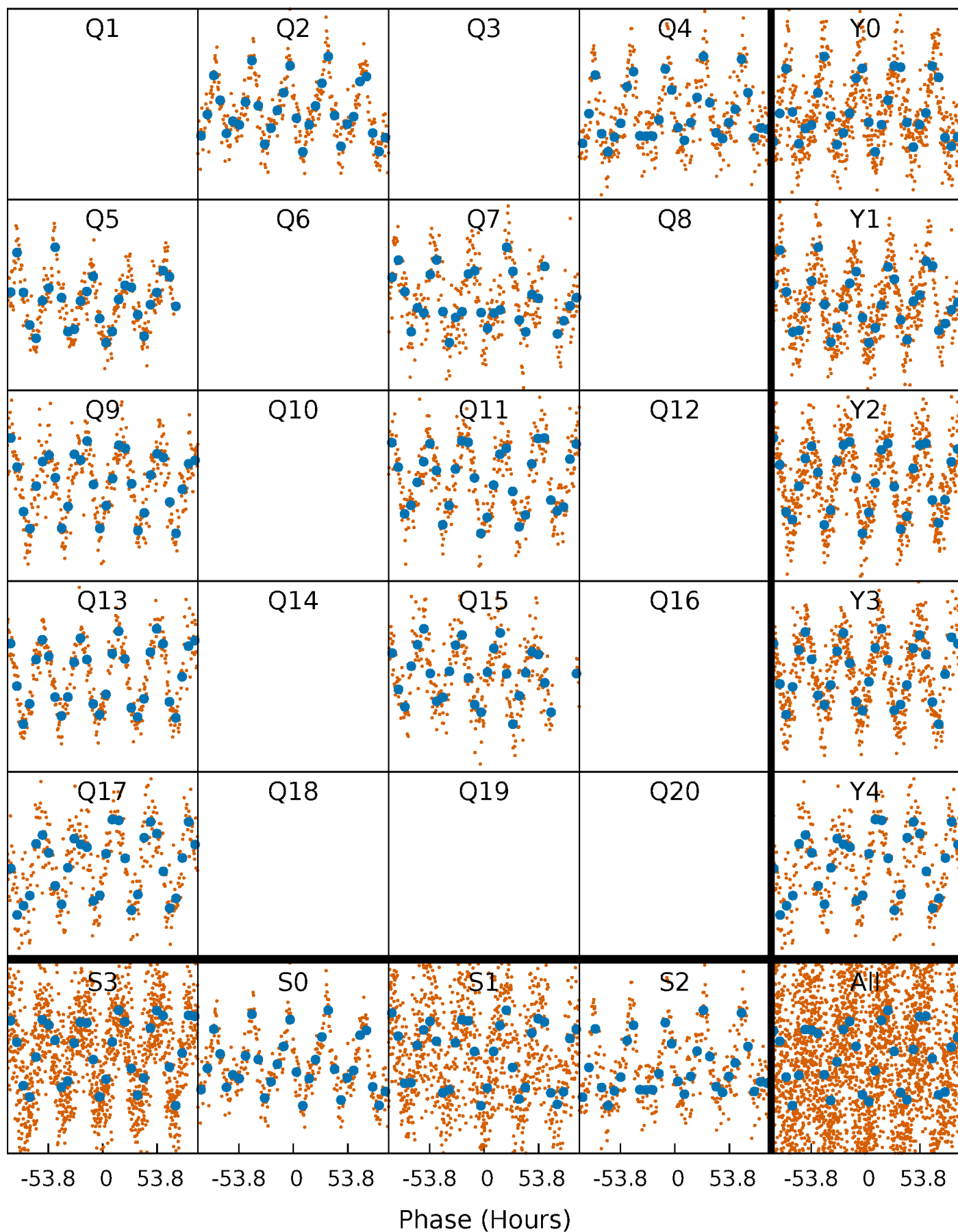


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



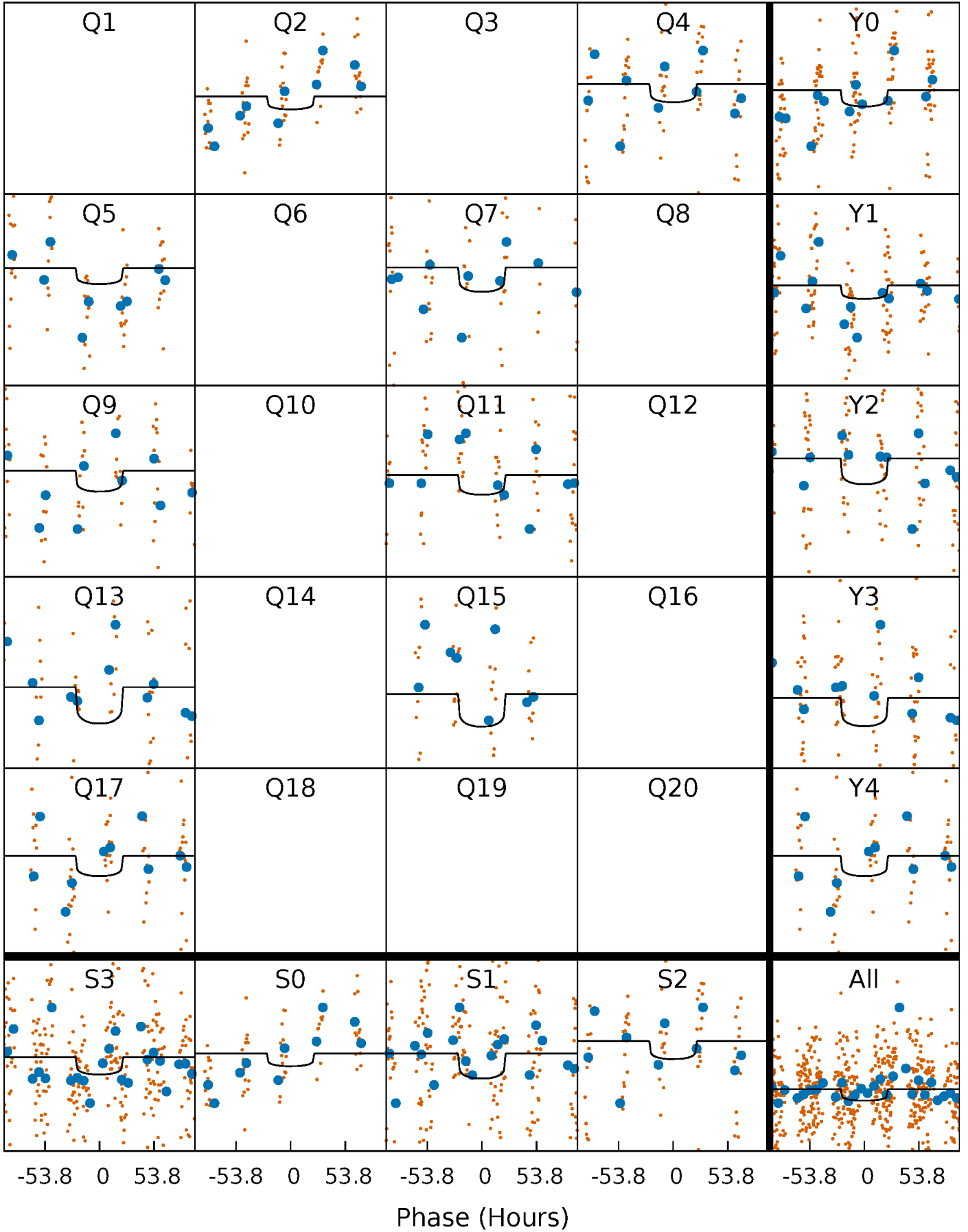
PDC Quarter-Phased Transit Curves

TCE 005372081-02 P=173.251831 Days $T_0=188.728132$ (BKJD)



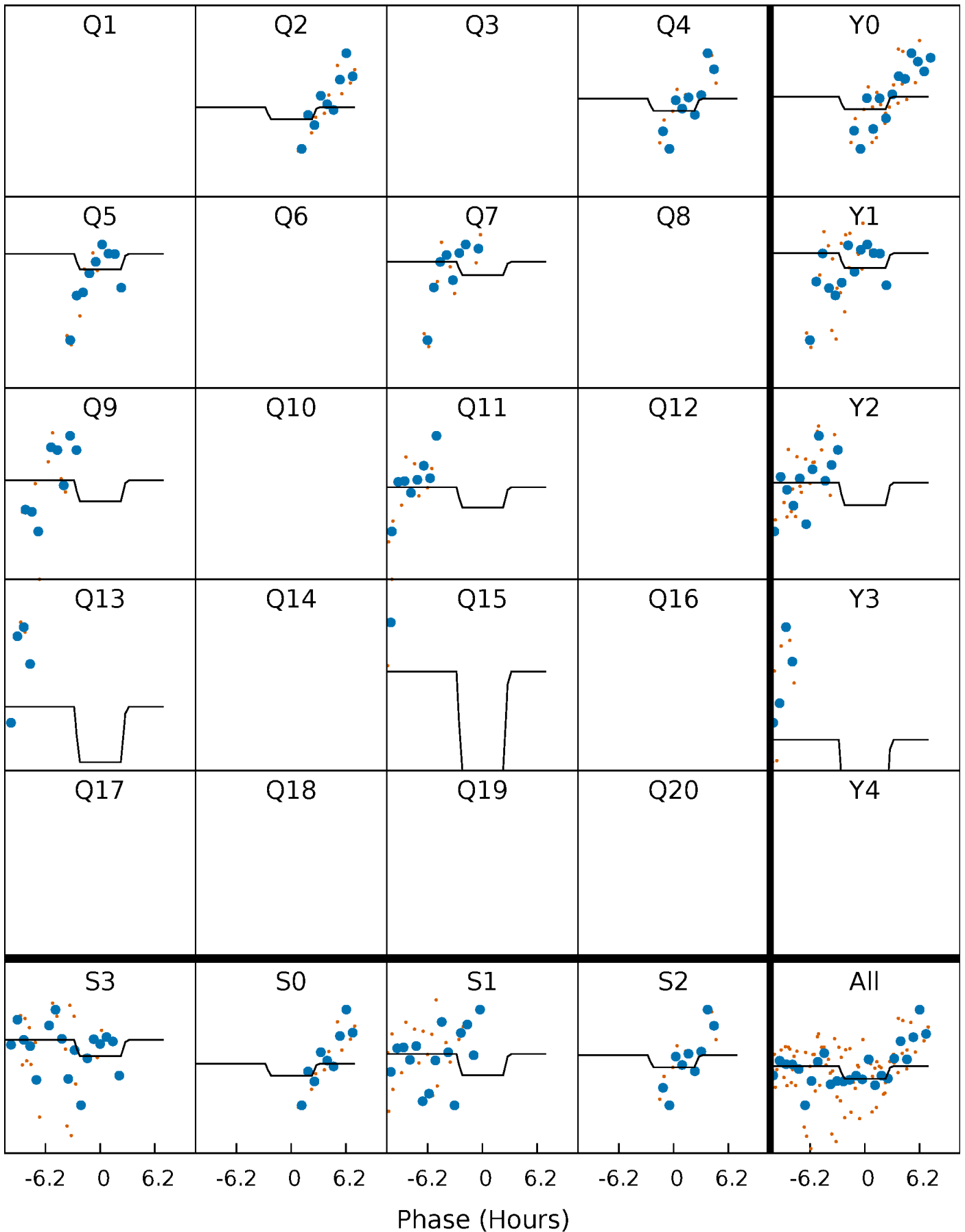
DV Quarter-Phased Transit Curves

TCE 005372081-02 P=173.251831 Days $T_0=188.728132$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

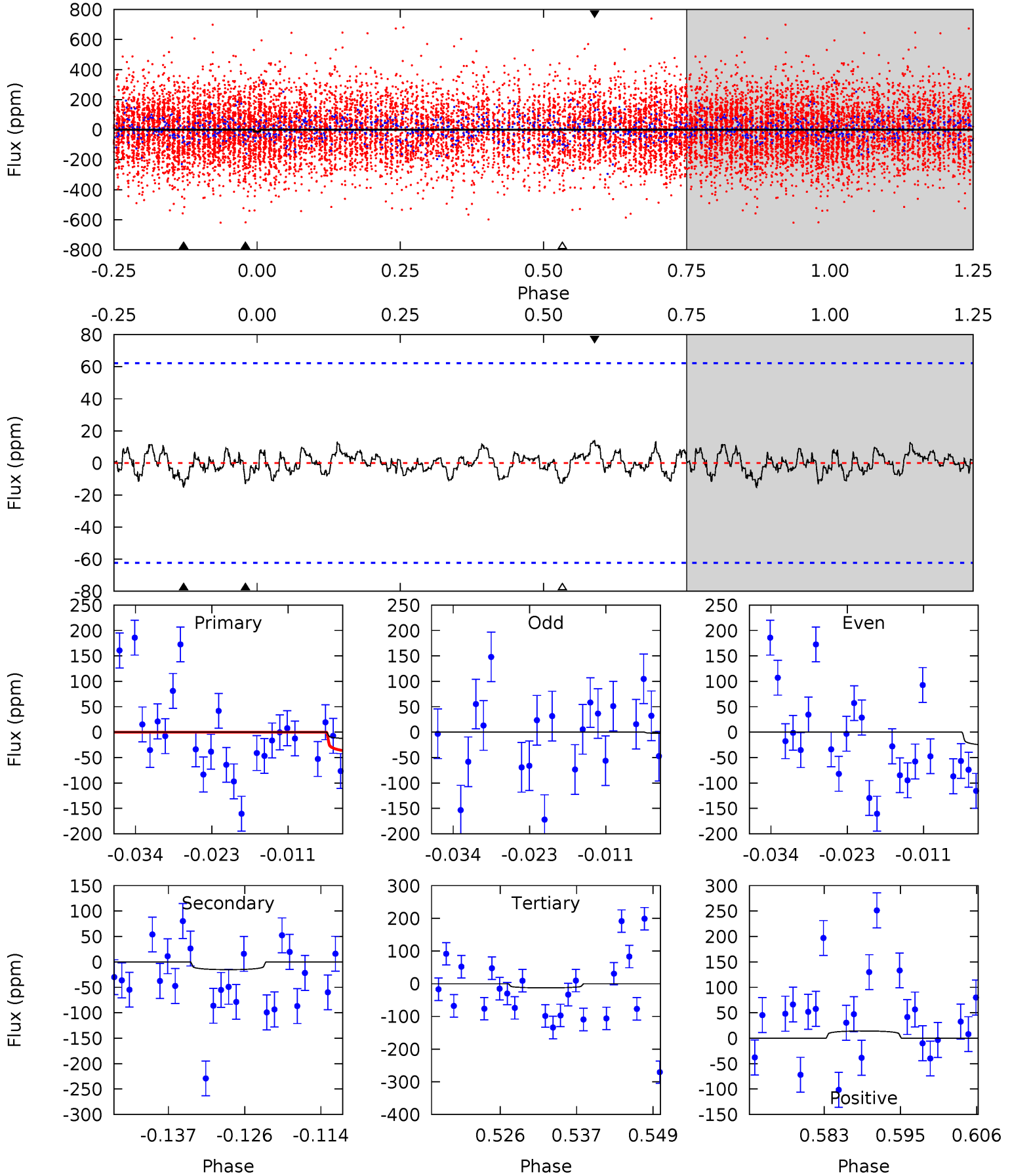
TCE 005372081-02 P=173.249344 Days $T_0=188.244330$ (BKJD)



DV Model-Shift Uniqueness Test

005372081-02, $P = 173.251831$ Days, $E = 15.476301$ Days

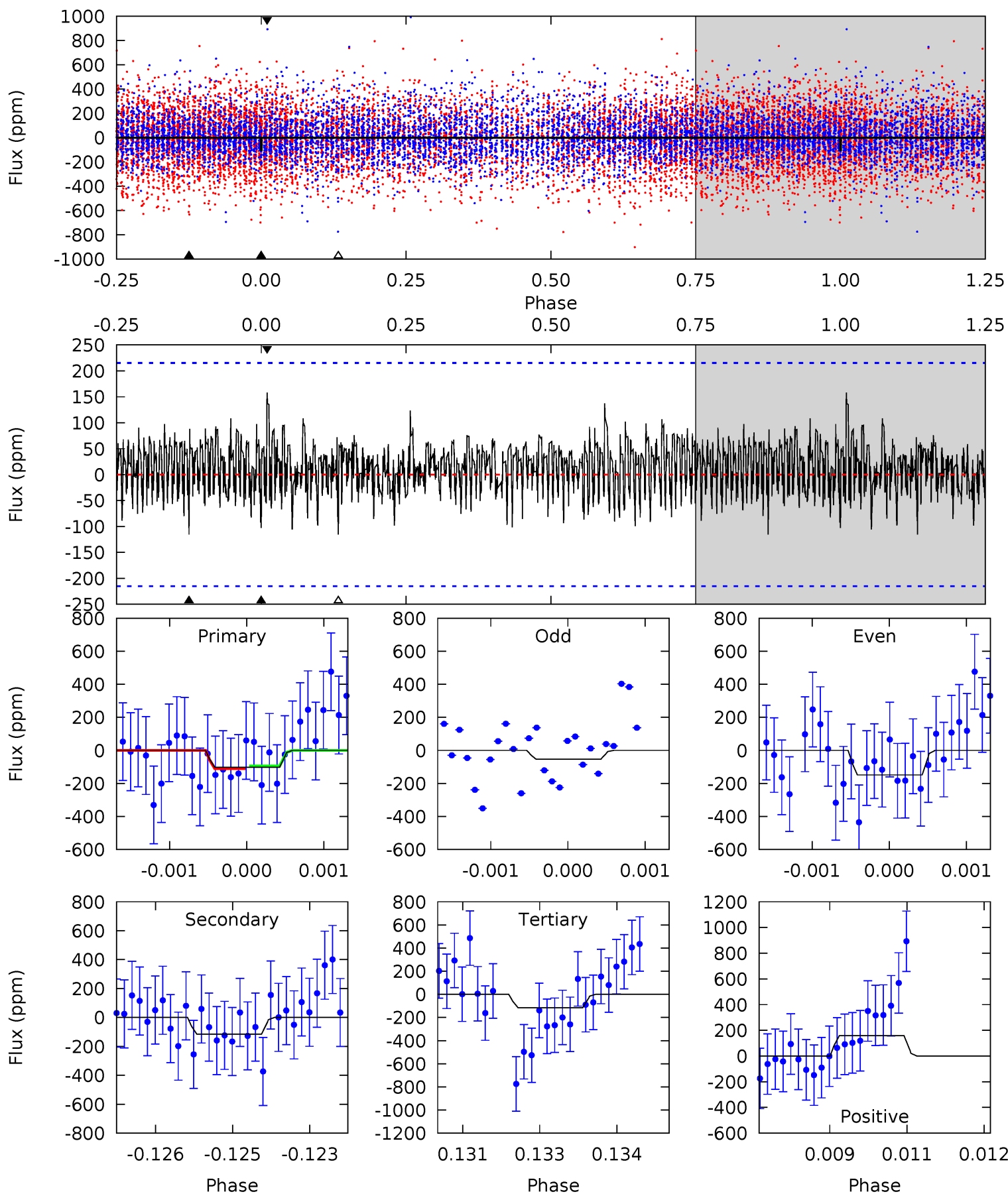
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.06	1.22	1.01	1.14	5.00	2.53	0.43	0.04	-0.08	0.21	0.08	0.95	-0.34	0.48	0.95



Alt Model-Shift Uniqueness Test

005372081-02, P = 173.249344 Days, E = 14.994986 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.58	2.90	2.89	3.97	5.40	3.21	0.92	-0.31	-1.39	0.01	-1.07	1.19	0.77	0.58	0.19



Stellar Parameters For KIC 005372081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6340^{+151}_{-189}	$4.457^{+0.050}_{-0.188}$	$-0.300^{+0.250}_{-0.350}$	$1.010^{+0.284}_{-0.122}$	$1.066^{+0.133}_{-0.146}$	$1.458^{+0.381}_{-0.734}$
	+2%/-3%	+1%/-4%	+83%/-117%	+28%/-12%	+12%/-14%	+26%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005372081-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 12	$0.98^{+0.36}_{-0.32}$	510^{+32}_{-23}	4386^{+1022}_{-1077}	3043^{+5194}_{-2520}
Alt.	-115 ± 40	$1.17^{+0.35}_{-0.30}$	507^{+33}_{-22}	6466^{+1309}_{-959}	16879^{+17785}_{-8163}

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

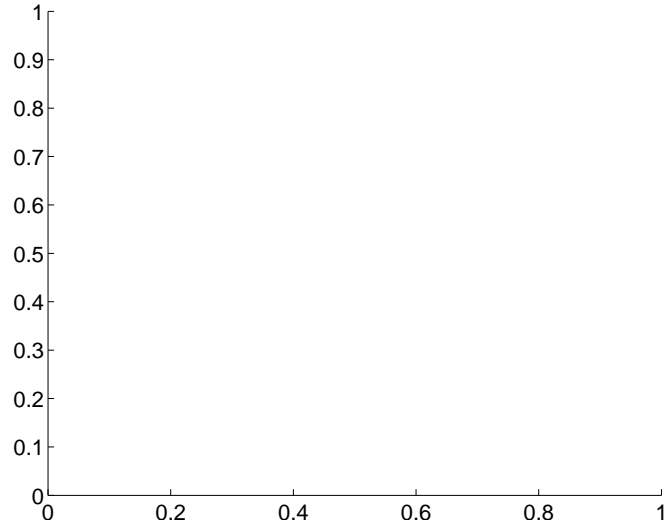
Supplemental centroid analysis for 005372081-02. Kepler magnitude: 13.50. Transit SNR 3.79

There are 0 quarters with good PRF difference image offsets

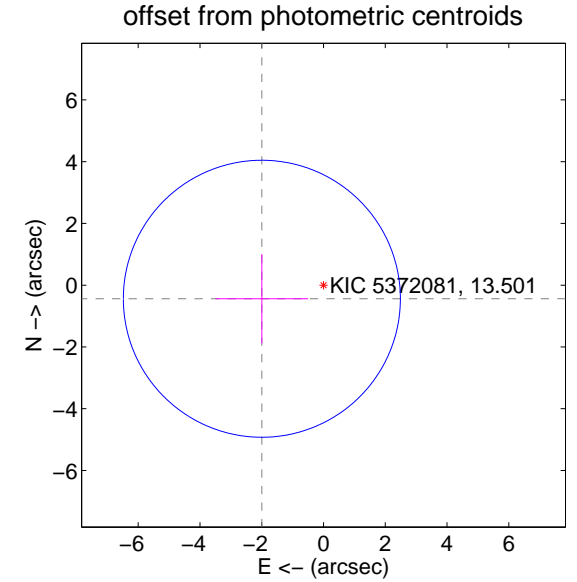
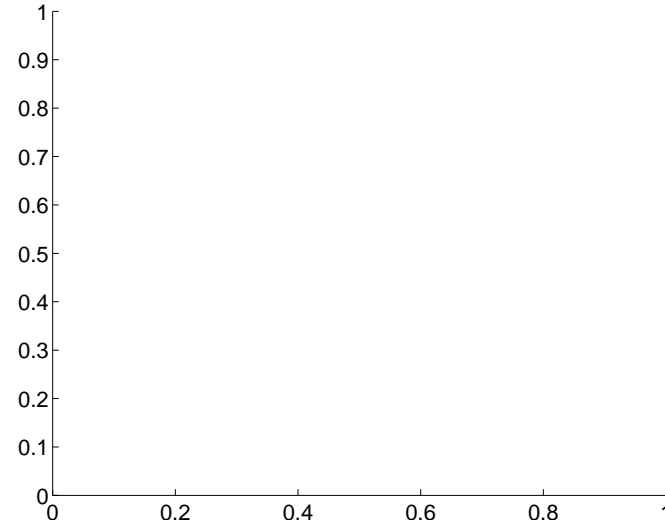
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	2.04 ± 1.50	1.37	2.00 ± 1.50	-0.44 ± 1.44

There is no PRF-fit offset from OOT-fit

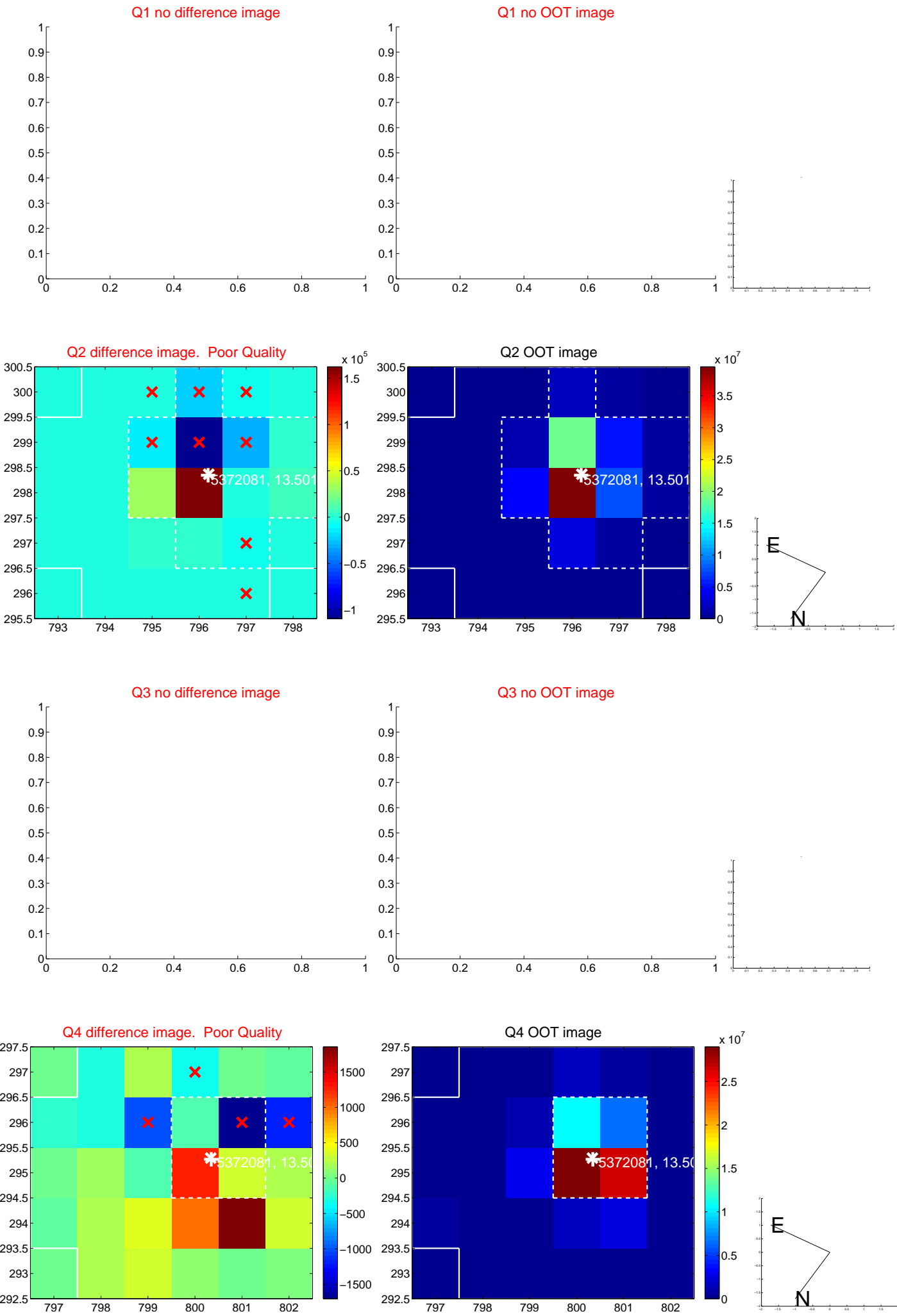


There is no PRF-fit offset from KIC



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

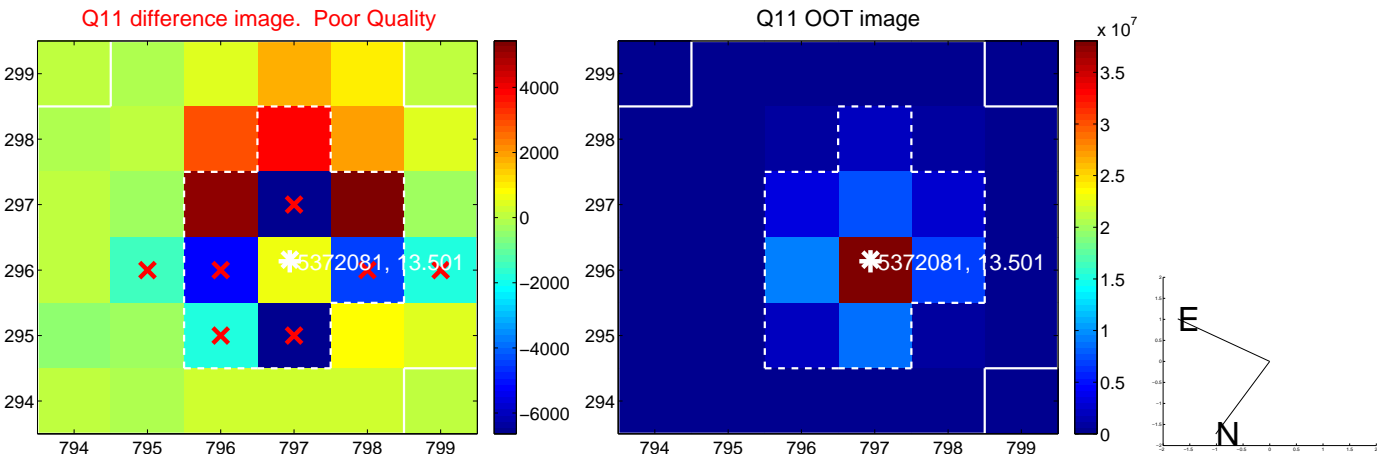
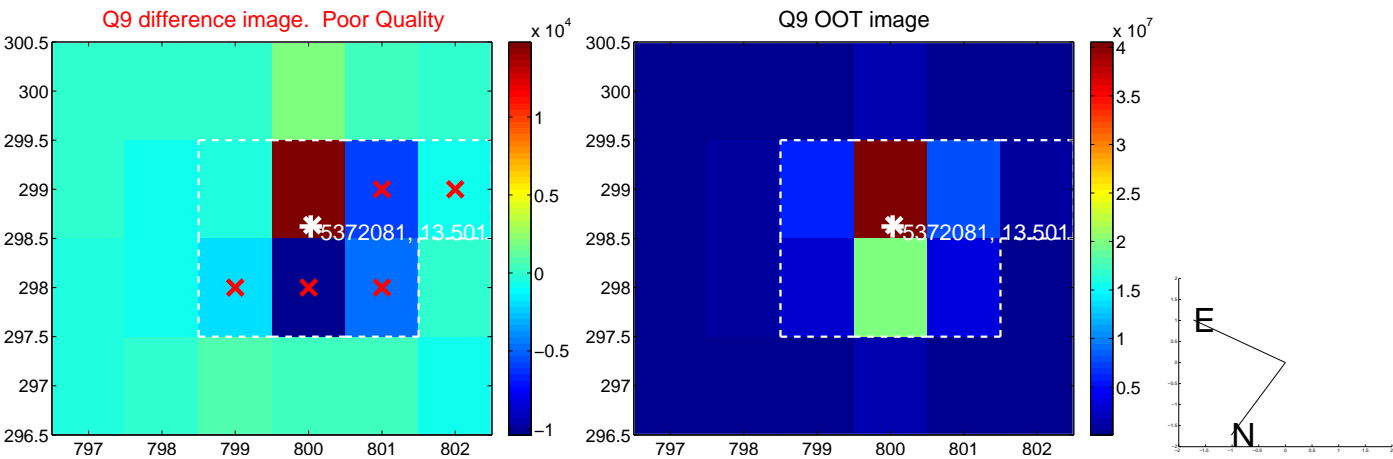
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



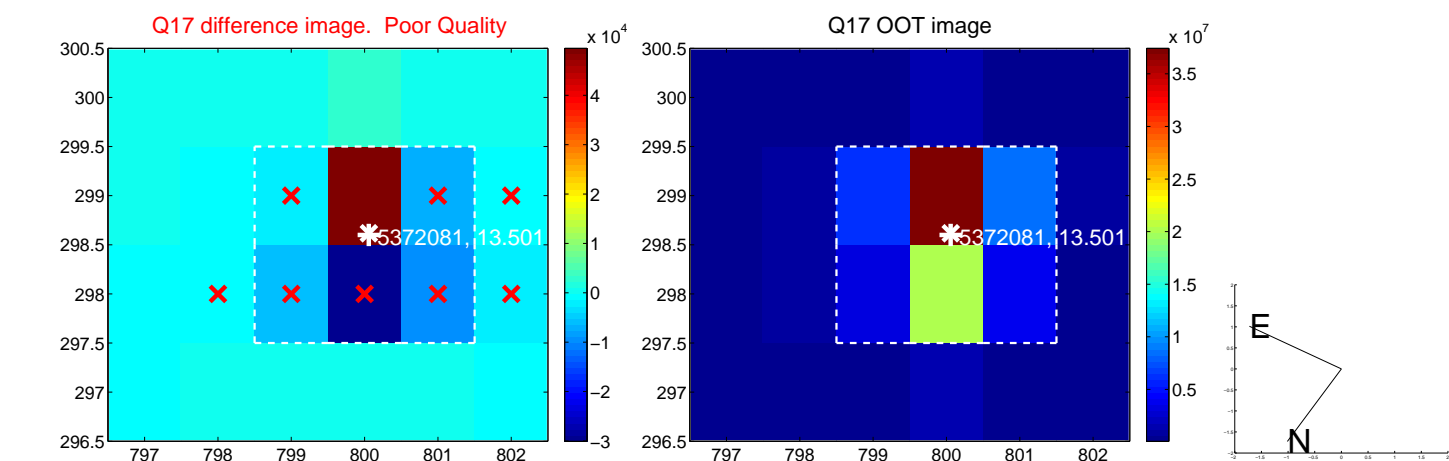
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



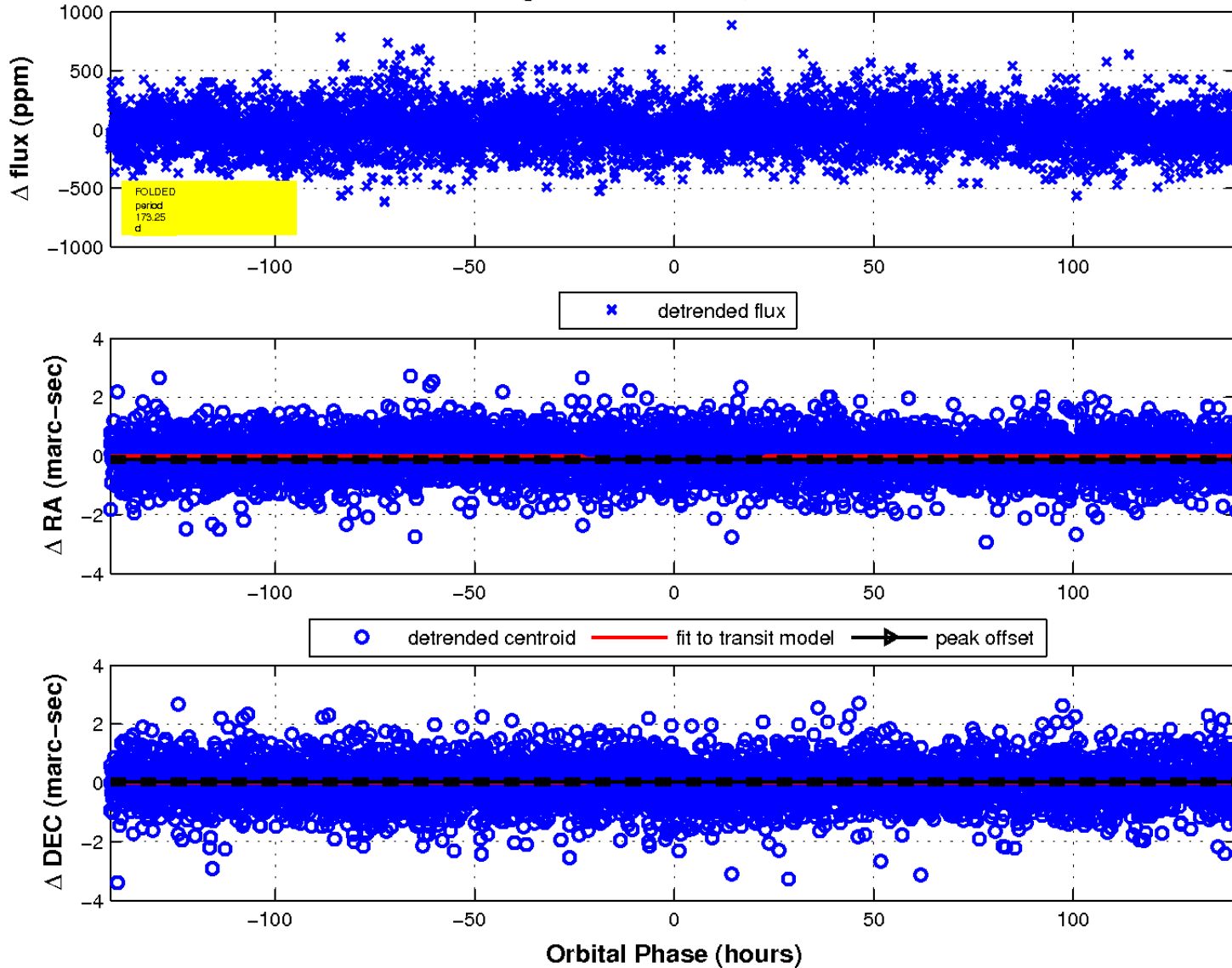
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

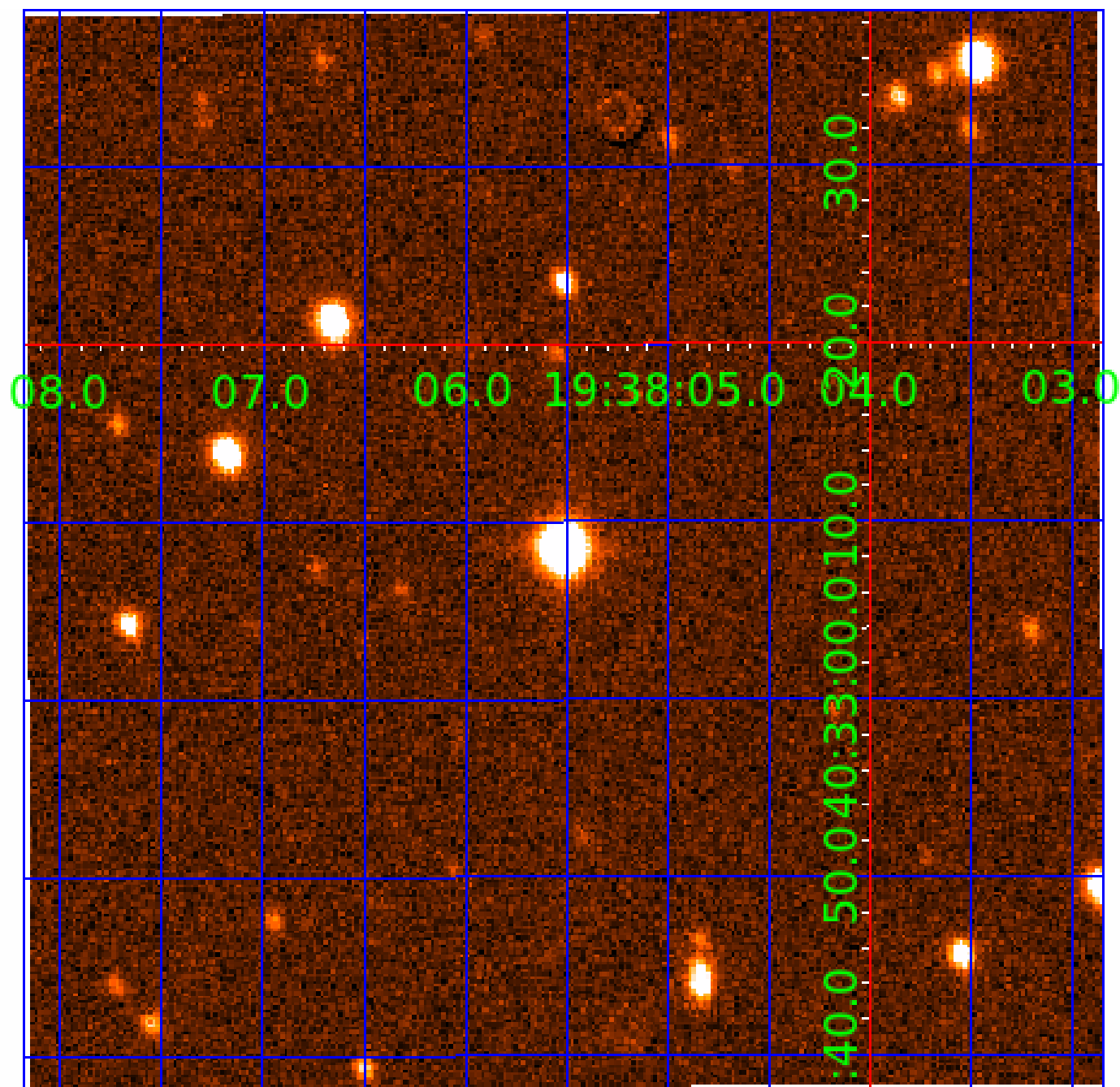


fluxWeightedCentroids, Planet 2 of 8



UKIRT Image

Declination



KIC 005372081

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})
005372081-01	OBS	No	1.532264	132.484753	3.2	9.907	8.2	1.7	1.01	6340	0.21	2091.00
005372081-02	OBS	No	173.251831	188.728132	64.3	47.095	17.8	3.8	1.01	6340	0.94	3.82
005372081-03	OBS	No	49.261082	157.953926	273.2	2.217	9.1	9.4	1.01	6340	2.12	20.45
005372081-04	OBS	No	49.904496	150.438465	362.3	1.877	9.3	9.0	1.01	6340	2.12	20.10
005372081-05	OBS	No	58.781787	190.236355	217.5	5.313	8.9	9.0	1.01	6340	1.66	16.16
005372081-06	OBS	No	39.420992	168.821592	338.0	1.185	8.2	9.5	1.01	6340	2.31	27.53
005372081-07	OBS	No	10.724962	140.794691	108.8	3.825	9.3	10.9	1.01	6340	1.24	156.17
005372081-08	OBS	No	127.948282	185.844319	300.7	11.956	7.8	7.5	1.01	6340	1.79	5.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005372081-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005372081-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005372081-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005372081-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
005372081-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005372081-06	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005372081-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005372081-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

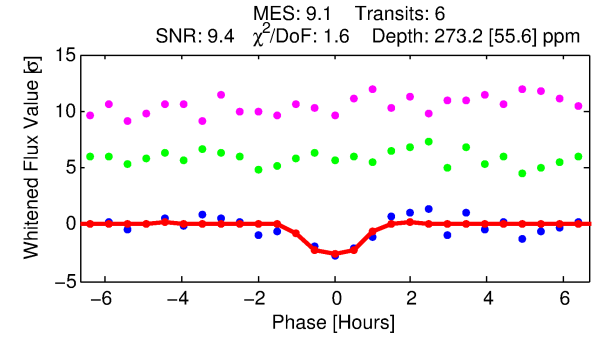
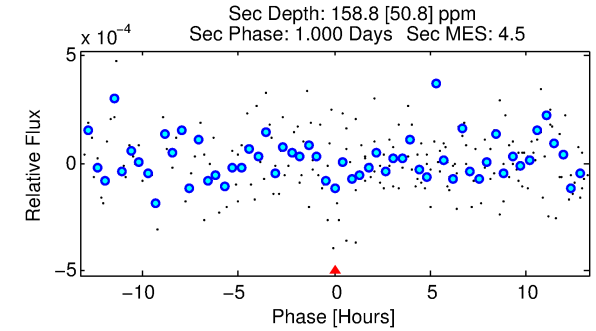
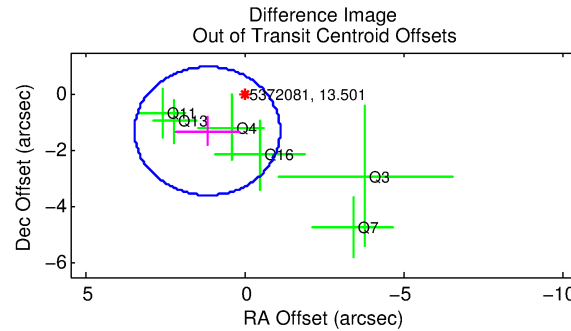
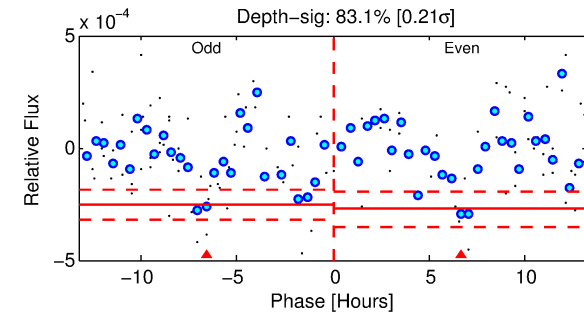
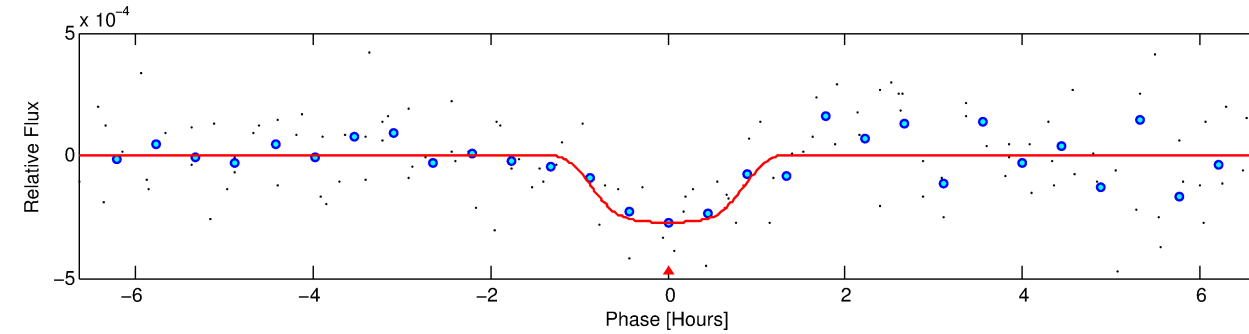
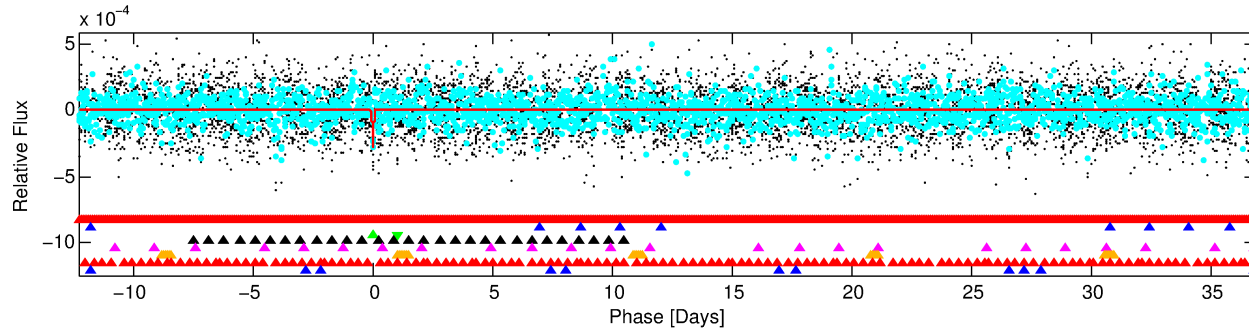
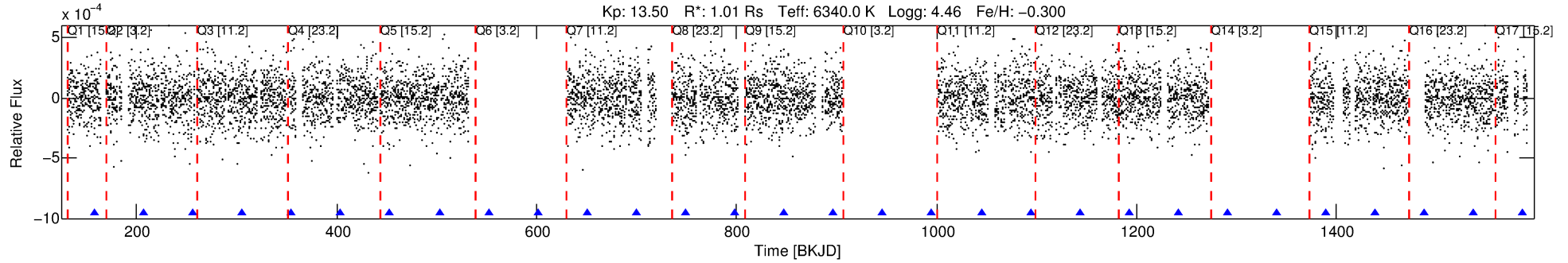
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005372081-03

No Significant Match Found

DV One-Page Summary

KIC: 5372081 Candidate: 3 of 8 Period: 49.261 d



DV Fit Results:

Period = 49.26108 [0.00075] d
Epoch = 157.9539 [0.0128] BKJD
Rp/R* = 0.0193 [0.0046]
a/R* = 56.44 [64.19]
b = 0.96 [0.09]
Seff = 20.45 [7.45]
Teq = 542 [49] K
Rp = 2.12 [0.79] Re
a = 0.2687 [0.0636] AU
Ag = 1396.75 [938.51] [1.49σ]
Teffp = 5126 [755] K [6.06σ]

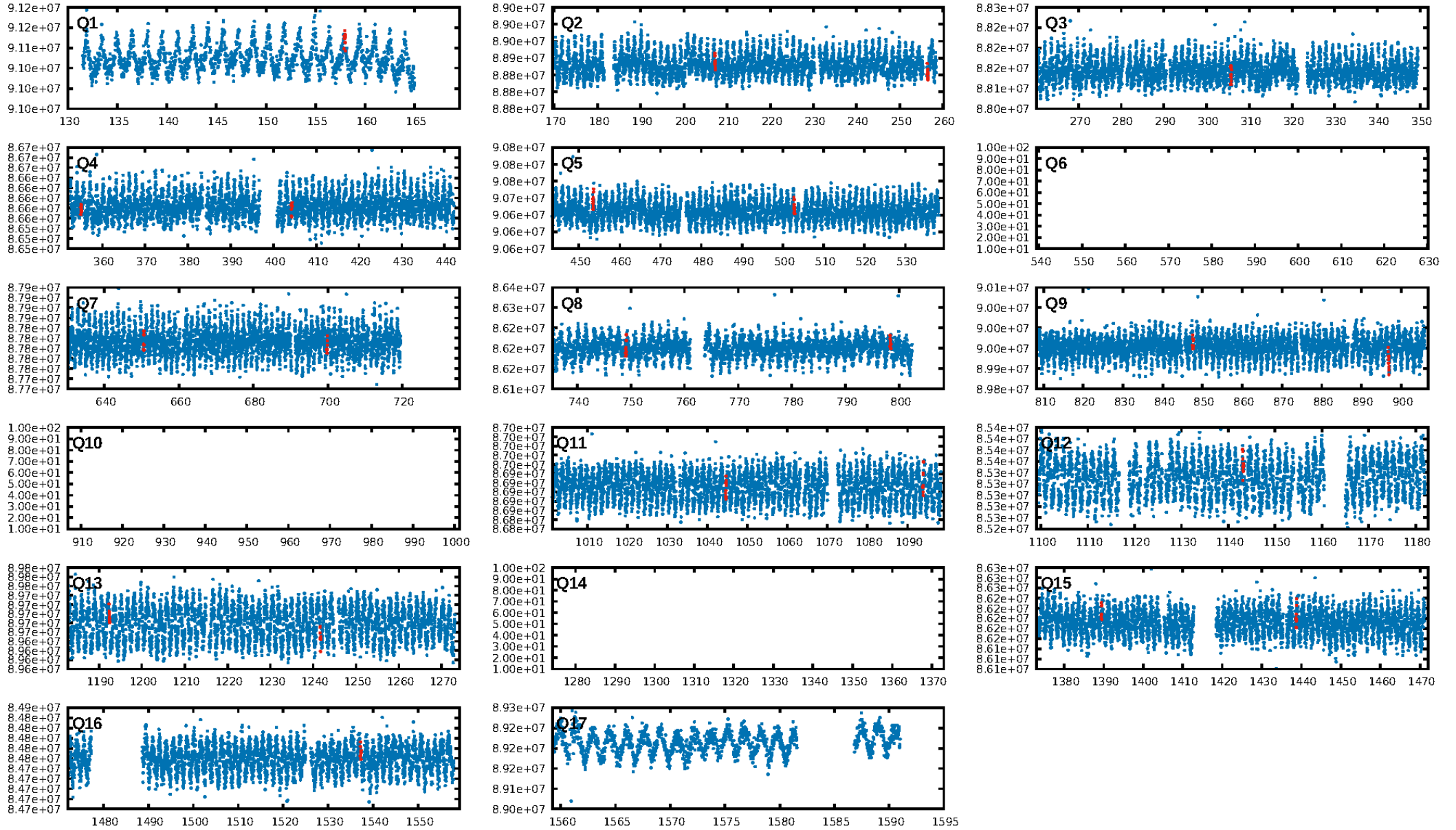
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [93.95σ]
LongPeriod-sig: 100.0% [5.32σ]
ModelChiSquare2-sig: 80.7%
ModelChiSquareGof-sig: 92.7%
Bootstrap-pfa: 2.66e-09
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -2.237
Centroid-sig: 0.6%
Centroid-so: 1.802 arcsec [2.08σ]
OotOffset-rm: 1.761 arcsec [2.31σ]
OotOffset-st: 0/3/2/1 [6]
KicOffset-rm: 1.701 arcsec [2.20σ]
KicOffset-st: 0/3/2/1 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 0.46 [6/13]

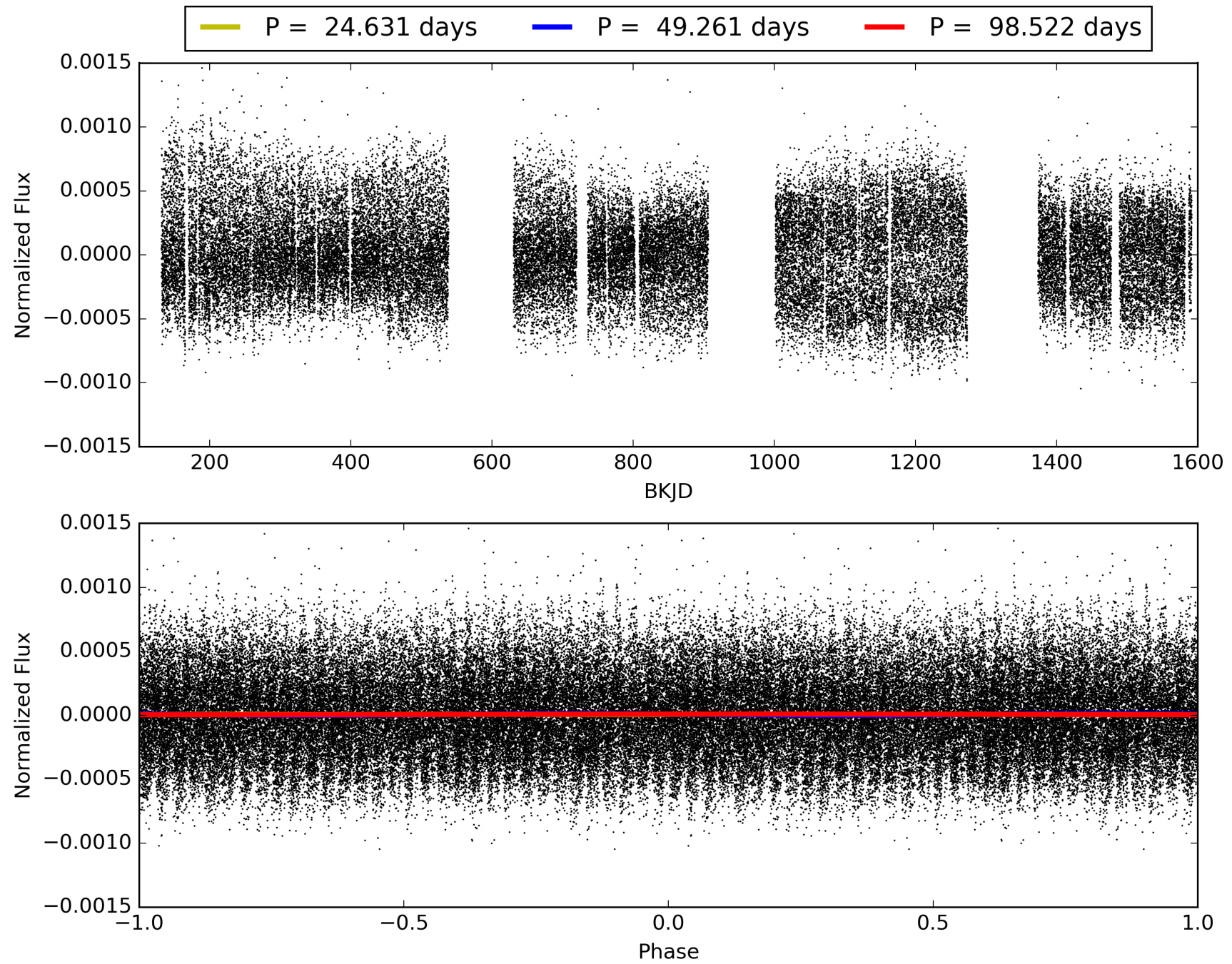
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:11:32 Z

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

TCE 005372081-03, PDC Light Curves

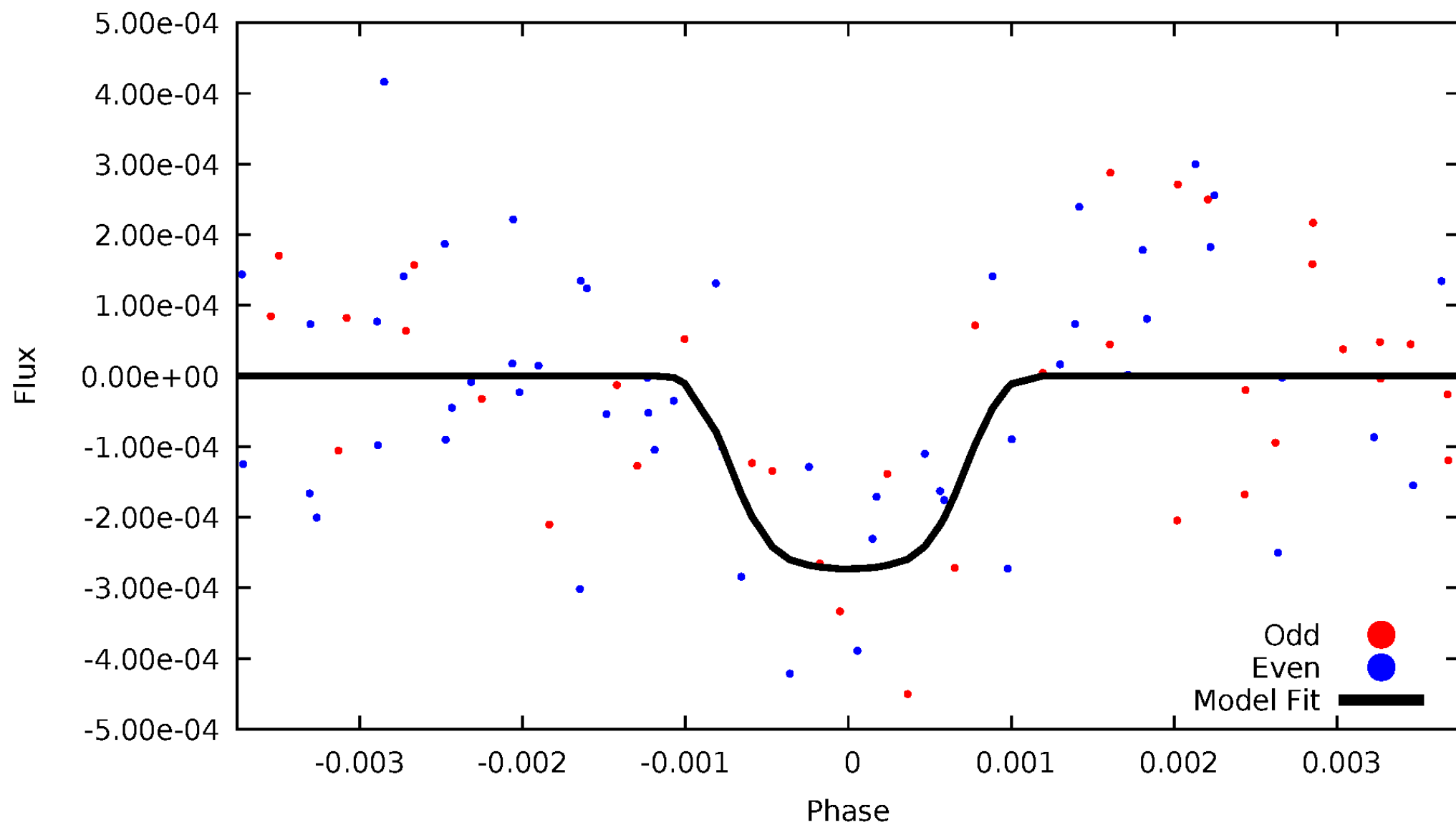


TCE 005372081-03



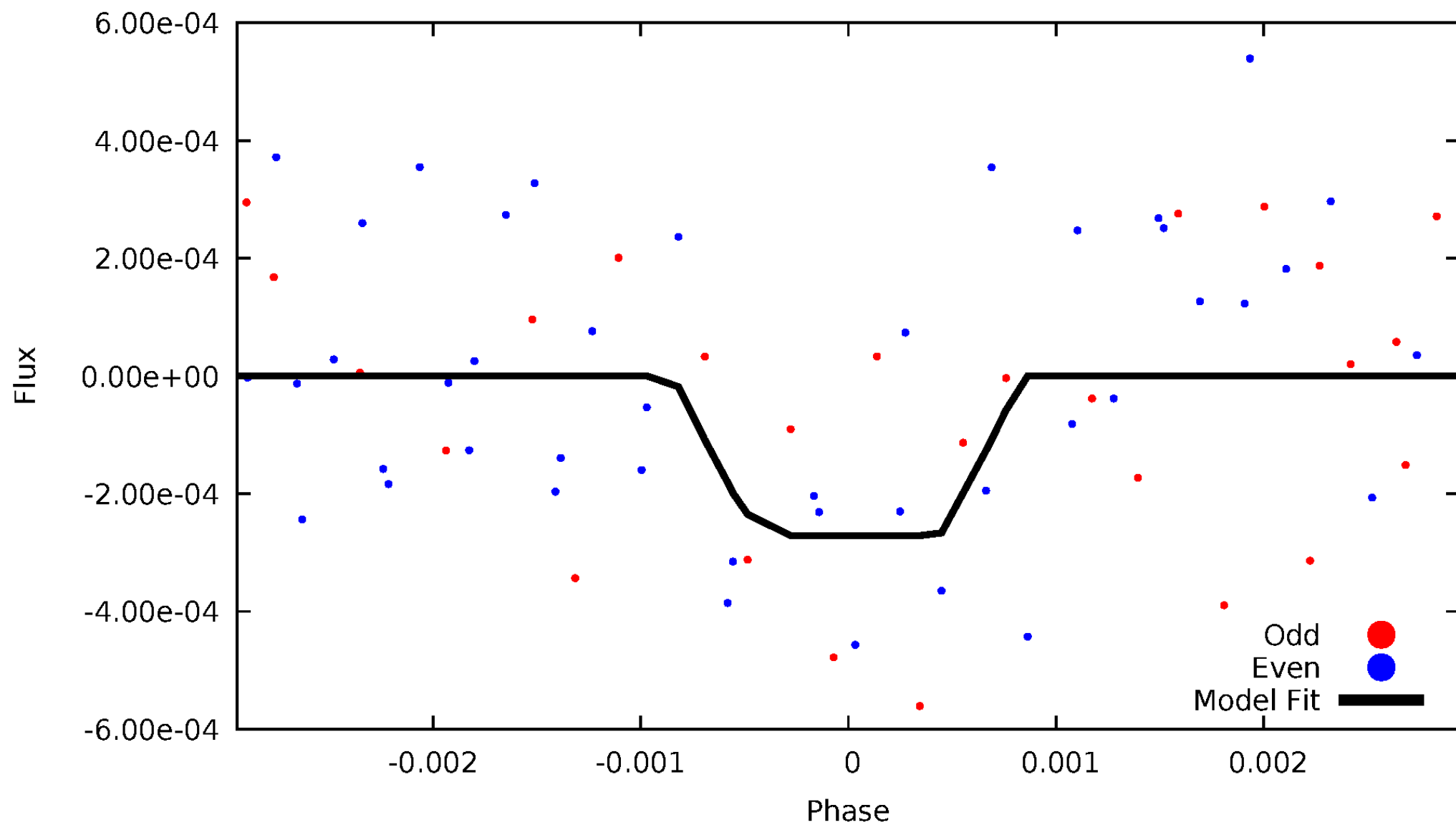
DV Odd/Even

TCE 005372081-03

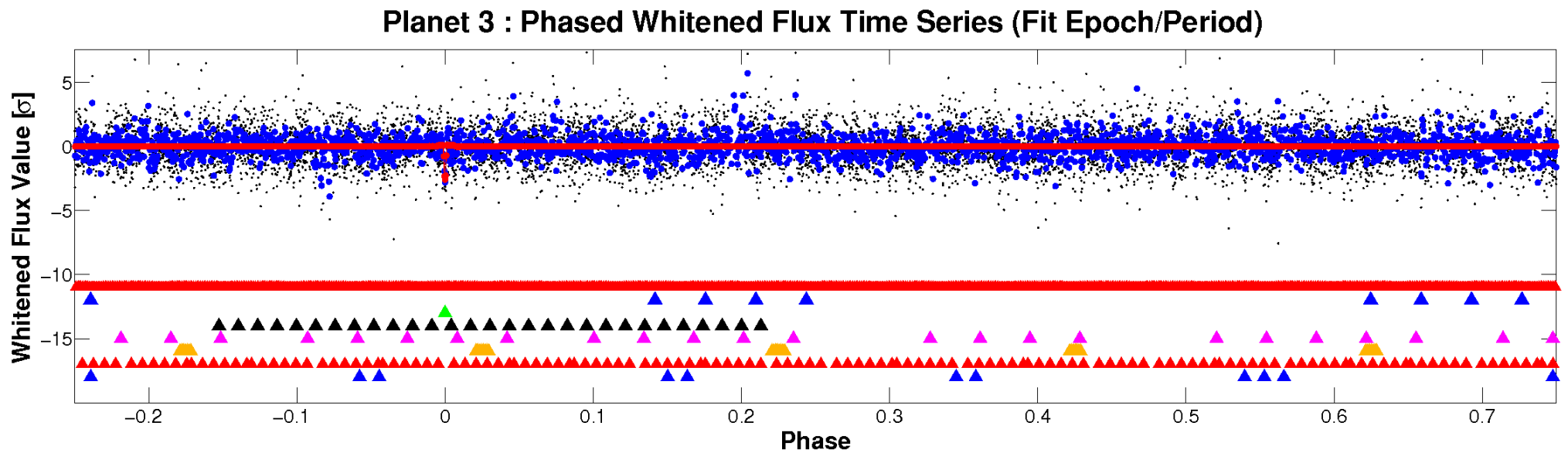
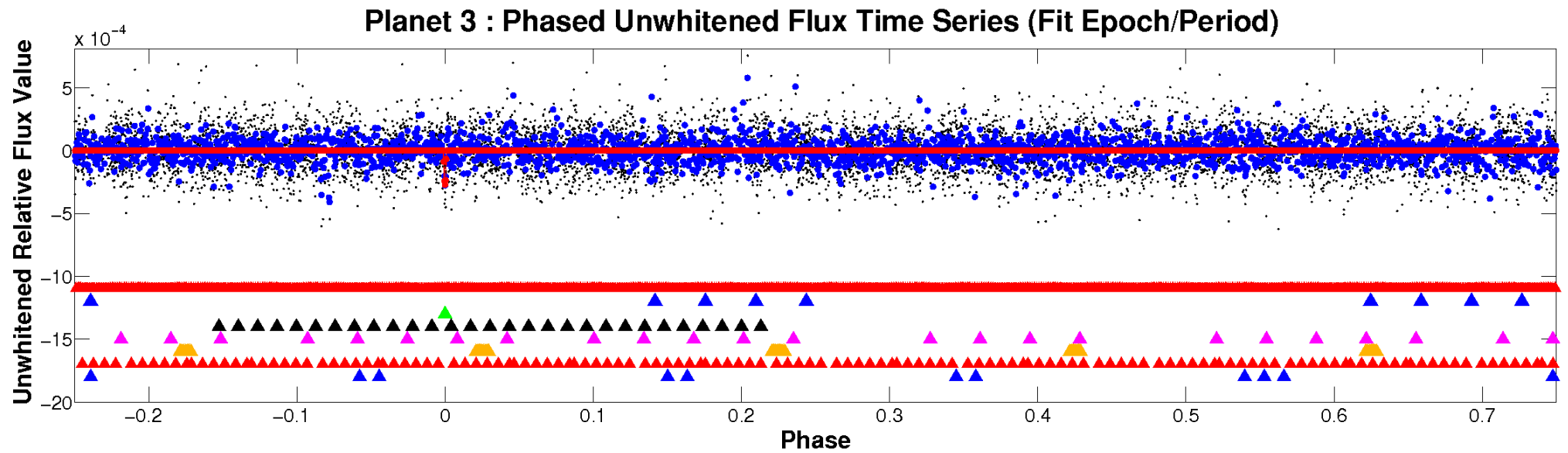


ALT Odd/Even

TCE 005372081-03



Non-Whitened Vs. Whitened Light Curve



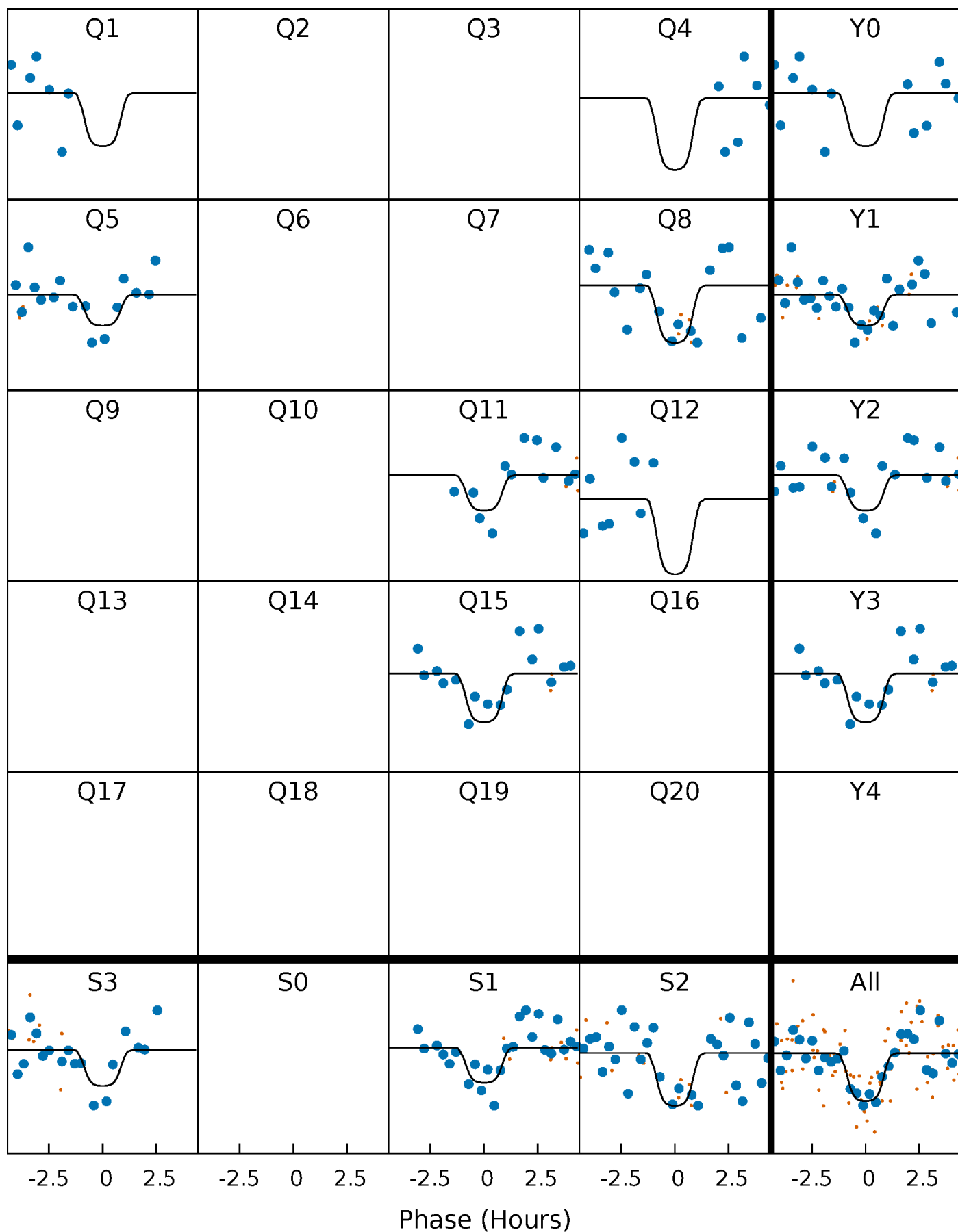
PDC Quarter-Phased Transit Curves

TCE 005372081-03 P= 49.261082 Days $T_0=157.953926$ (BKJD)



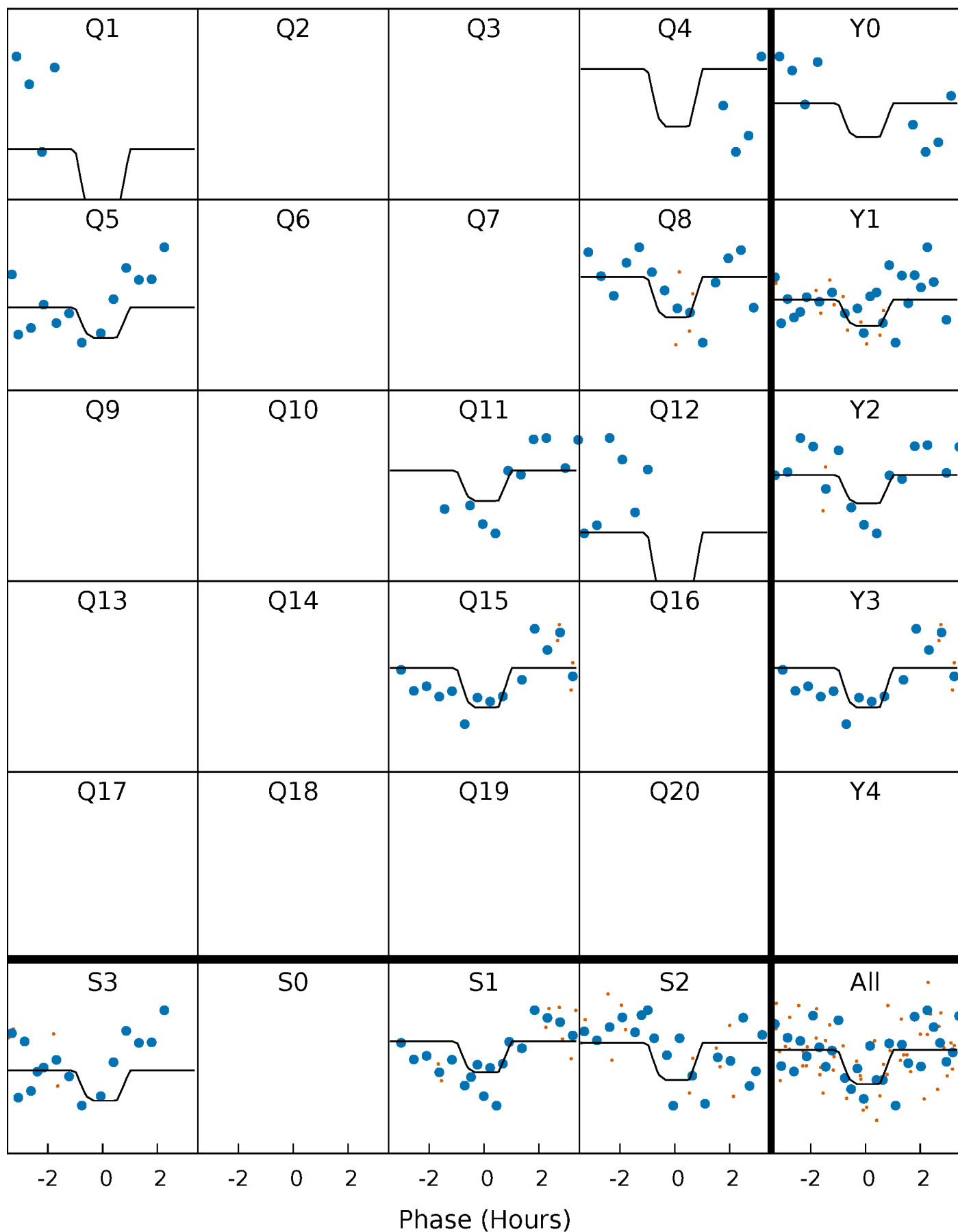
DV Quarter-Phased Transit Curves

TCE 005372081-03 P= 49.261082 Days $T_0=157.953926$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

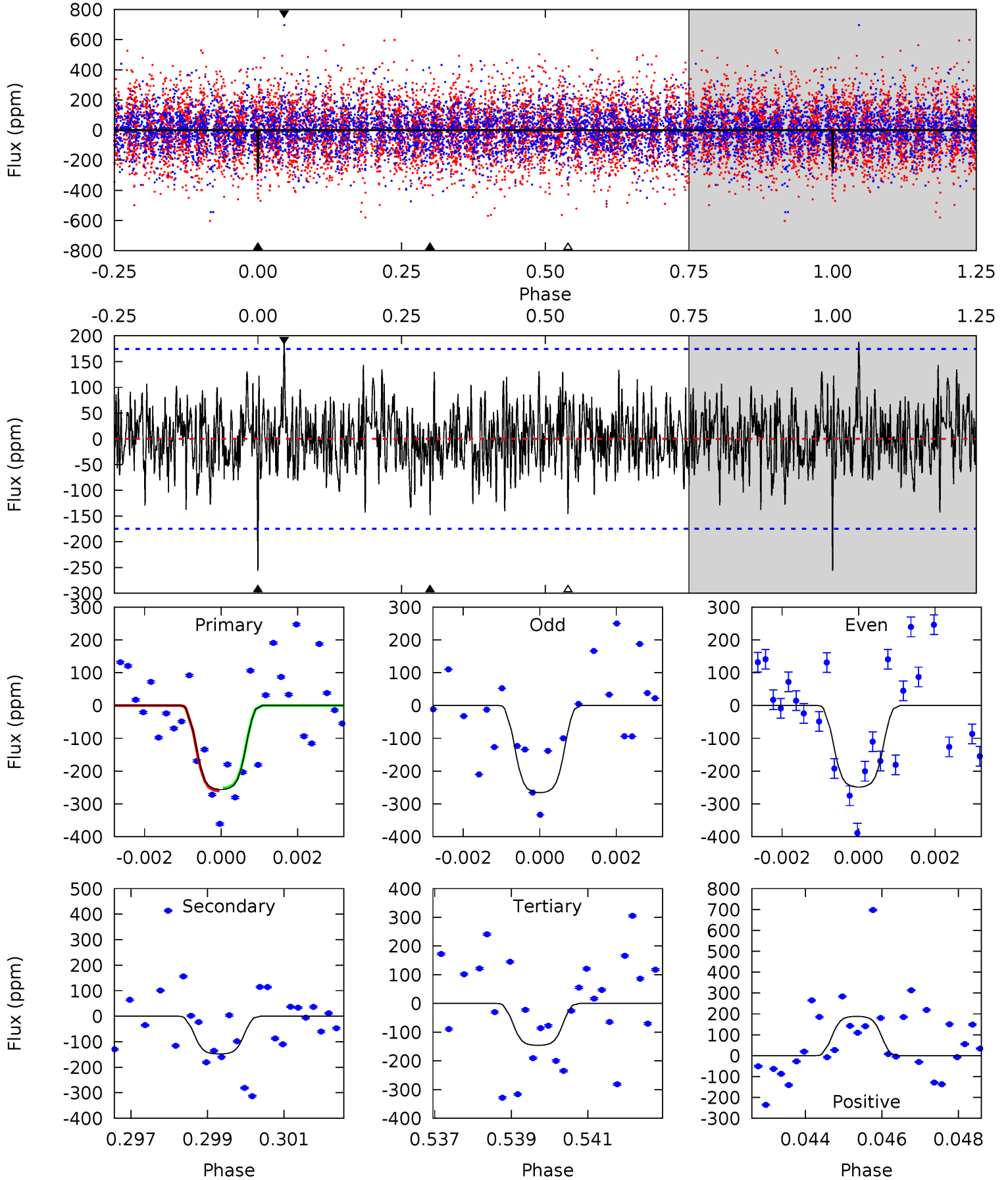
TCE 005372081-03 P= 49.260412 Days $T_0=157.967609$ (BKJD)



DV Model-Shift Uniqueness Test

005372081-03, $P = 49.261082$ Days, $E = 108.692844$ Days

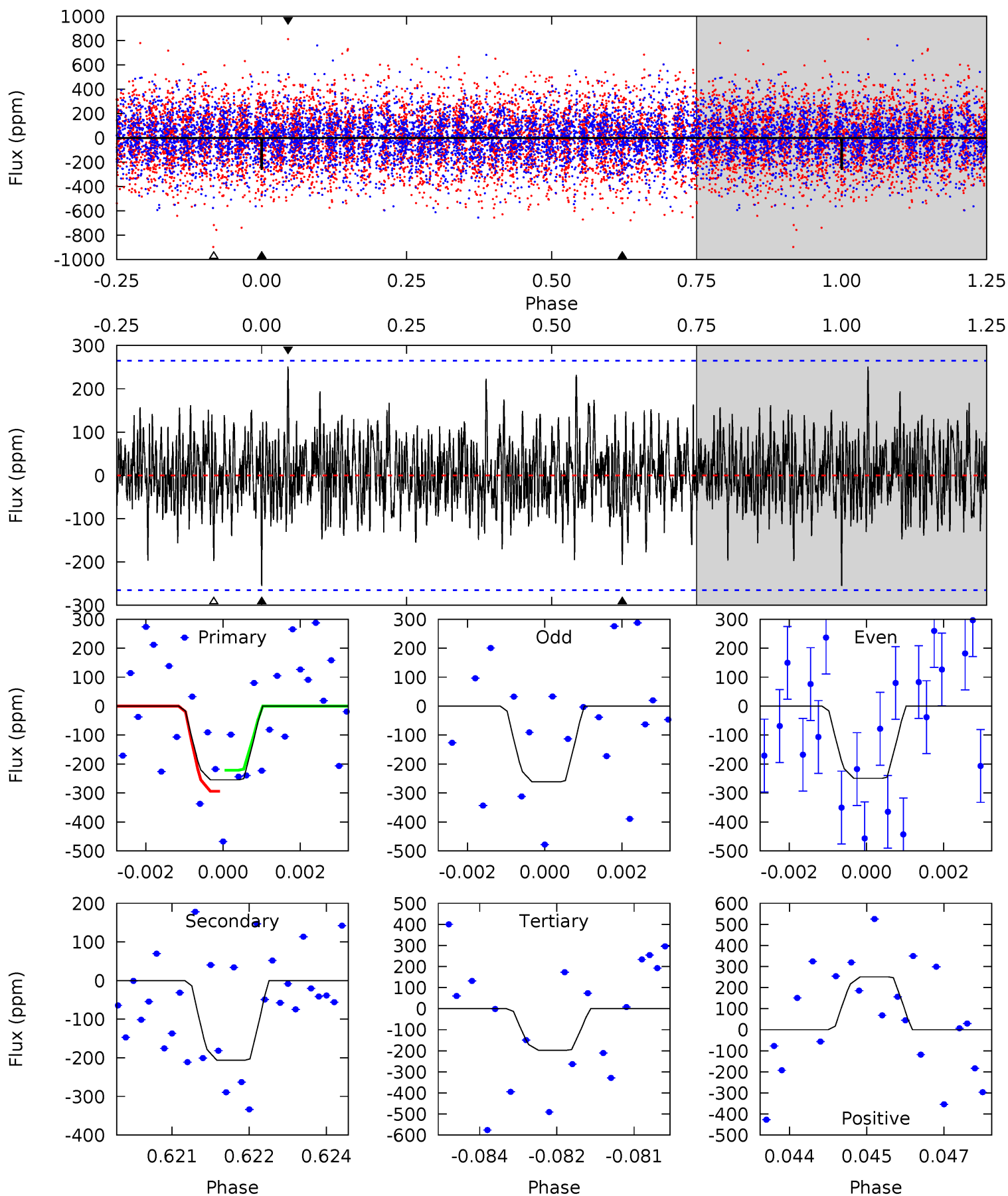
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.79	4.50	4.44	5.72	5.31	3.06	1.41	3.35	2.06	0.06	-1.23	0.25	1.11	0.42	0.13



Alt Model-Shift Uniqueness Test

005372081-03, P = 49.260412 Days, E = 108.707197 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.15	4.17	3.99	5.07	5.36	3.14	1.24	1.16	0.08	0.18	-0.91	0.12	0.90	0.50	0.73



Stellar Parameters For KIC 005372081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6340^{+151}_{-189}	$4.457^{+0.050}_{-0.188}$	$-0.300^{+0.250}_{-0.350}$	$1.010^{+0.284}_{-0.122}$	$1.066^{+0.133}_{-0.146}$	$1.458^{+0.381}_{-0.734}$
	+2%/-3%	+1%/-4%	+83%/-117%	+28%/-12%	+12%/-14%	+26%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005372081-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-148 ± 33	$2.26^{+0.60}_{-0.60}$	776^{+50}_{-39}	5104^{+714}_{-532}	1143^{+886}_{-481}
Alt.	-206 ± 49	$1.88^{+0.60}_{-0.55}$	771^{+51}_{-34}	5899^{+1192}_{-729}	2268^{+2365}_{-1078}

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 $A_{obs} \gg 1.0$

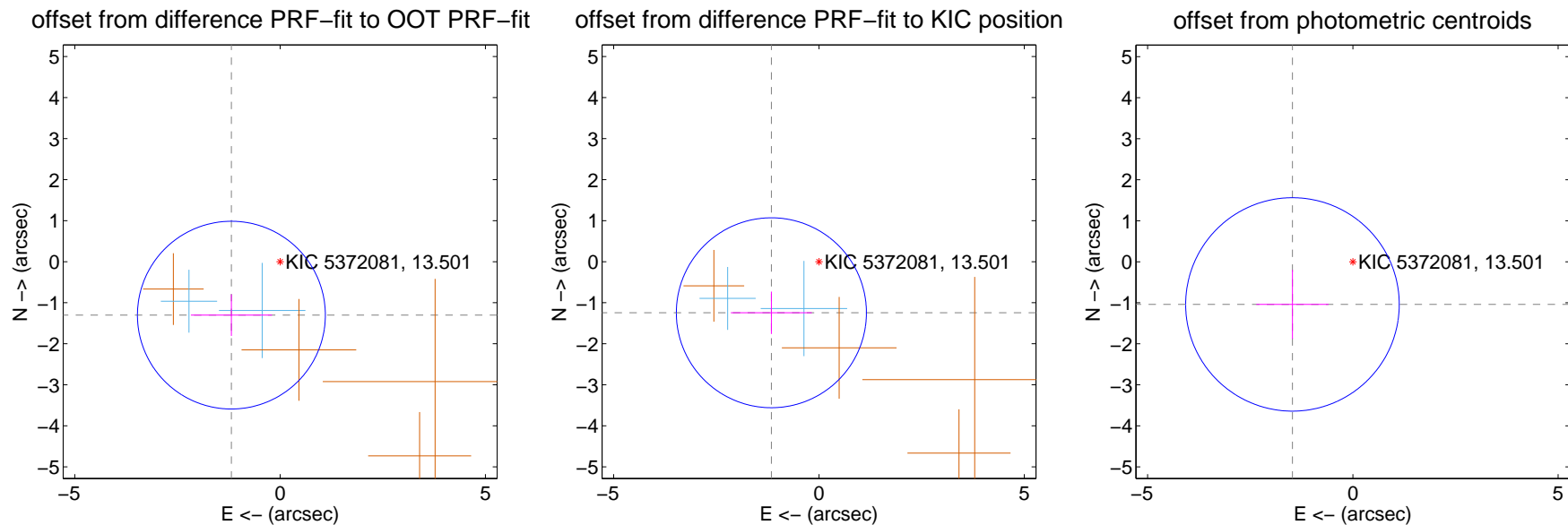
DV Centroid Data

Supplemental centroid analysis for 005372081-03. Kepler magnitude: 13.50. Transit SNR 9.38

There are 2 quarters with good PRF difference image offsets

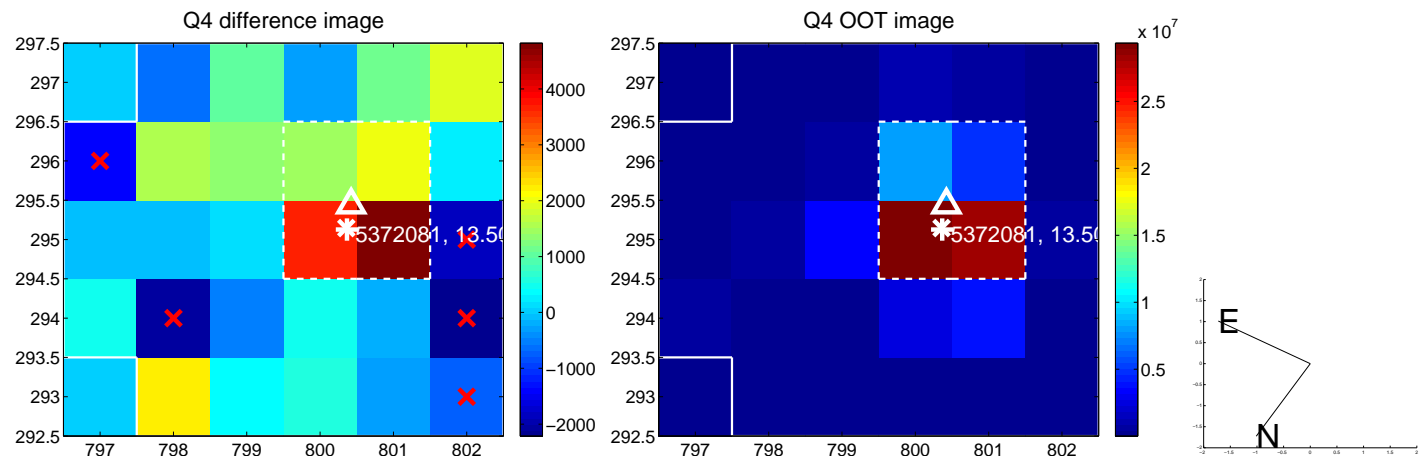
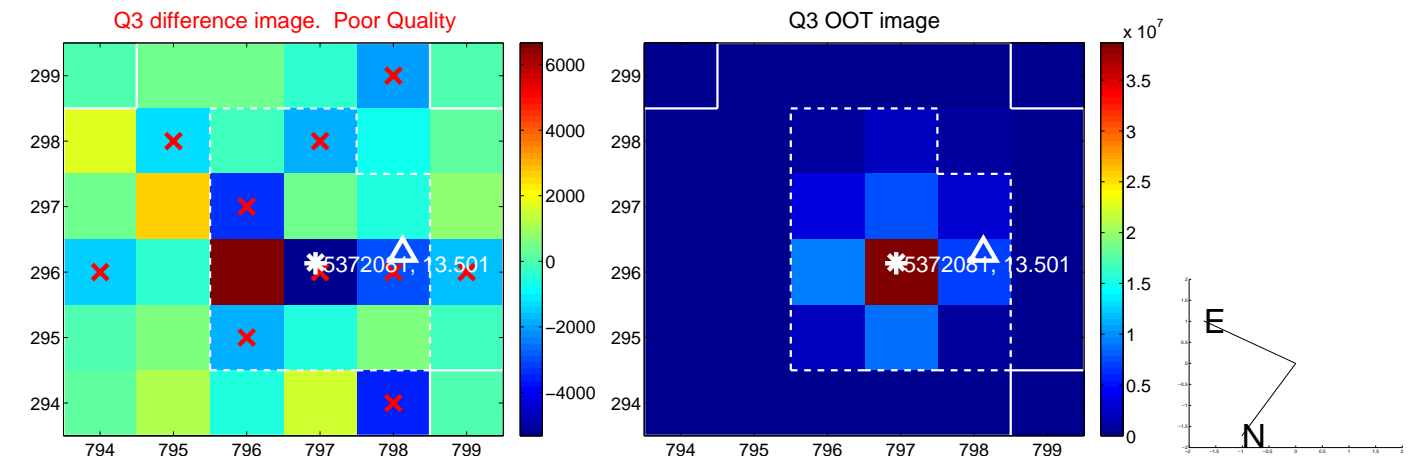
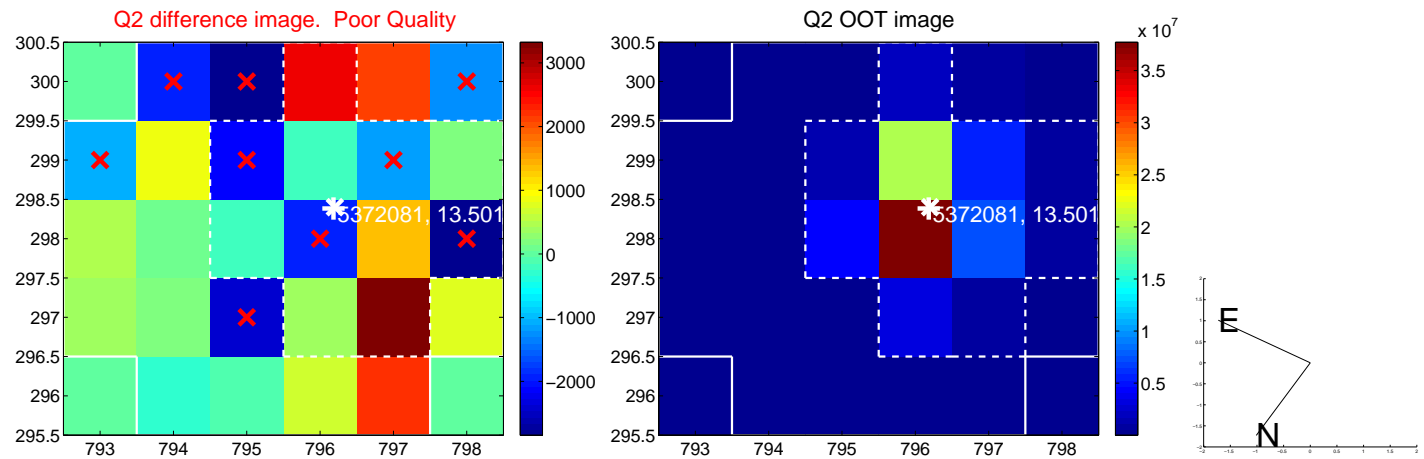
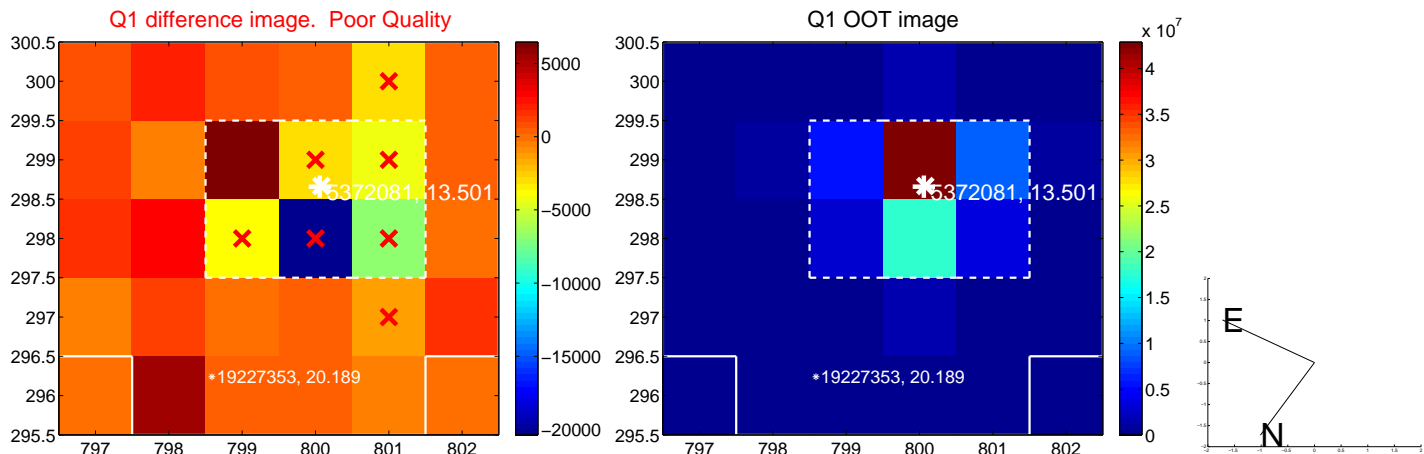
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.761 ± 0.763	2.31	1.186 ± 0.986	-1.302 ± 0.507
PRF-fit source offset from KIC position	1.701 ± 0.771	2.20	1.159 ± 0.987	-1.244 ± 0.516
photometric centroid source offset	1.80 ± 0.87	2.08	1.47 ± 0.88	-1.04 ± 0.84

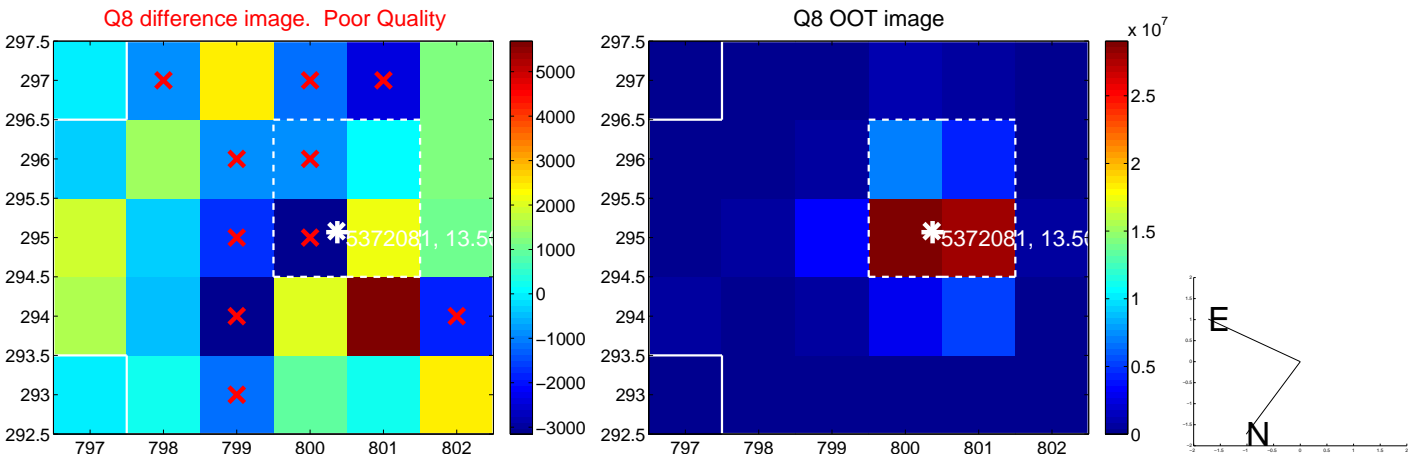
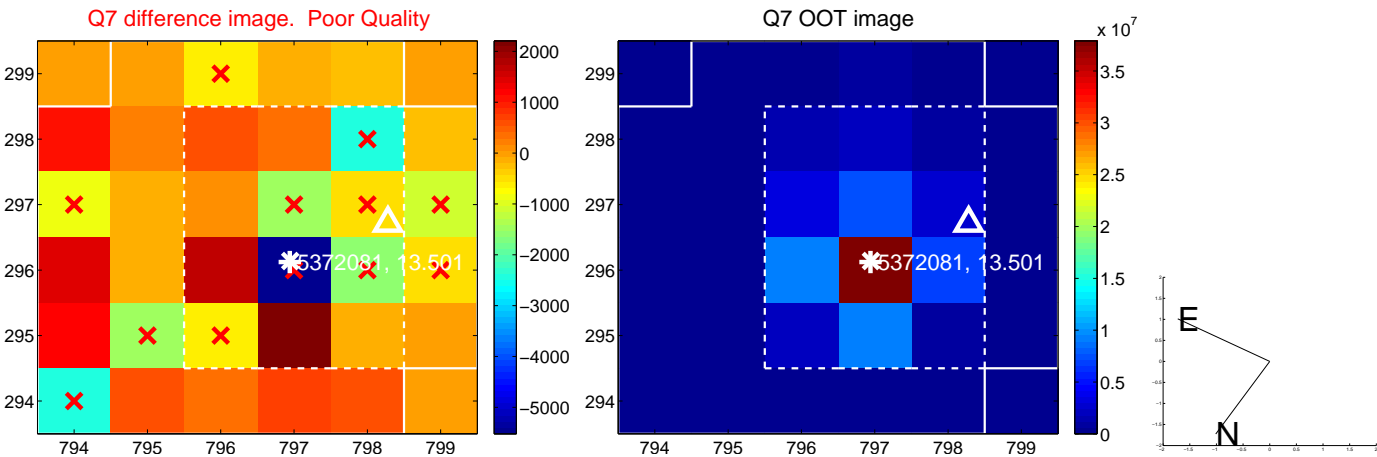
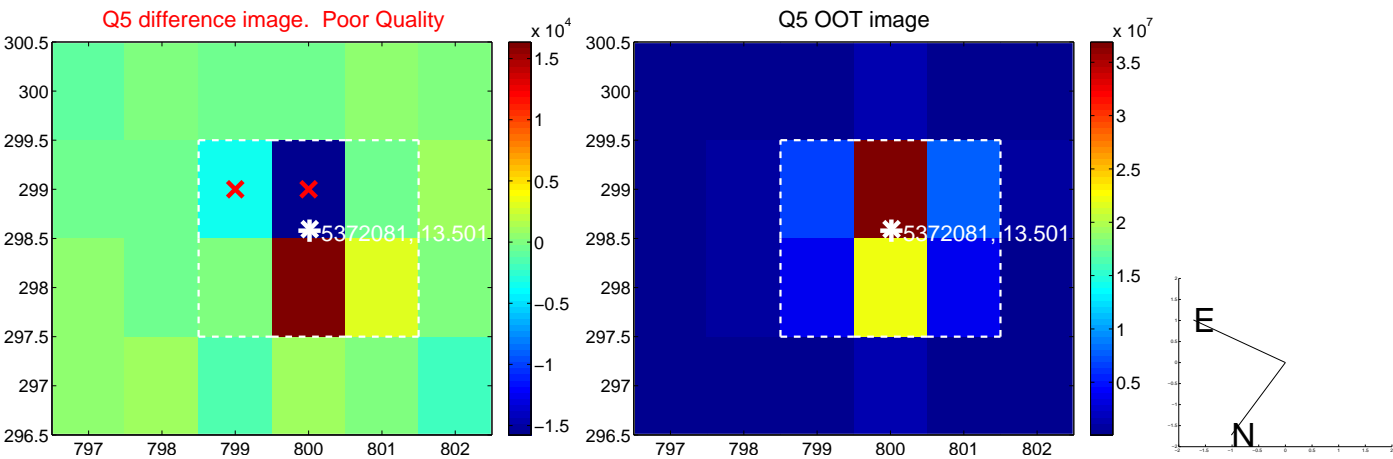


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

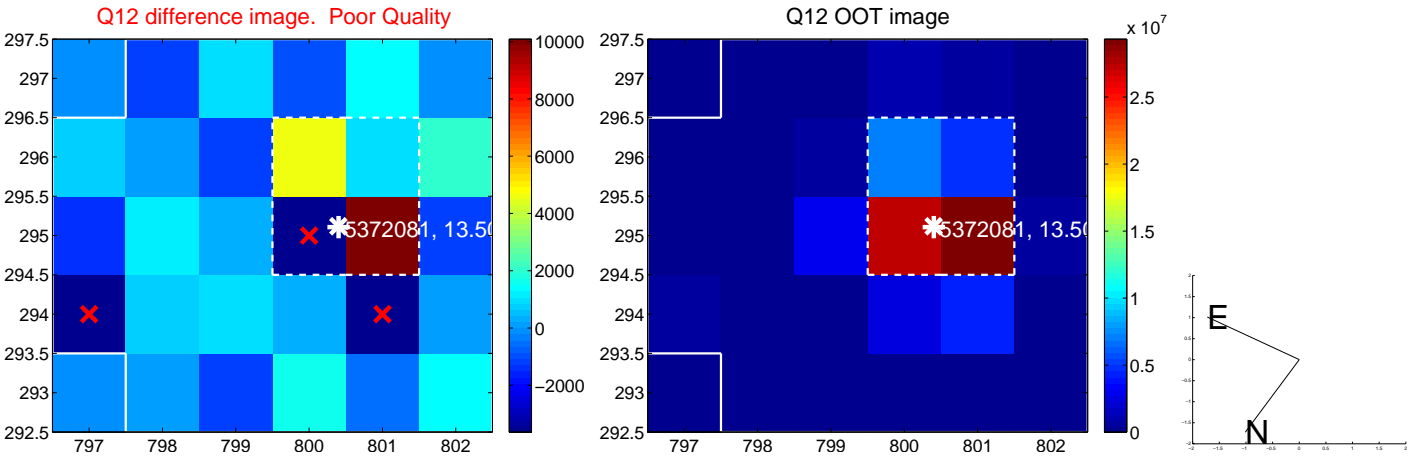
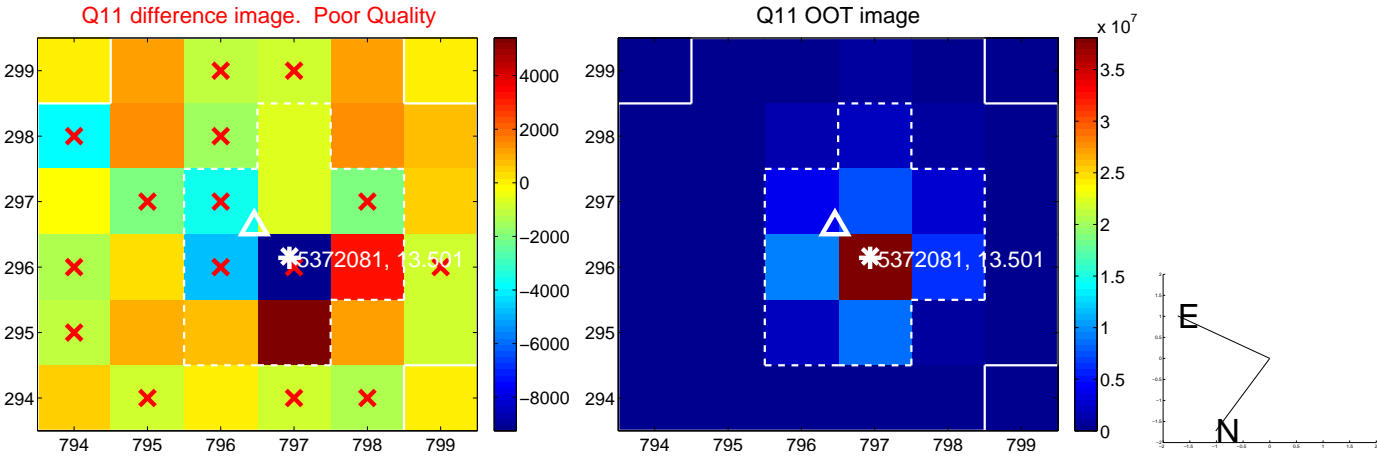
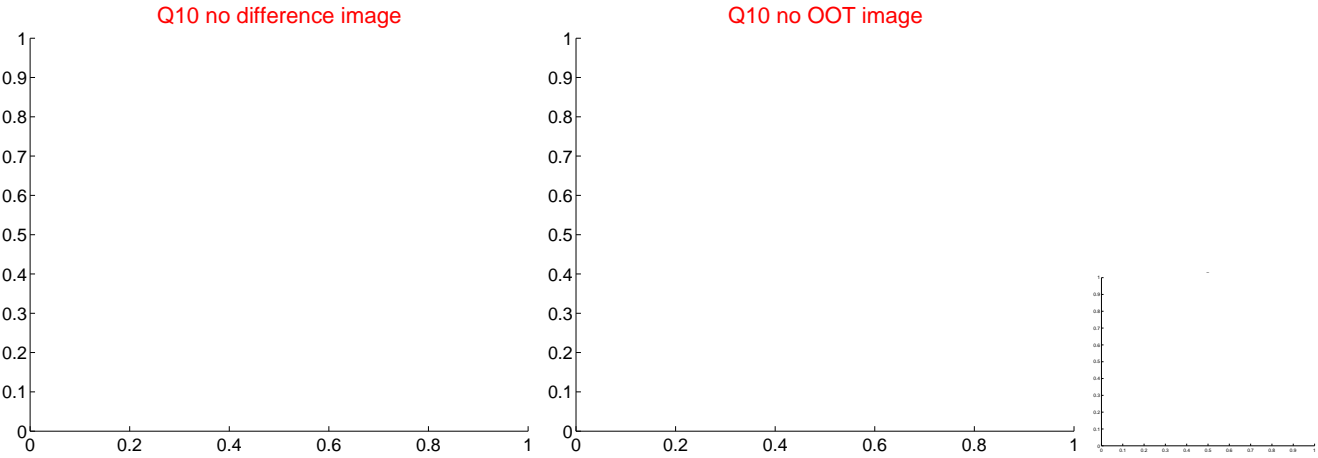
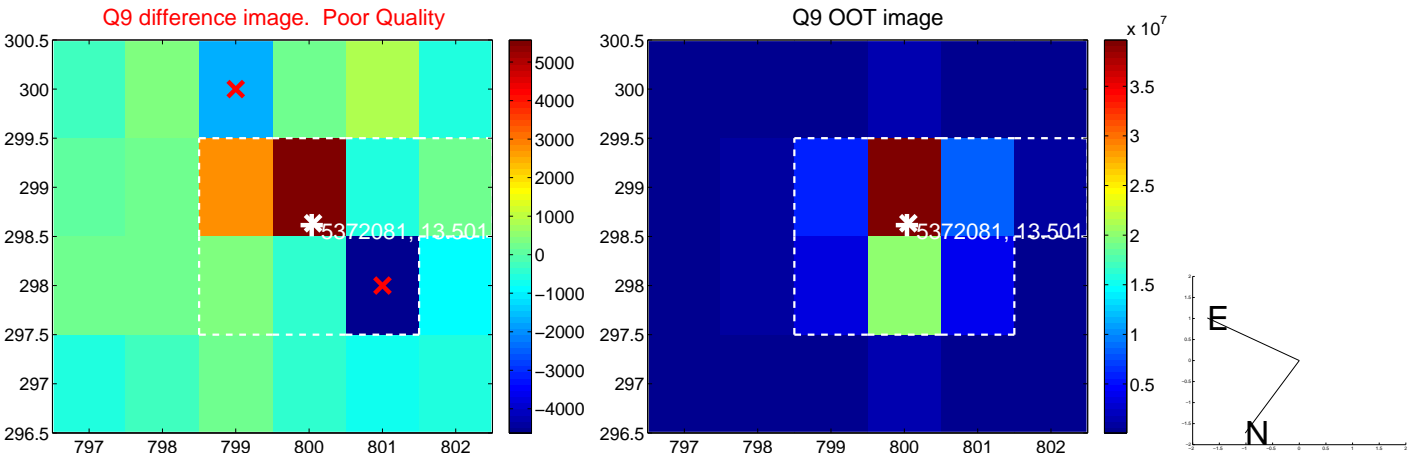
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



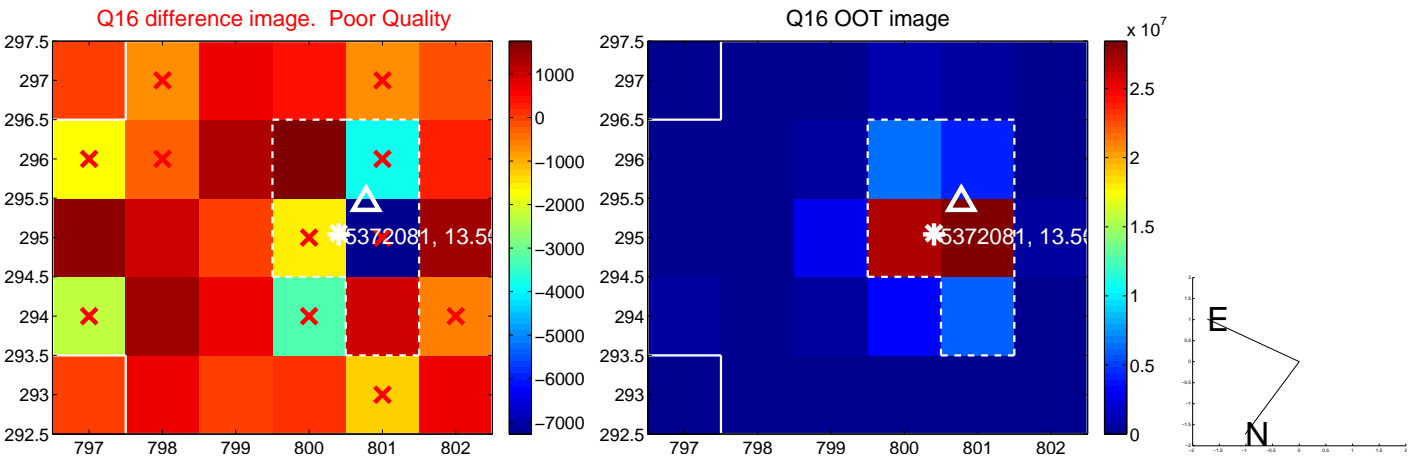
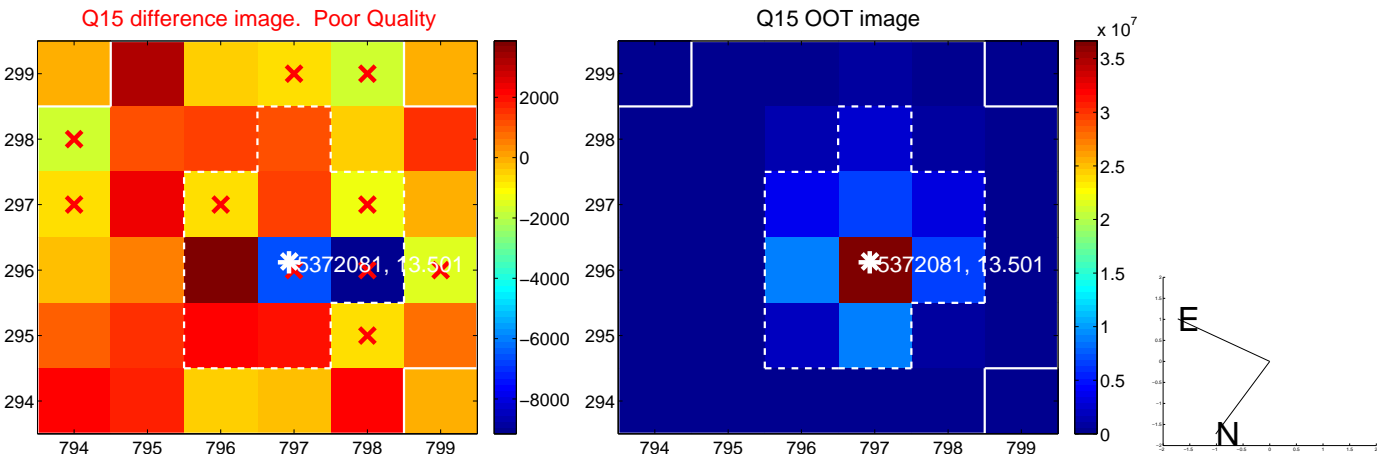
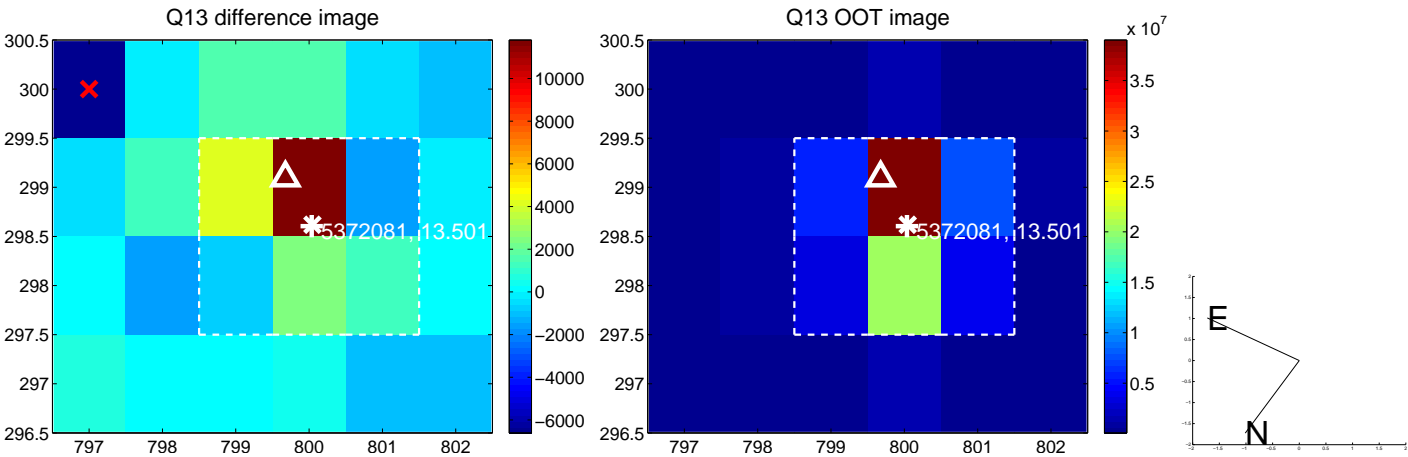
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



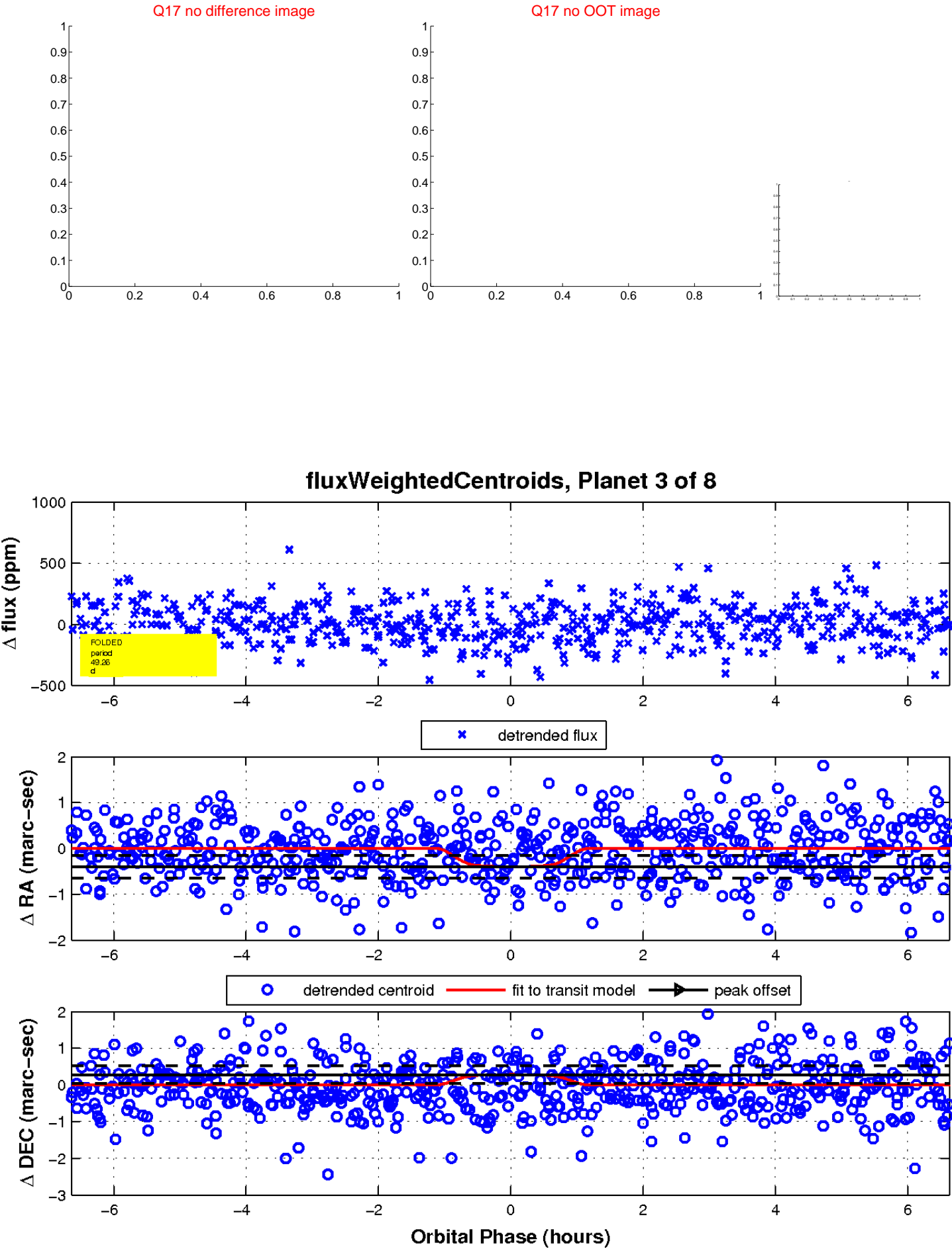
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

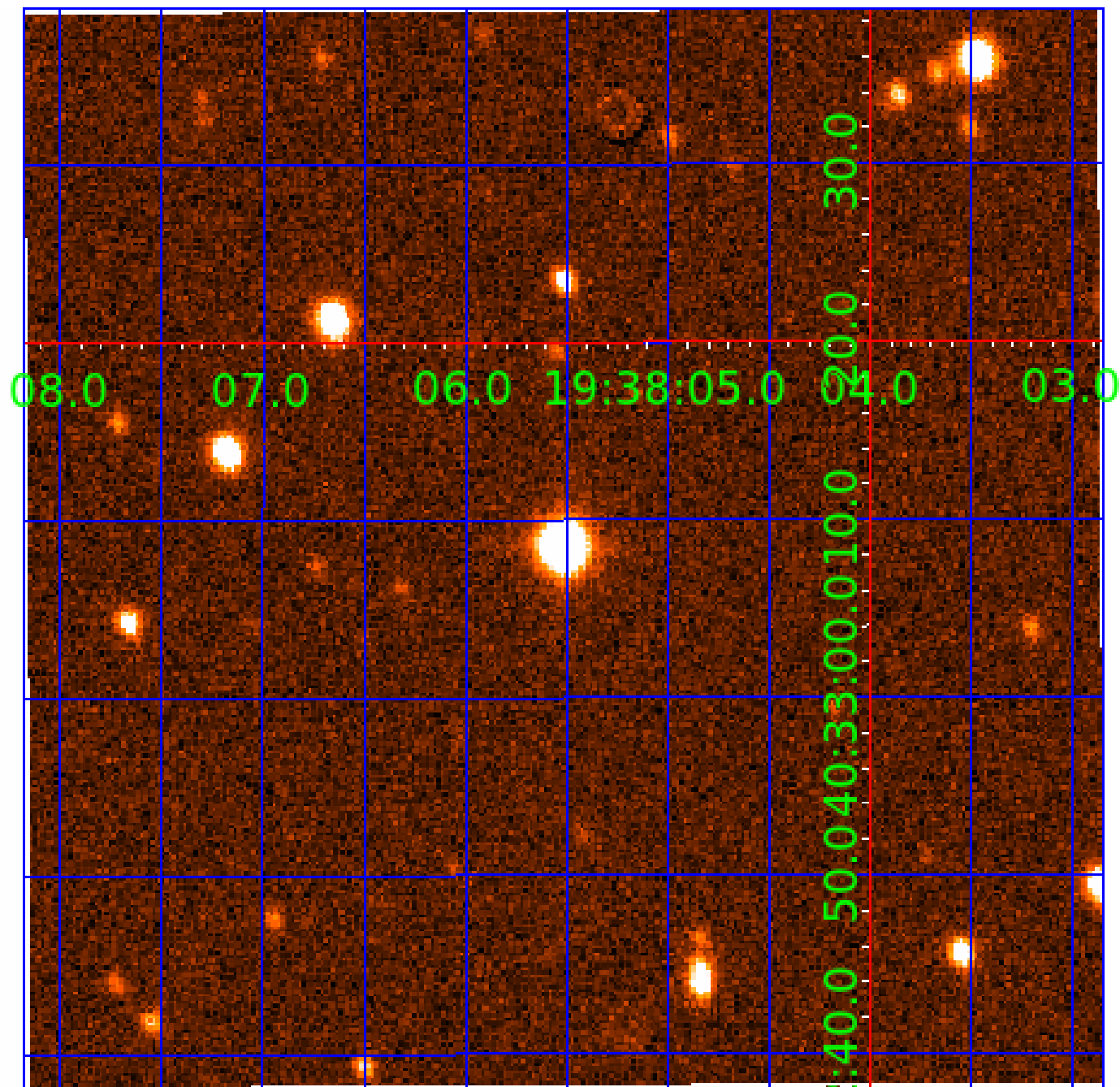


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005372081

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})
005372081-01	OBS	No	1.532264	132.484753	3.2	9.907	8.2	1.7	1.01	6340	0.21	2091.00
005372081-02	OBS	No	173.251831	188.728132	64.3	47.095	17.8	3.8	1.01	6340	0.94	3.82
005372081-03	OBS	No	49.261082	157.953926	273.2	2.217	9.1	9.4	1.01	6340	2.12	20.45
005372081-04	OBS	No	49.904496	150.438465	362.3	1.877	9.3	9.0	1.01	6340	2.12	20.10
005372081-05	OBS	No	58.781787	190.236355	217.5	5.313	8.9	9.0	1.01	6340	1.66	16.16
005372081-06	OBS	No	39.420992	168.821592	338.0	1.185	8.2	9.5	1.01	6340	2.31	27.53
005372081-07	OBS	No	10.724962	140.794691	108.8	3.825	9.3	10.9	1.01	6340	1.24	156.17
005372081-08	OBS	No	127.948282	185.844319	300.7	11.956	7.8	7.5	1.01	6340	1.79	5.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005372081-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005372081-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005372081-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005372081-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
005372081-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005372081-06	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005372081-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005372081-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

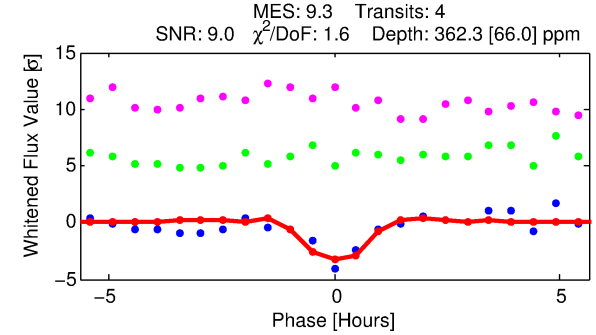
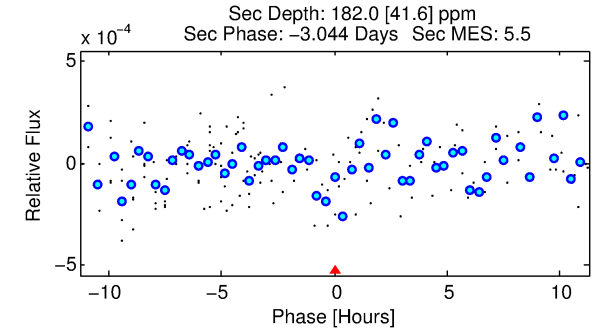
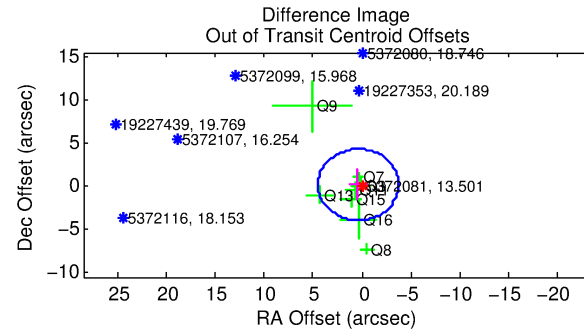
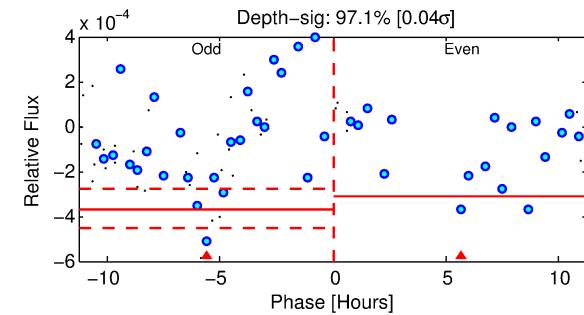
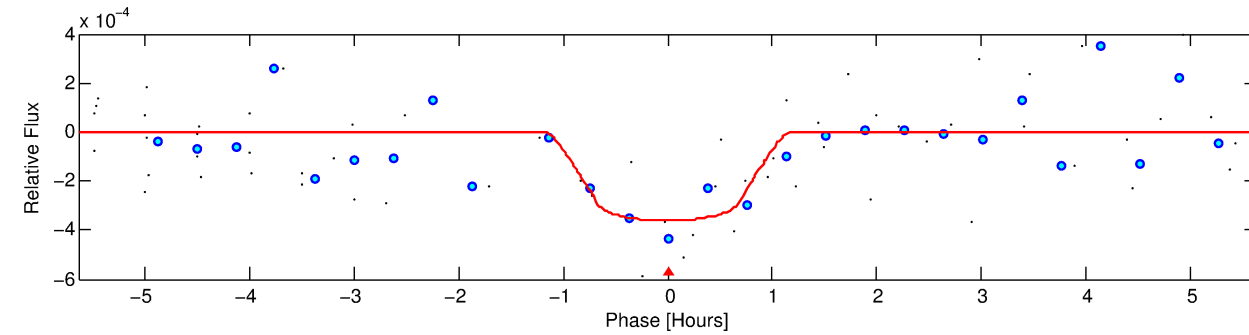
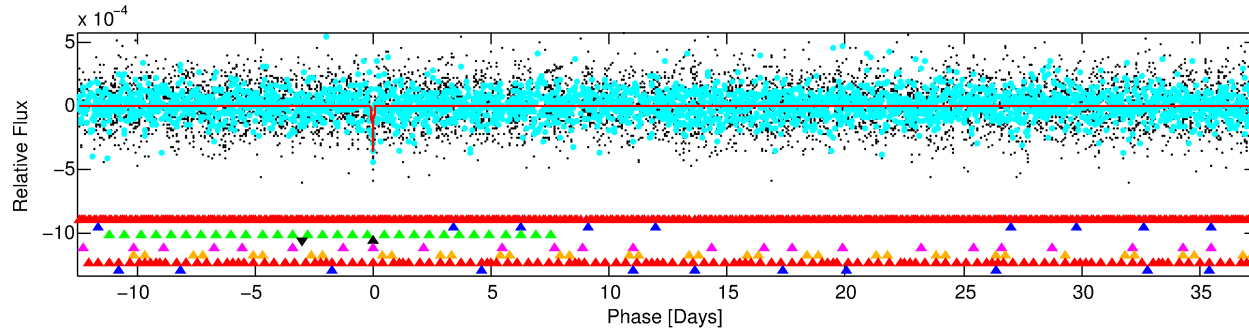
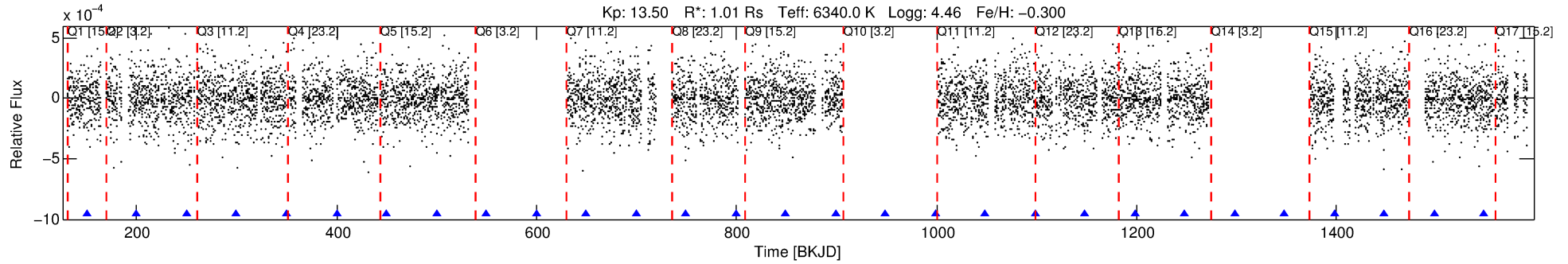
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005372081-04

No Significant Match Found

DV One-Page Summary

KIC: 5372081 Candidate: 4 of 8 Period: 49.904 d



DV Fit Results:

Period = 49.90450 [0.00049] d
Epoch = 150.4385 [0.0093] BKJD
Rp/R* = 0.0192 [0.0295]
a/R* = 131.83 [1082.53]
b = 0.79 [4.05]
Seff = 20.10 [7.32]
Teq = 540 [49] K
Rp = 2.12 [3.31] Re
a = 0.2710 [0.0641] AU
Ag = 1641.76 [5090.26] [0.32σ]
Teffp = 5314 [4097] K [1.17σ]

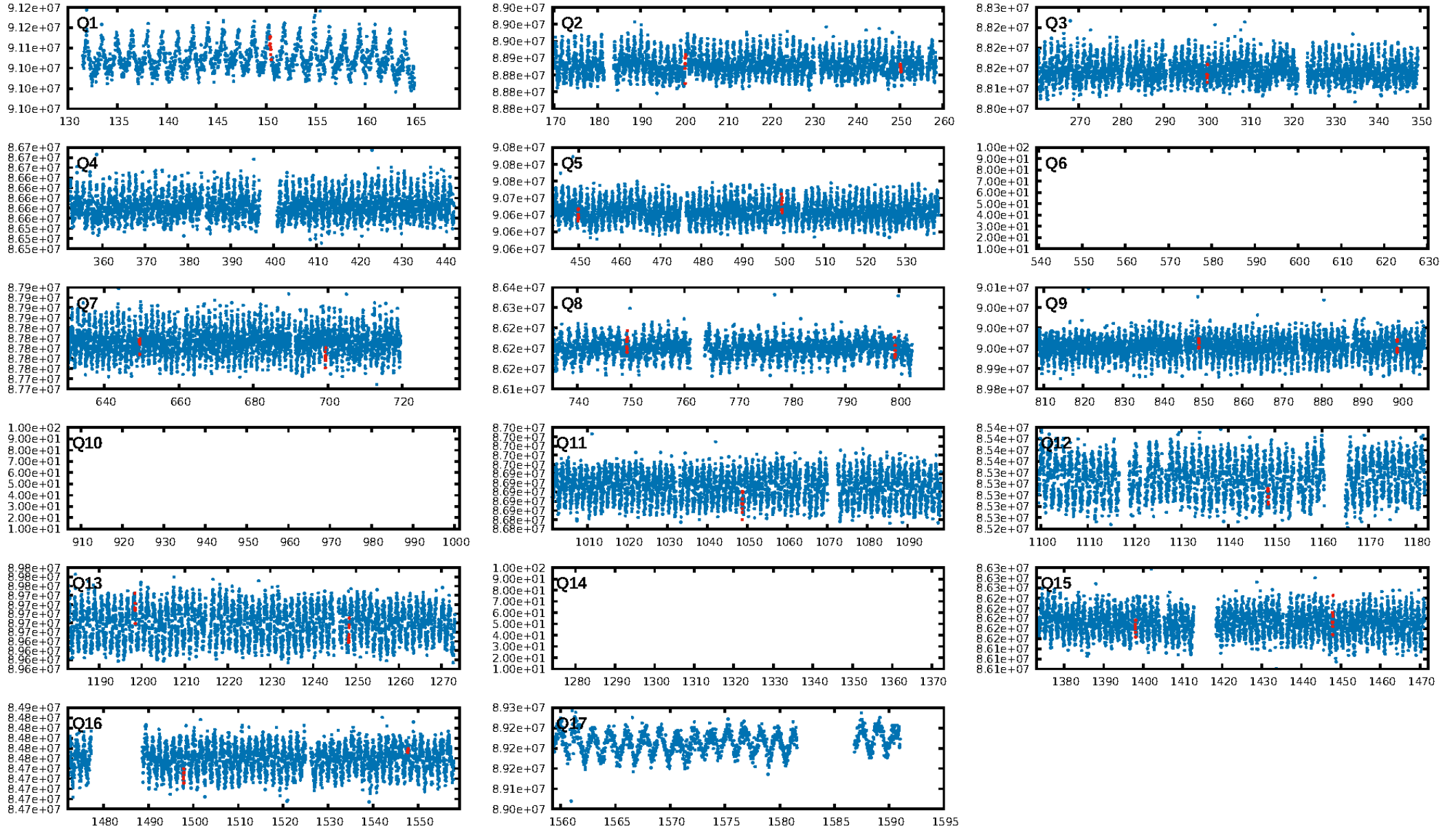
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.32σ]
LongPeriod-sig: 100.0% [37.81σ]
ModelChiSquare2-sig: 21.8%
ModelChiSquareGof-sig: 92.9%
Bootstrap-pfa: 3.58e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.001
Centroid-sig: 3.6%
Centroid-so: 0.946 arcsec [1.41σ]
OotOffset-rm: 0.447 arcsec [0.33σ]
KicOffset-rm: 0.454 arcsec [0.36σ]
OotOffset-st: 0/4/2/2 [8]
KicOffset-st: 0/4/2/2 [8]
DiffImageQuality-fgm: 0.50 [4/8]
DiffImageOverlap-fno: 0.50 [6/12]

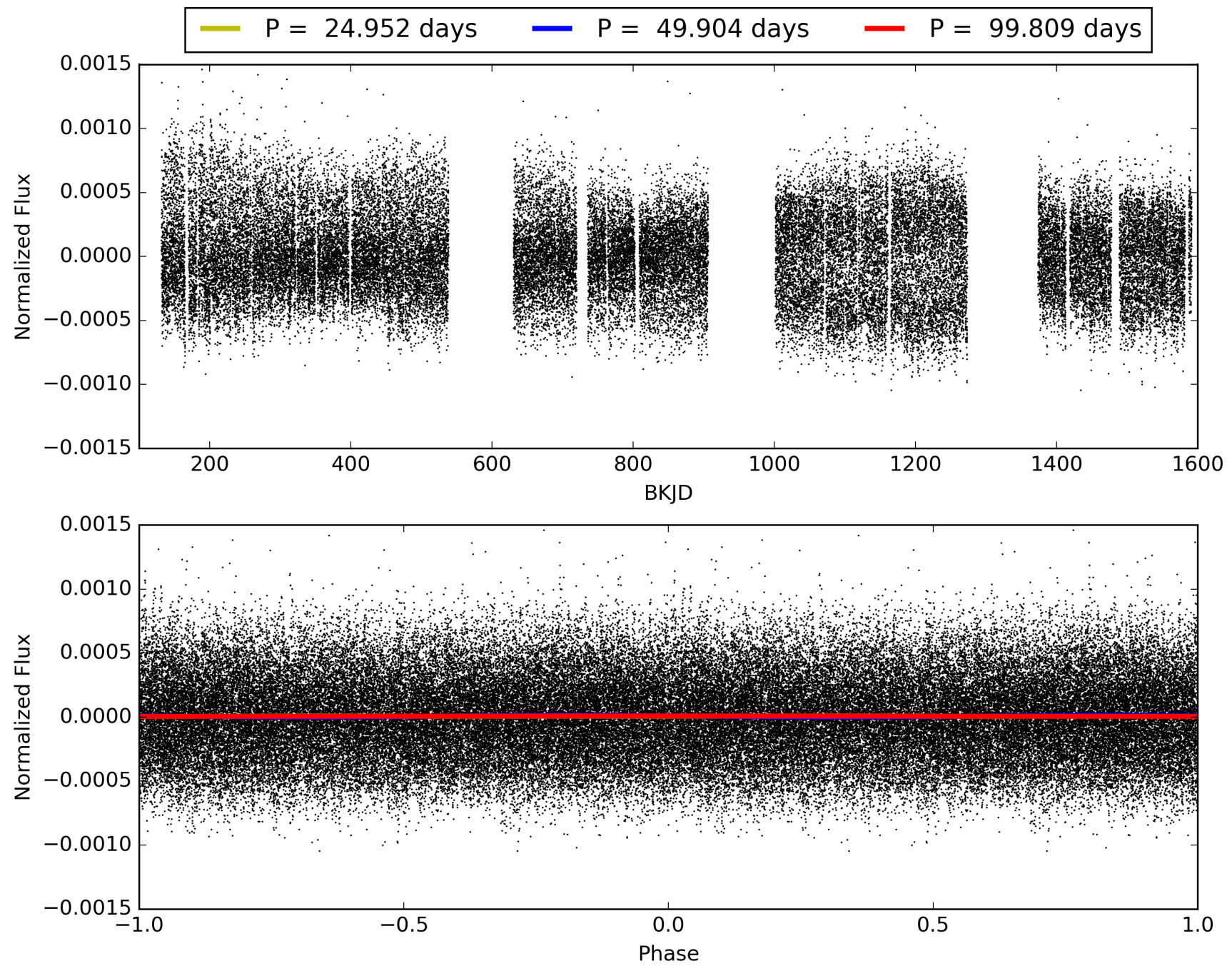
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:11:35 Z

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

TCE 005372081-04, PDC Light Curves

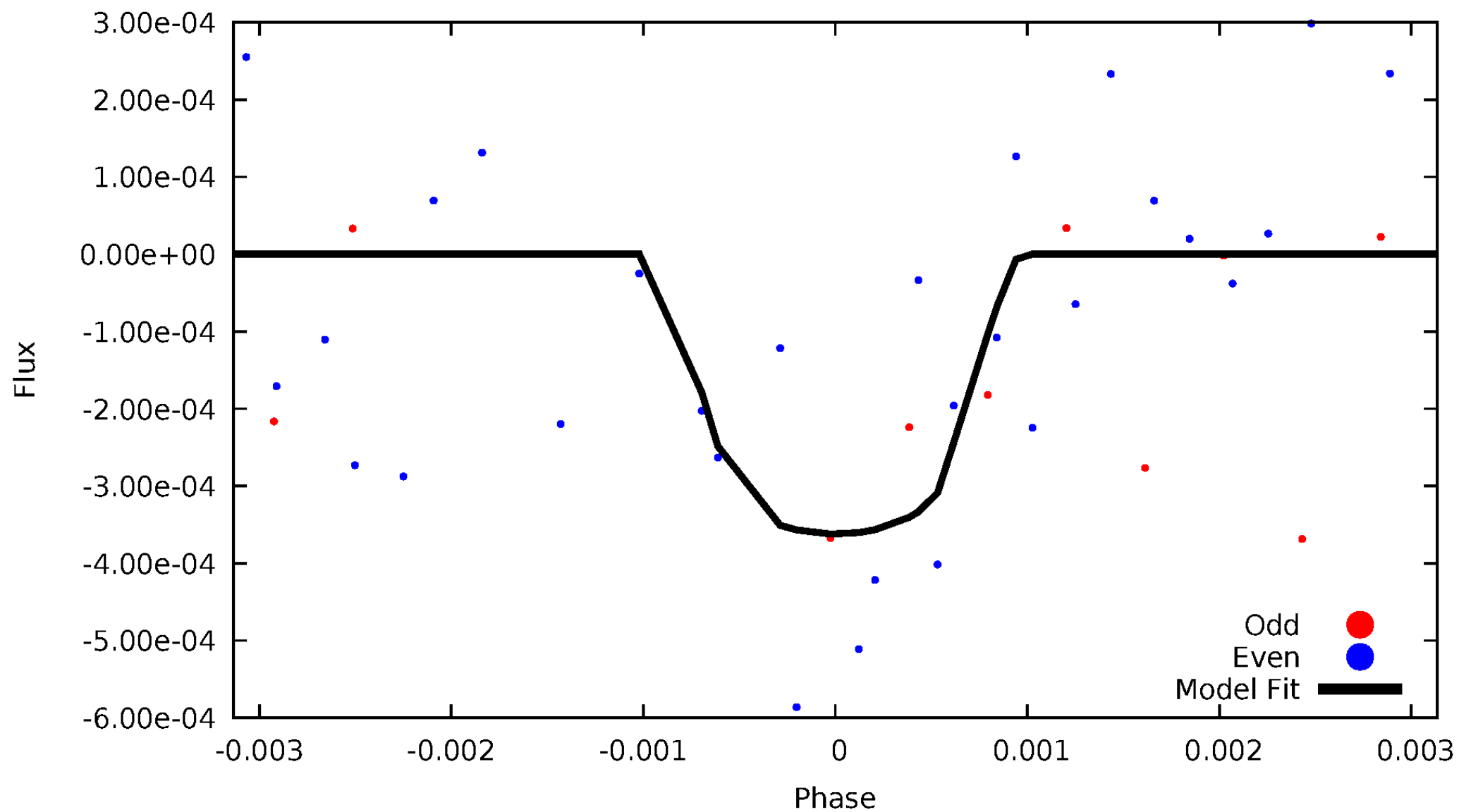


TCE 005372081-04



DV Odd/Even

TCE 005372081-04

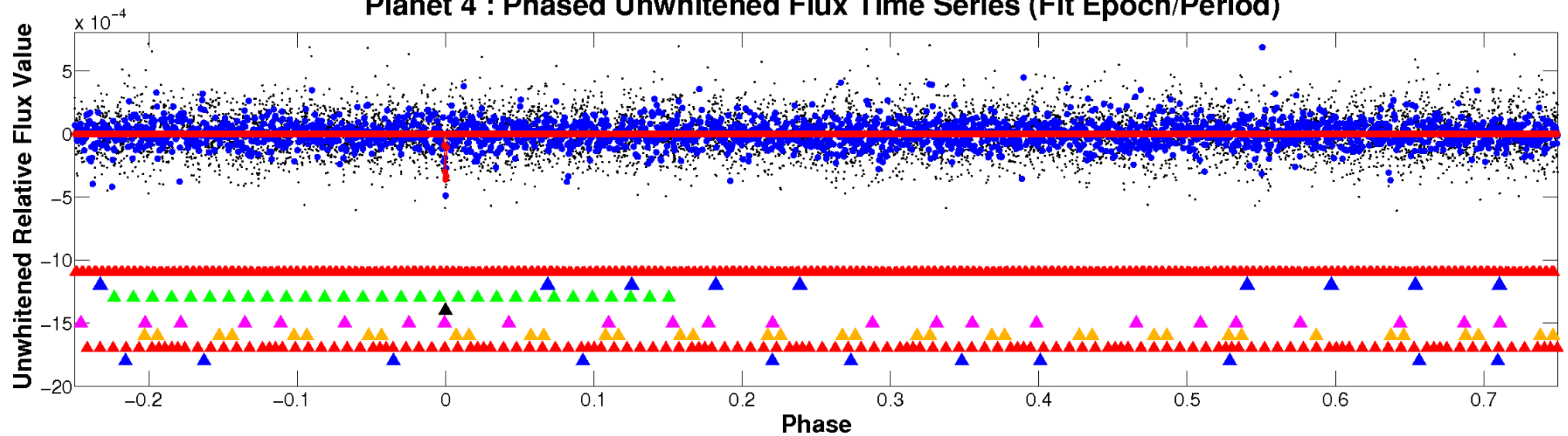


ALT Odd/Even

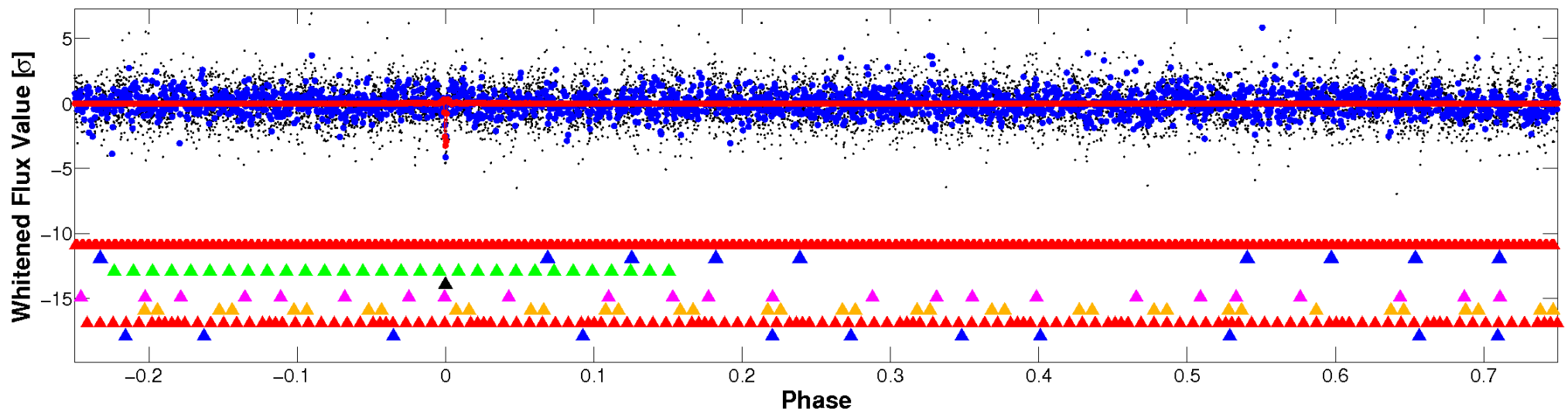
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

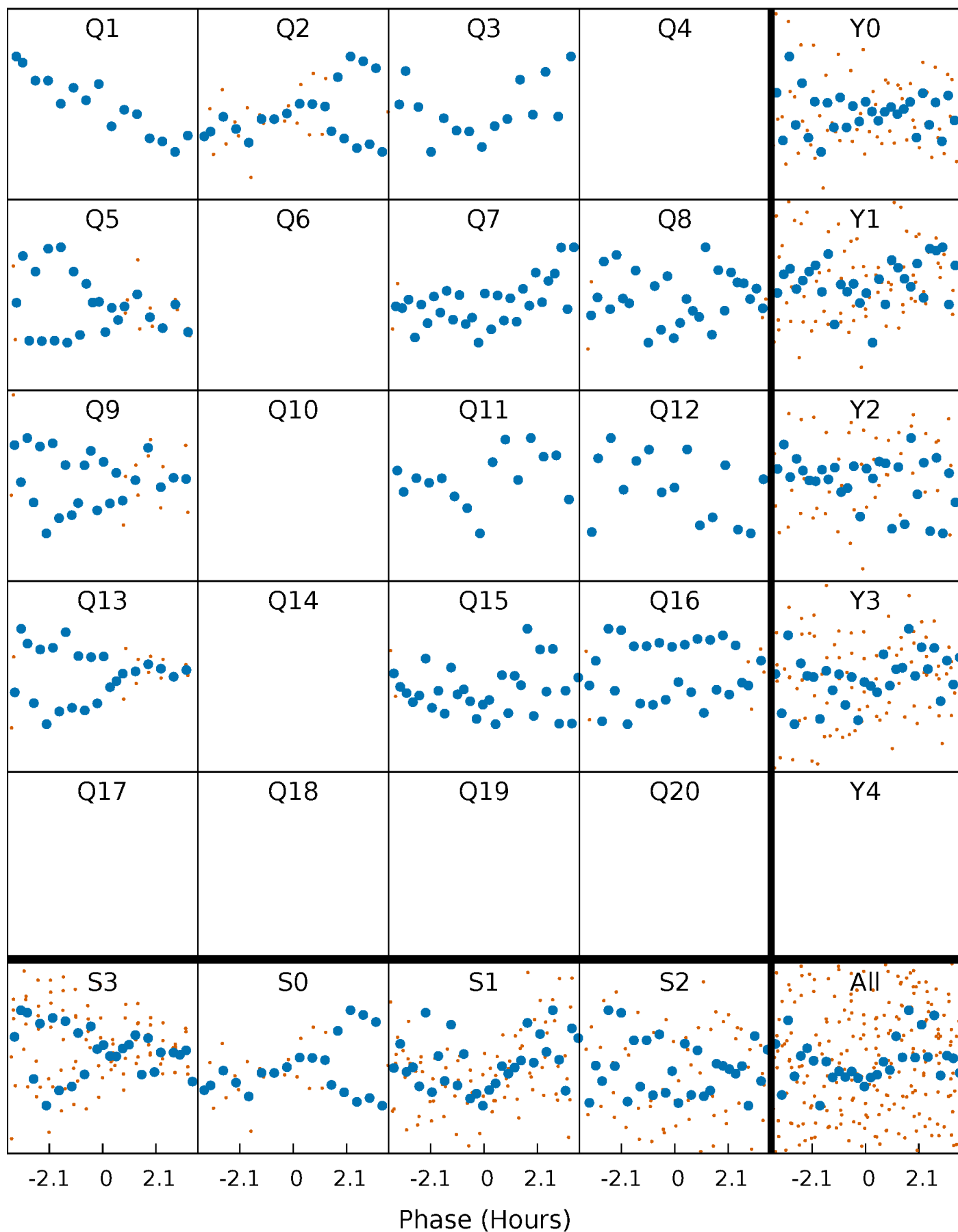


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



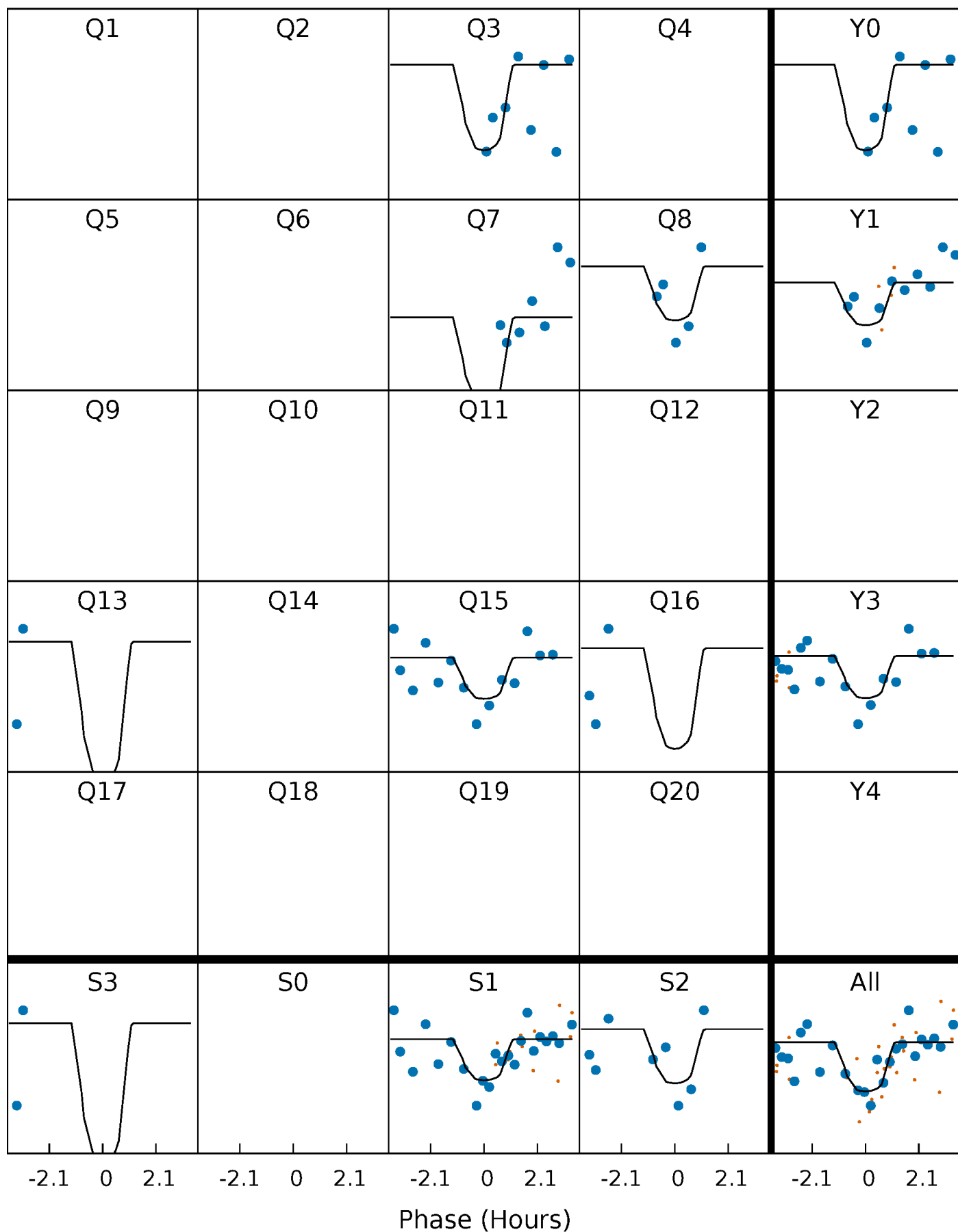
PDC Quarter-Phased Transit Curves

TCE 005372081-04 $P = 49.904496$ Days $T_0 = 150.438465$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005372081-04 P= 49.904496 Days $T_0=150.438465$ (BKJD)

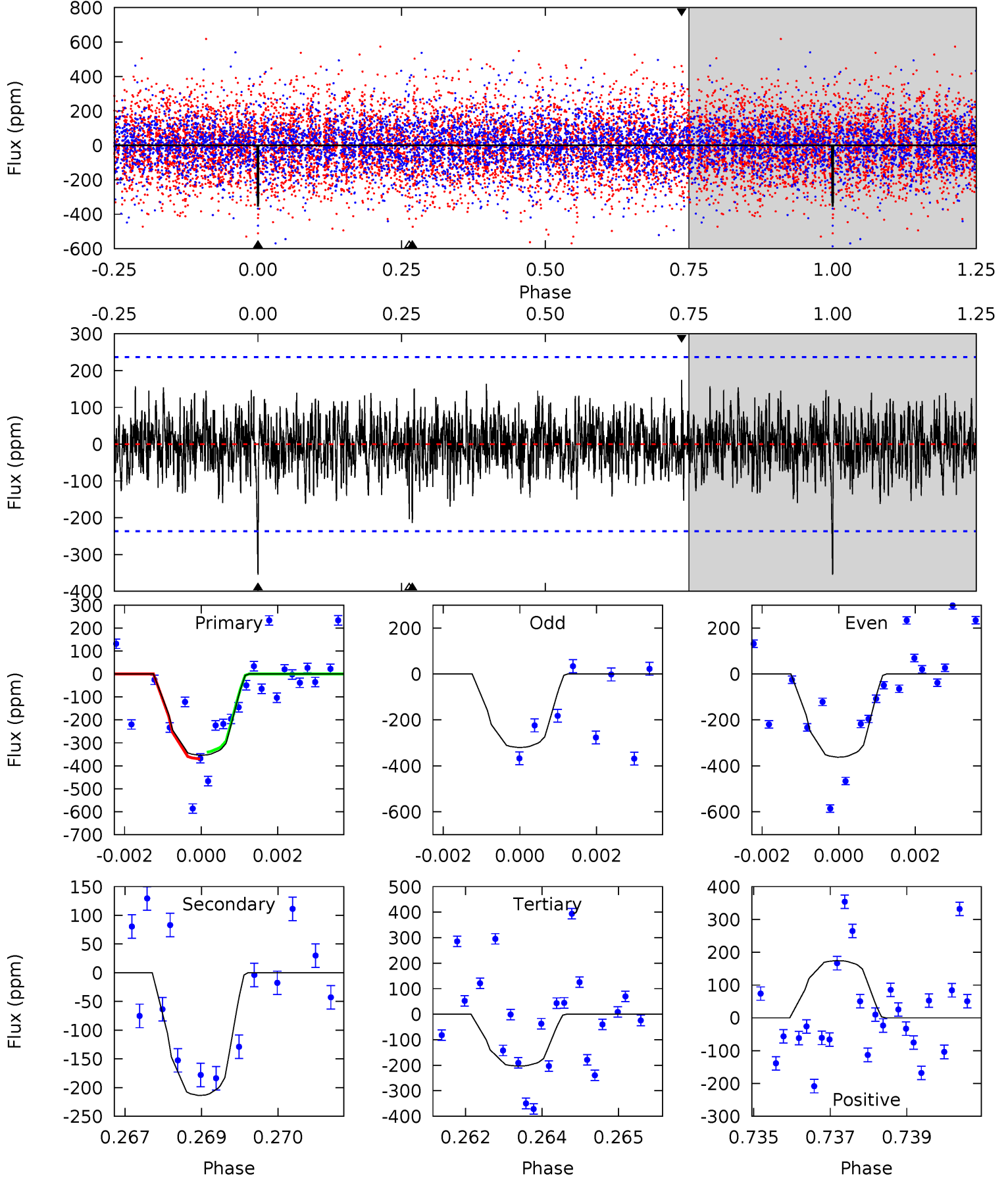


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

005372081-04, P = 49.904496 Days, E = 100.533969 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.04	4.85	4.61	3.96	5.36	3.15	1.24	3.42	4.08	0.24	0.89	0.42	0.87	0.33	0.30



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 005372081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6340^{+151}_{-189}	$4.457^{+0.050}_{-0.188}$	$-0.300^{+0.250}_{-0.350}$	$1.010^{+0.284}_{-0.122}$	$1.066^{+0.133}_{-0.146}$	$1.458^{+0.381}_{-0.734}$
	+2%/-3%	+1%/-4%	+83%/-117%	+28%/-12%	+12%/-14%	+26%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005372081-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-214±44	$3.67^{+2.93}_{-2.44}$	772^{+54}_{-38}	4520^{+3049}_{-872}	633^{+5280}_{-436}
Alt.	N/A	N/A	N/A	N/A	N/A

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

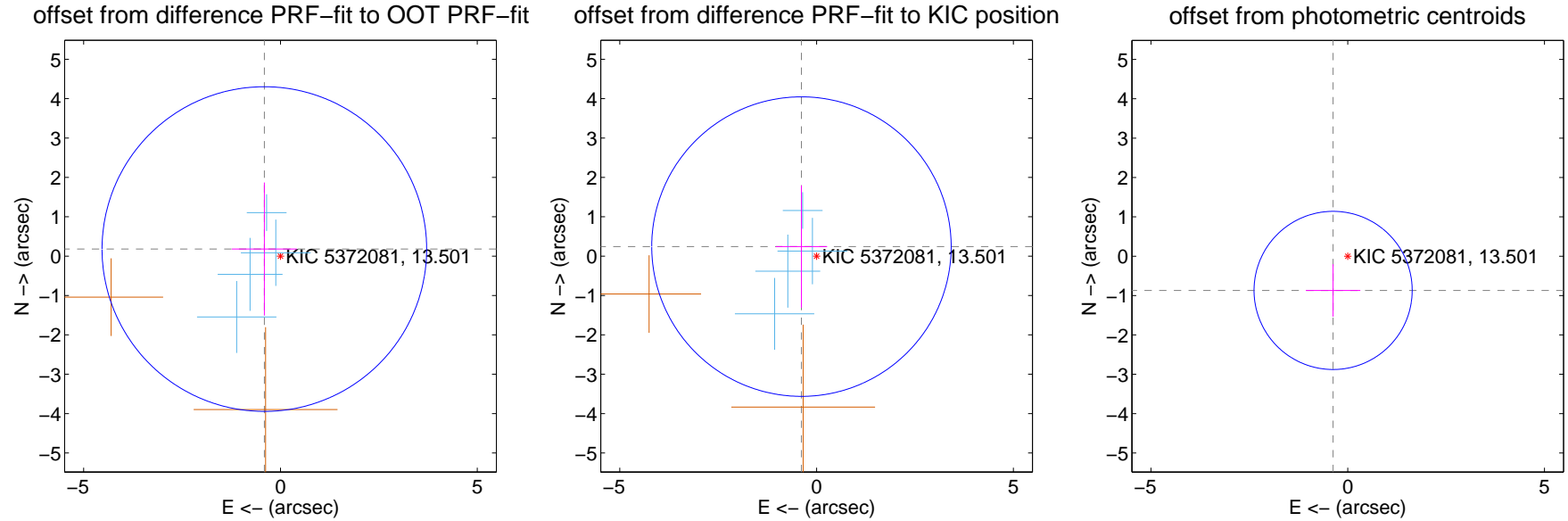
DV Centroid Data

Supplemental centroid analysis for 005372081-04. Kepler magnitude: 13.50. Transit SNR 8.96

There are 4 quarters with good PRF difference image offsets

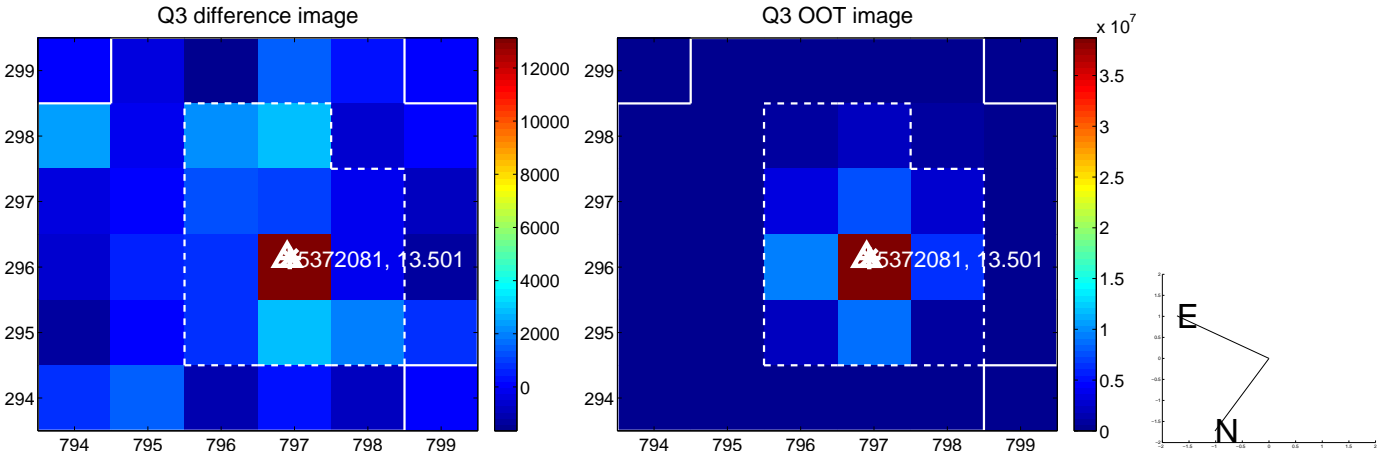
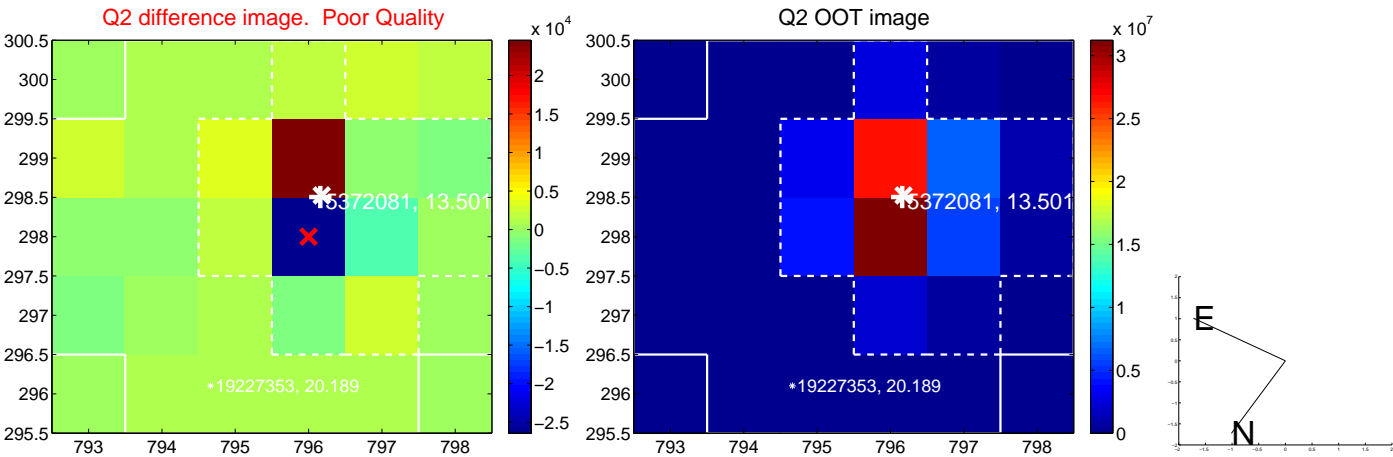
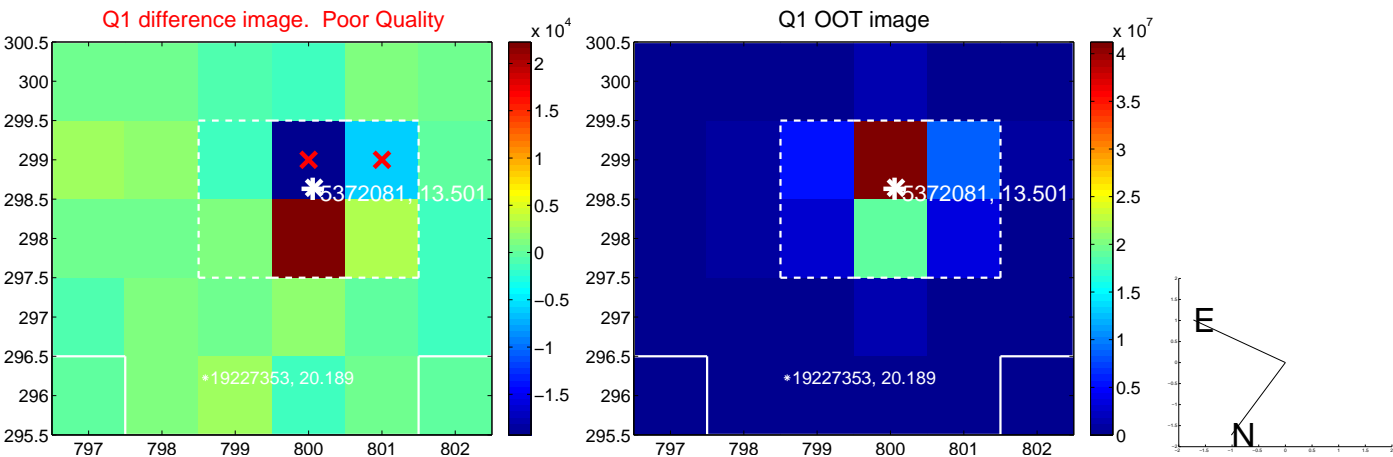
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.447 ± 1.375	0.33	0.409 ± 0.825	0.179 ± 1.690
PRF-fit source offset from KIC position	0.454 ± 1.268	0.36	0.385 ± 0.653	0.242 ± 1.552
photometric centroid source offset	0.95 ± 0.67	1.41	0.37 ± 0.69	-0.87 ± 0.67

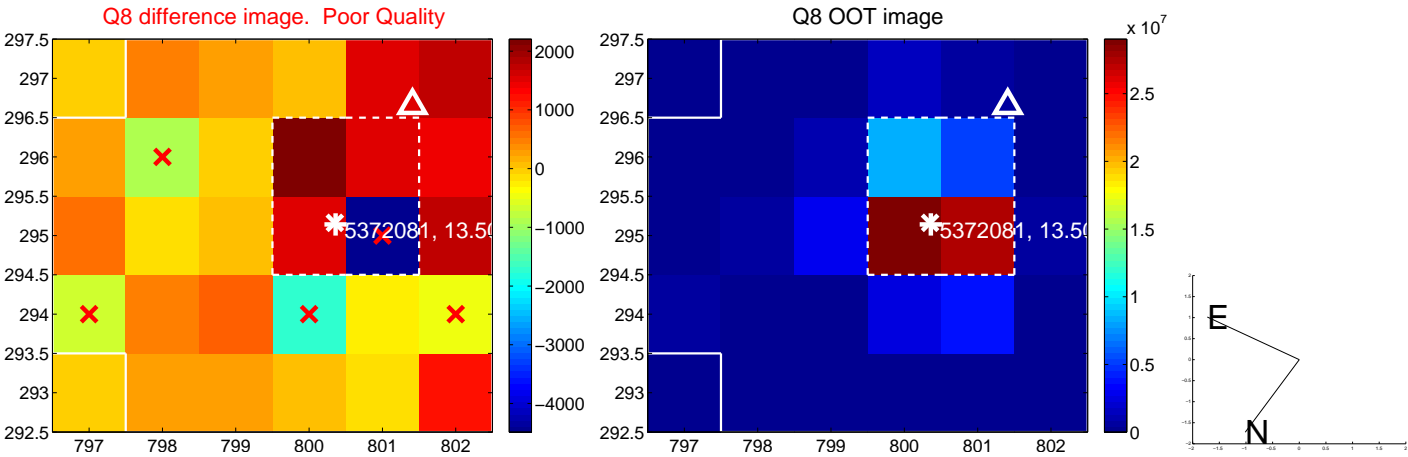
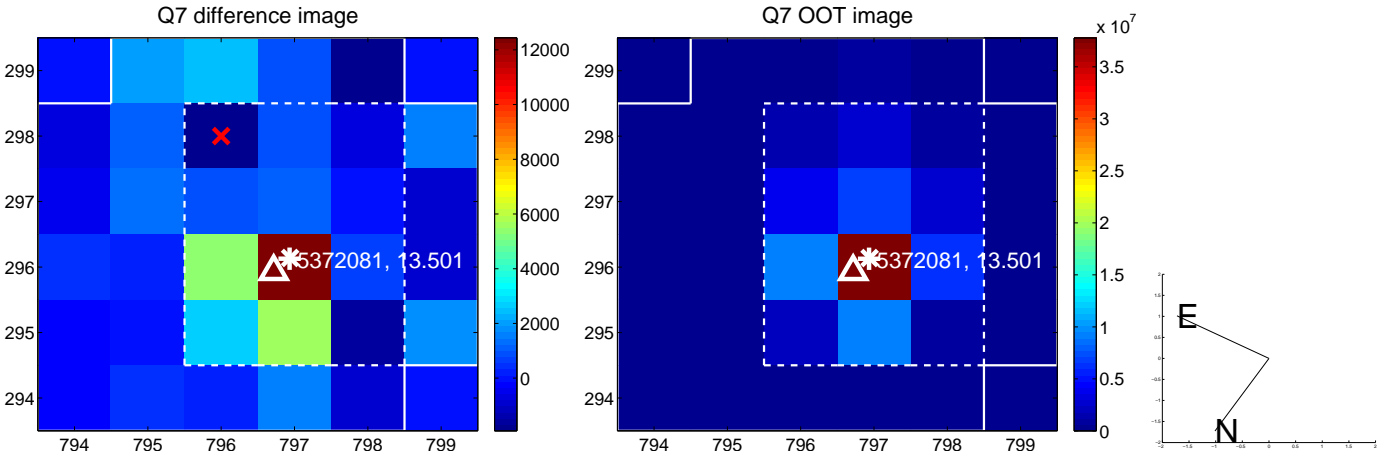
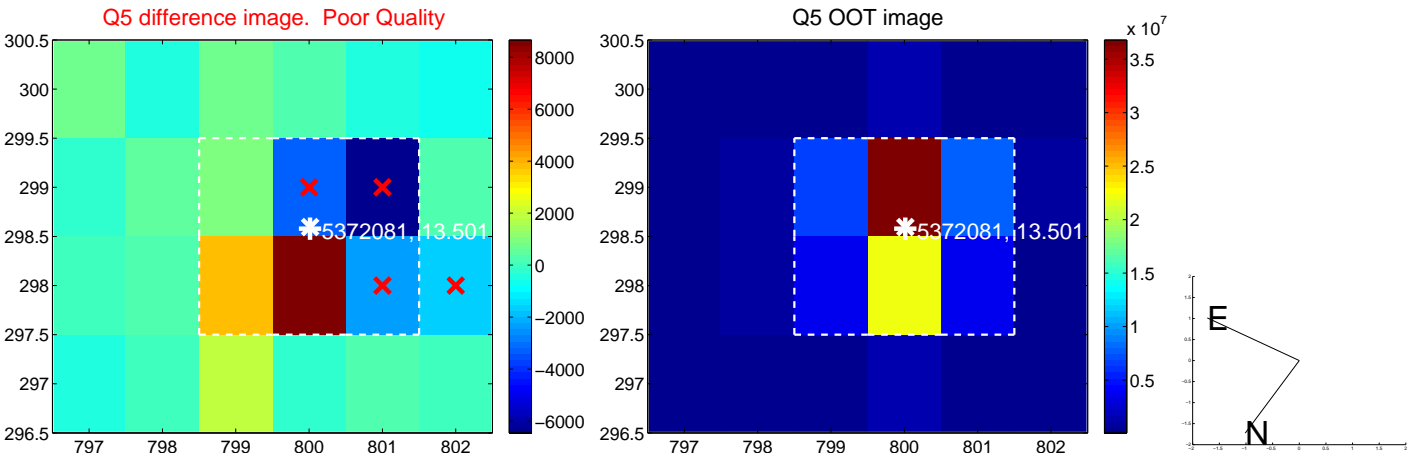


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

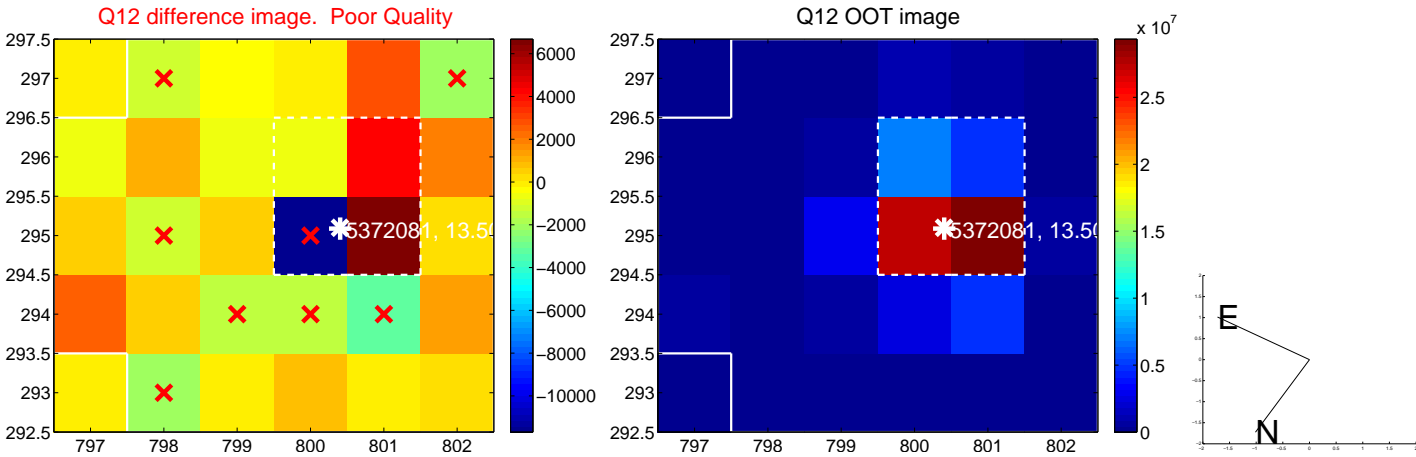
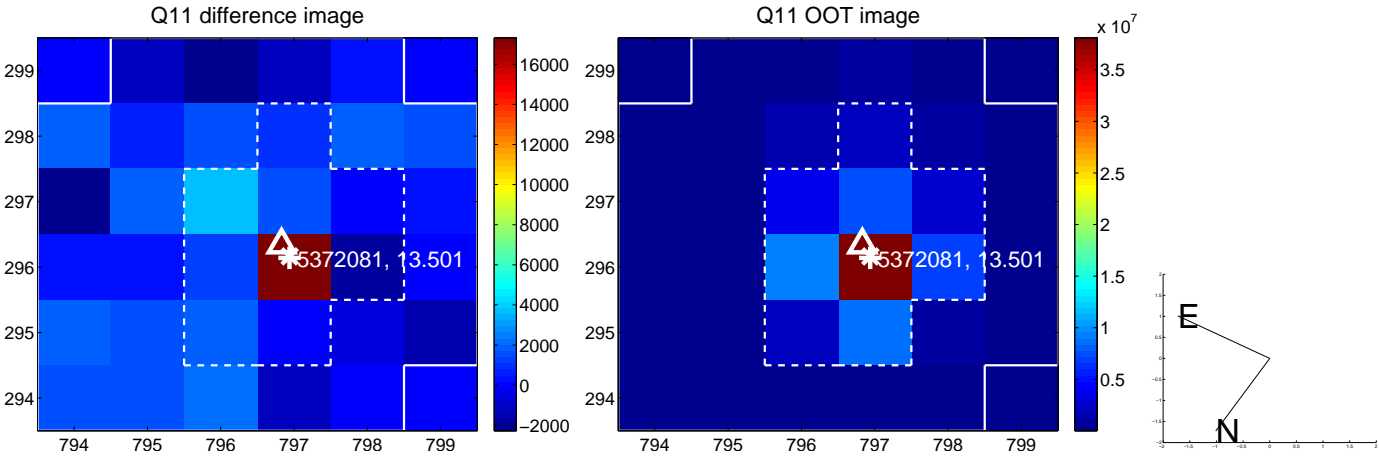
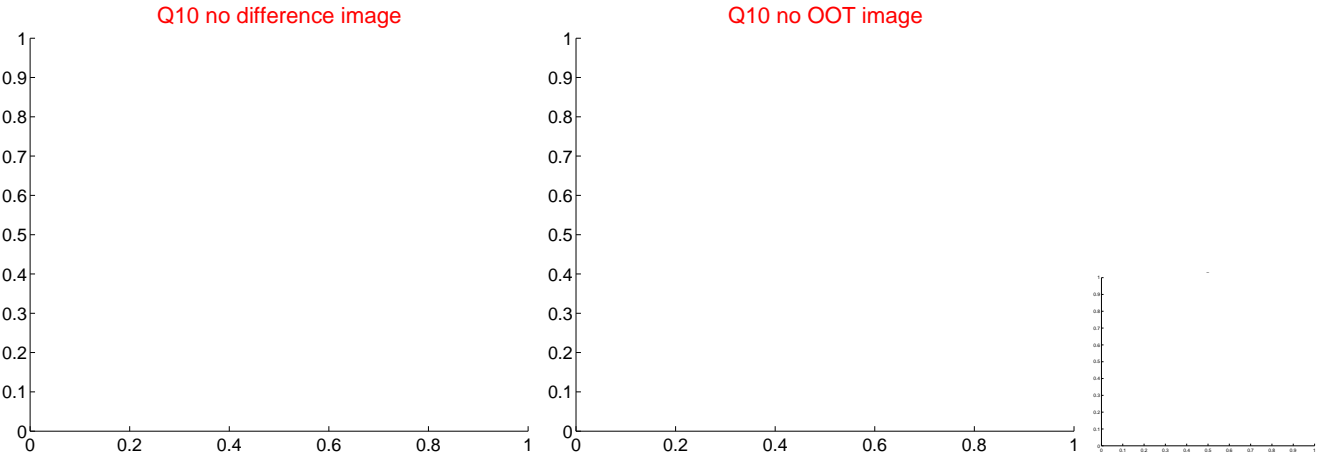
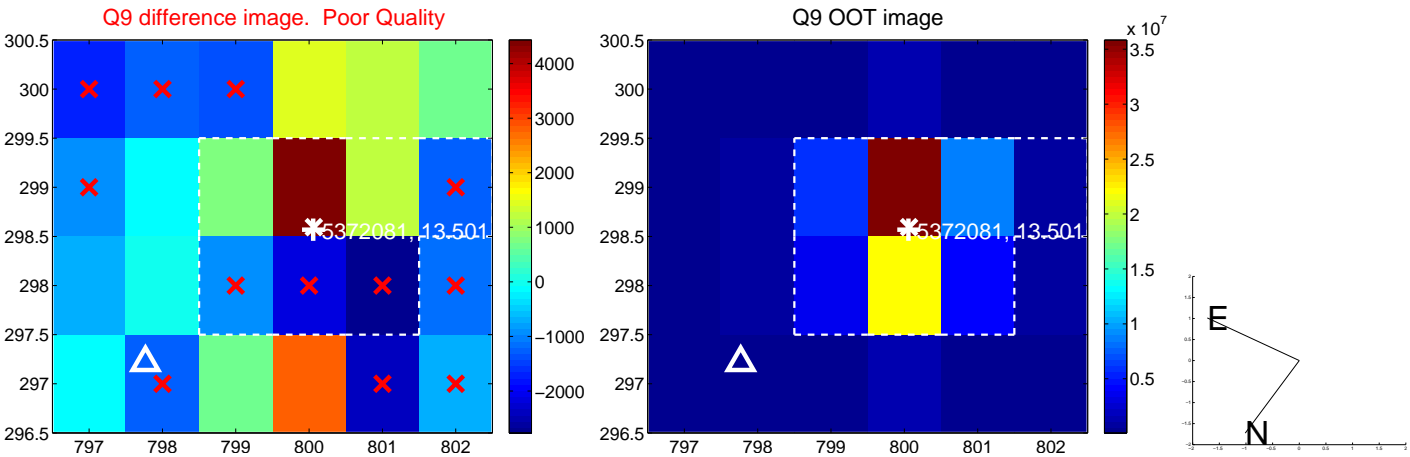
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



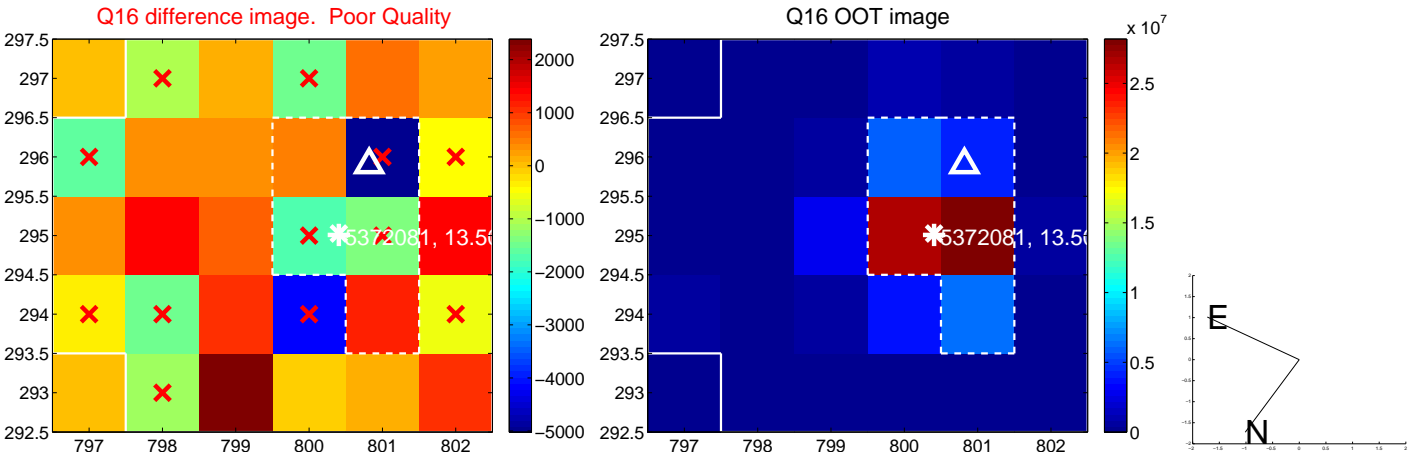
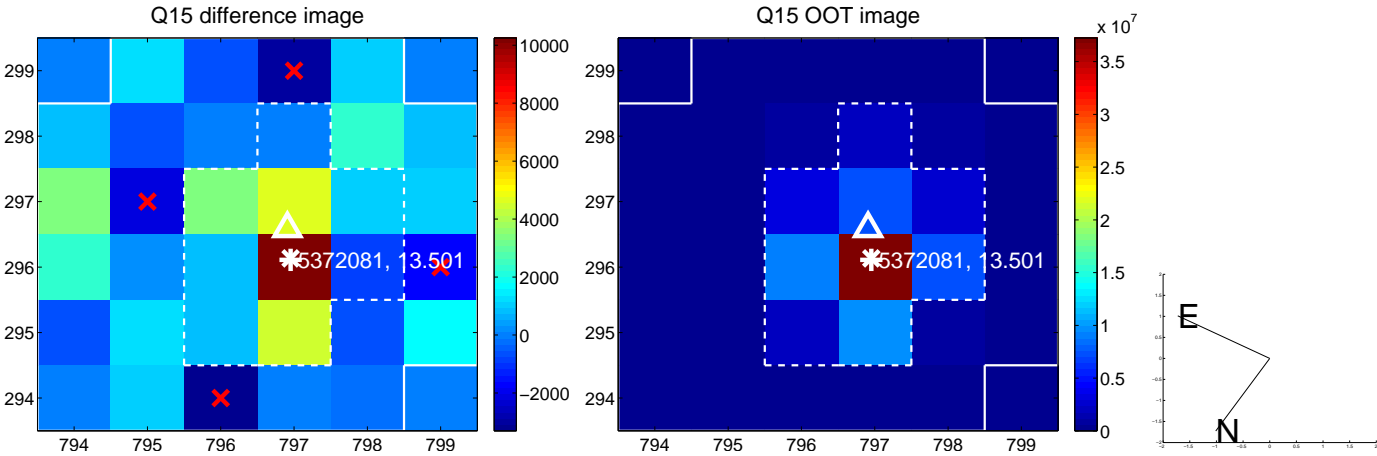
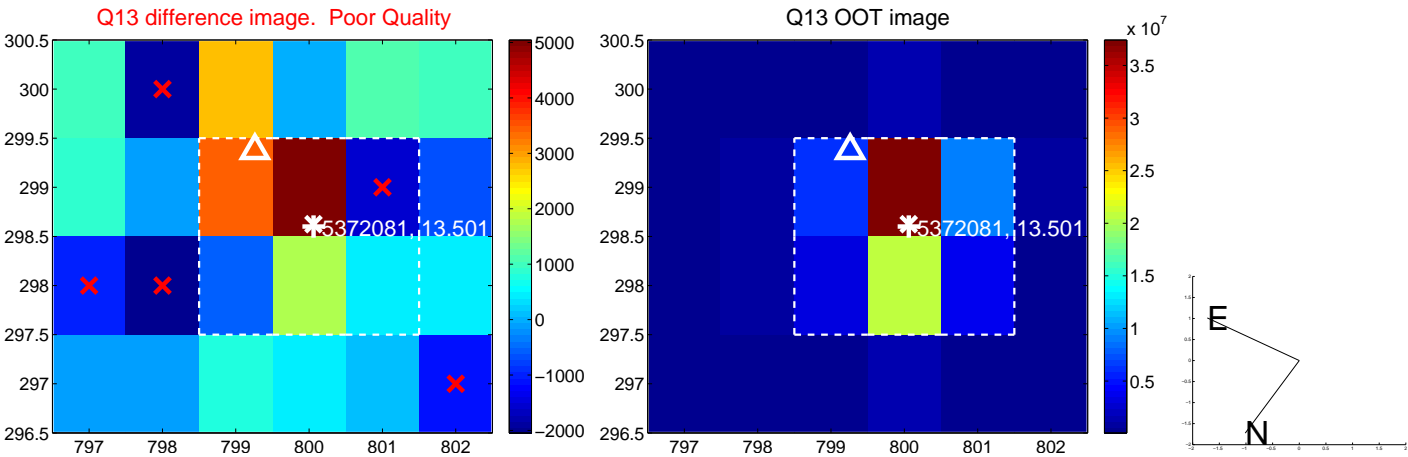
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



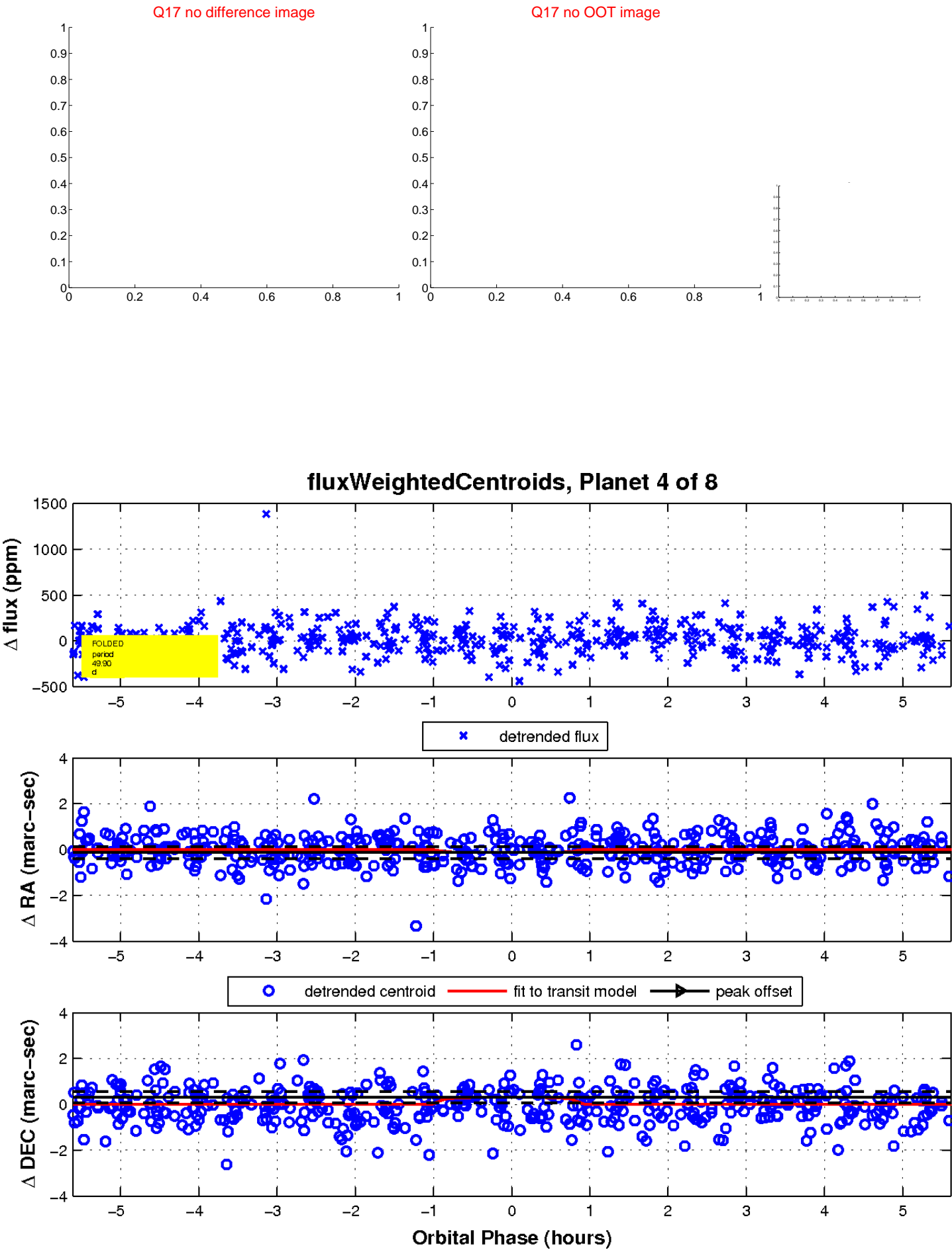
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

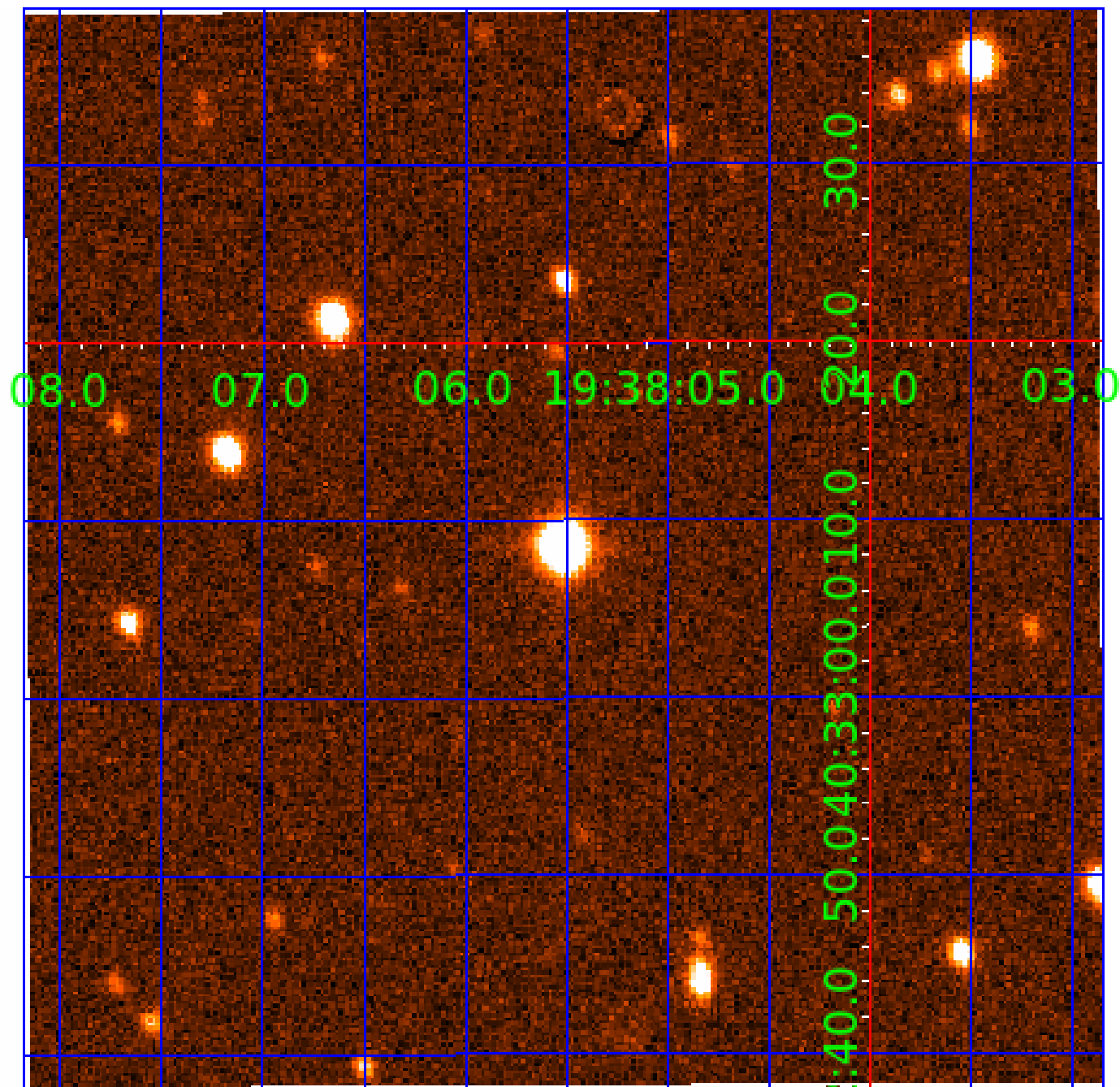


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005372081

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})
005372081-01	OBS	No	1.532264	132.484753	3.2	9.907	8.2	1.7	1.01	6340	0.21	2091.00
005372081-02	OBS	No	173.251831	188.728132	64.3	47.095	17.8	3.8	1.01	6340	0.94	3.82
005372081-03	OBS	No	49.261082	157.953926	273.2	2.217	9.1	9.4	1.01	6340	2.12	20.45
005372081-04	OBS	No	49.904496	150.438465	362.3	1.877	9.3	9.0	1.01	6340	2.12	20.10
005372081-05	OBS	No	58.781787	190.236355	217.5	5.313	8.9	9.0	1.01	6340	1.66	16.16
005372081-06	OBS	No	39.420992	168.821592	338.0	1.185	8.2	9.5	1.01	6340	2.31	27.53
005372081-07	OBS	No	10.724962	140.794691	108.8	3.825	9.3	10.9	1.01	6340	1.24	156.17
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Robovetter Results

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005372081-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005372081-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005372081-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
005372081-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005372081-06	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005372081-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005372081-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

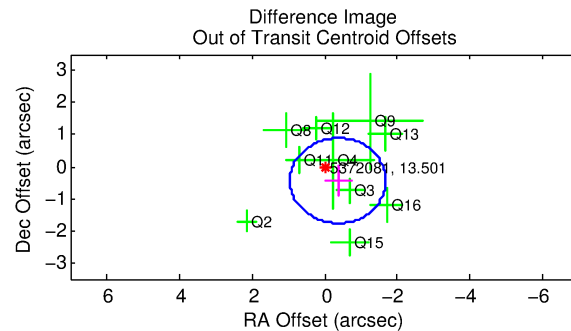
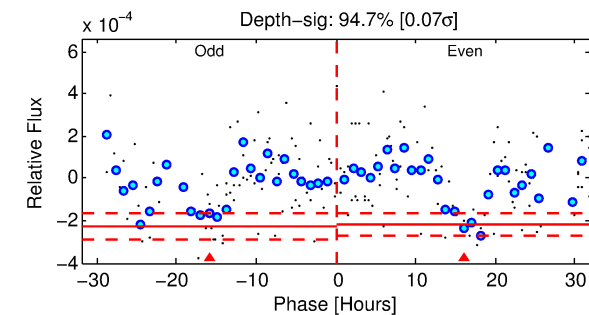
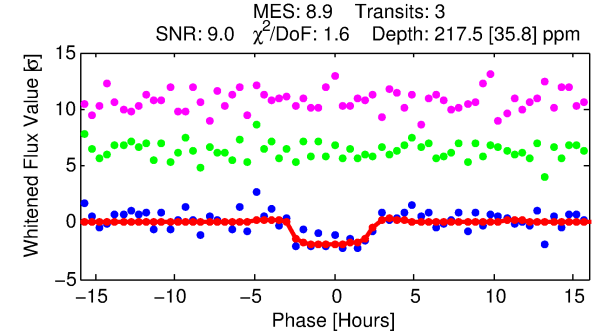
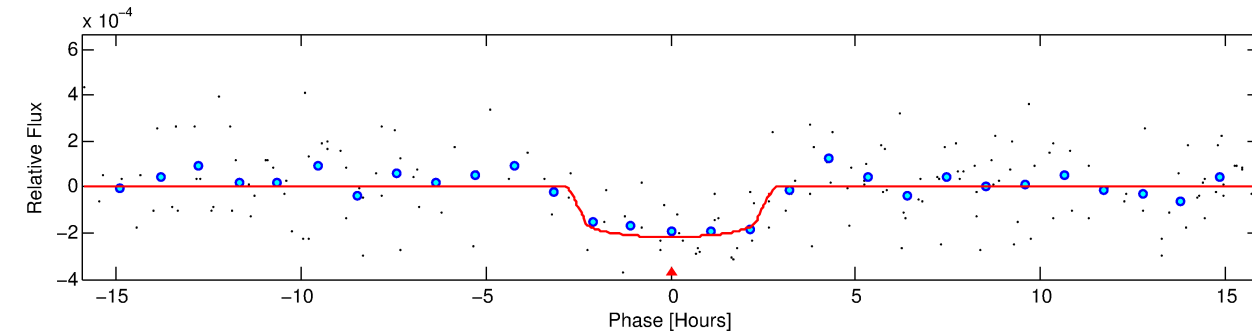
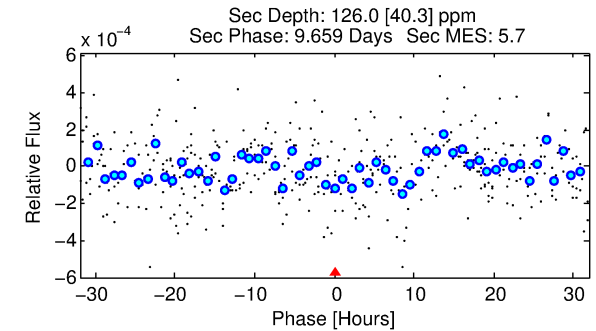
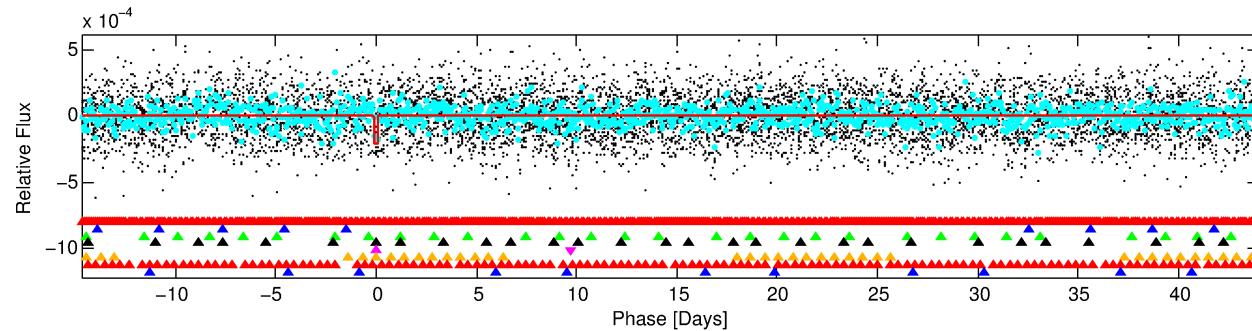
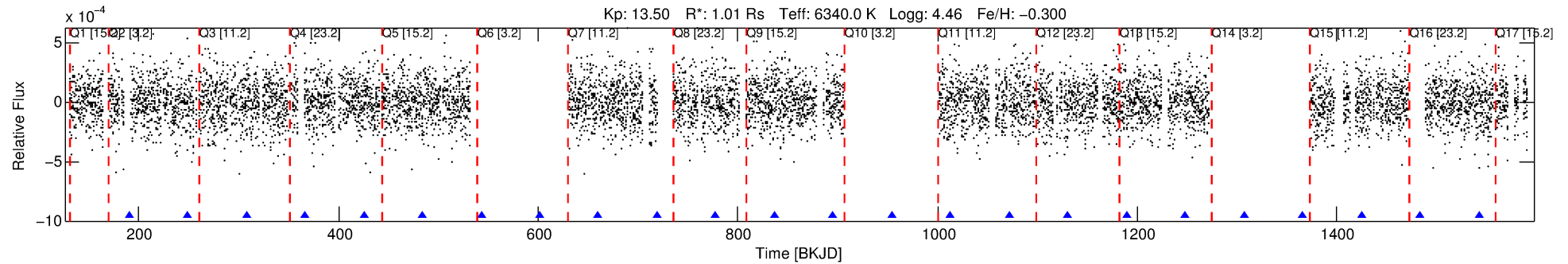
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005372081-05

No Significant Match Found

DV One-Page Summary

KIC: 5372081 Candidate: 5 of 8 Period: 58.782 d



DV Fit Results:

Period = 58.78179 [0.00164] d
Epoch = 190.2364 [0.0169] BKJD
Rp/R* = 0.0150 [0.0129]
a/R* = 50.83 [234.81]
b = 0.82 [1.90]
Seff = 16.16 [5.89]
Teff = 511 [47] K
Rp = 1.66 [1.50] Re
a = 0.3023 [0.0715] AU
Ag = 2303.41 [4106.37] [0.56σ]
Teffp = 5476 [2400] K [2.07σ]

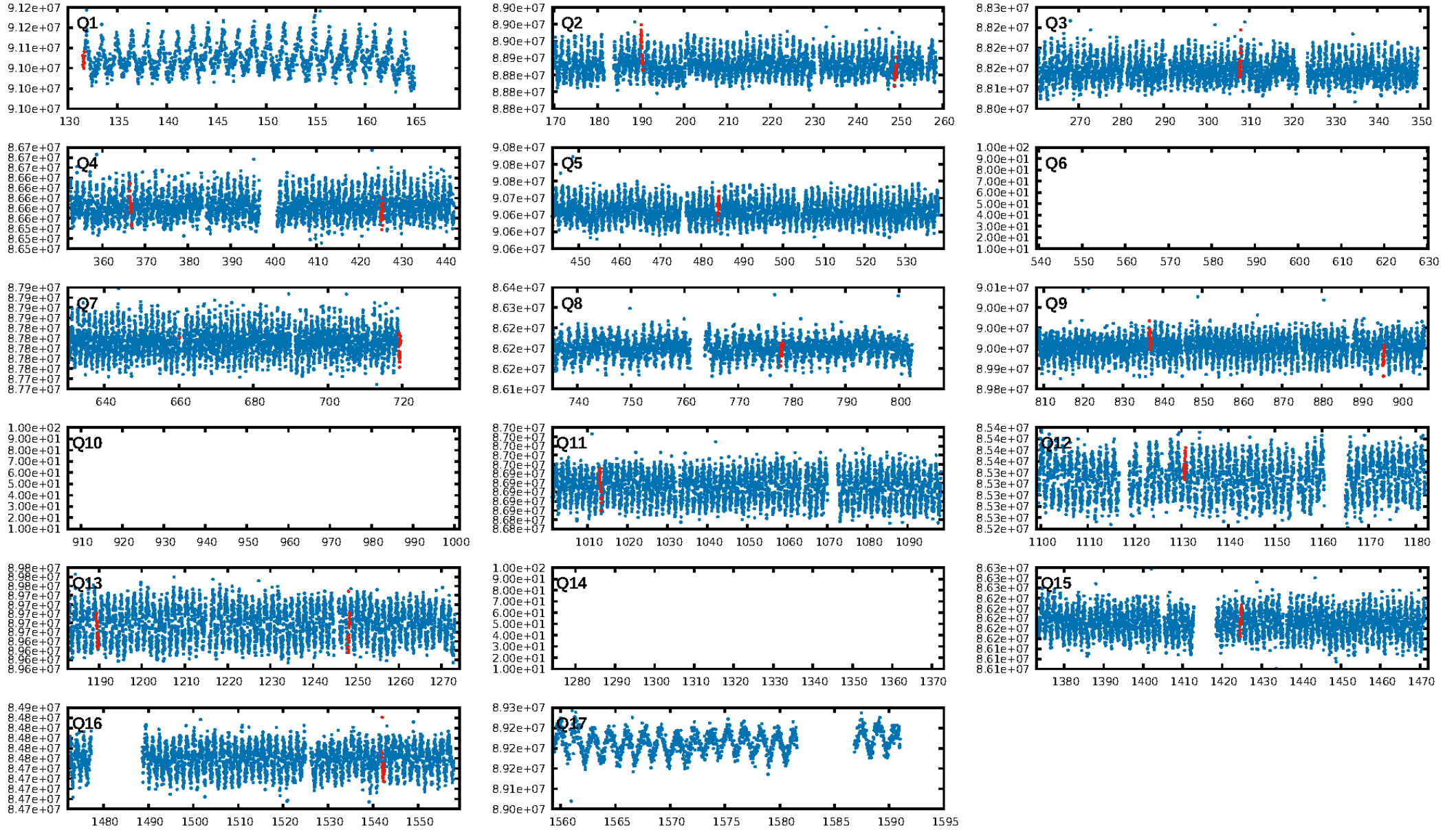
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [37.81σ]
LongPeriod-sig: 100.0% [126.88σ]
ModelChiSquare2-sig: 73.6%
ModelChiSquareGof-sig: 94.4%
Bootstrap-pfa: 1.21e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.809
Centroid-sig: 28.4%
Centroid-so: 0.801 arcsec [1.04σ]
OotOffset-rm: 0.569 arcsec [1.29σ]
KicOffset-rm: 0.554 arcsec [1.32σ]
OotOffset-st: 1/3/4/2 [10]
KicOffset-st: 1/3/4/2 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 0.09 [1/11]

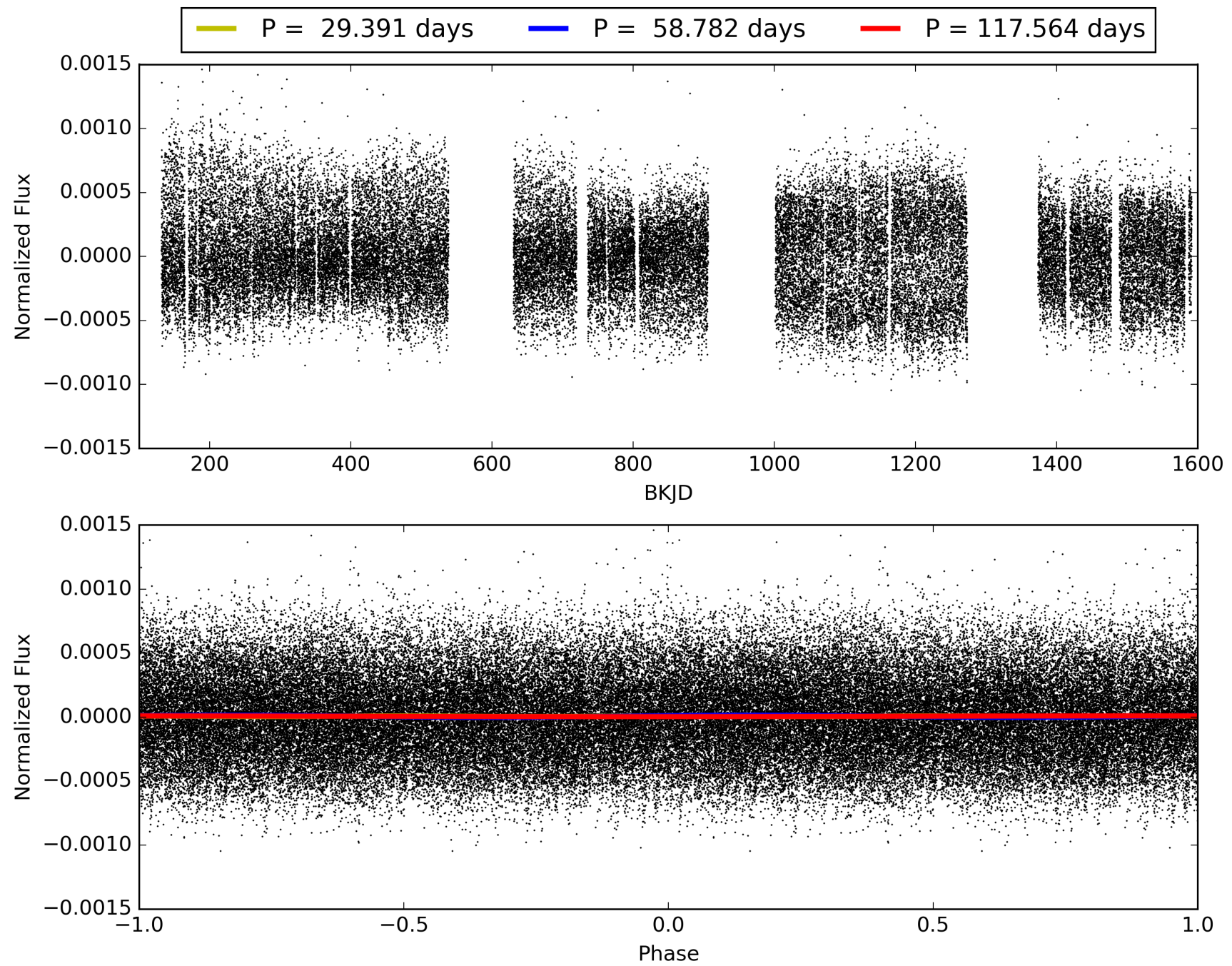
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:11:39 Z

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

TCE 005372081-05, PDC Light Curves

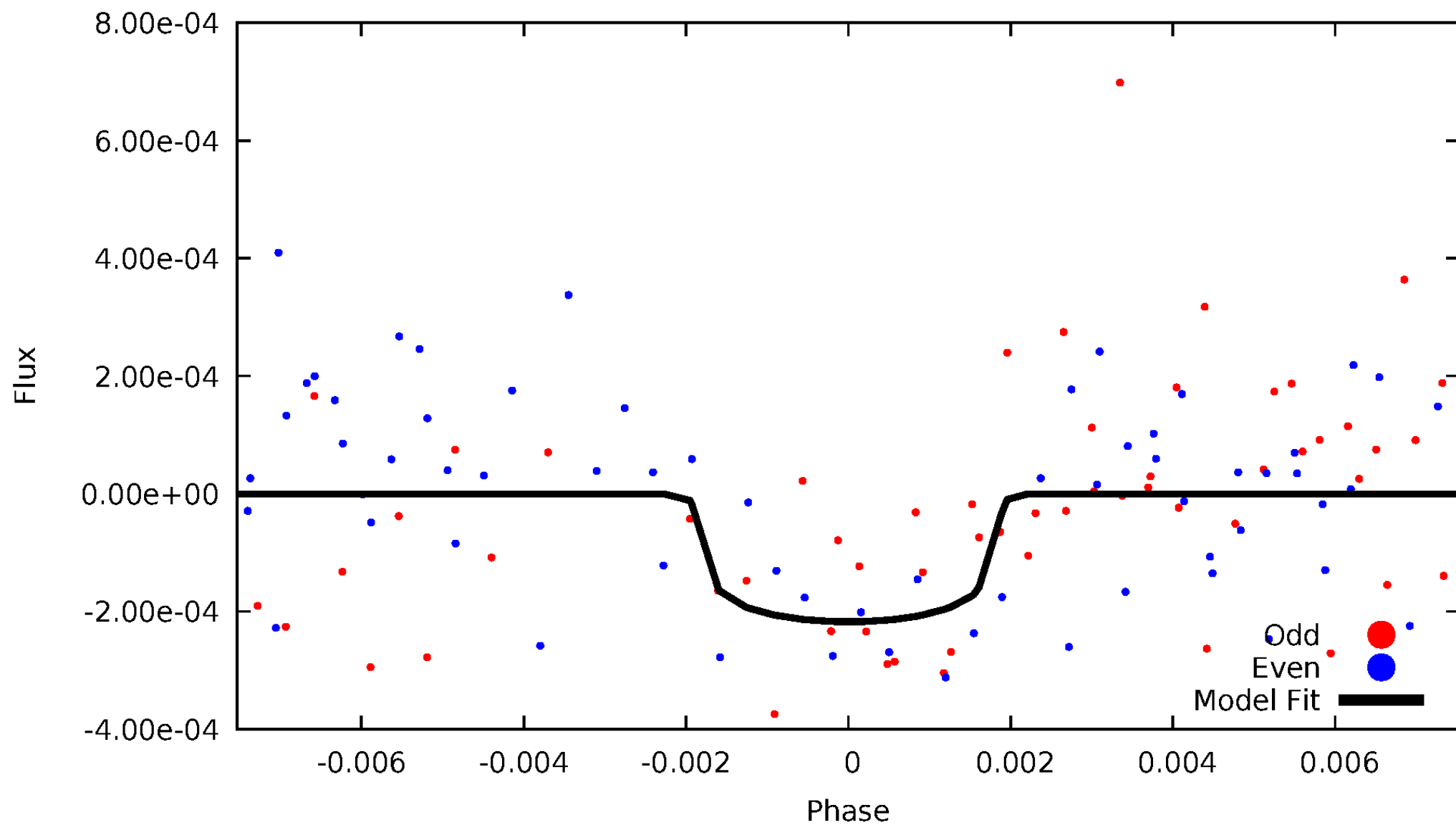


TCE 005372081-05



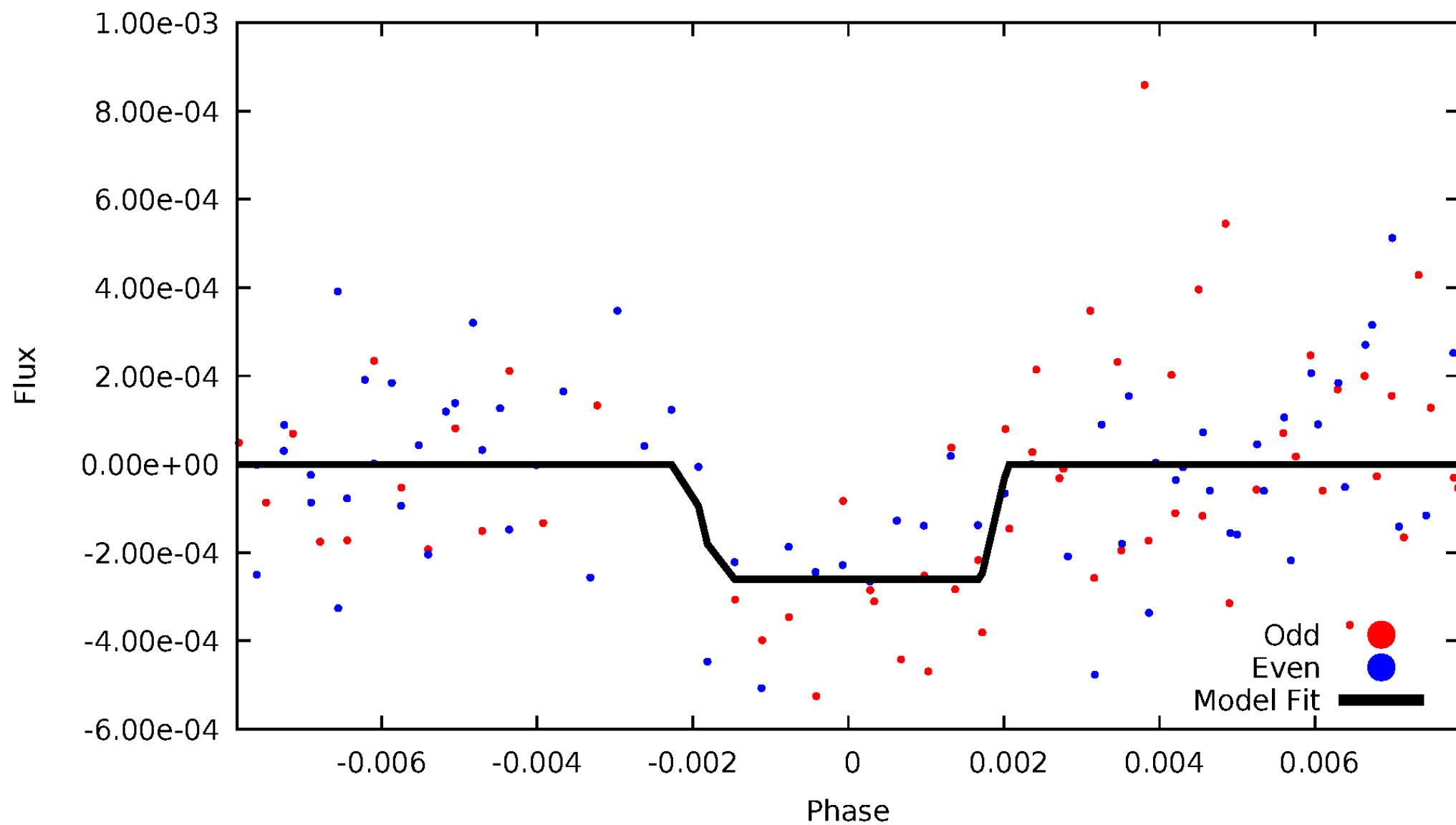
DV Odd/Even

TCE 005372081-05



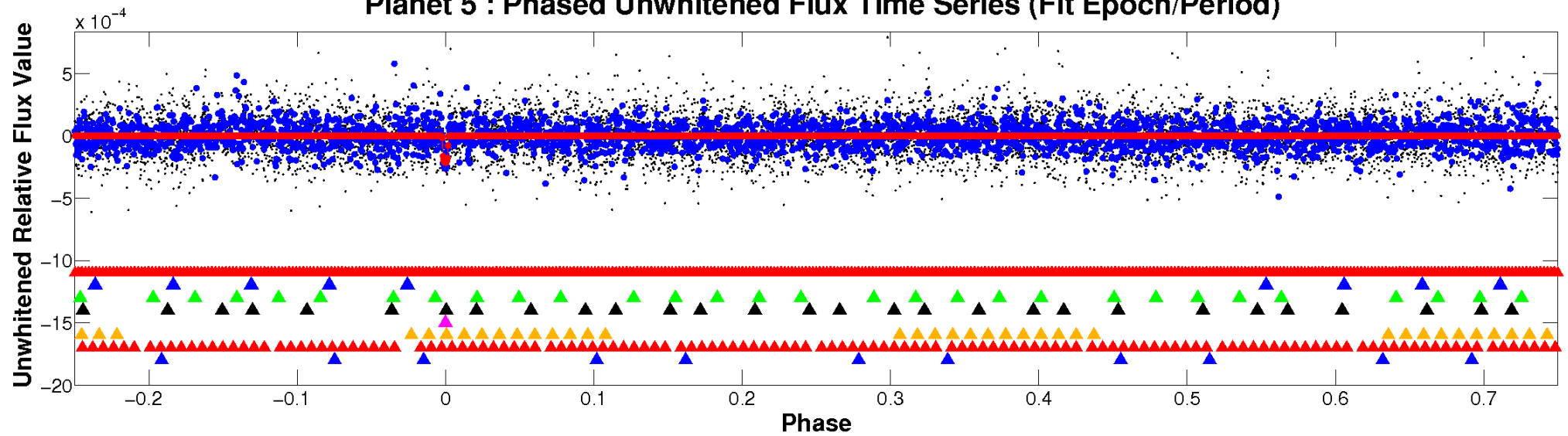
ALT Odd/Even

TCE 005372081-05

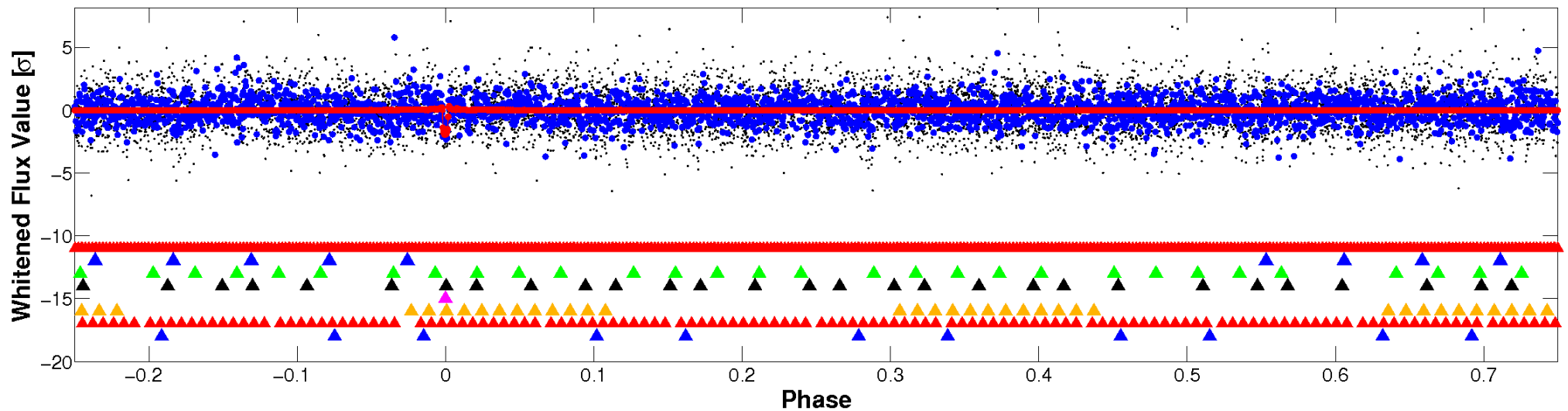


Non-Whitened Vs. Whitened Light Curve

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

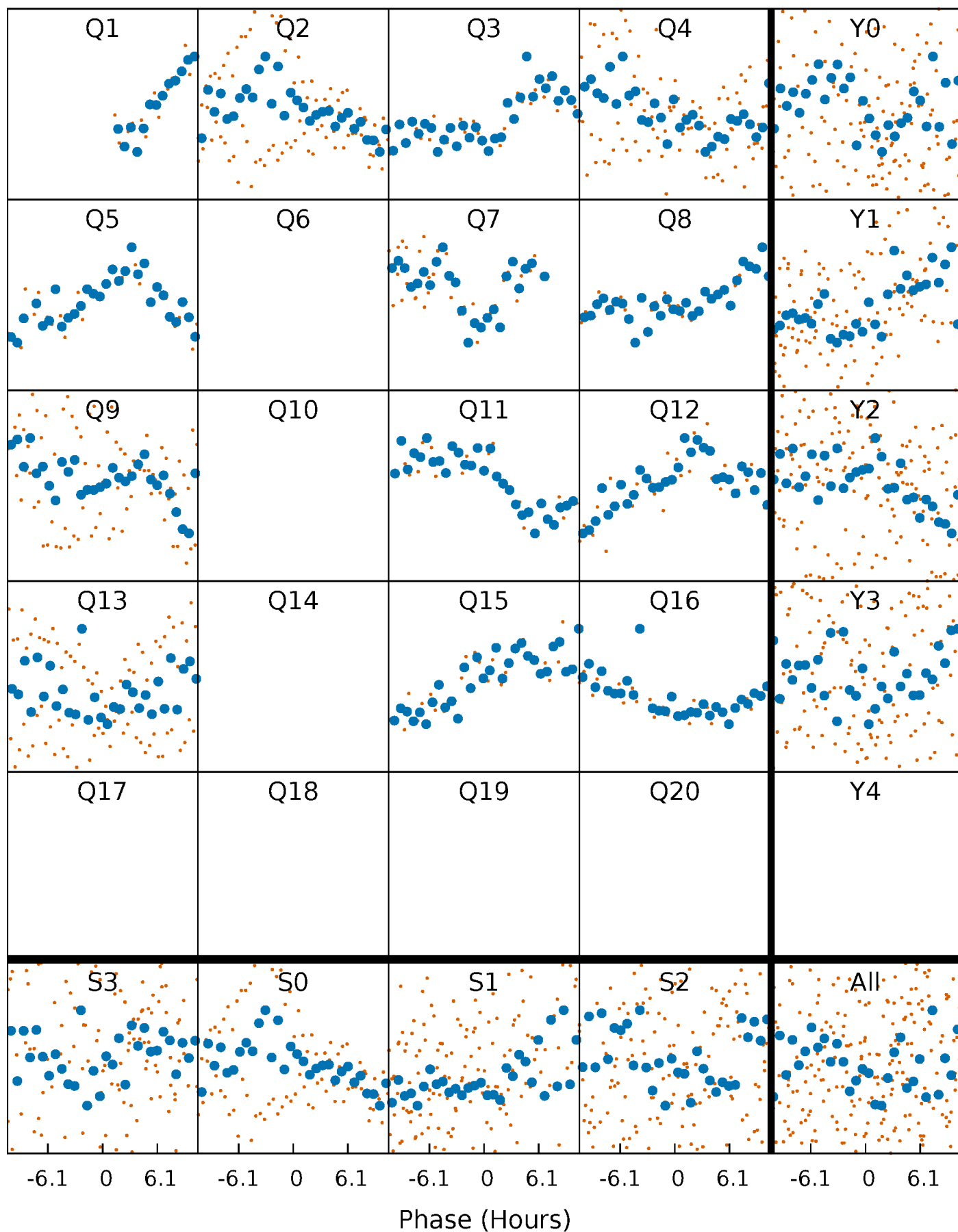


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



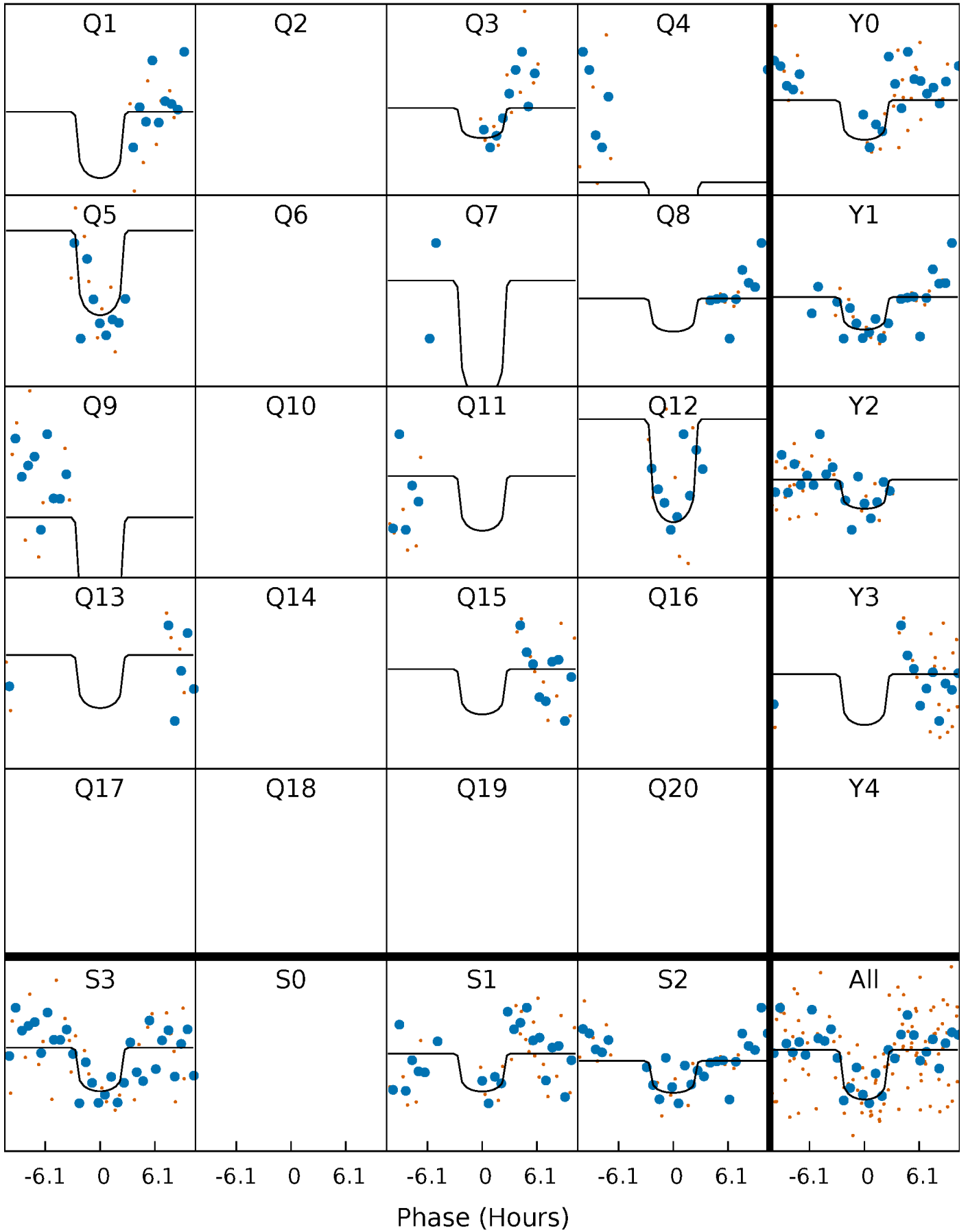
PDC Quarter-Phased Transit Curves

TCE 005372081-05 $P = 58.781787$ Days $T_0 = 190.236355$ (BKJD)



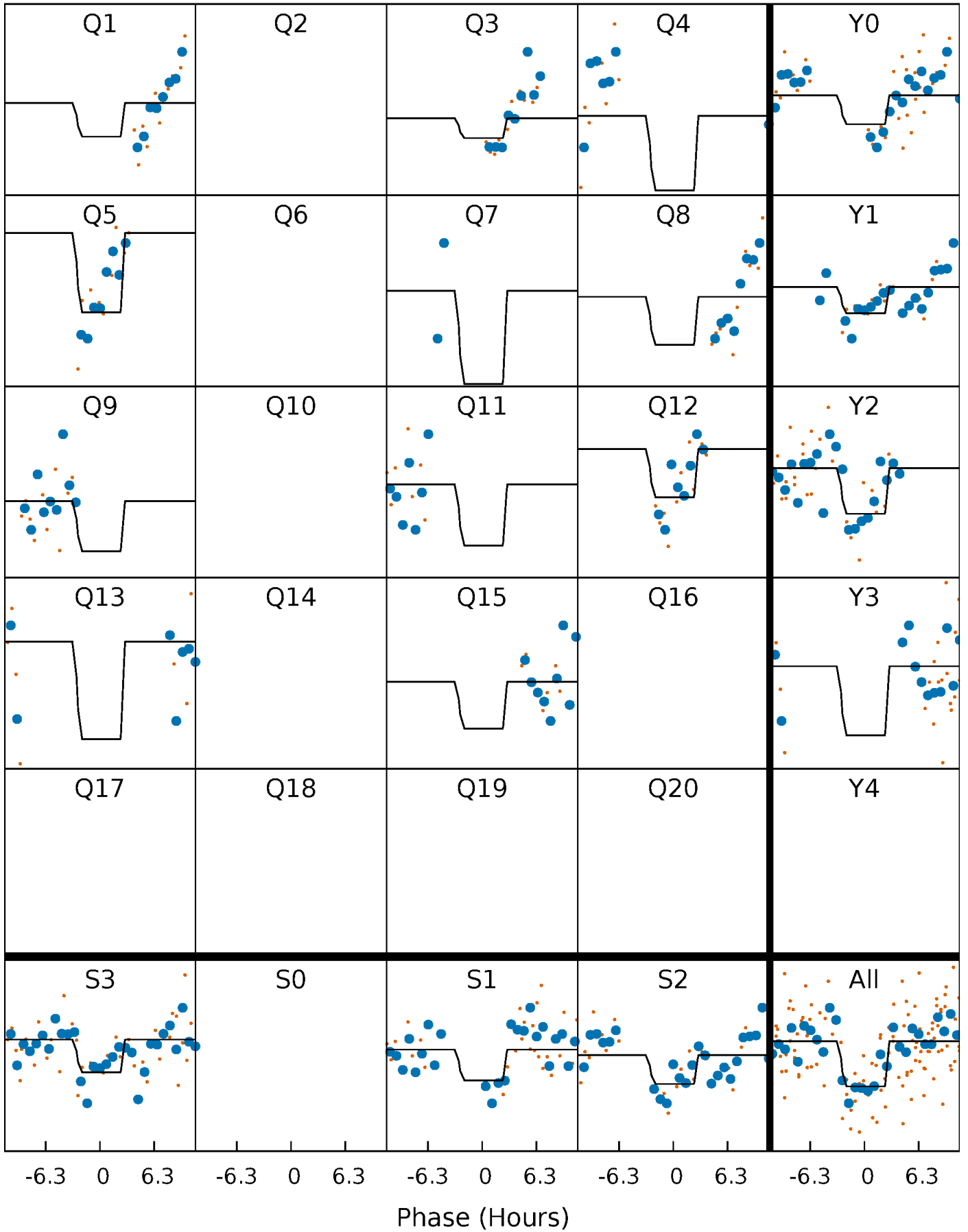
DV Quarter-Phased Transit Curves

TCE 005372081-05 P= 58.781787 Days $T_0=190.236355$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

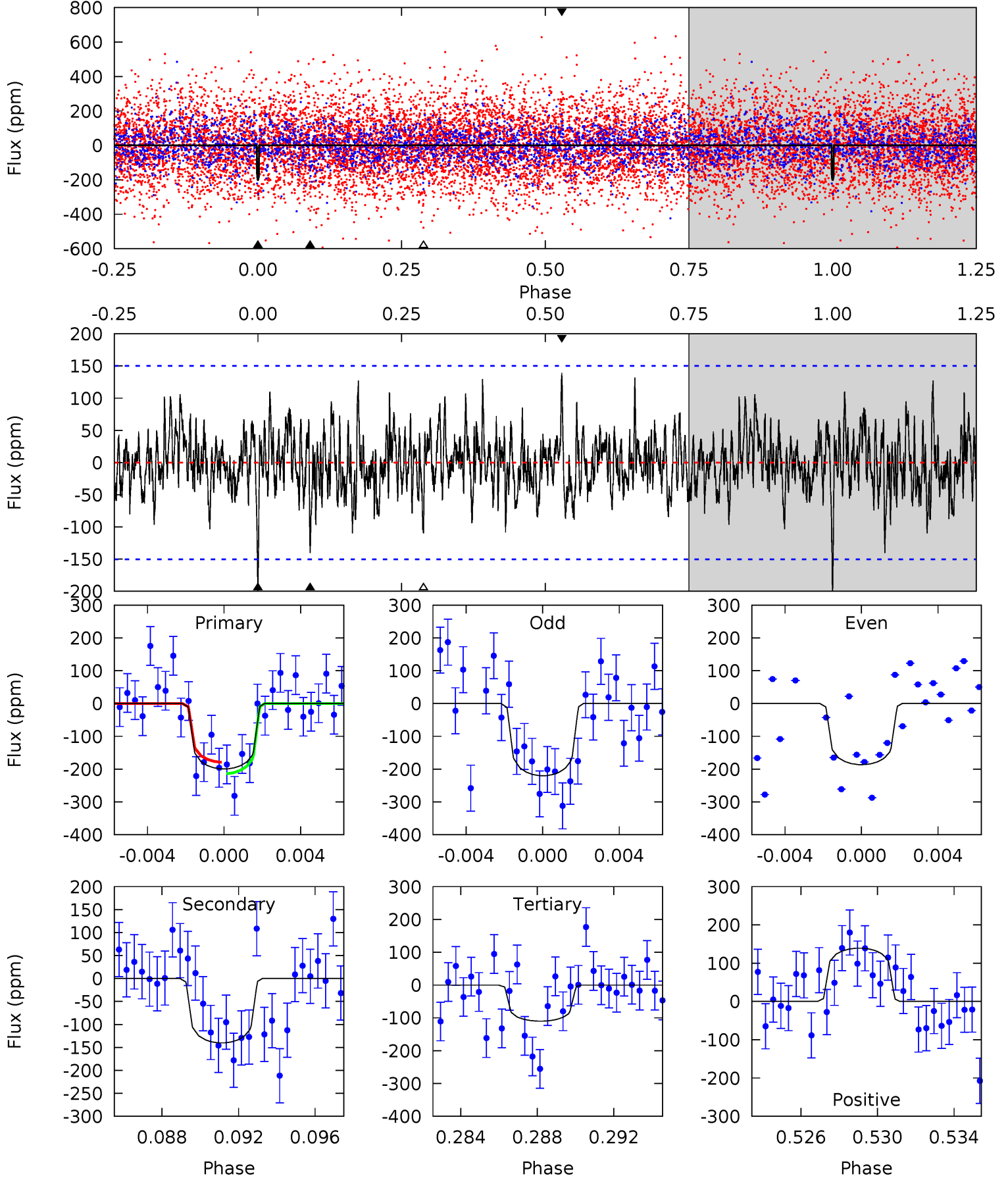
TCE 005372081-05 P= 58.781634 Days $T_0=190.209734$ (BKJD)



DV Model-Shift Uniqueness Test

005372081-05, P = 58.781787 Days, E = 131.454568 Days

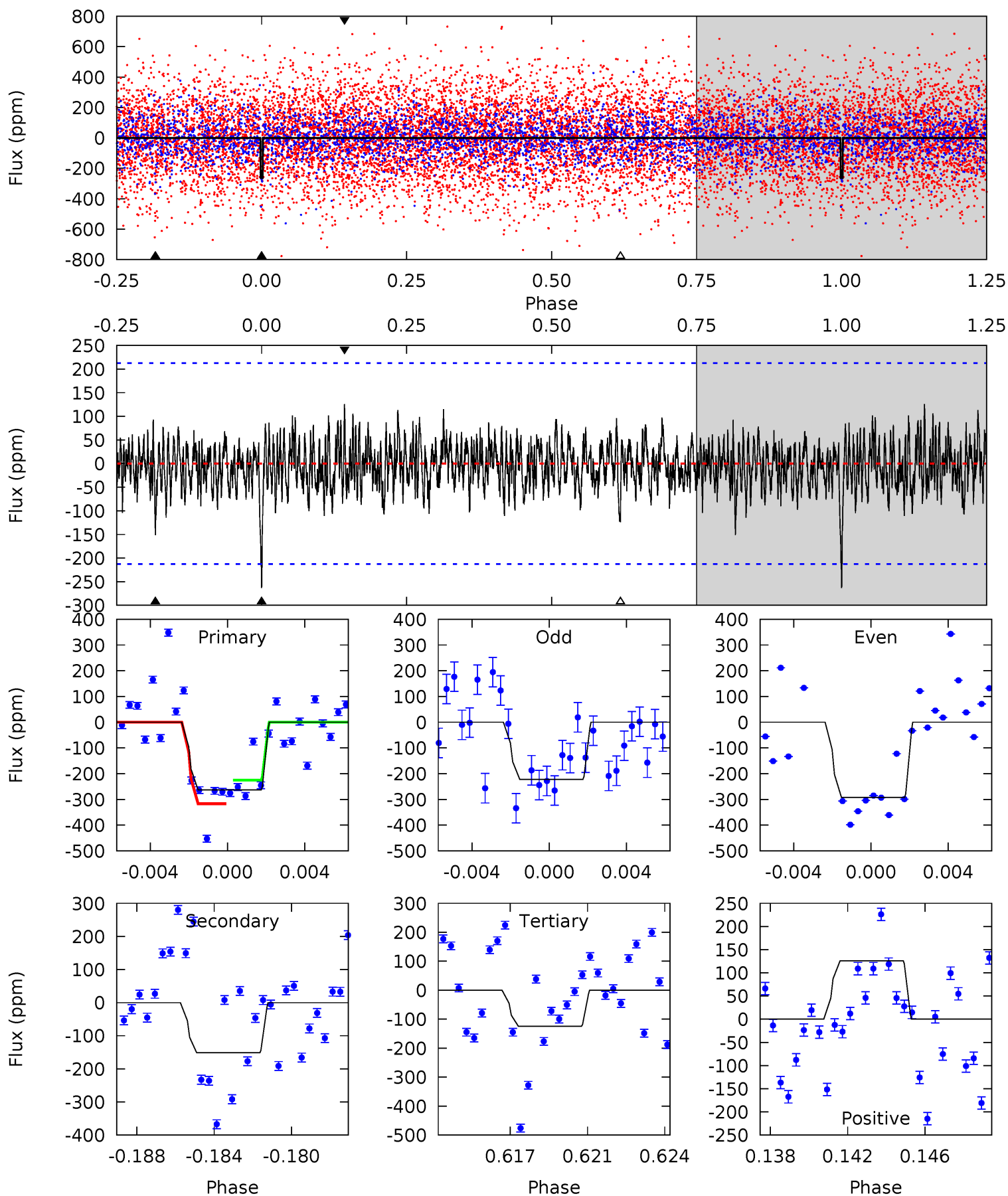
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.89	4.84	3.80	4.81	5.19	2.86	1.33	3.09	2.08	1.05	0.04	0.57	1.03	0.41	0.59



Alt Model-Shift Uniqueness Test

005372081-05, P = 58.781634 Days, E = 131.428100 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.44	3.70	3.04	3.08	5.21	2.89	0.98	3.40	3.36	0.66	0.62	0.85	1.14	0.32	1.09



Stellar Parameters For KIC 005372081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6340^{+151}_{-189}	$4.457^{+0.050}_{-0.188}$	$-0.300^{+0.250}_{-0.350}$	$1.010^{+0.284}_{-0.122}$	$1.066^{+0.133}_{-0.146}$	$1.458^{+0.381}_{-0.734}$
	+2%/-3%	+1%/-4%	+83%/-117%	+28%/-12%	+12%/-14%	+26%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005372081-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-140 ± 29	$2.00^{+1.30}_{-1.15}$	729^{+47}_{-33}	5275^{+3079}_{-1034}	1711^{+7850}_{-1125}
Alt.	-151 ± 41	$2.08^{+1.46}_{-1.27}$	728^{+46}_{-34}	5247^{+3334}_{-1055}	1664^{+9679}_{-1127}

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

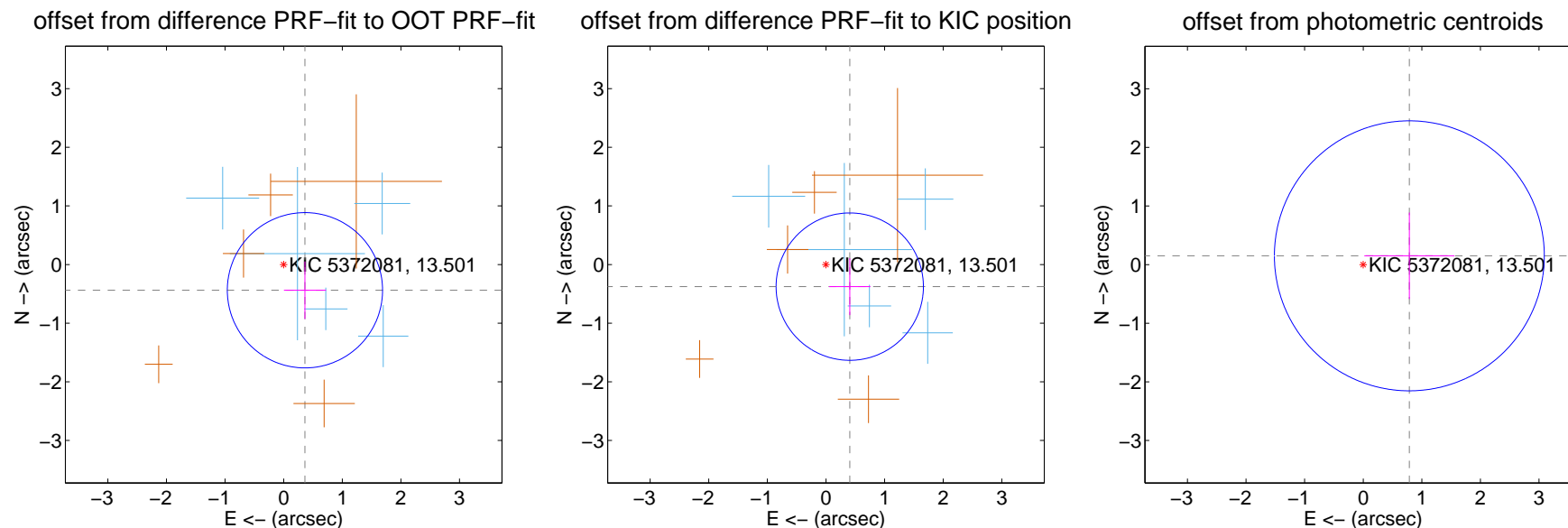
DV Centroid Data

Supplemental centroid analysis for 005372081-05. Kepler magnitude: 13.50. Transit SNR 8.97

There are 5 quarters with good PRF difference image offsets

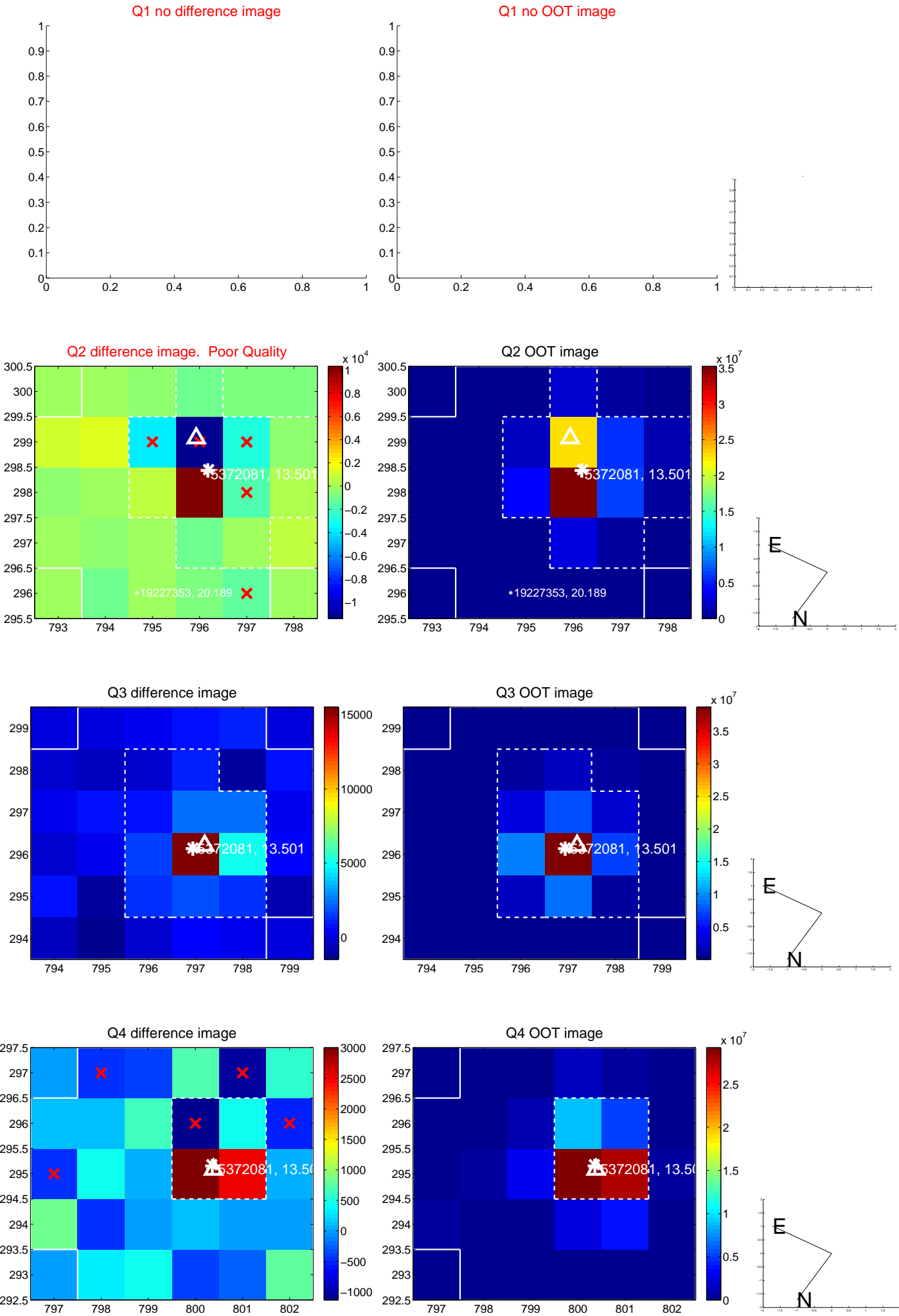
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.569 ± 0.441	1.29	-0.363 ± 0.359	-0.439 ± 0.490
PRF-fit source offset from KIC position	0.554 ± 0.419	1.32	-0.406 ± 0.353	-0.377 ± 0.484
photometric centroid source offset	0.80 ± 0.77	1.04	-0.79 ± 0.77	0.15 ± 0.74

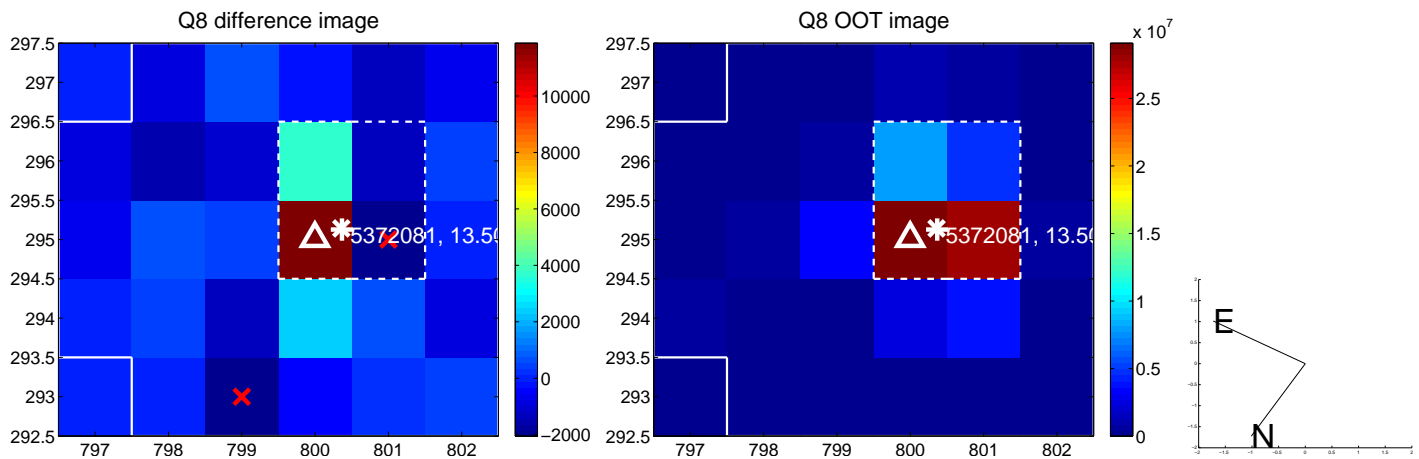
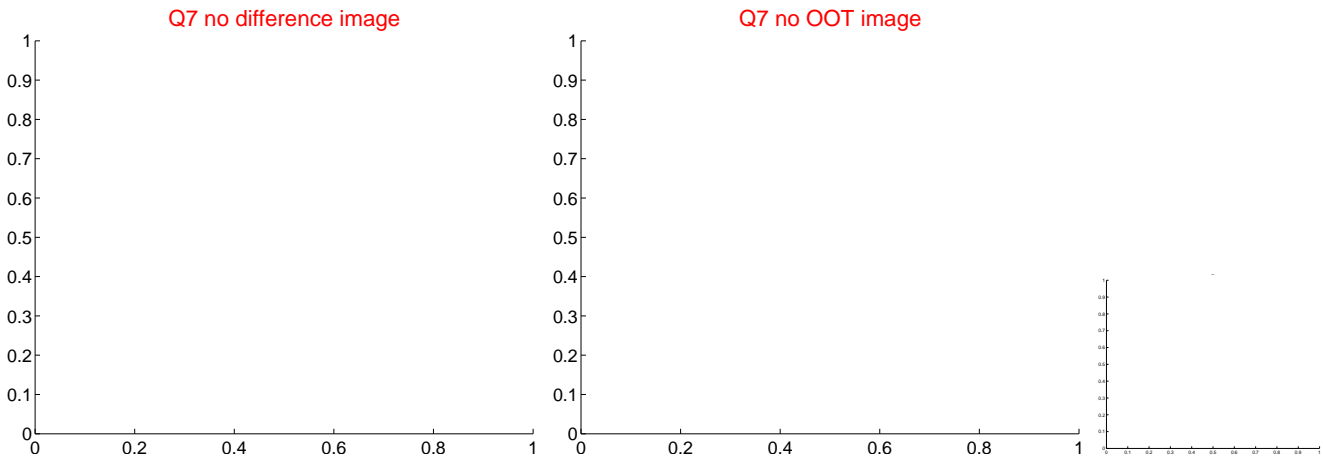
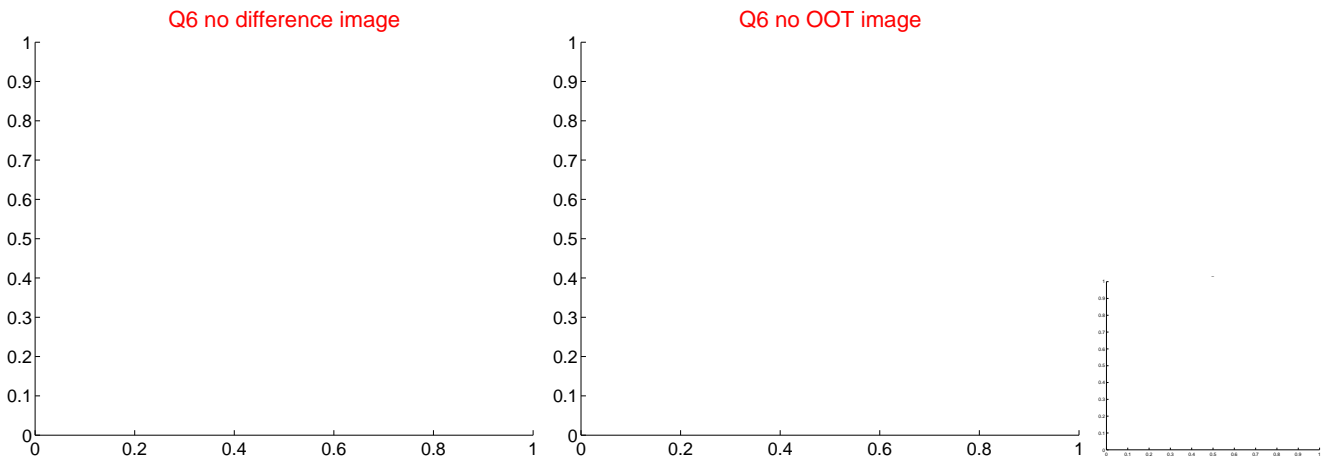
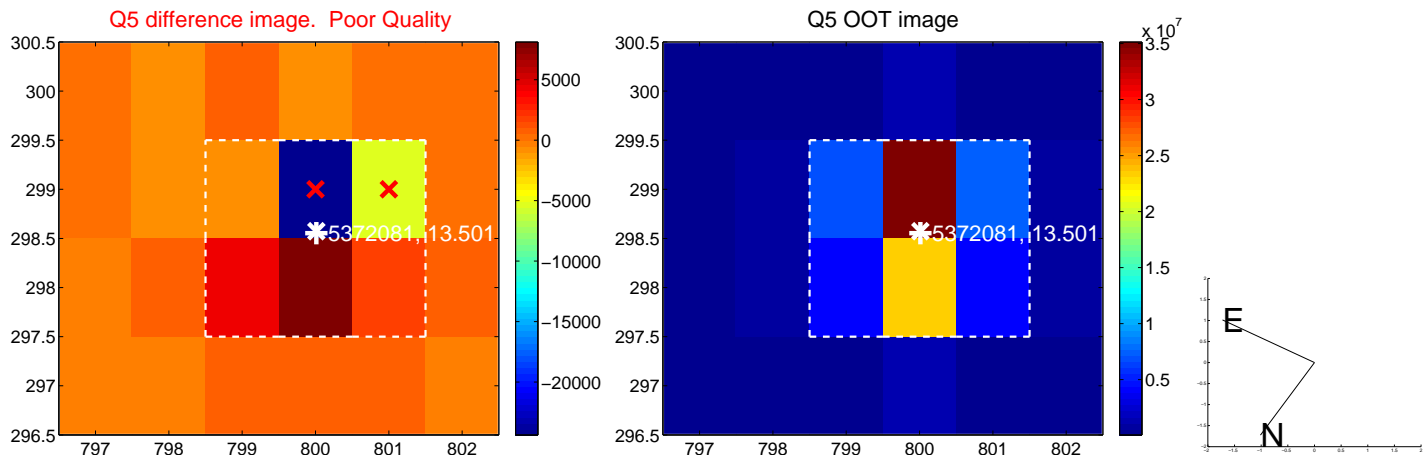


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

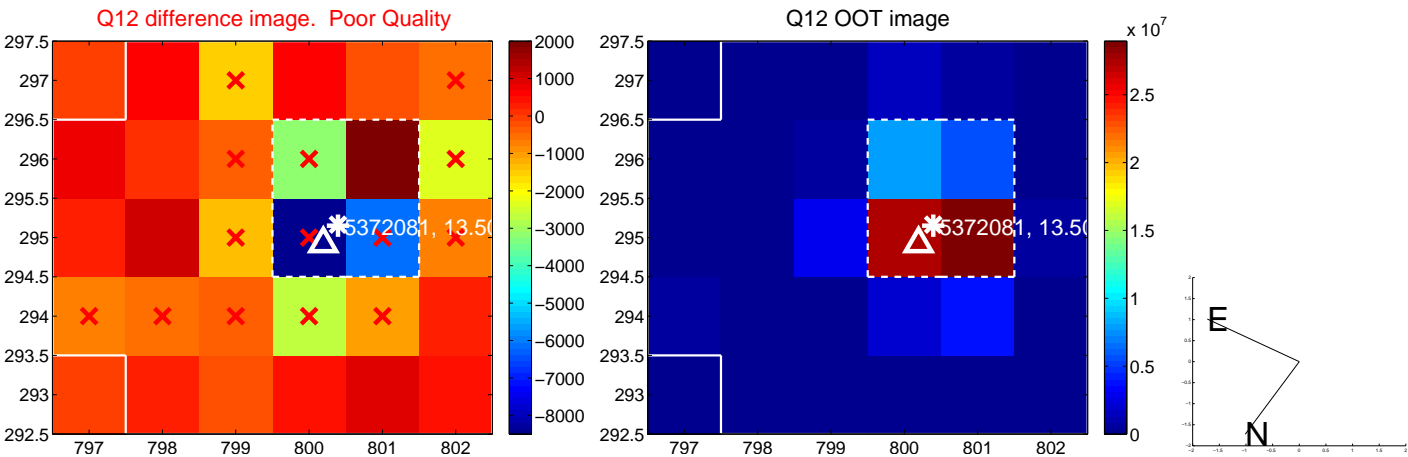
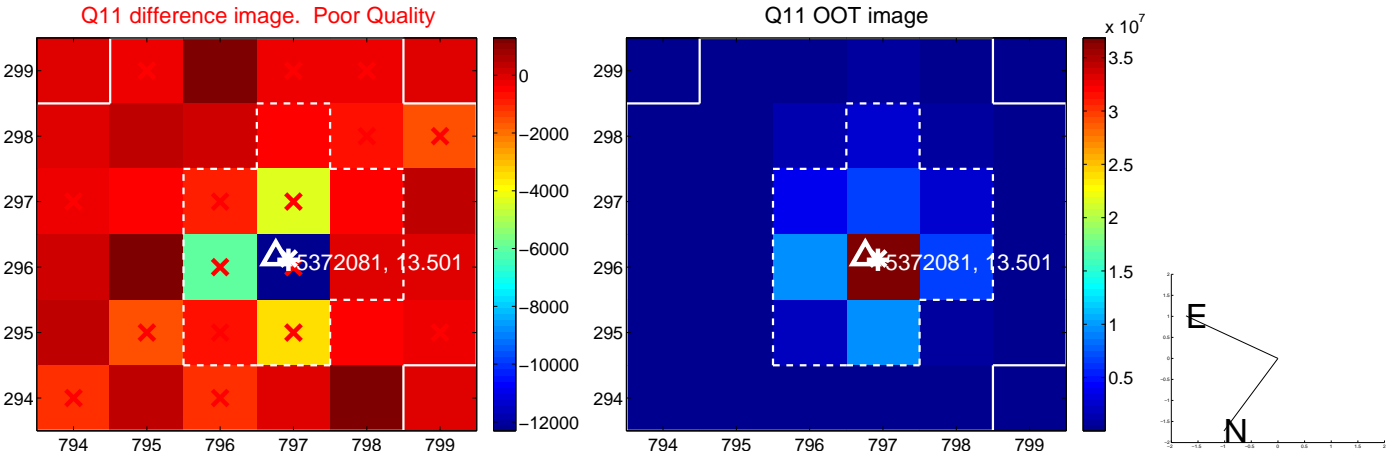
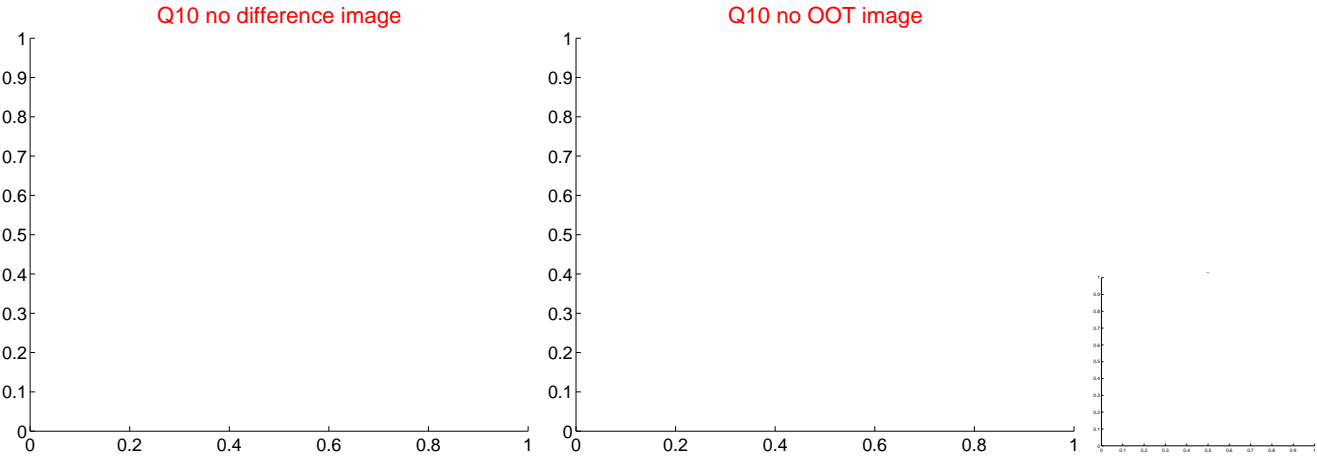
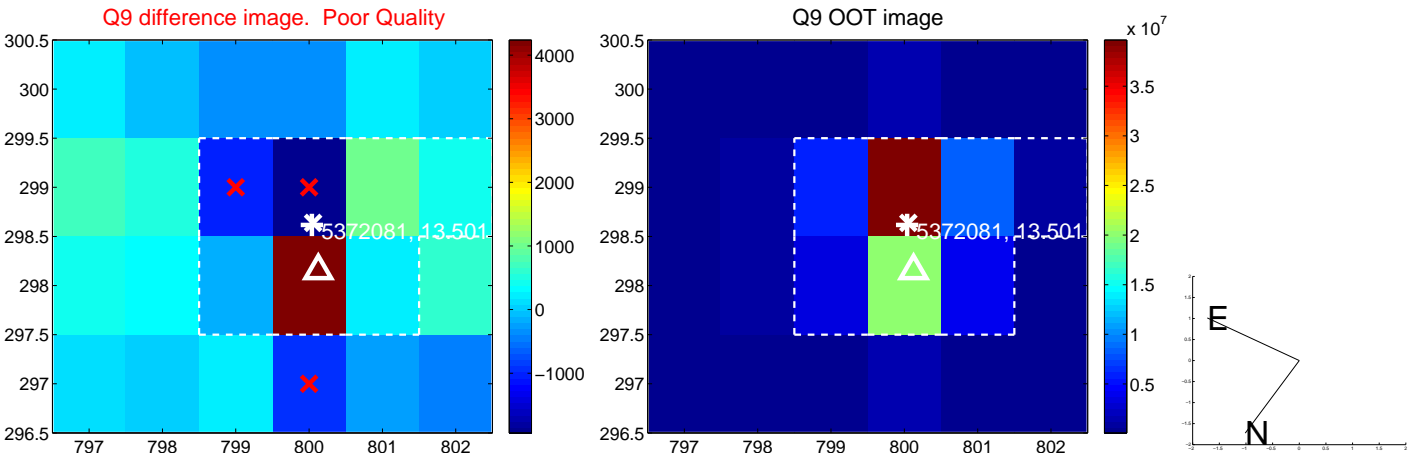
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



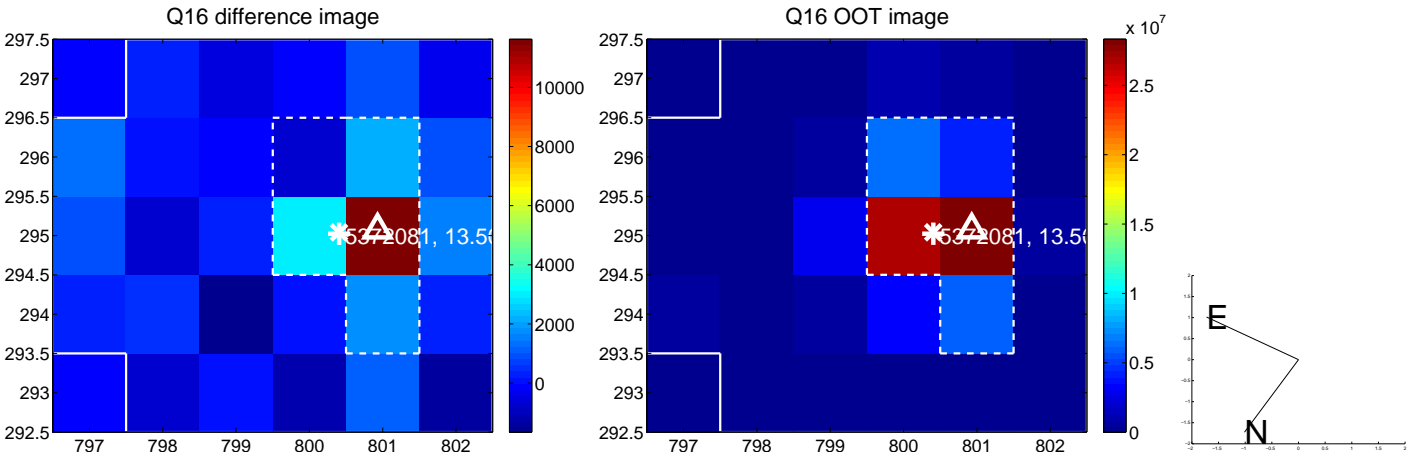
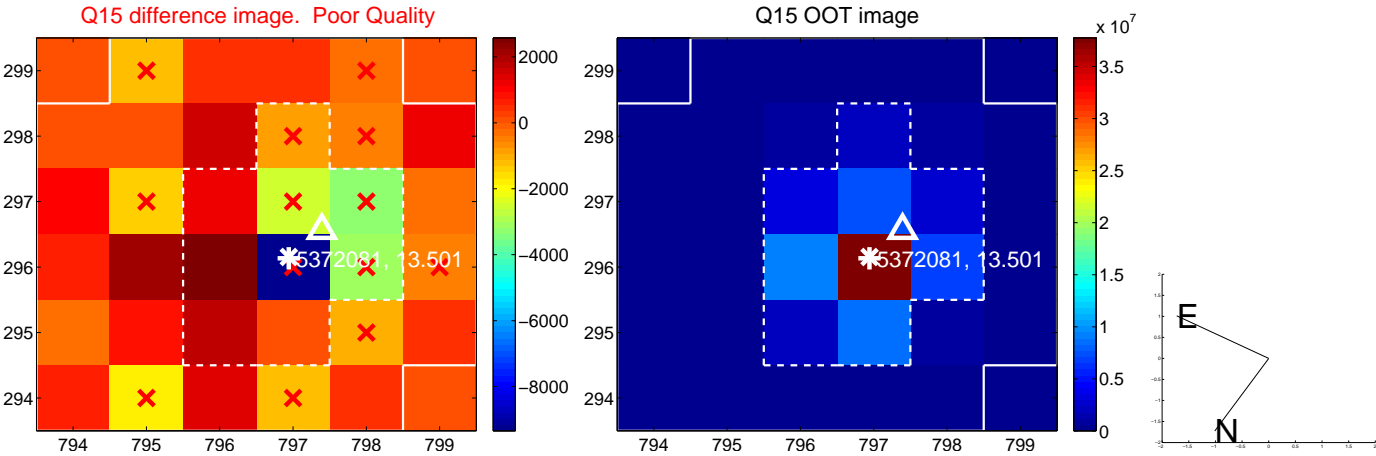
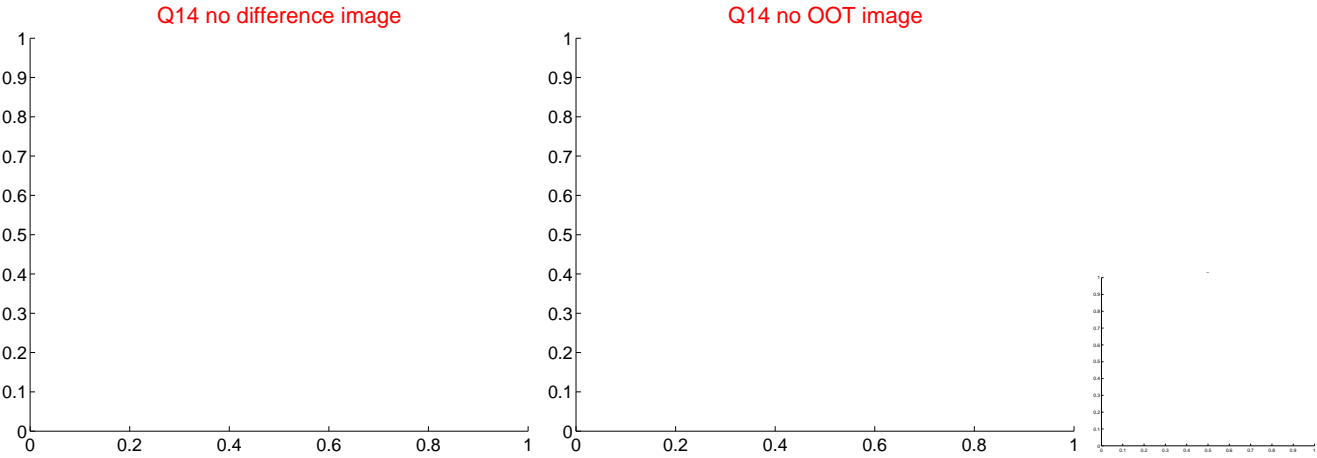
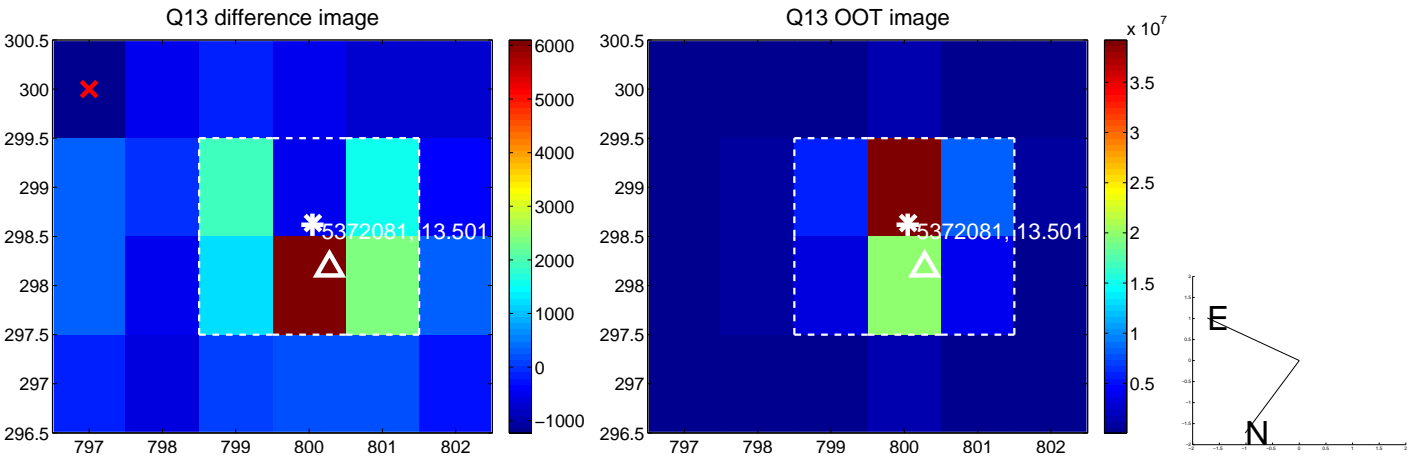
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



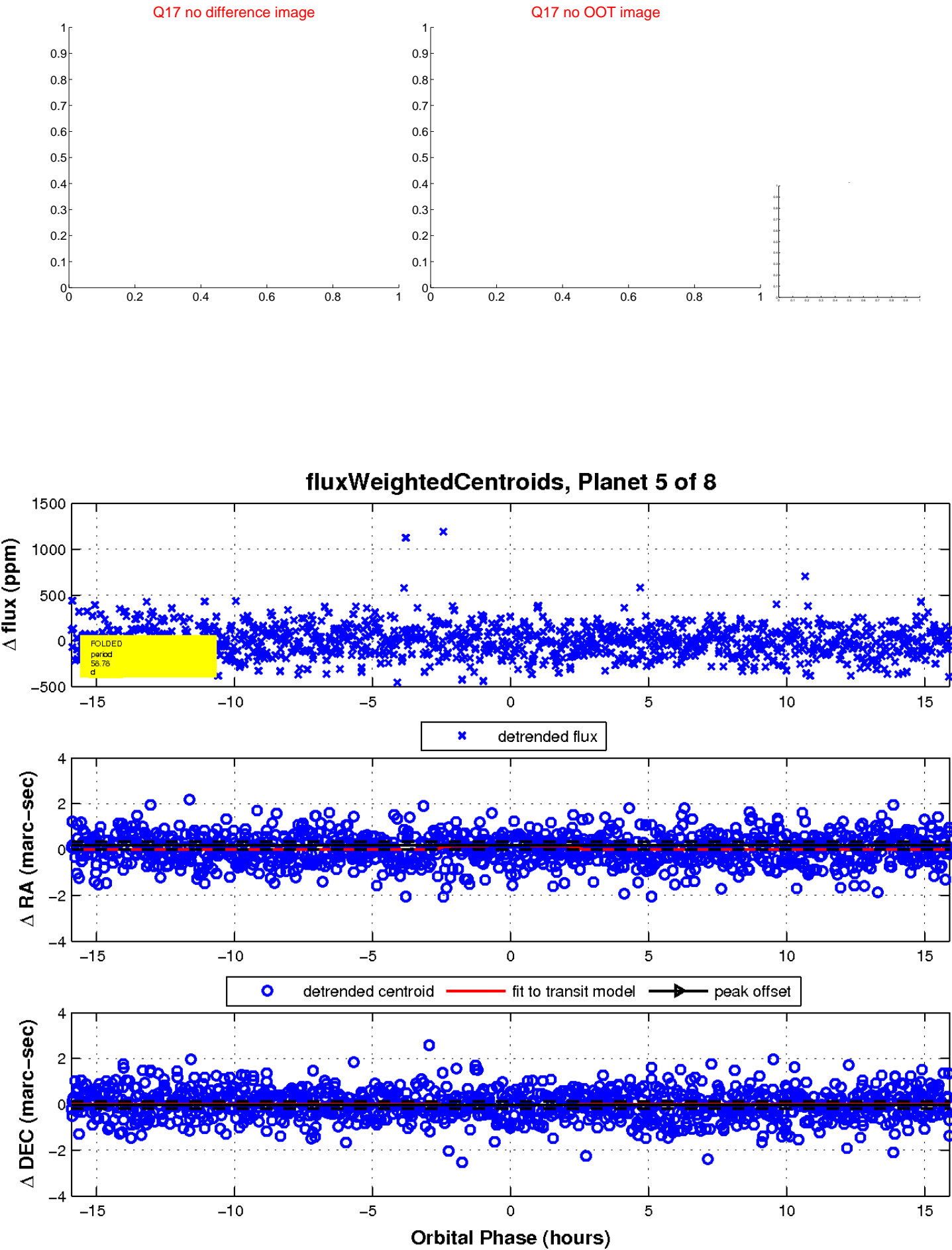
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

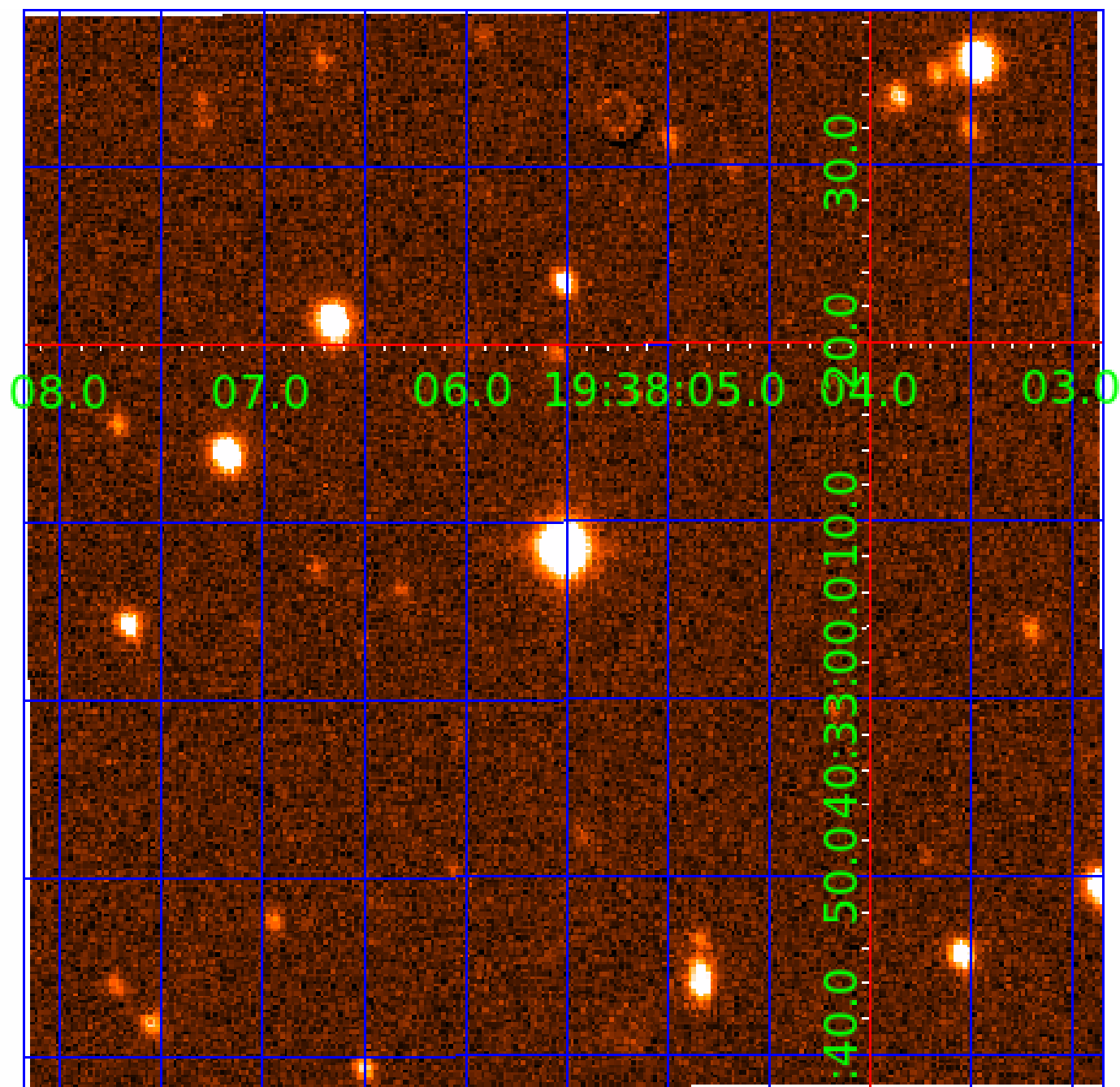


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005372081

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})
005372081-01	OBS	No	1.532264	132.484753	3.2	9.907	8.2	1.7	1.01	6340	0.21	2091.00
005372081-02	OBS	No	173.251831	188.728132	64.3	47.095	17.8	3.8	1.01	6340	0.94	3.82
005372081-03	OBS	No	49.261082	157.953926	273.2	2.217	9.1	9.4	1.01	6340	2.12	20.45
005372081-04	OBS	No	49.904496	150.438465	362.3	1.877	9.3	9.0	1.01	6340	2.12	20.10
005372081-05	OBS	No	58.781787	190.236355	217.5	5.313	8.9	9.0	1.01	6340	1.66	16.16
005372081-06	OBS	No	39.420992	168.821592	338.0	1.185	8.2	9.5	1.01	6340	2.31	27.53
005372081-07	OBS	No	10.724962	140.794691	108.8	3.825	9.3	10.9	1.01	6340	1.24	156.17
005372081-08	OBS	No	127.948282	185.844319	300.7	11.956	7.8	7.5	1.01	6340	1.79	5.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005372081-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005372081-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005372081-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005372081-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
005372081-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005372081-06	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005372081-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005372081-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

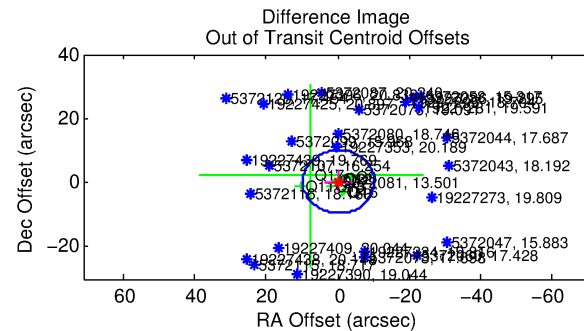
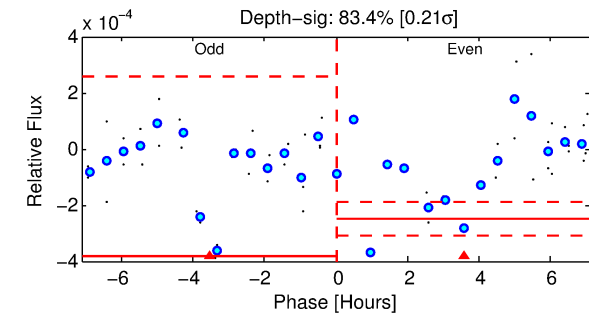
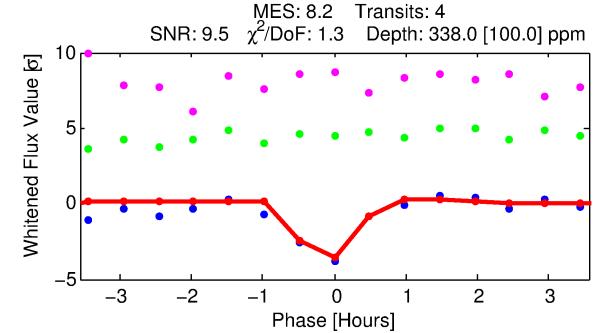
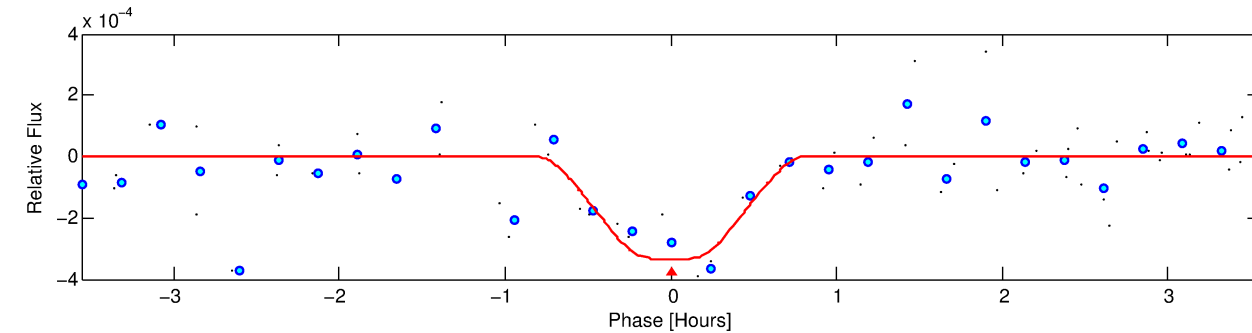
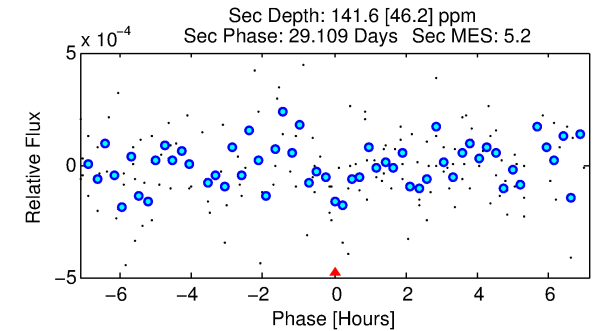
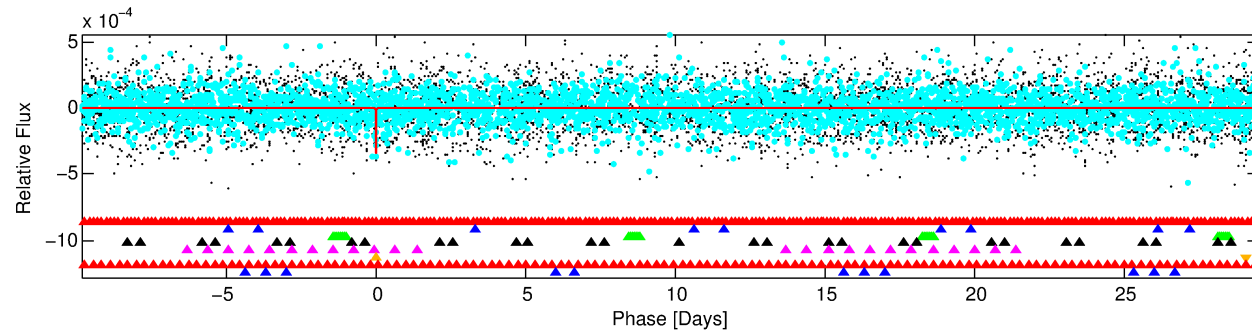
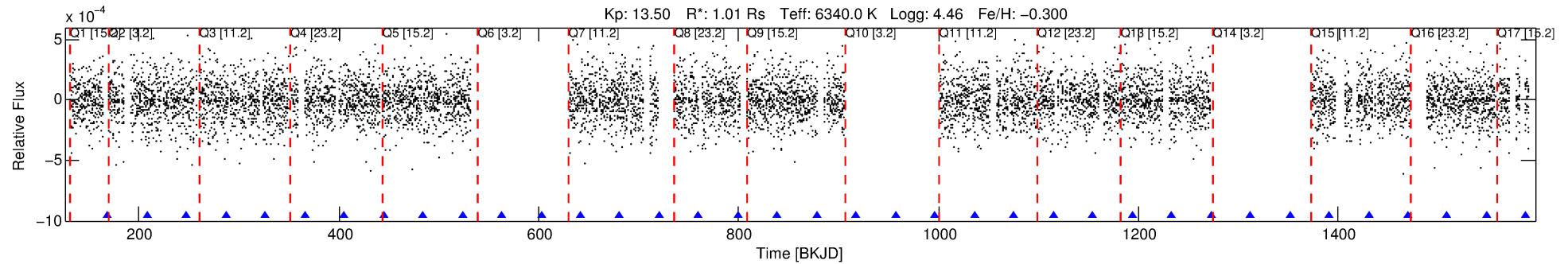
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005372081-06

No Significant Match Found

DV One-Page Summary

KIC: 5372081 Candidate: 6 of 8 Period: 39.421 d



DV Fit Results:

Period = 39.42099 [0.00021] d
Epoch = 168.8216 [0.0046] BKJD
Rp/R* = 0.0210 [0.0108]
a/R* = 95.60 [223.89]
b = 0.95 [0.26]
Seff = 27.53 [10.03]
Teq = 584 [53] K
Rp = 2.31 [1.36] Re
a = 0.2316 [0.0548] AU
Ag = 780.56 [885.87] [0.88 σ]
Teffp = 4773 [1298] K [3.22 σ]

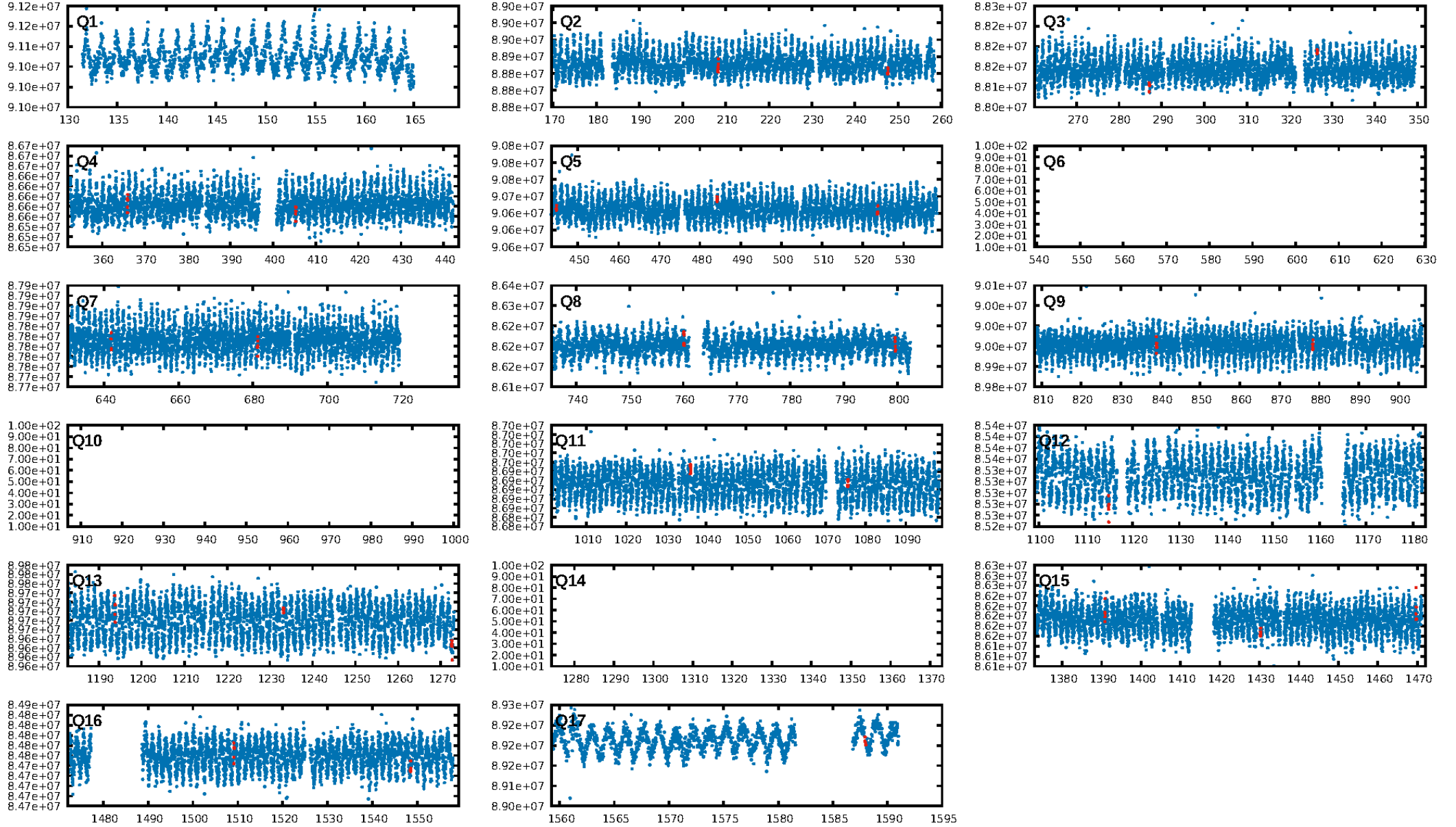
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [171.99 σ]
LongPeriod-sig: 100.0% [93.95 σ]
ModelChiSquare2-sig: 31.5%
ModelChiSquareGof-sig: 95.7%
Bootstrap-pfa: 1.66e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.05572
Centroid-sig: 97.8%
Centroid-so: 0.112 arcsec [0.13 σ]
OotOffset-rm: 0.311 arcsec [0.09 σ]
KicOffset-rm: 0.354 arcsec [0.11 σ]
OotOffset-st: 1/2/3/3 [9]
KicOffset-st: 1/2/3/3 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.62 [8/13]

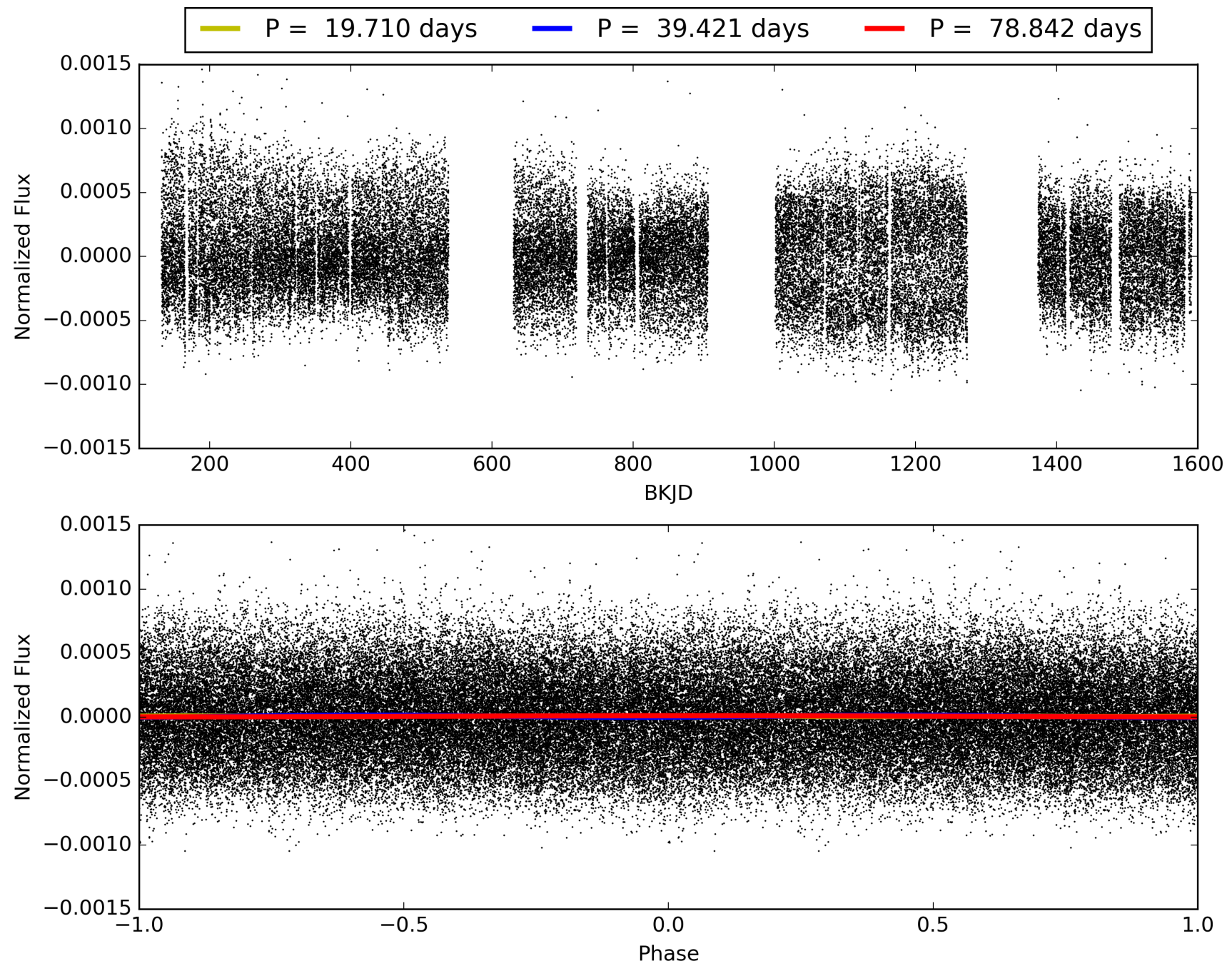
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:11:43 Z

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

TCE 005372081-06, PDC Light Curves

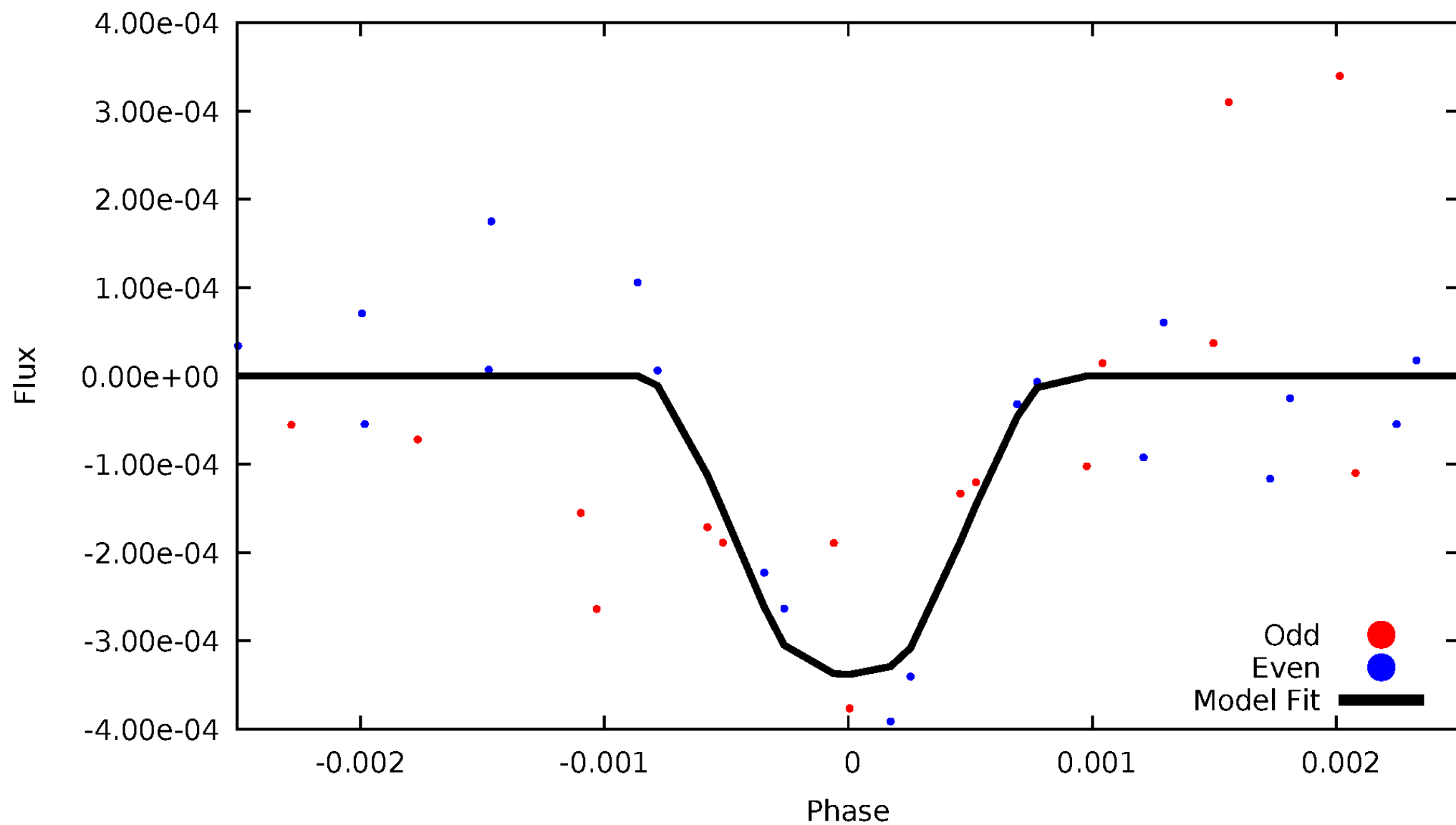


TCE 005372081-06



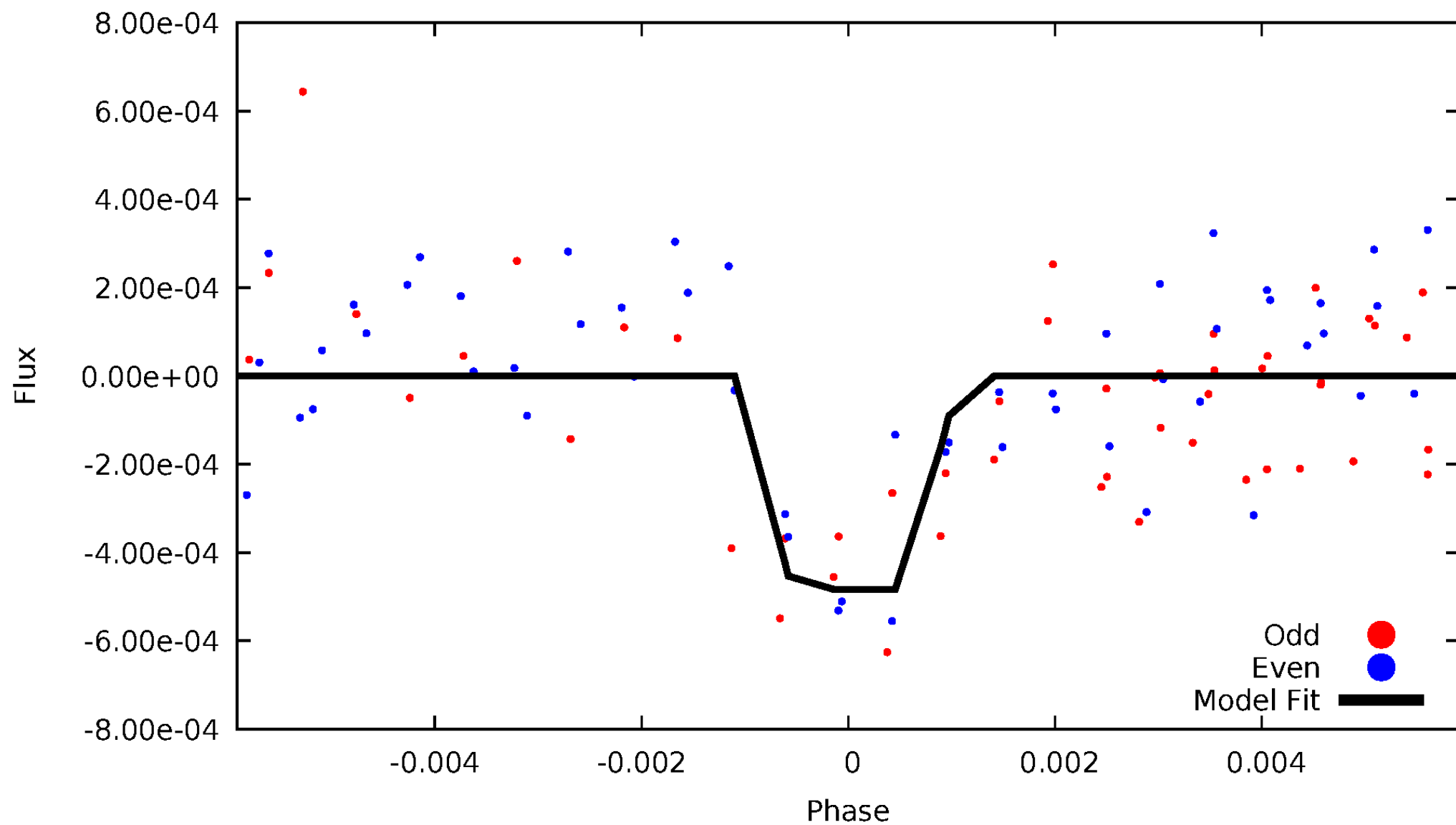
DV Odd/Even

TCE 005372081-06



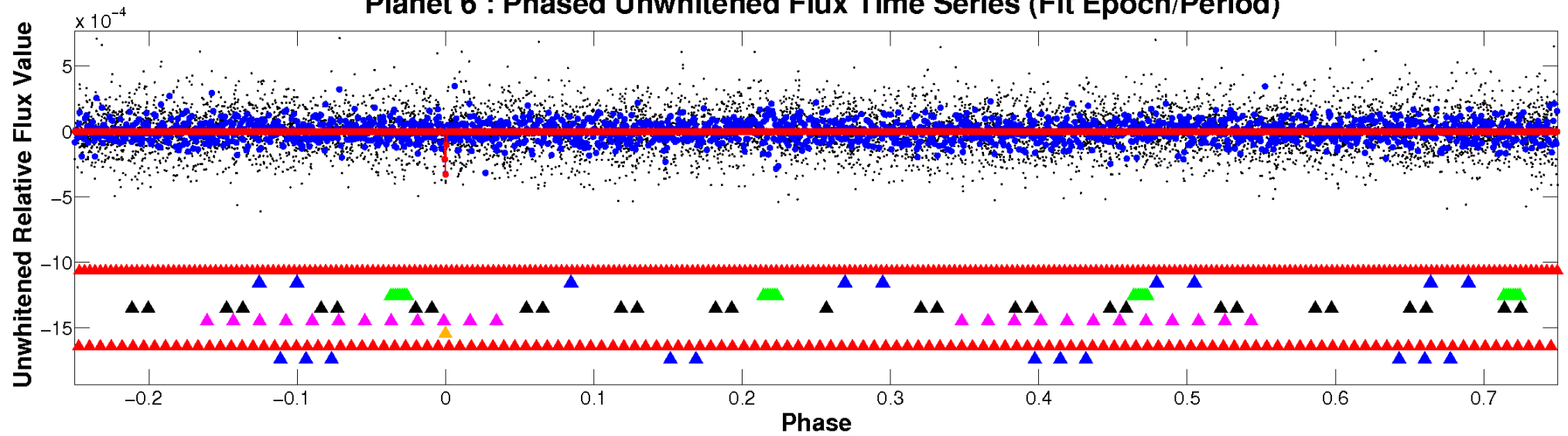
ALT Odd/Even

TCE 005372081-06

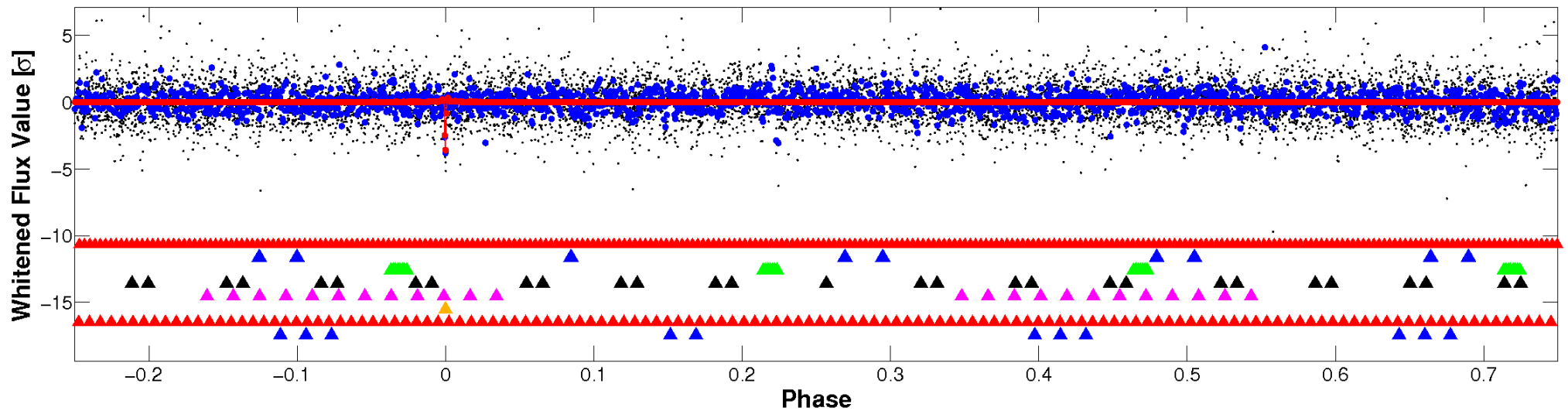


Non-Whitened Vs. Whitened Light Curve

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

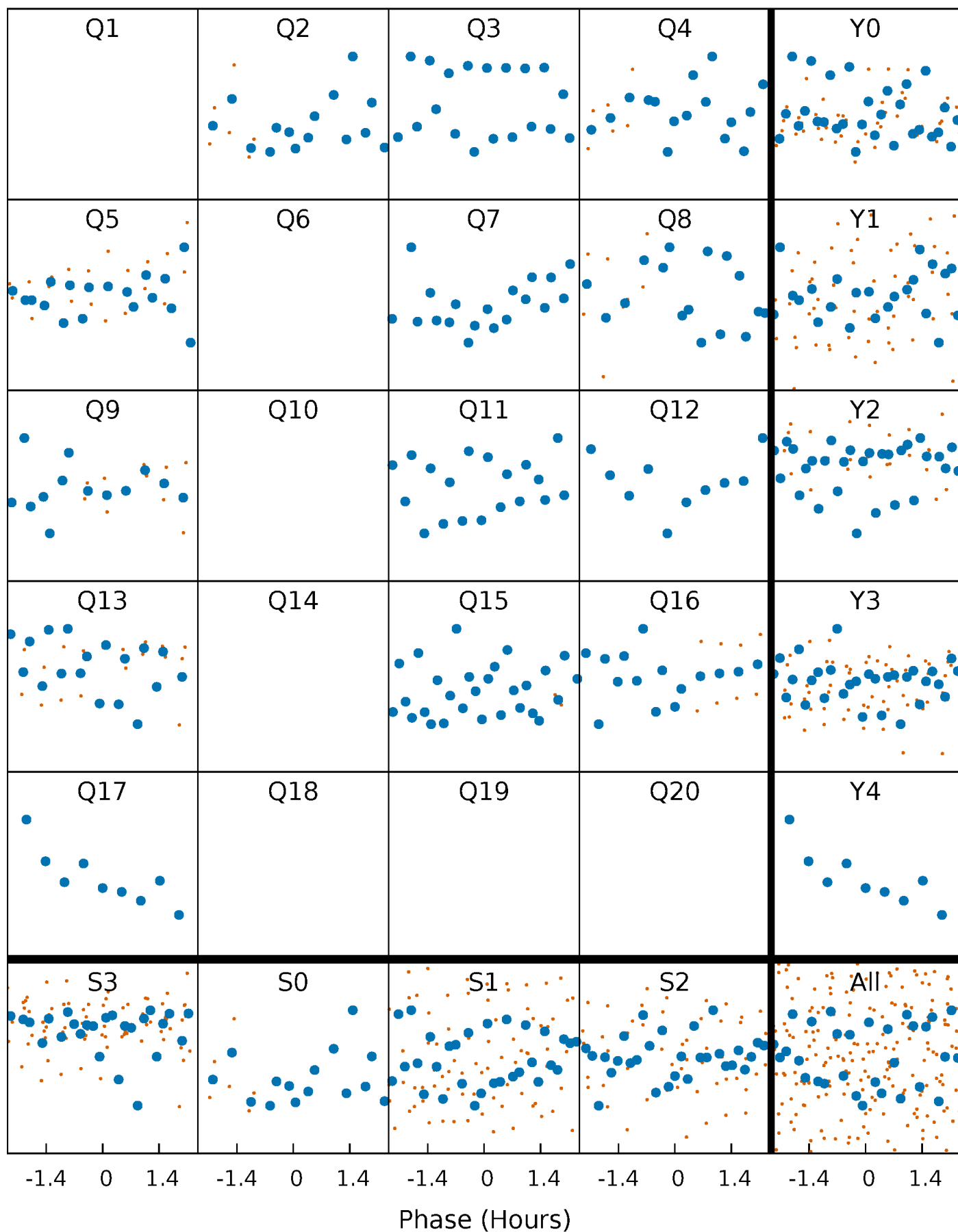


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



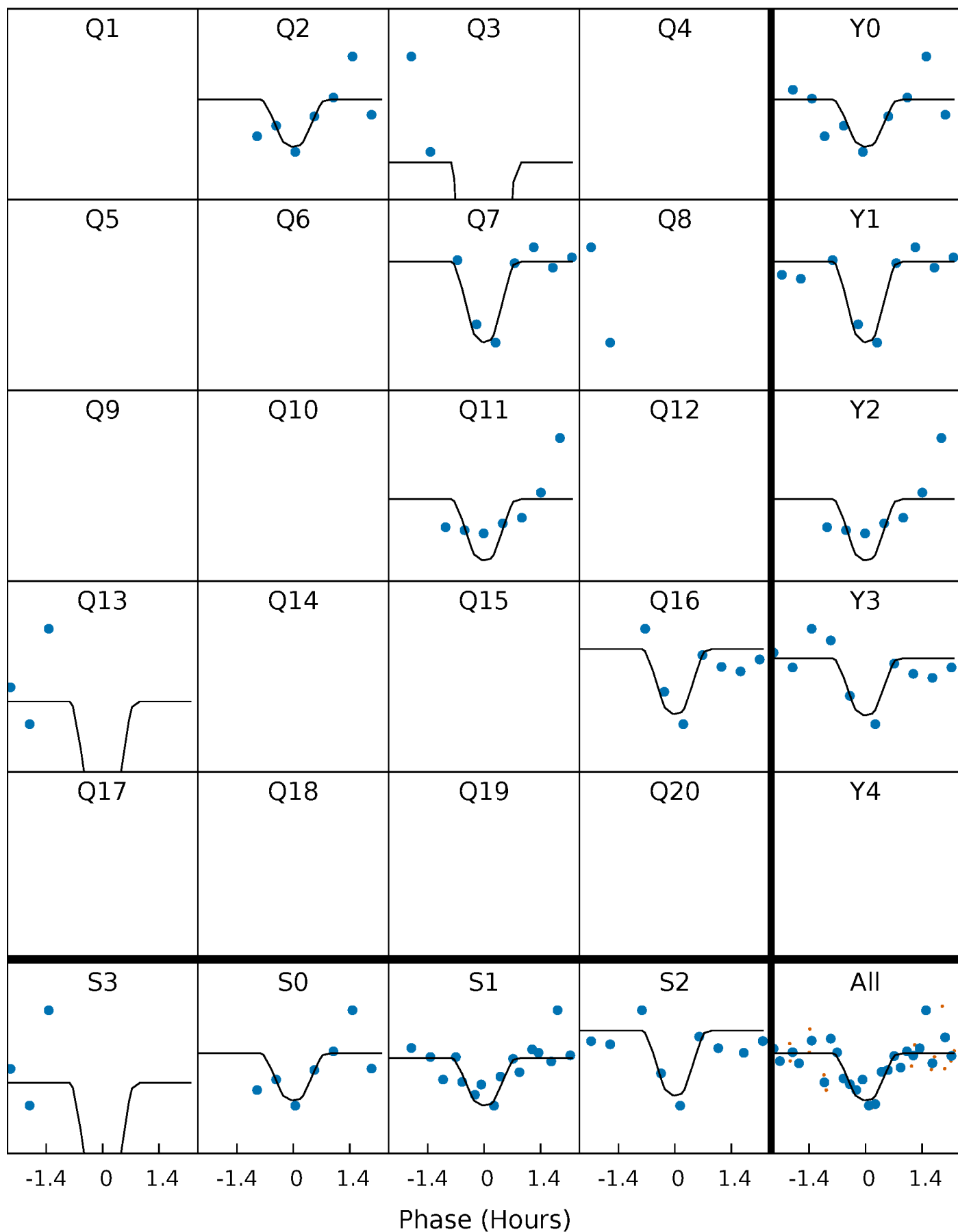
PDC Quarter-Phased Transit Curves

TCE 005372081-06 P= 39.420992 Days $T_0=168.821592$ (BKJD)



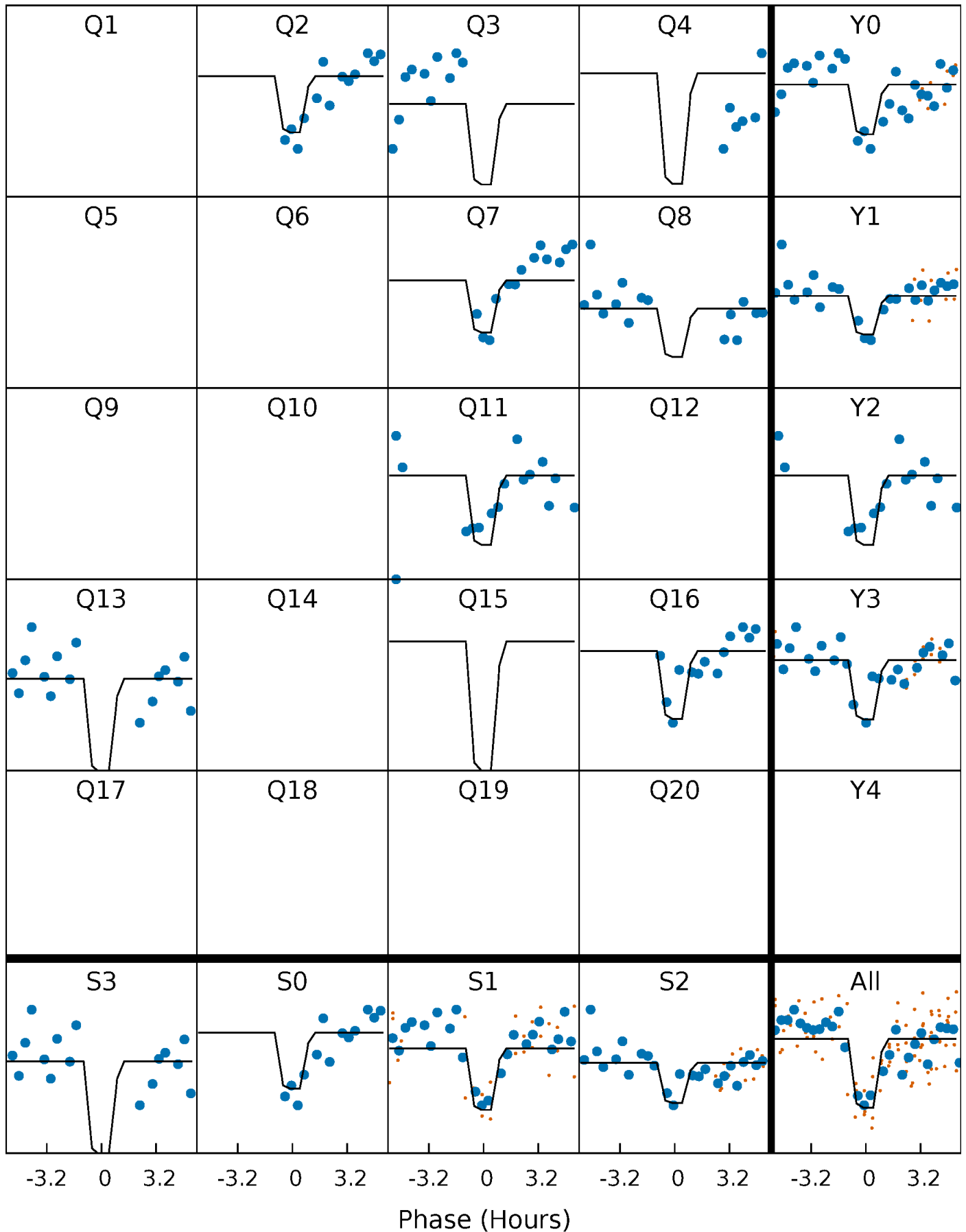
DV Quarter-Phased Transit Curves

TCE 005372081-06 P= 39.420992 Days $T_0=168.821592$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

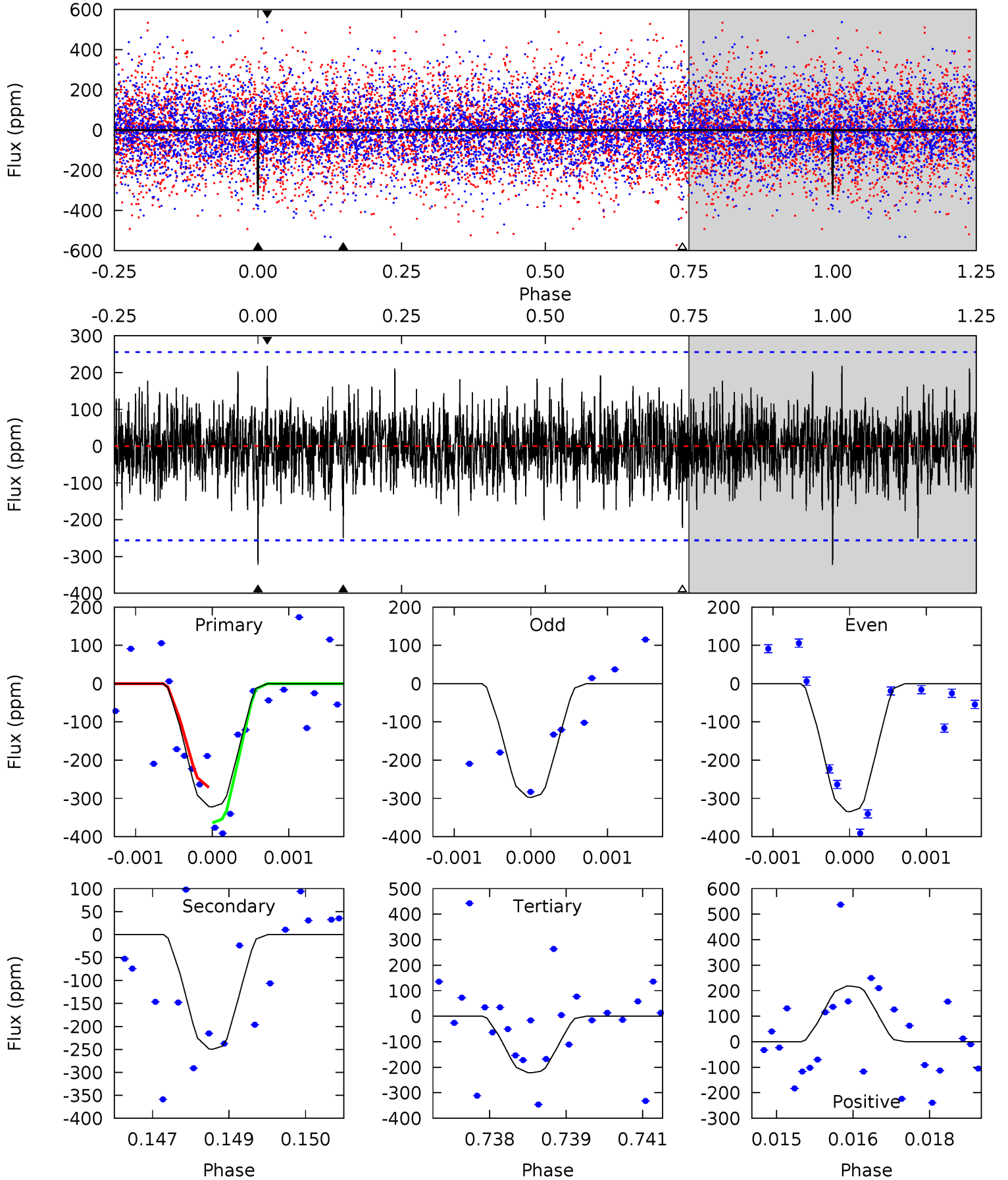
TCE 005372081-06 P= 39.421718 Days $T_0=168.806248$ (BKJD)



DV Model-Shift Uniqueness Test

005372081-06, P = 39.420992 Days, E = 129.400600 Days

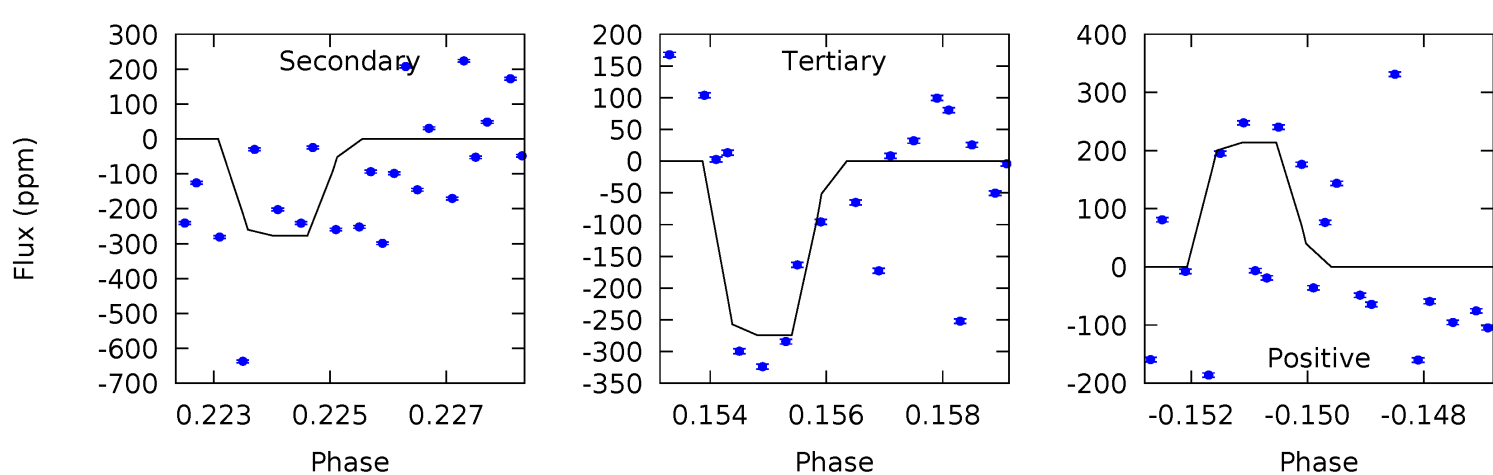
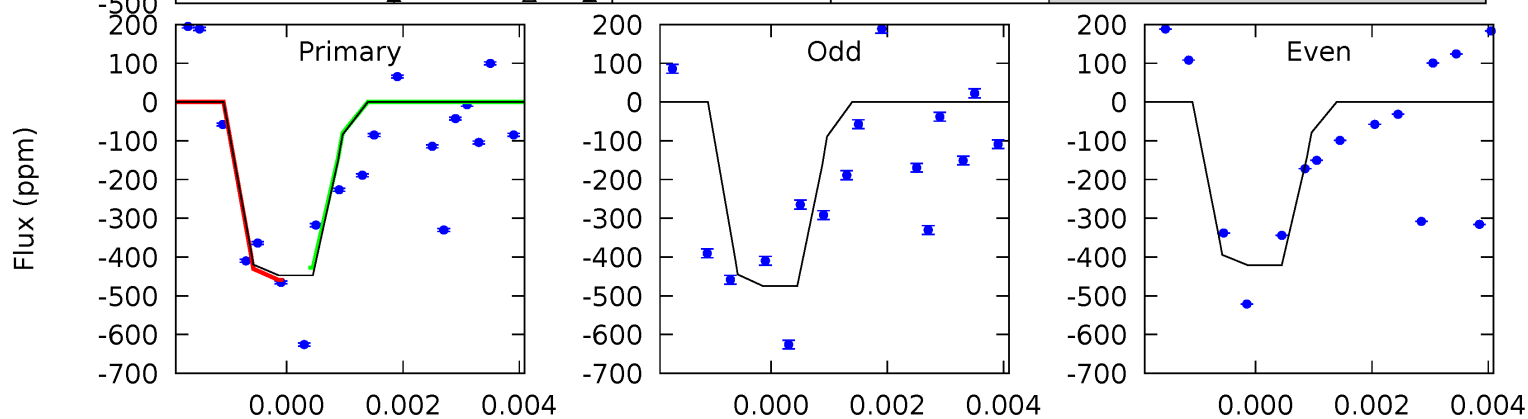
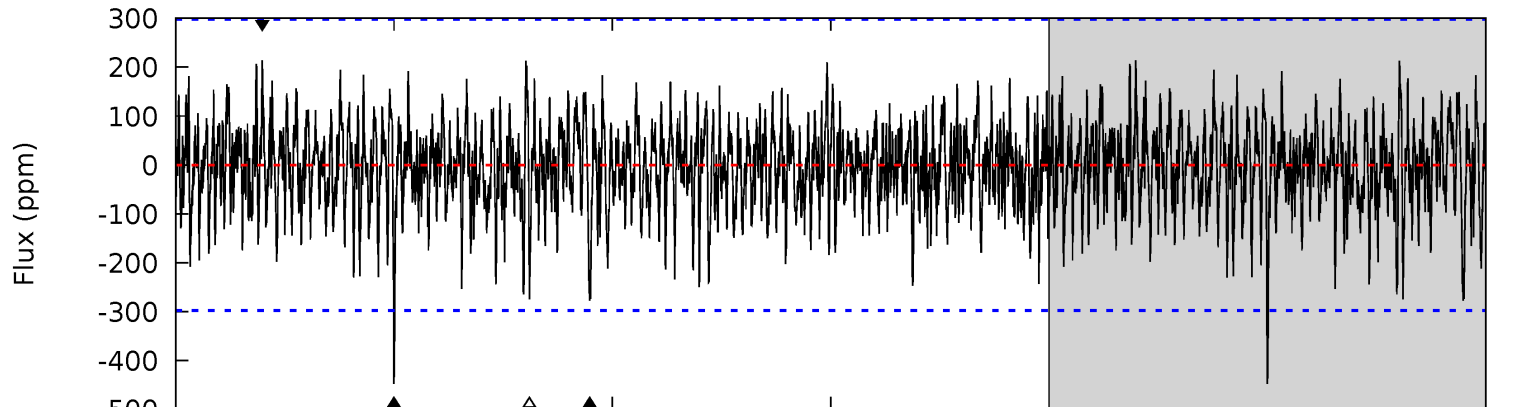
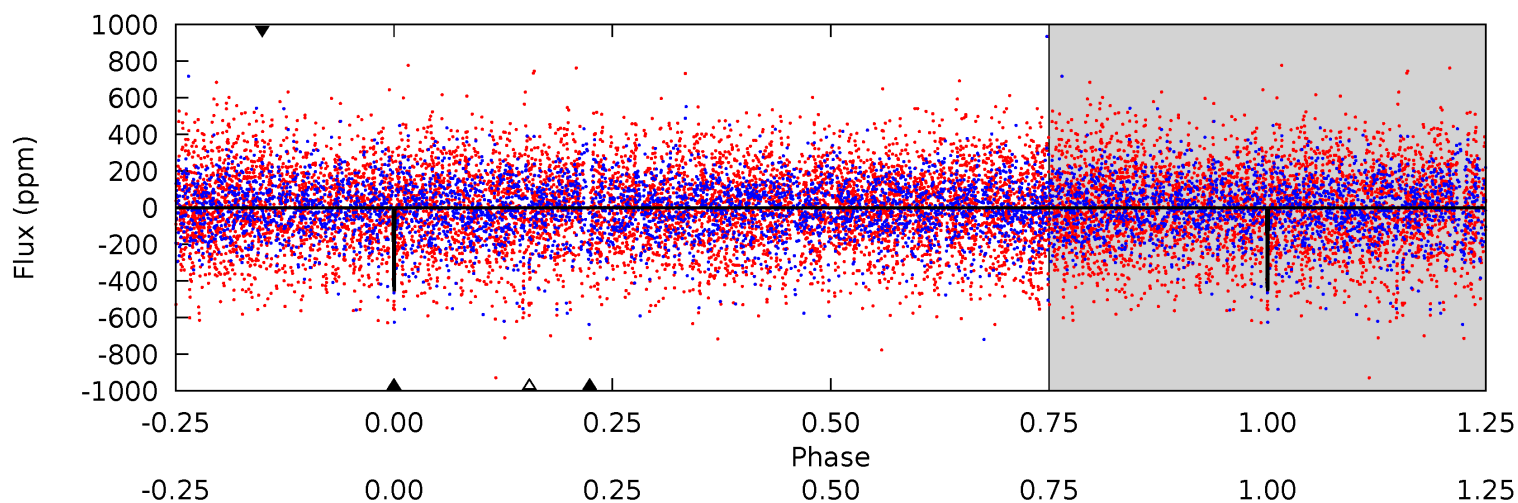
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.79	5.27	4.68	4.60	5.40	3.20	1.29	2.12	2.19	0.59	0.66	0.41	0.93	0.40	0.96



Alt Model-Shift Uniqueness Test

005372081-06, P = 39.421718 Days, E = 129.384530 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.00	4.96	4.91	3.82	5.32	3.09	1.36	3.09	4.18	0.06	1.14	0.48	1.06	0.32	0.28



Stellar Parameters For KIC 005372081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6340^{+151}_{-189}	$4.457^{+0.050}_{-0.188}$	$-0.300^{+0.250}_{-0.350}$	$1.010^{+0.284}_{-0.122}$	$1.066^{+0.133}_{-0.146}$	$1.458^{+0.381}_{-0.734}$
	+2%/-3%	+1%/-4%	+83%/-117%	+28%/-12%	+12%/-14%	+26%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005372081-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-250 ± 47	$2.42^{+1.38}_{-1.19}$	832^{+55}_{-35}	5484^{+2337}_{-898}	1187^{+3749}_{-704}
Alt.	-277 ± 56	$2.60^{+1.24}_{-1.23}$	830^{+54}_{-35}	5474^{+2099}_{-856}	1212^{+3087}_{-686}

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

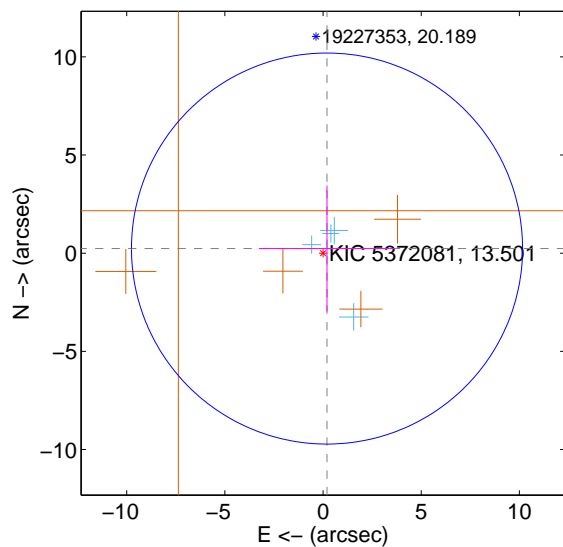
Supplemental centroid analysis for 005372081-06. Kepler magnitude: 13.50. Transit SNR 9.52

There are 4 quarters with good PRF difference image offsets

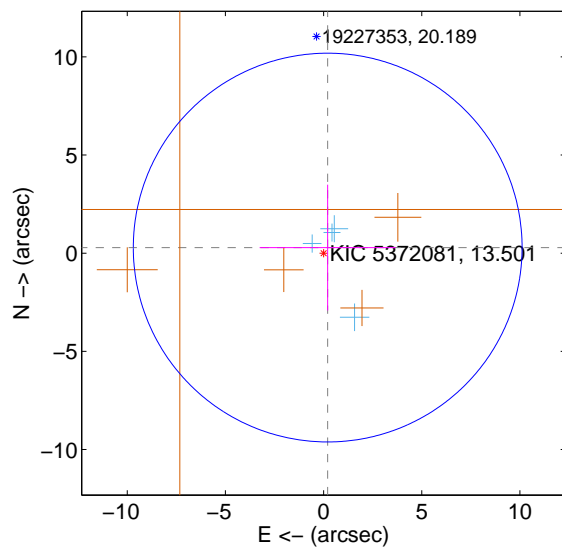
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.311 ± 3.320	0.09	-0.202 ± 3.469	0.236 ± 3.206
PRF-fit source offset from KIC position	0.354 ± 3.301	0.11	-0.210 ± 3.469	0.285 ± 3.206
photometric centroid source offset	0.11 ± 0.84	0.13	-0.05 ± 0.87	-0.10 ± 0.83

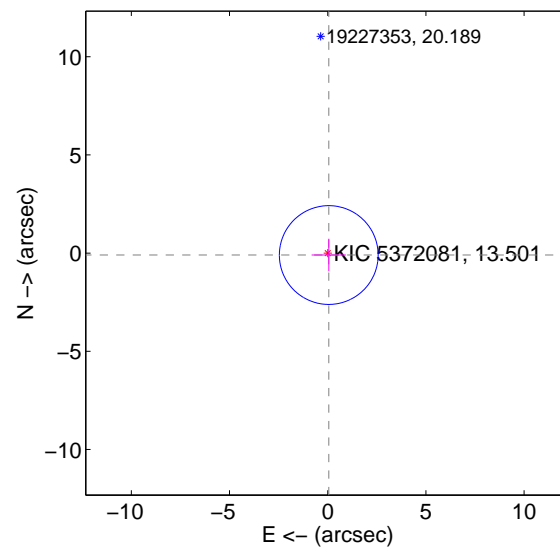
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

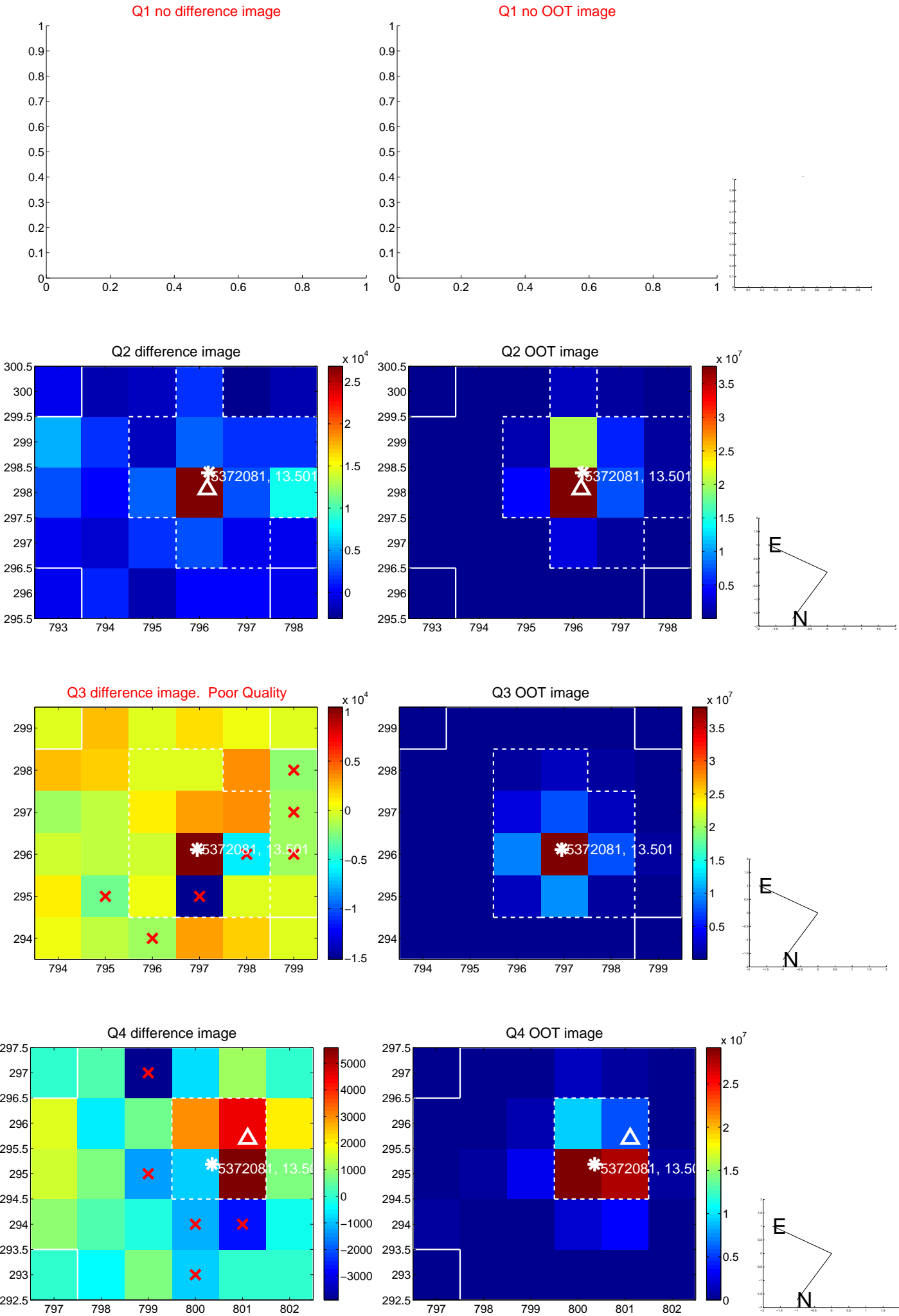


offset from photometric centroids

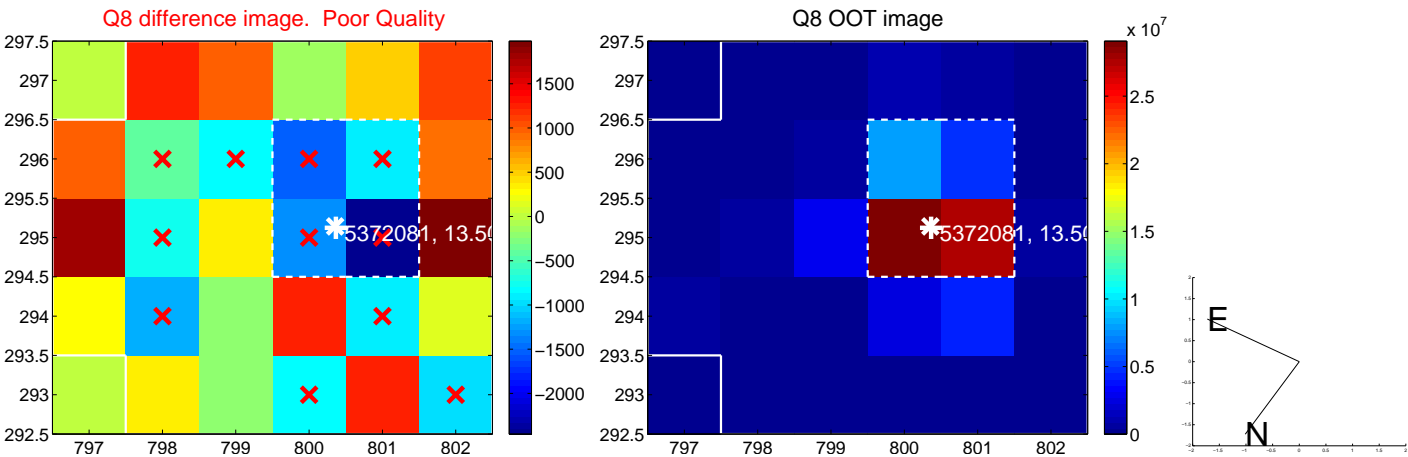
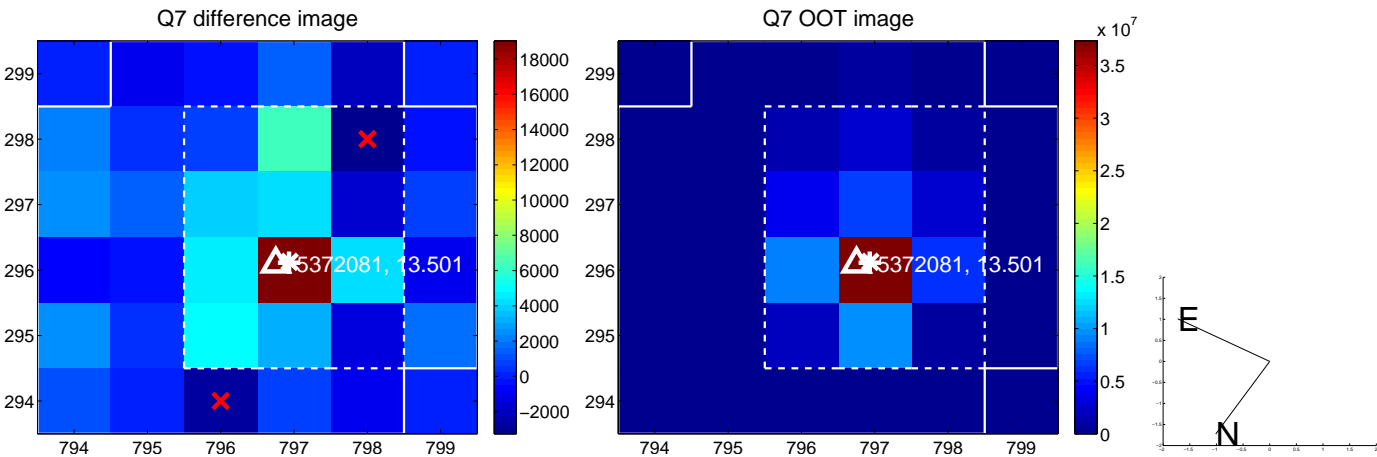
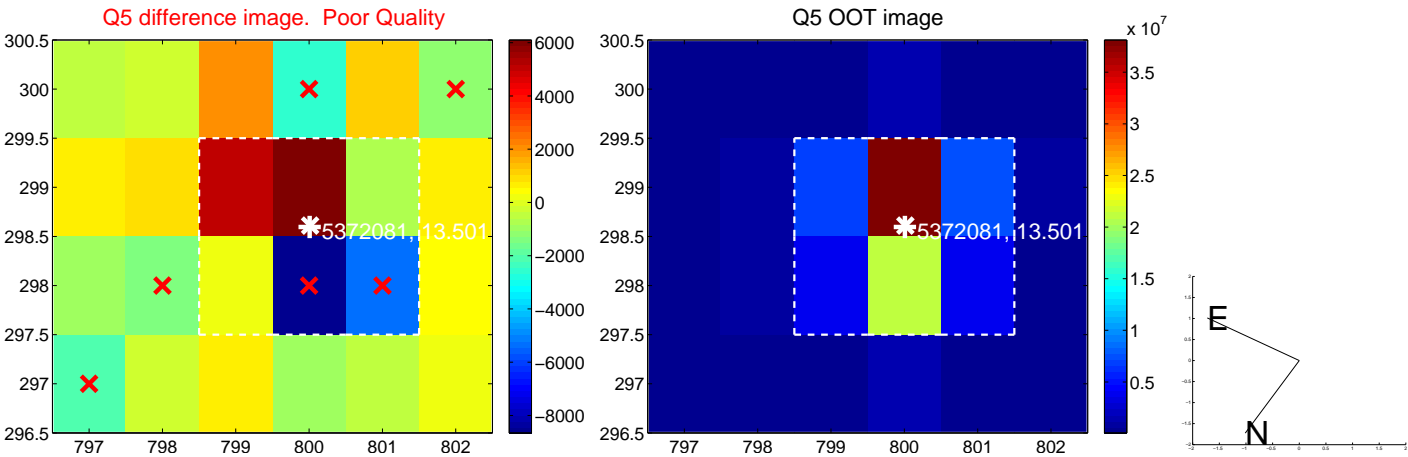


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

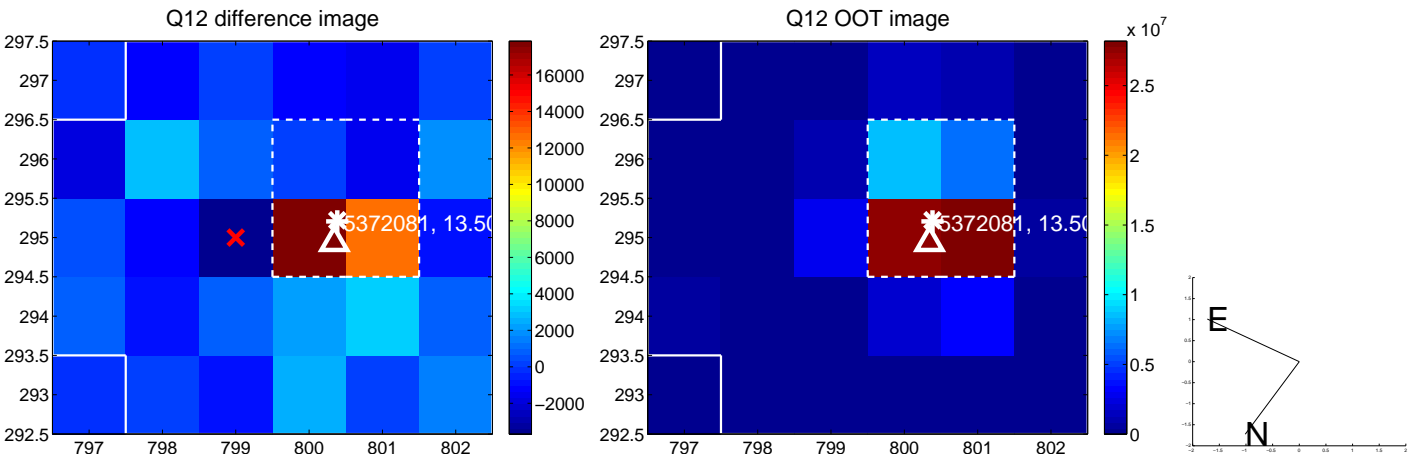
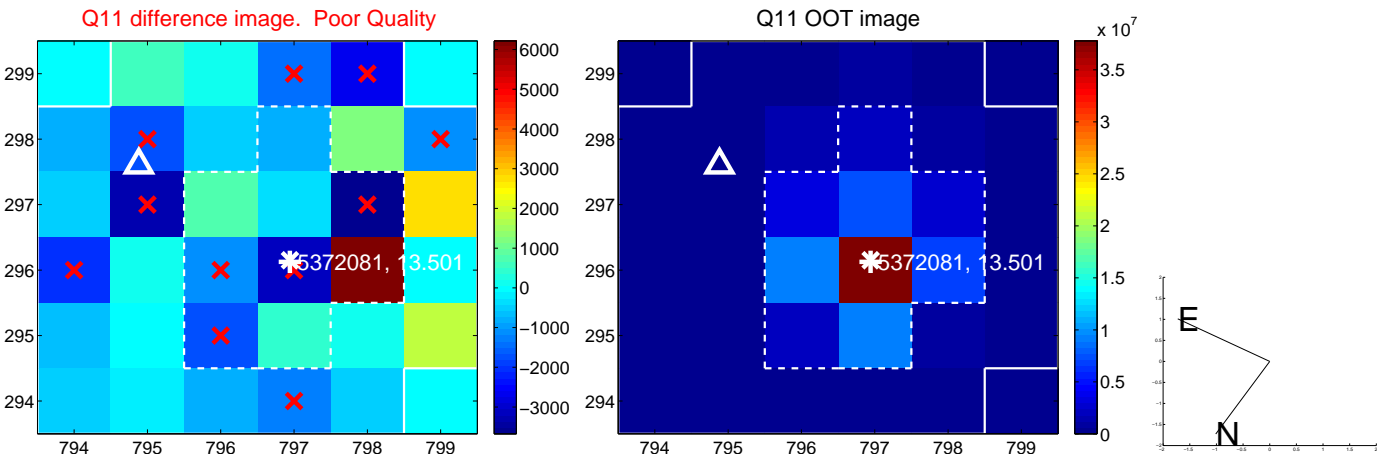
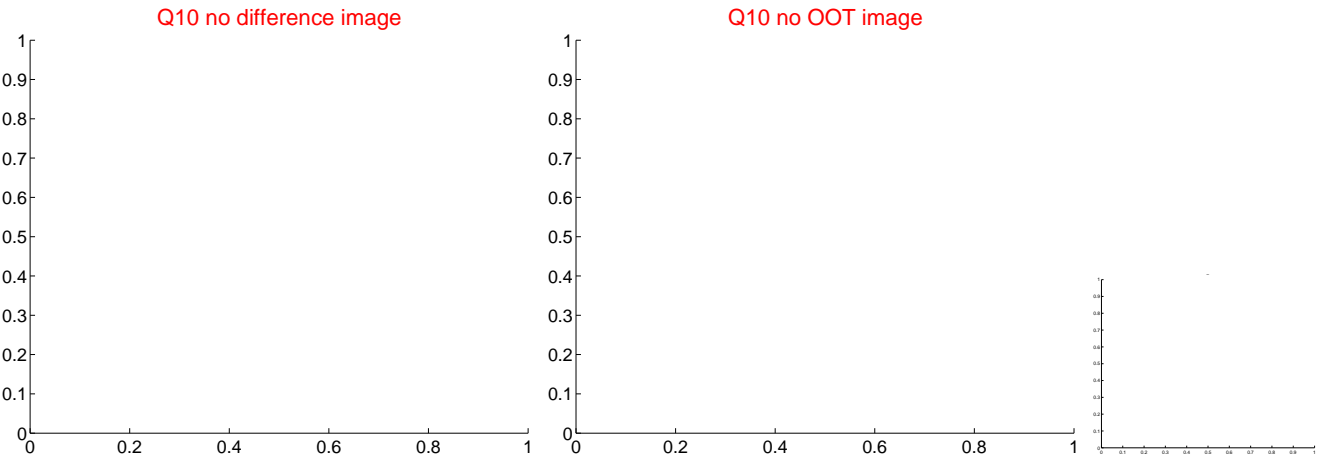
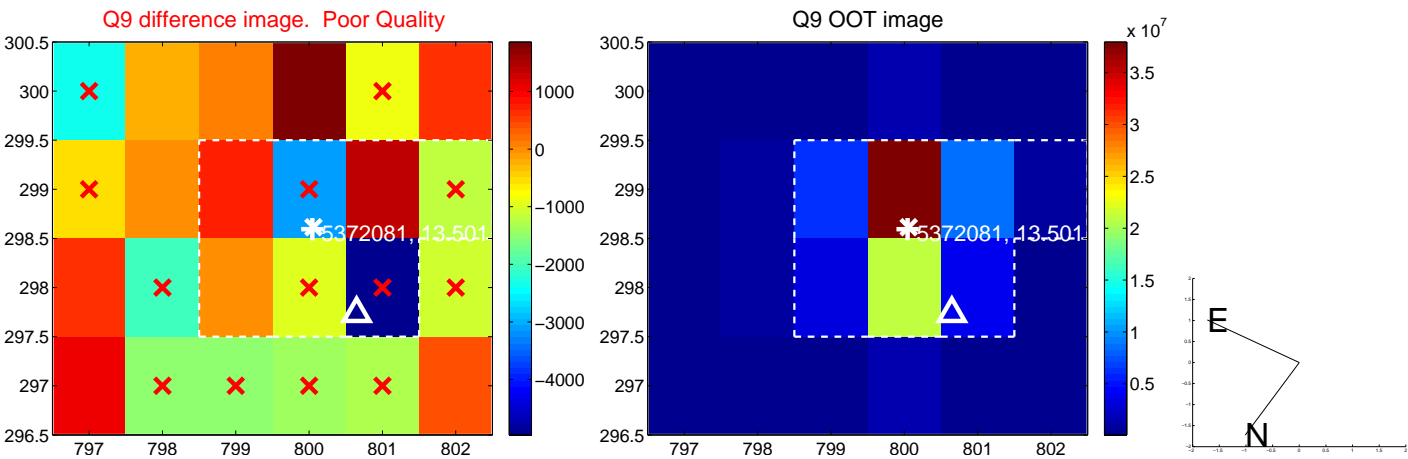
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



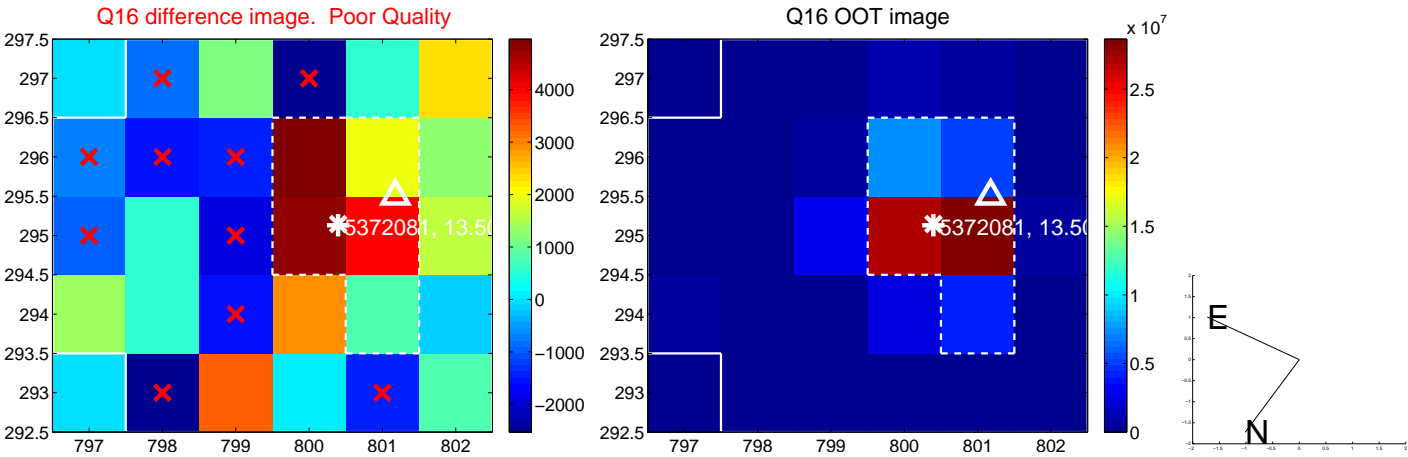
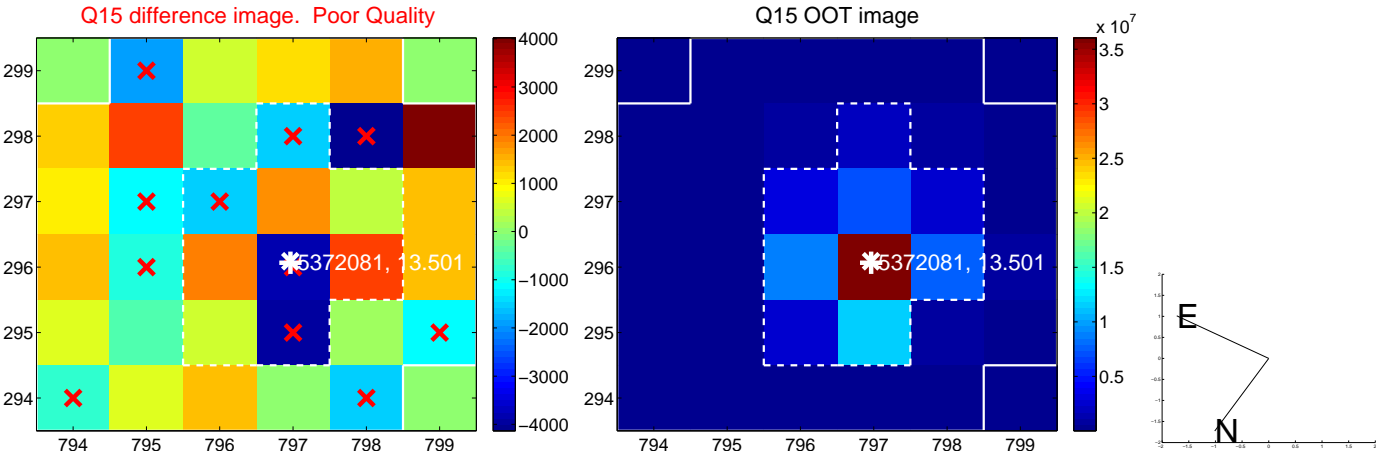
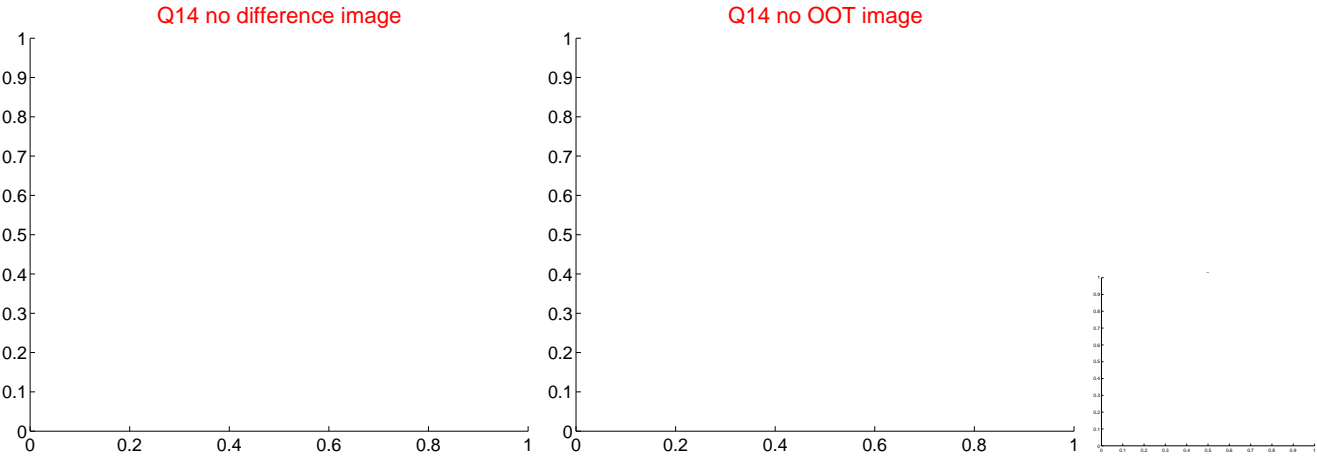
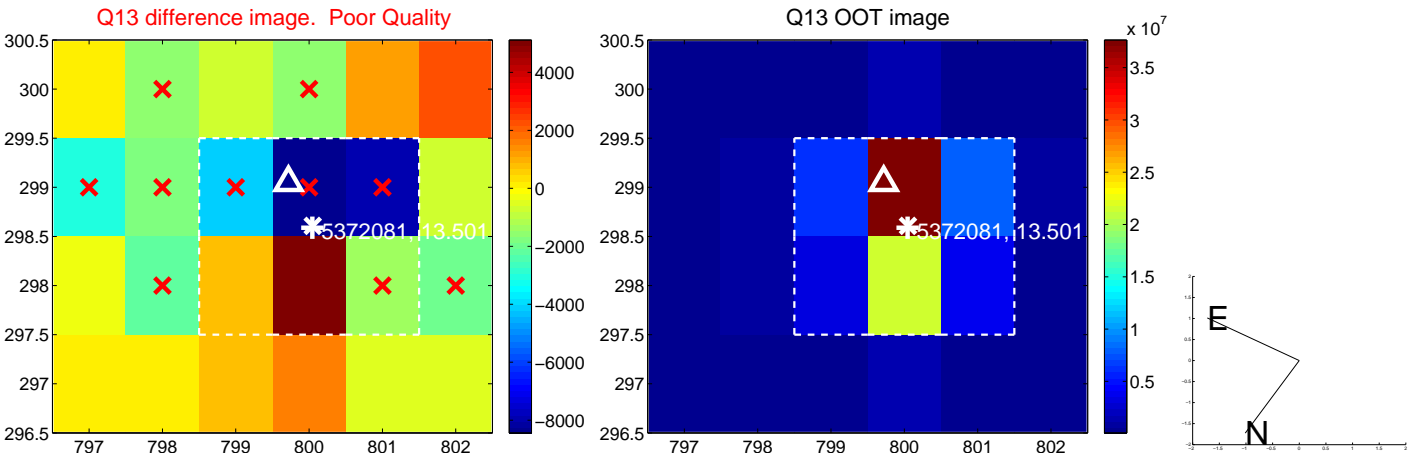
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



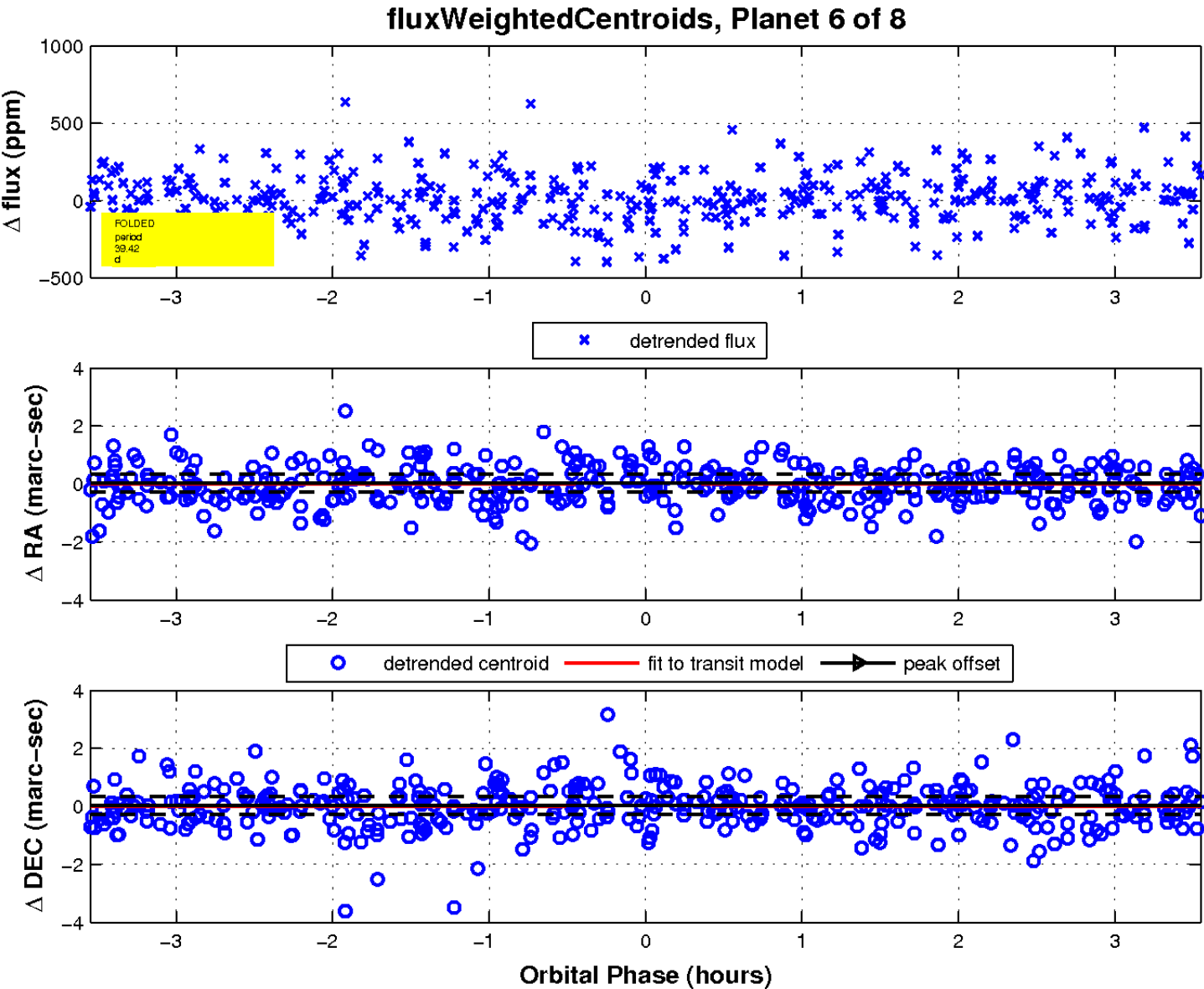
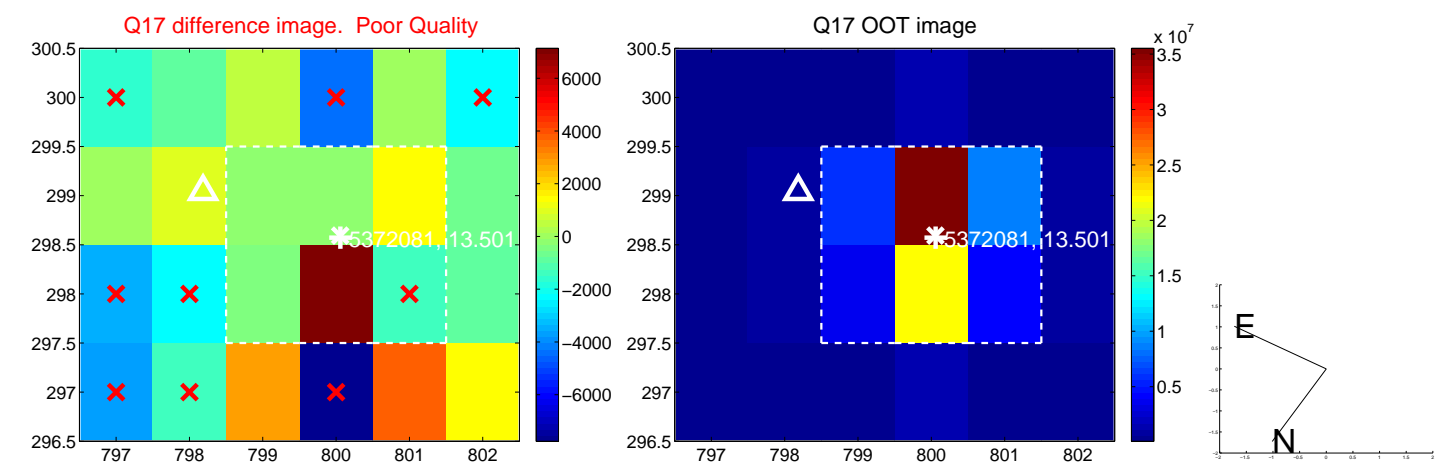
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

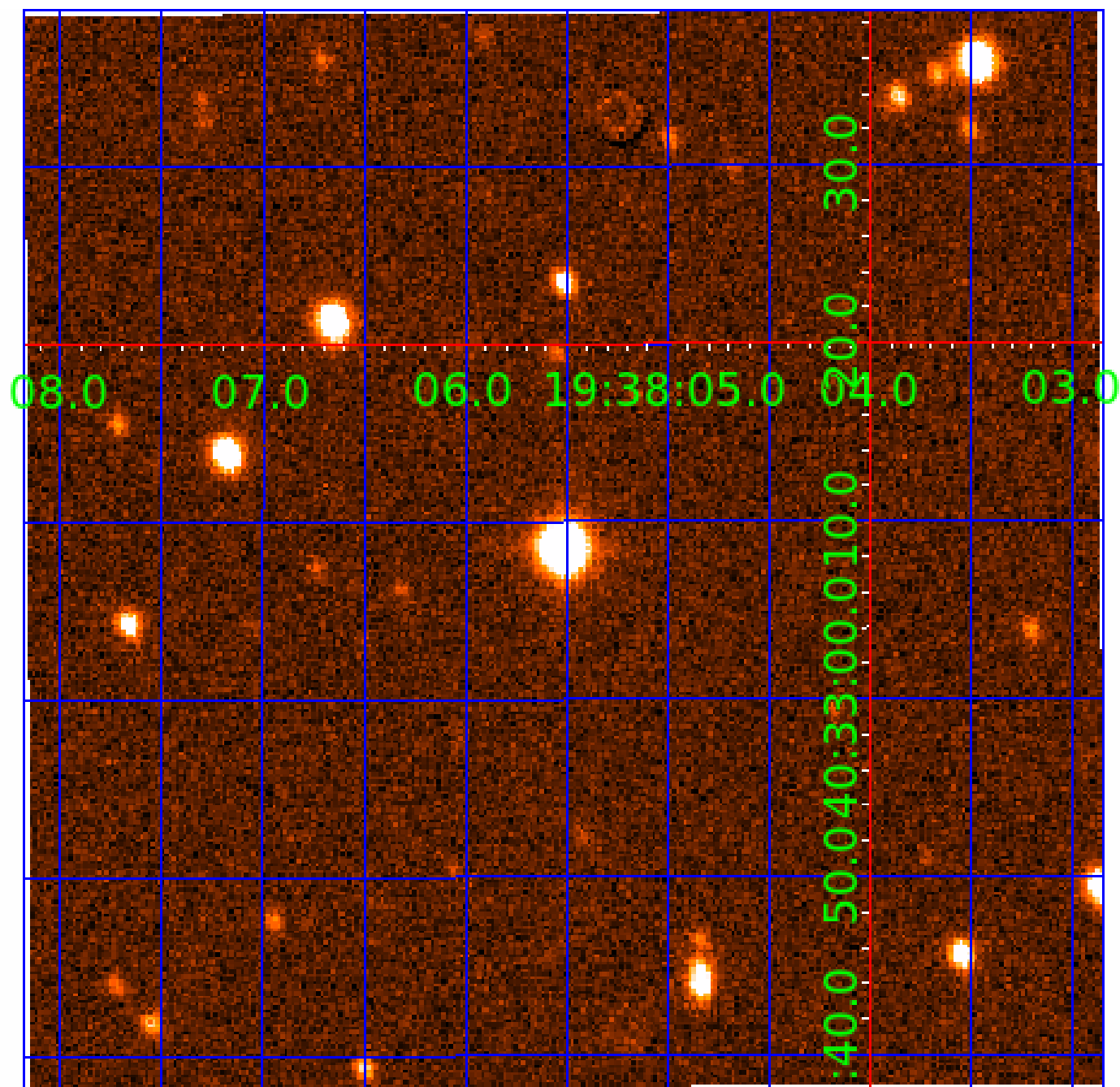


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005372081

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})
005372081-01	OBS	No	1.532264	132.484753	3.2	9.907	8.2	1.7	1.01	6340	0.21	2091.00
005372081-02	OBS	No	173.251831	188.728132	64.3	47.095	17.8	3.8	1.01	6340	0.94	3.82
005372081-03	OBS	No	49.261082	157.953926	273.2	2.217	9.1	9.4	1.01	6340	2.12	20.45
005372081-04	OBS	No	49.904496	150.438465	362.3	1.877	9.3	9.0	1.01	6340	2.12	20.10
005372081-05	OBS	No	58.781787	190.236355	217.5	5.313	8.9	9.0	1.01	6340	1.66	16.16
005372081-06	OBS	No	39.420992	168.821592	338.0	1.185	8.2	9.5	1.01	6340	2.31	27.53
005372081-07	OBS	No	10.724962	140.794691	108.8	3.825	9.3	10.9	1.01	6340	1.24	156.17
005372081-08	OBS	No	127.948282	185.844319	300.7	11.956	7.8	7.5	1.01	6340	1.79	5.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005372081-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005372081-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005372081-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005372081-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
005372081-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005372081-06	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005372081-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005372081-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

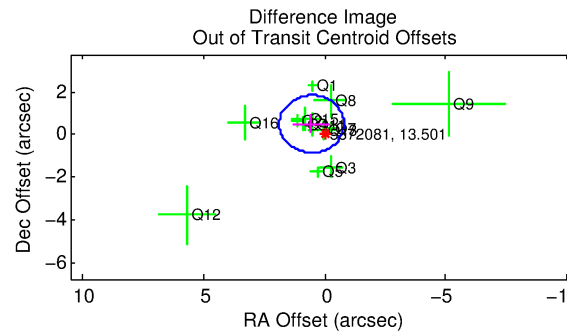
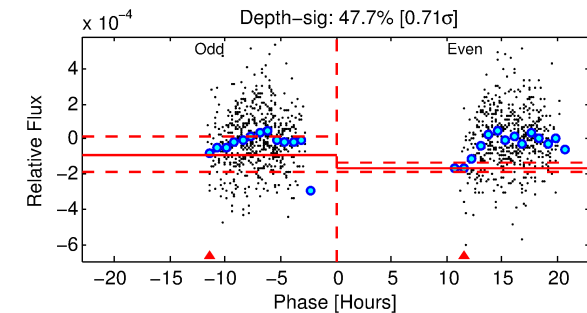
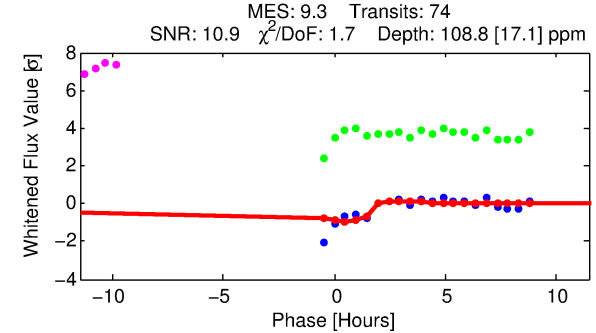
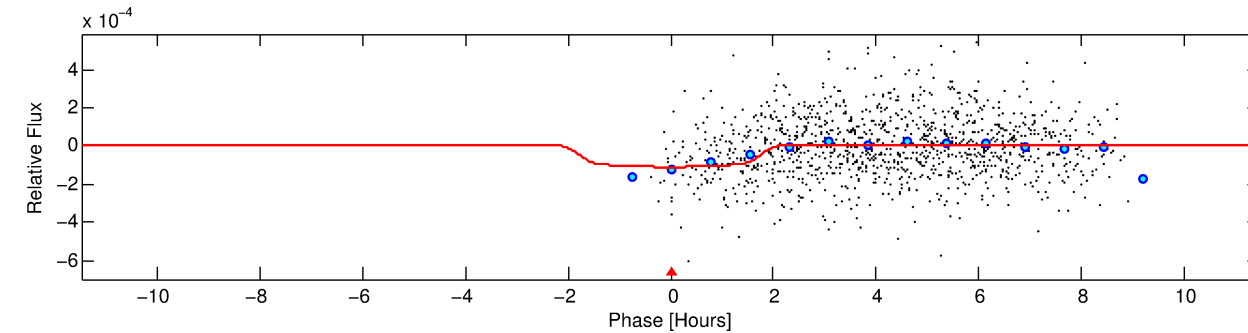
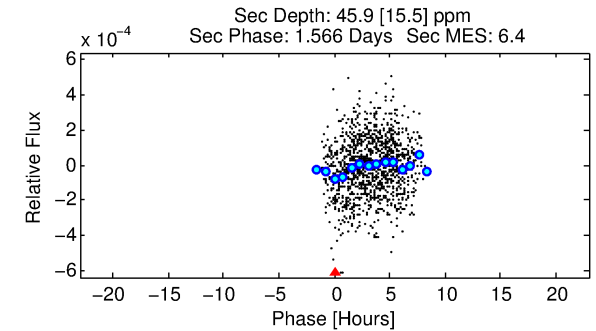
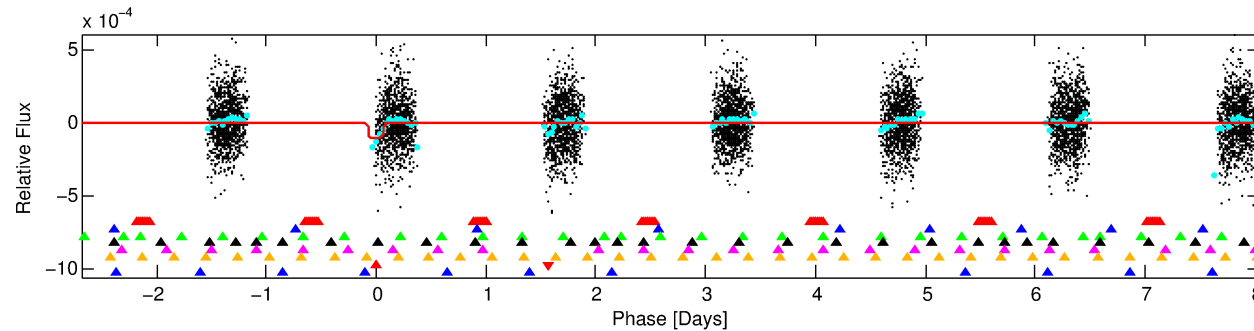
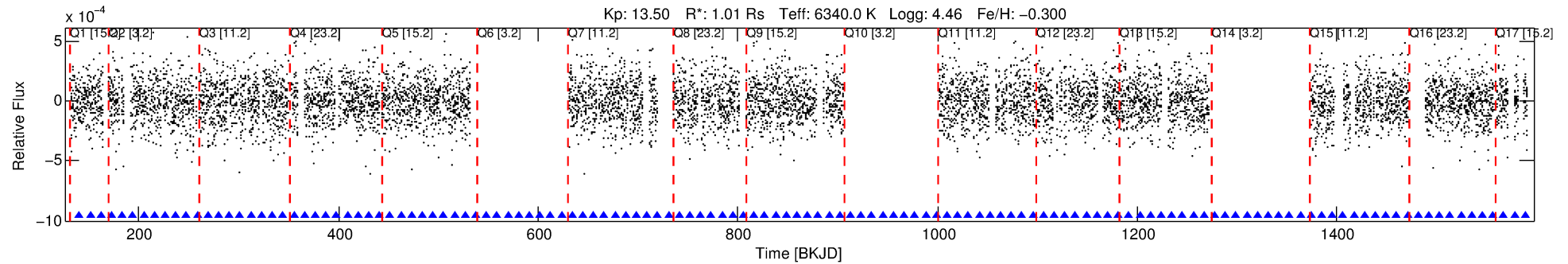
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005372081-07

No Significant Match Found

DV One-Page Summary

KIC: 5372081 Candidate: 7 of 8 Period: 10.725 d



DV Fit Results:

Period = 10.72496 [0.00012] d
Epoch = 140.7947 [0.0267] BKJD
Rp/R* = 0.0112 [0.0072]
a/R* = 9.63 [35.71]
b = 0.91 [0.70]
Seff = 156.17 [56.88]
Teff = 901 [82] K
Rp = 1.24 [0.86] Re
a = 0.0972 [0.0230] AU
Ag = 155.33 [211.87] [0.73σ]
Teffp = 4920 [1630] K [2.46σ]

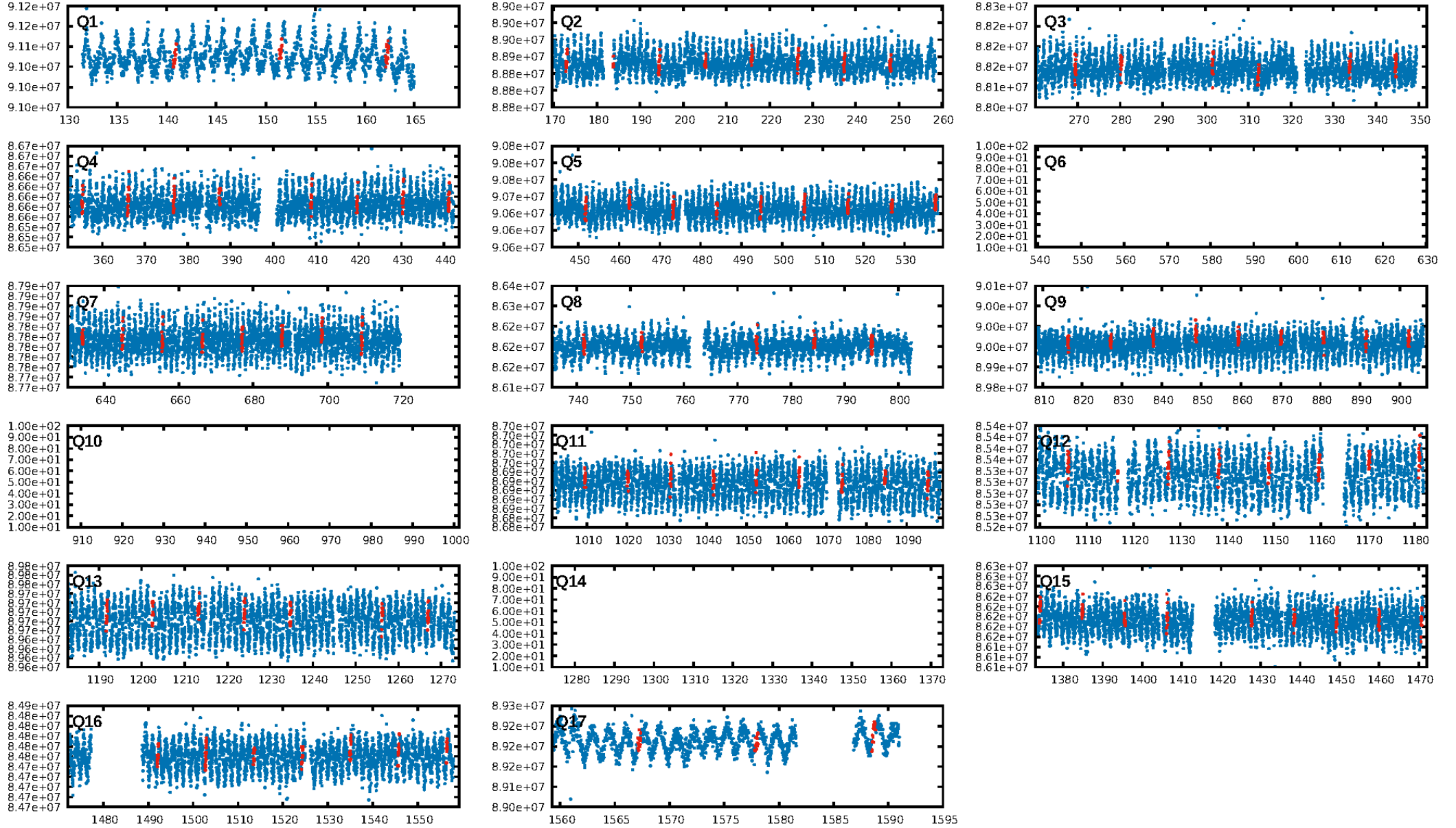
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [20.78σ]
LongPeriod-sig: 100.0% [171.99σ]
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.88e-10
RollingBand-fgt: 1.00 [71/71]
GhostDiagnostic-chr: 0.656
Centroid-sig: 39.0%
Centroid-so: 0.543 arcsec [0.76σ]
OotOffset-rm: 0.734 arcsec [1.65σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-rm: 0.782 arcsec [1.98σ]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 0.64 [9/14]

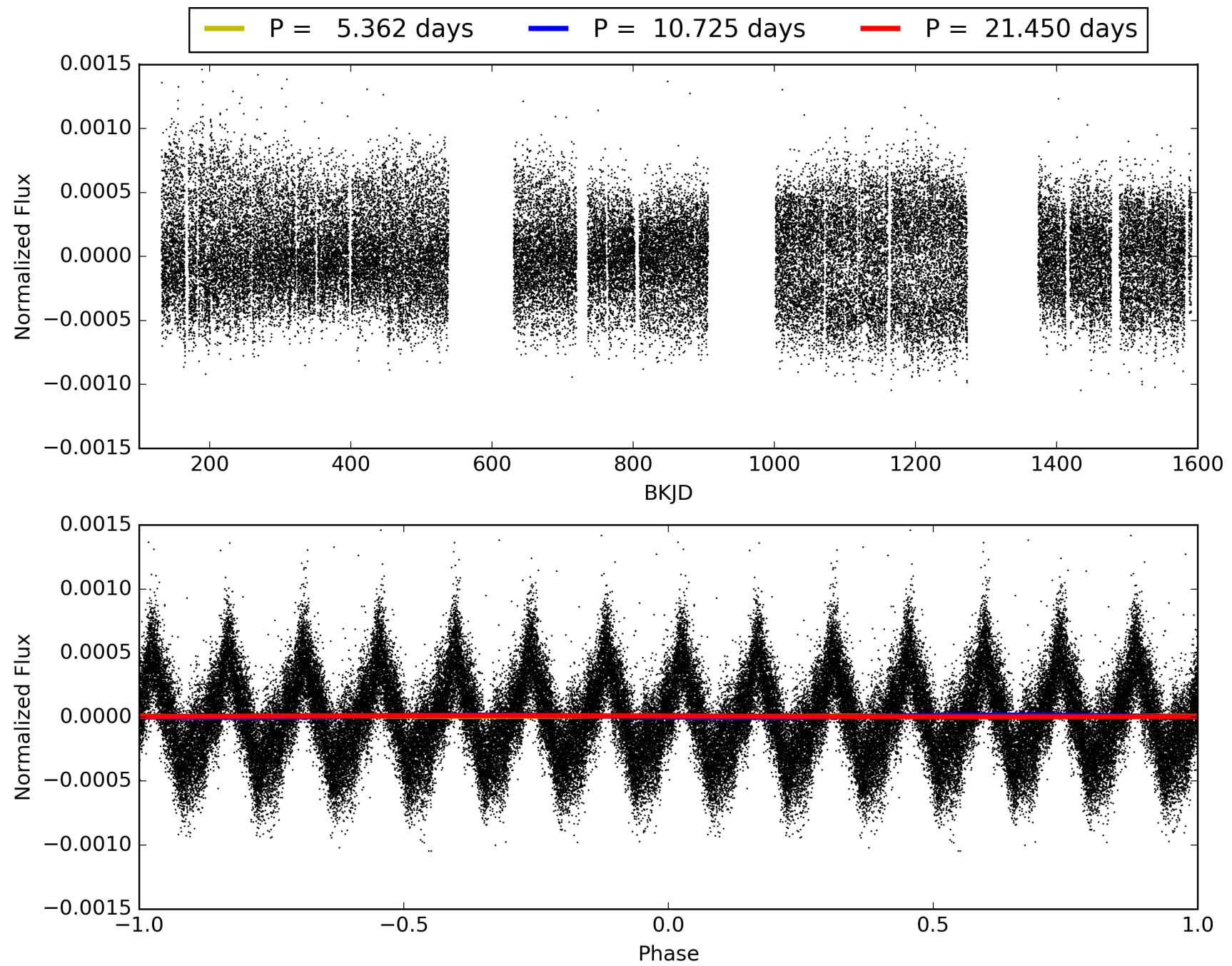
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:11:46 Z

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

TCE 005372081-07, PDC Light Curves

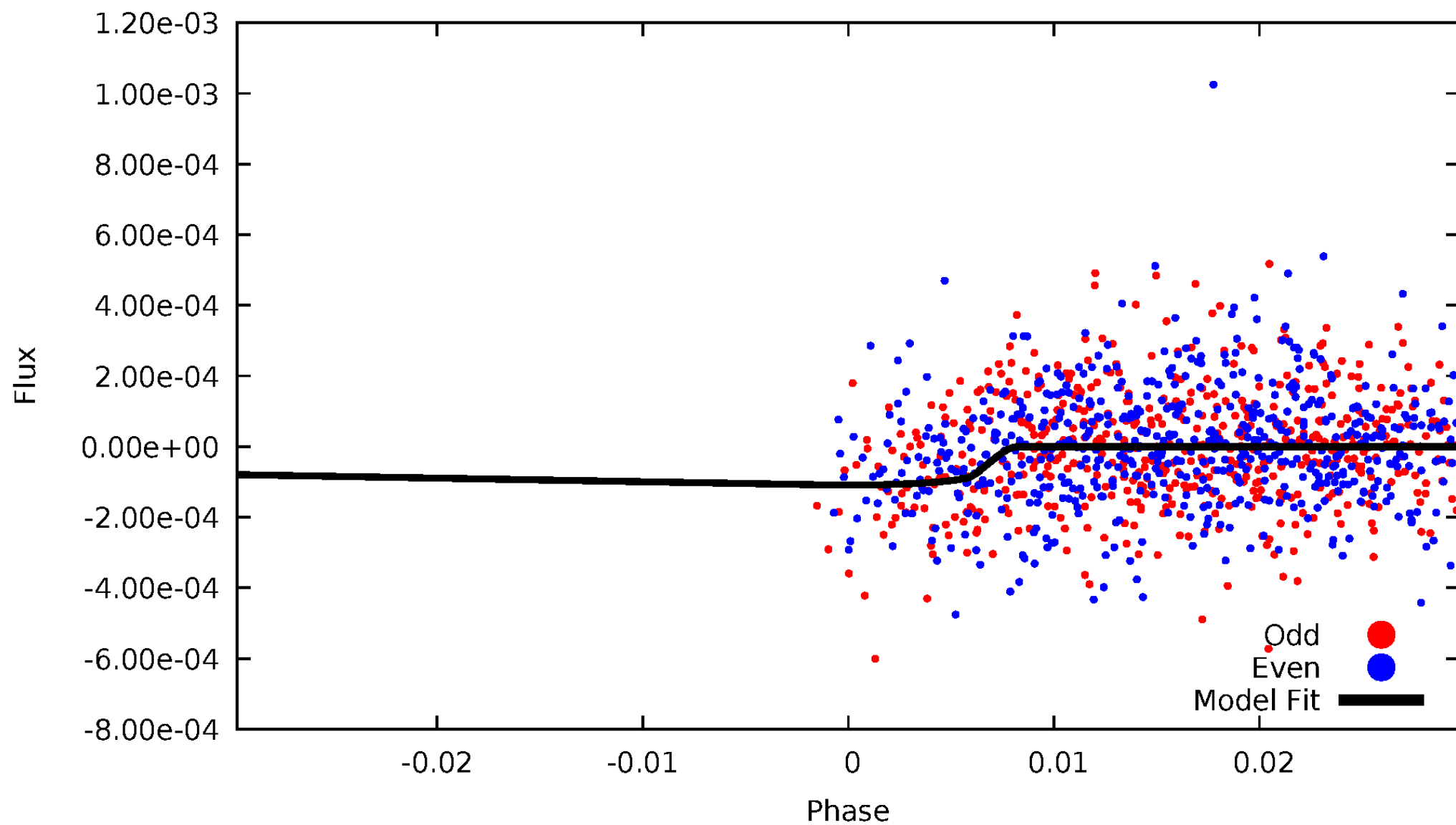


TCE 005372081-07



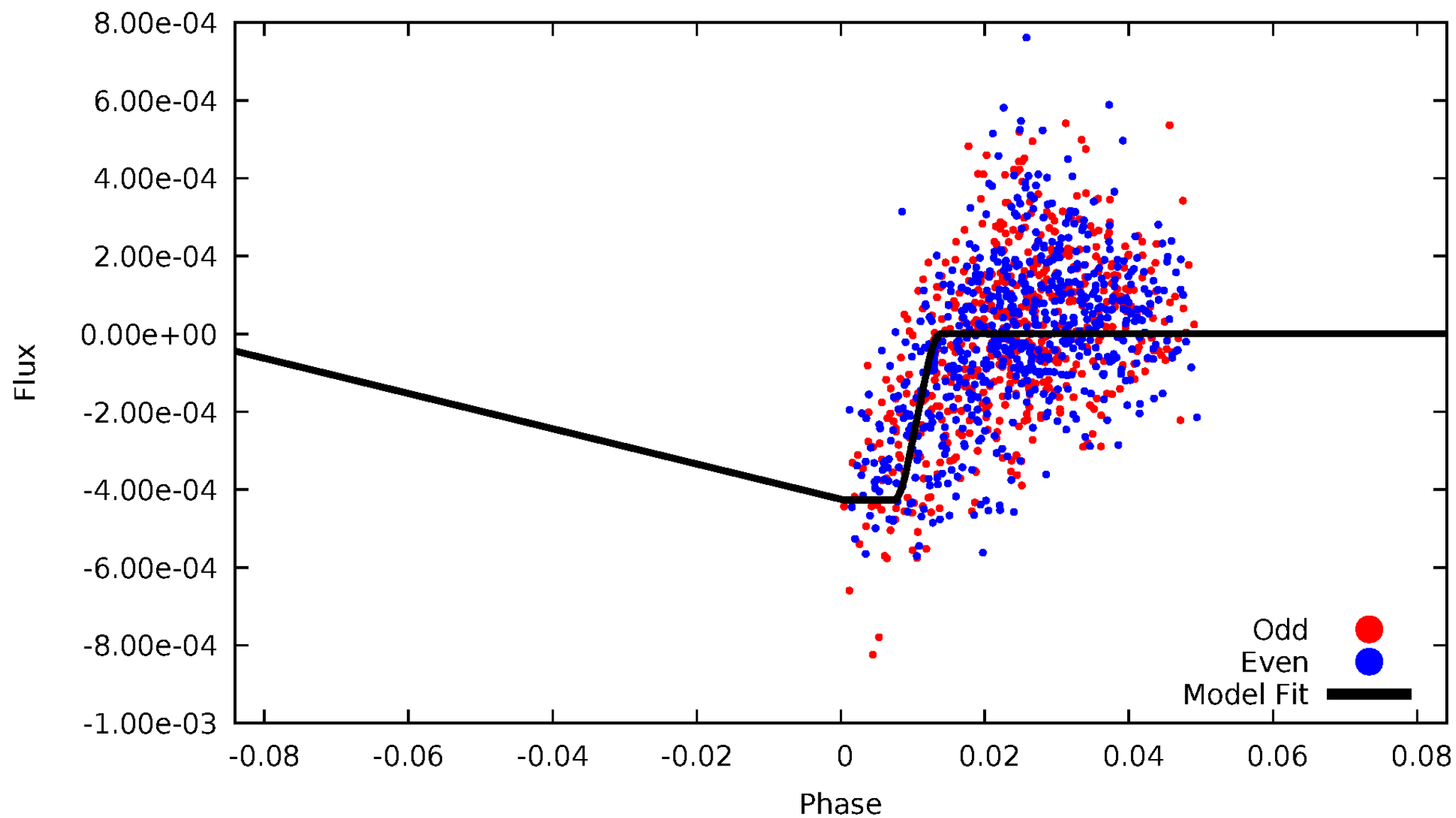
DV Odd/Even

TCE 005372081-07



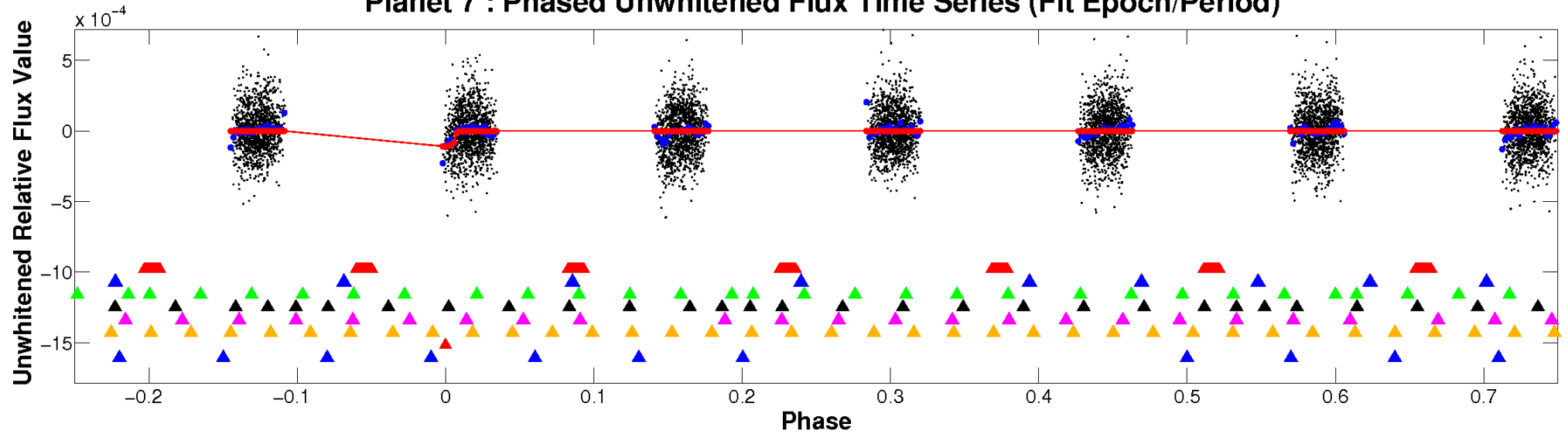
ALT Odd/Even

TCE 005372081-07

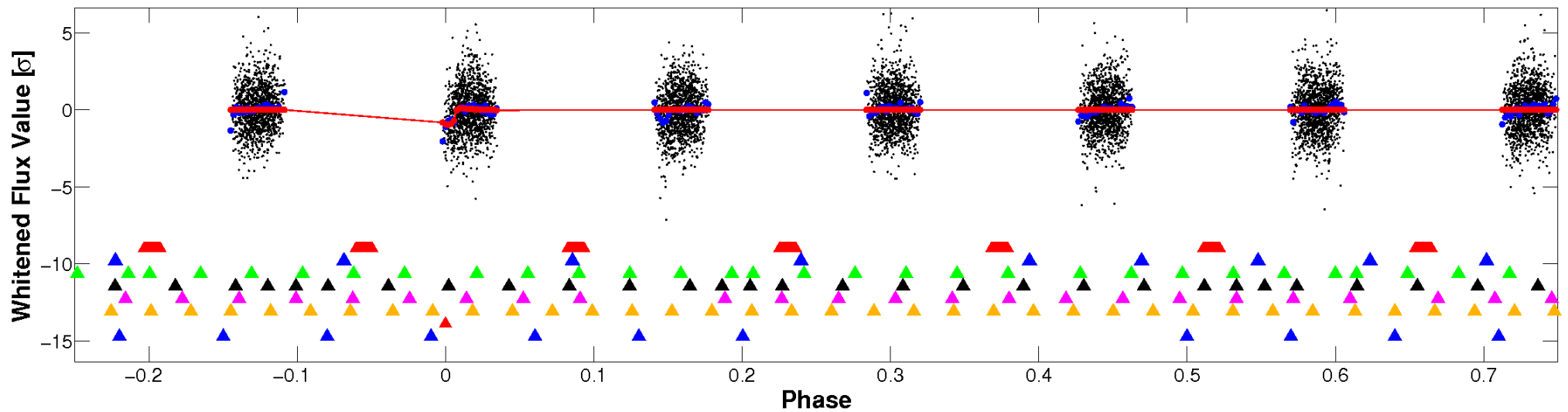


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

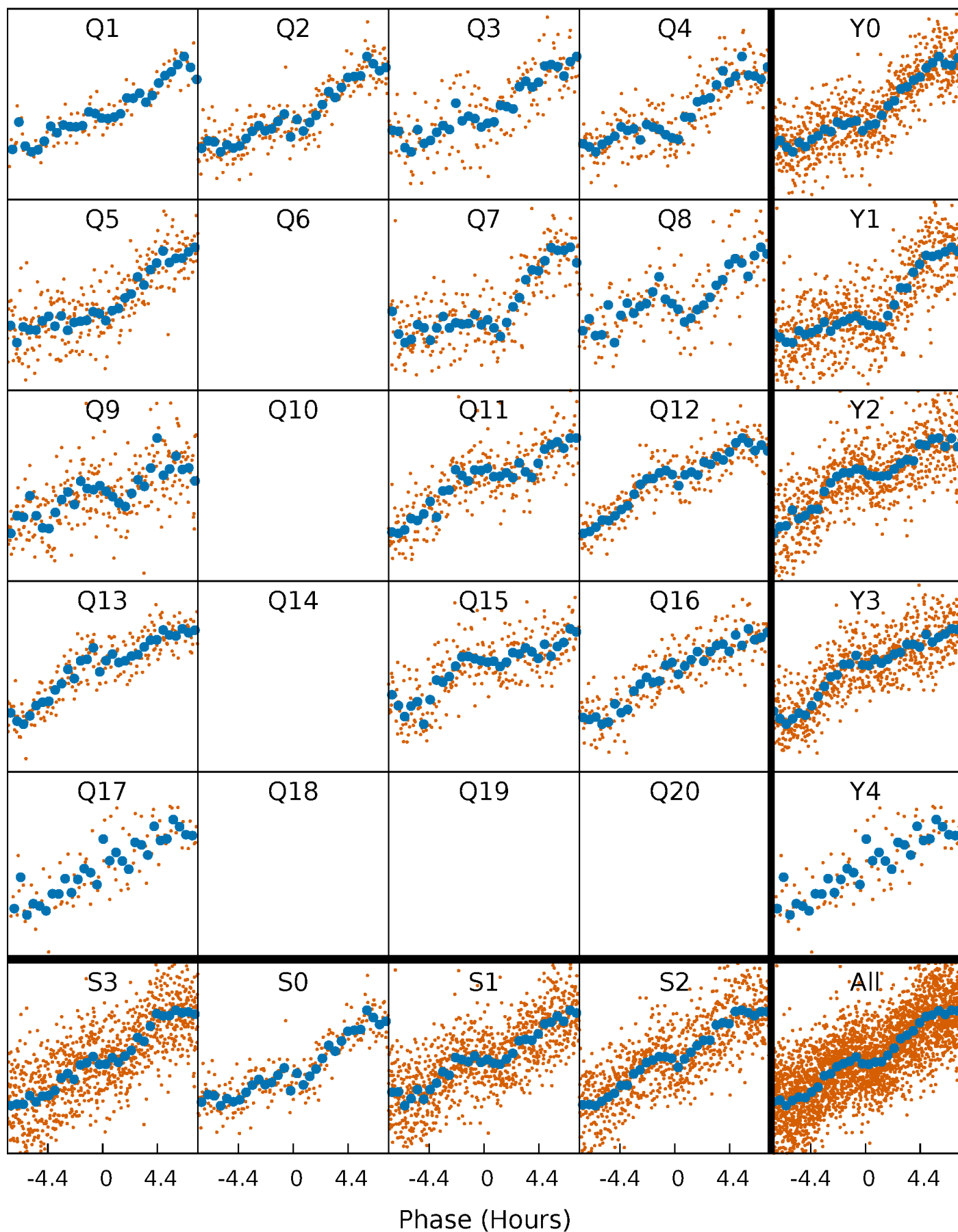


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 005372081-07 $P = 10.724962$ Days $T_0 = 140.794691$ (BKJD)



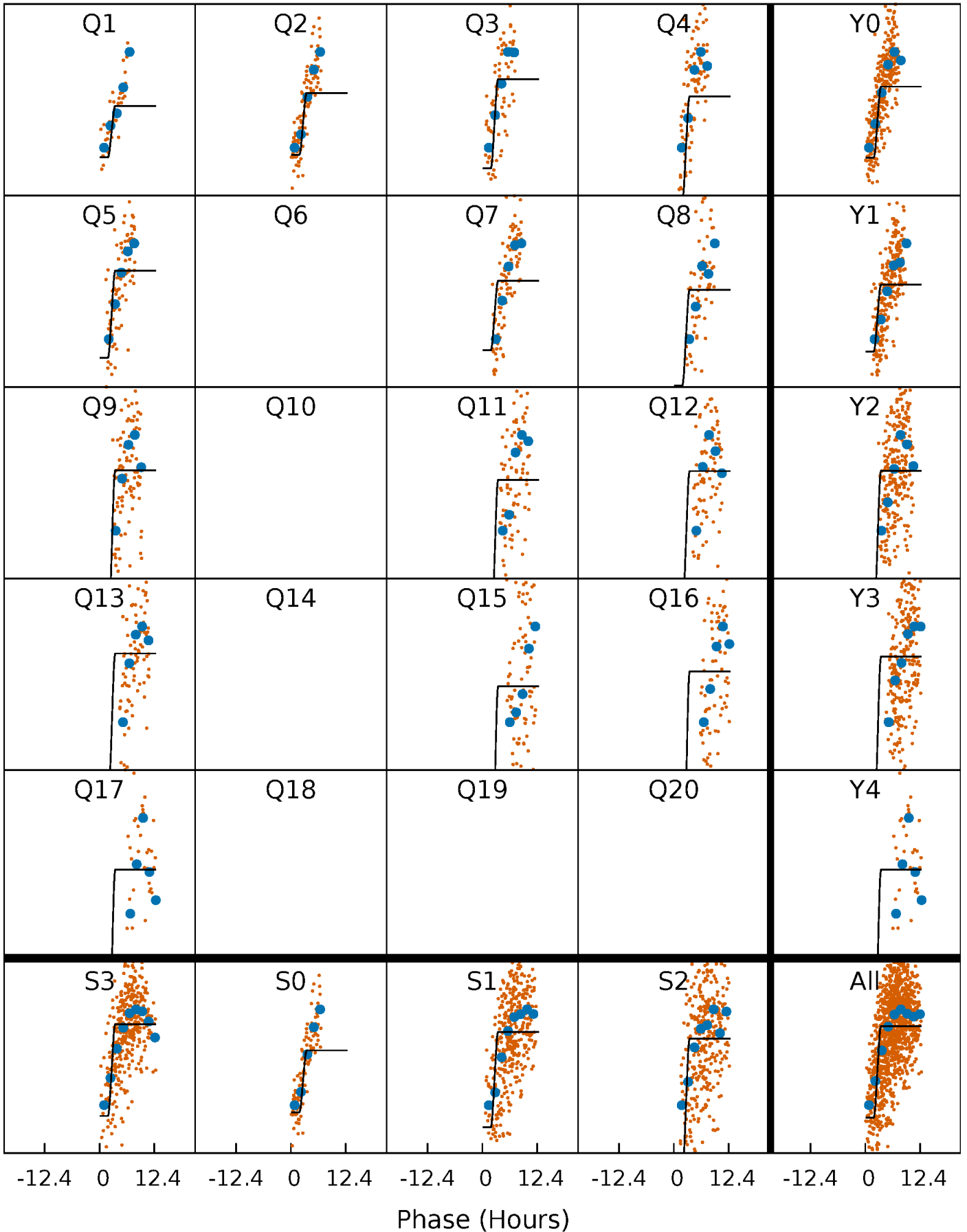
DV Quarter-Phased Transit Curves

TCE 005372081-07 $P = 10.724962$ Days $T_0 = 140.794691$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

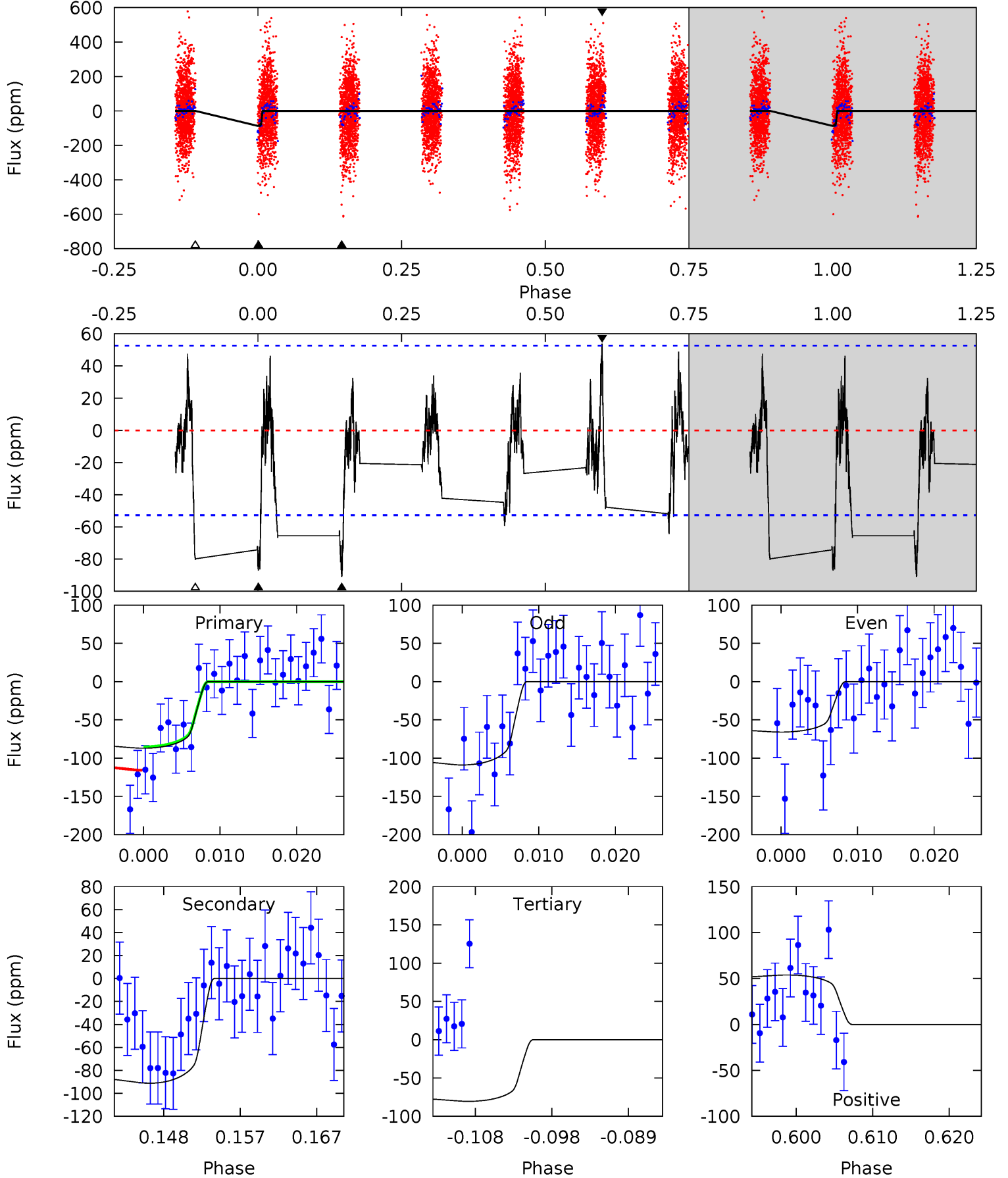
TCE 005372081-07 $P = 10.723915$ Days $T_0 = 140.776805$ (BKJD)



DV Model-Shift Uniqueness Test

005372081-07, P = 10.724962 Days, E = 130.069729 Days

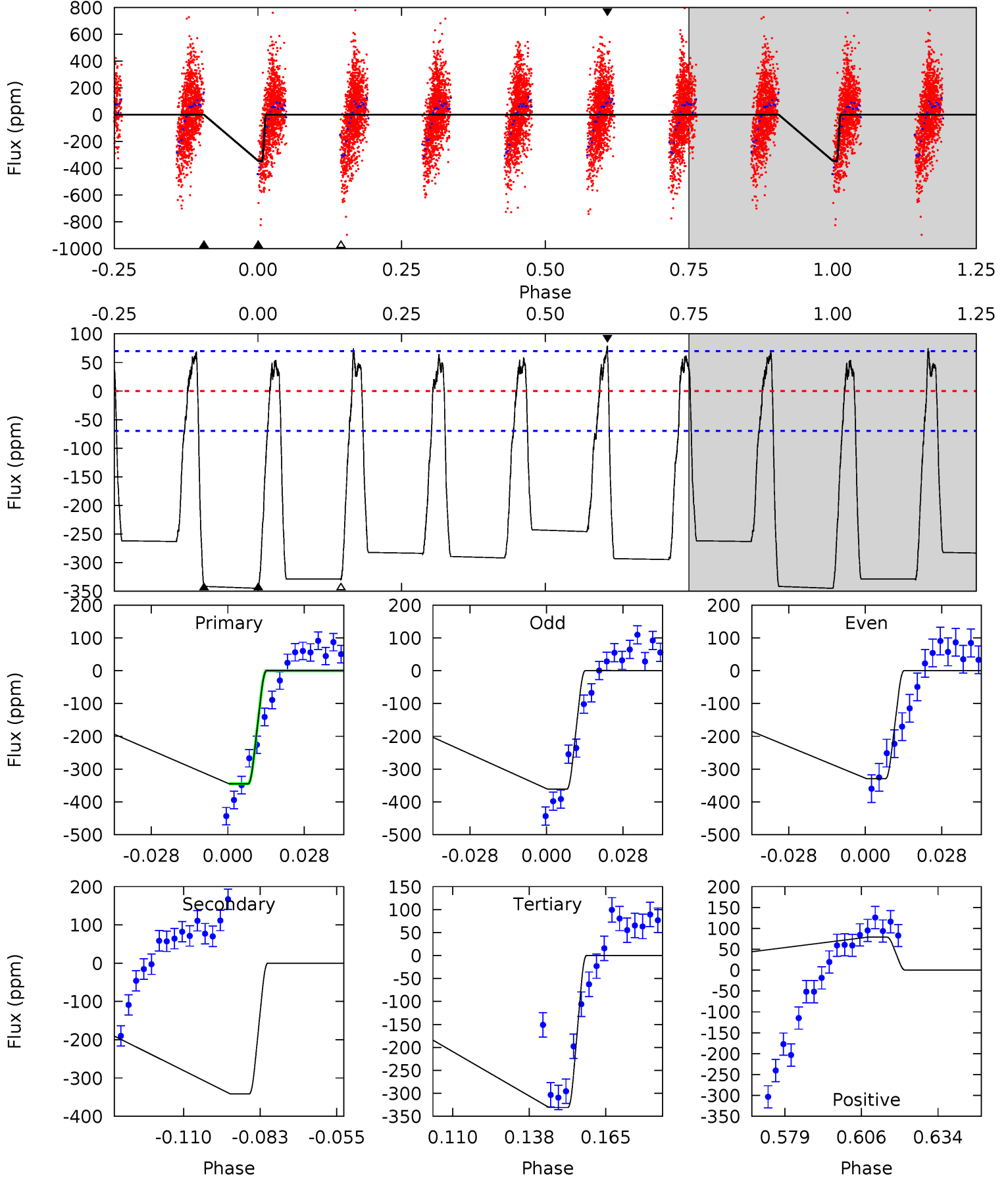
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.30	8.70	7.68	5.13	5.03	2.58	1.94	0.63	3.17	1.03	3.57	2.05	1.02	0.37	0.52



Alt Model-Shift Uniqueness Test

005372081-07, P = 10.723915 Days, E = 130.052890 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.8	23.6	22.9	5.47	4.83	2.20	6.83	0.97	18.4	0.74	18.1	1.13	1.13	0.19	0



Stellar Parameters For KIC 005372081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6340^{+151}_{-189}	$4.457^{+0.050}_{-0.188}$	$-0.300^{+0.250}_{-0.350}$	$1.010^{+0.284}_{-0.122}$	$1.066^{+0.133}_{-0.146}$	$1.458^{+0.381}_{-0.734}$
	+2%/-3%	+1%/-4%	+83%/-117%	+28%/-12%	+12%/-14%	+26%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005372081-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-91 ± 10	$1.34^{+0.89}_{-0.70}$	1290^{+83}_{-57}	5777^{+2933}_{-1163}	262^{+868}_{-170}
Alt.	-341 ± 14	$2.43^{+0.88}_{-0.87}$	1287^{+83}_{-59}	5928^{+1545}_{-761}	293^{+427}_{-134}

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

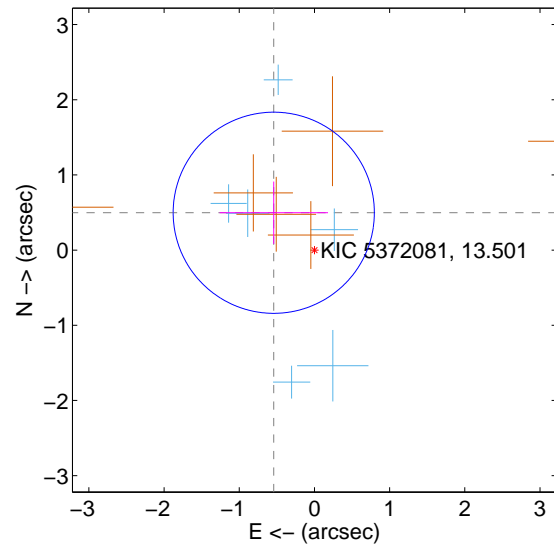
Supplemental centroid analysis for 005372081-07. Kepler magnitude: 13.50. Transit SNR 10.90

There are 6 quarters with good PRF difference image offsets

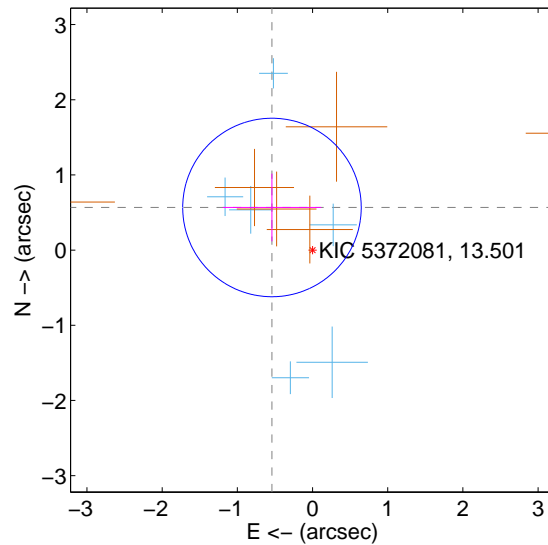
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.734 ± 0.446	1.65	0.541 ± 0.721	0.497 ± 0.415
PRF-fit source offset from KIC position	0.782 ± 0.396	1.98	0.539 ± 0.654	0.567 ± 0.450
photometric centroid source offset	0.54 ± 0.71	0.76	-0.02 ± 0.74	-0.54 ± 0.71

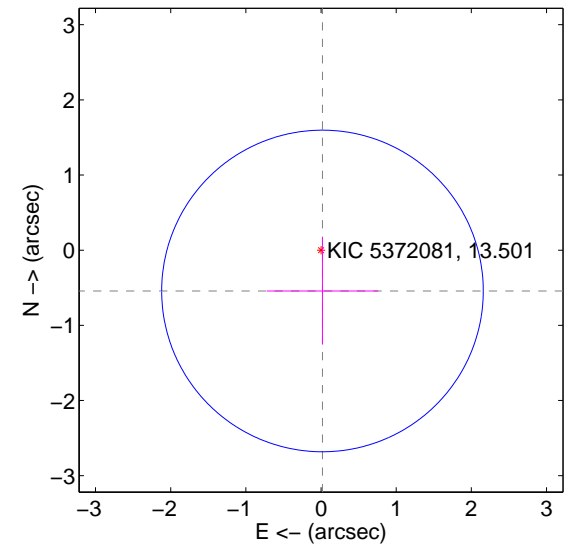
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

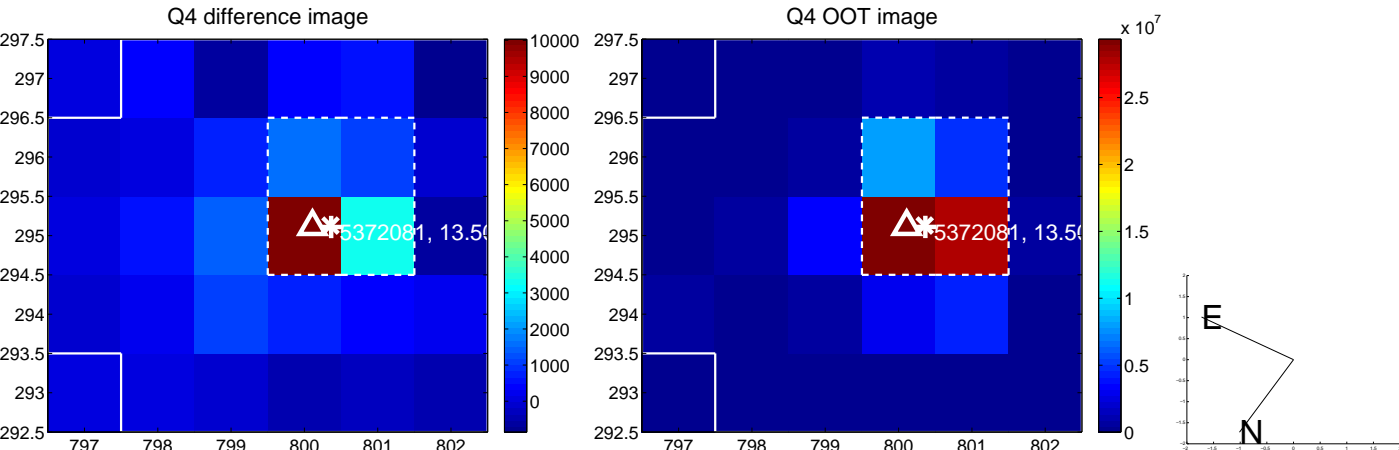
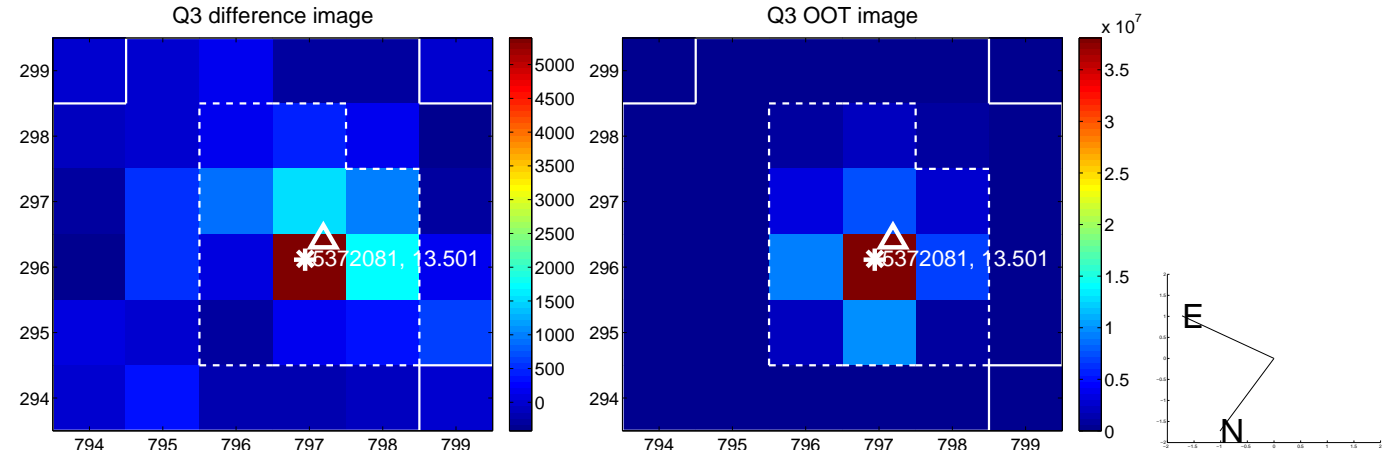
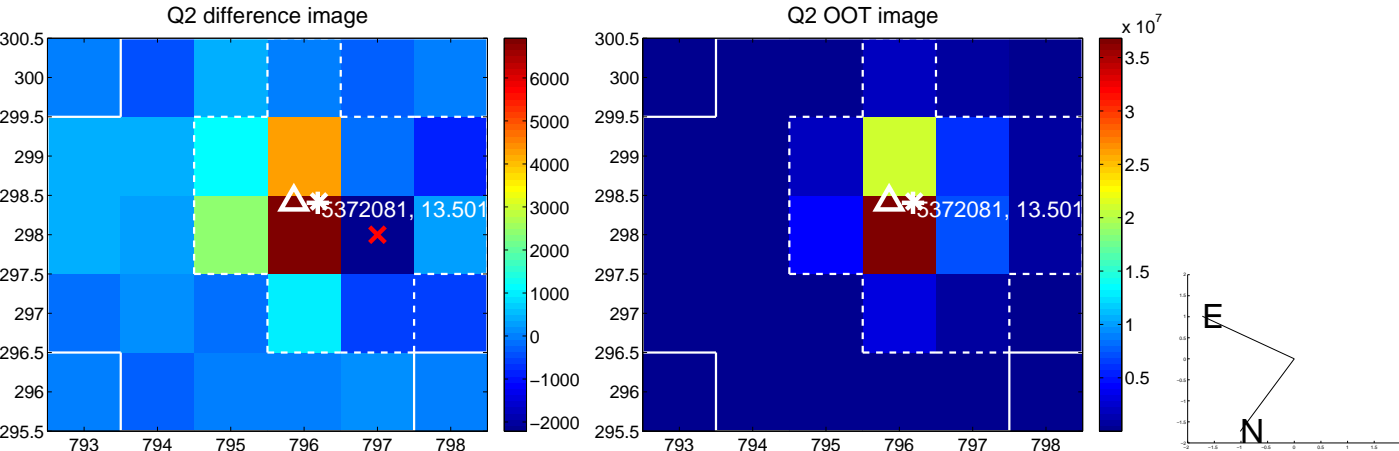
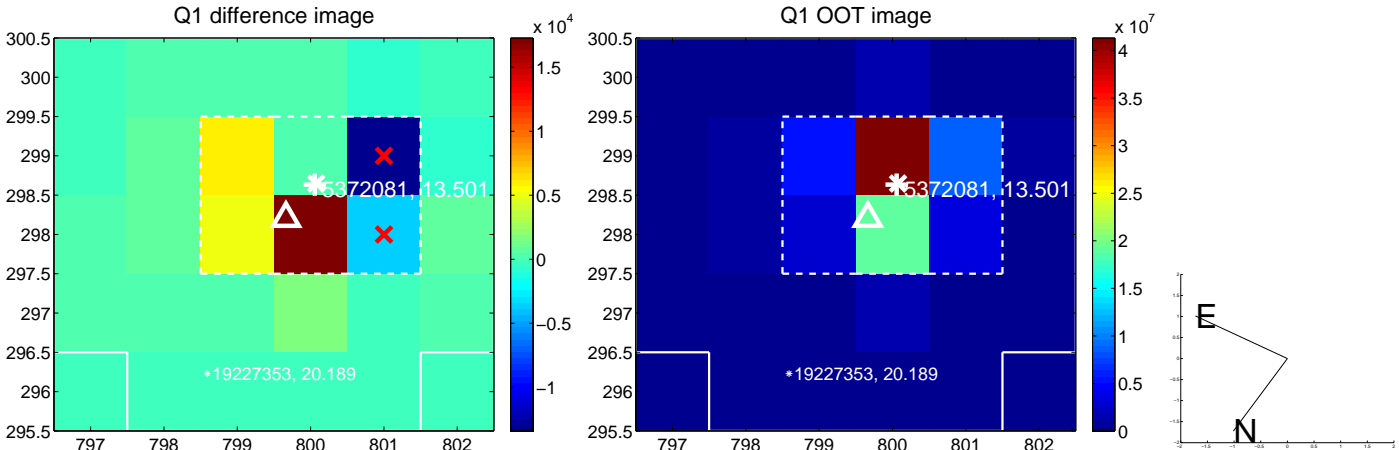


offset from photometric centroids

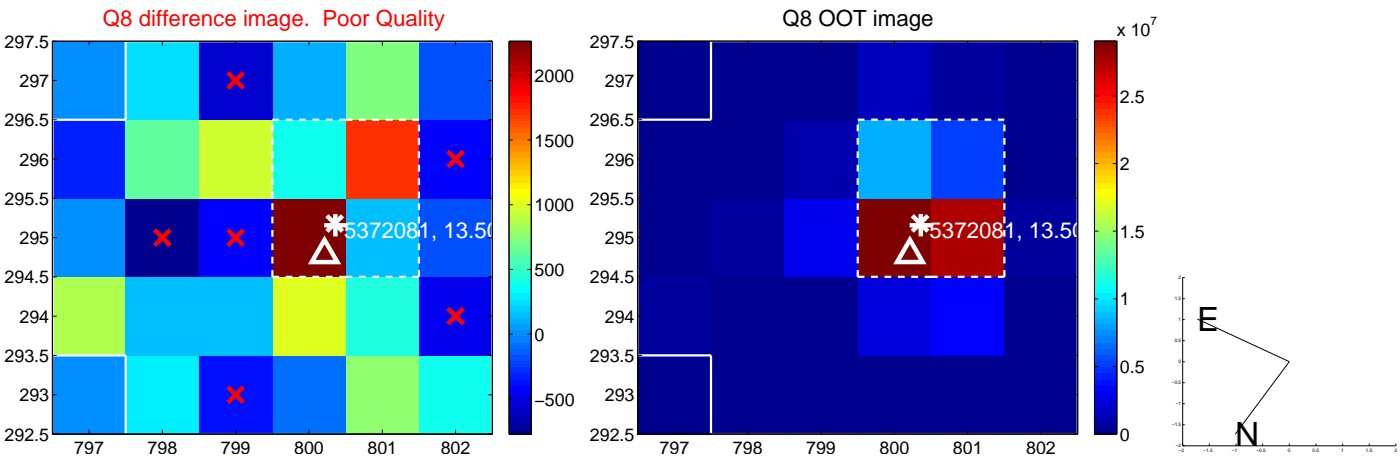
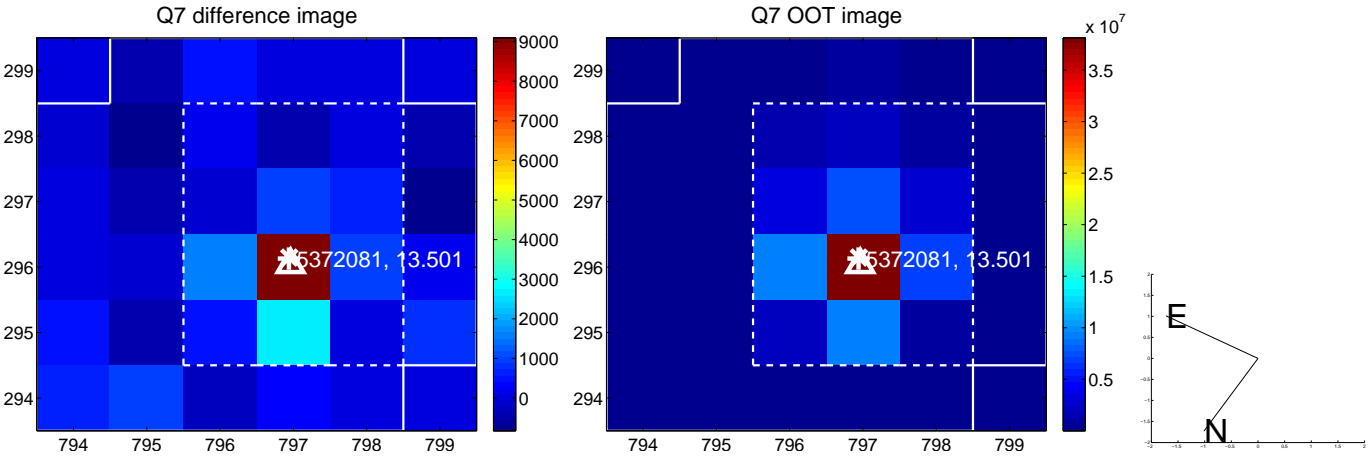
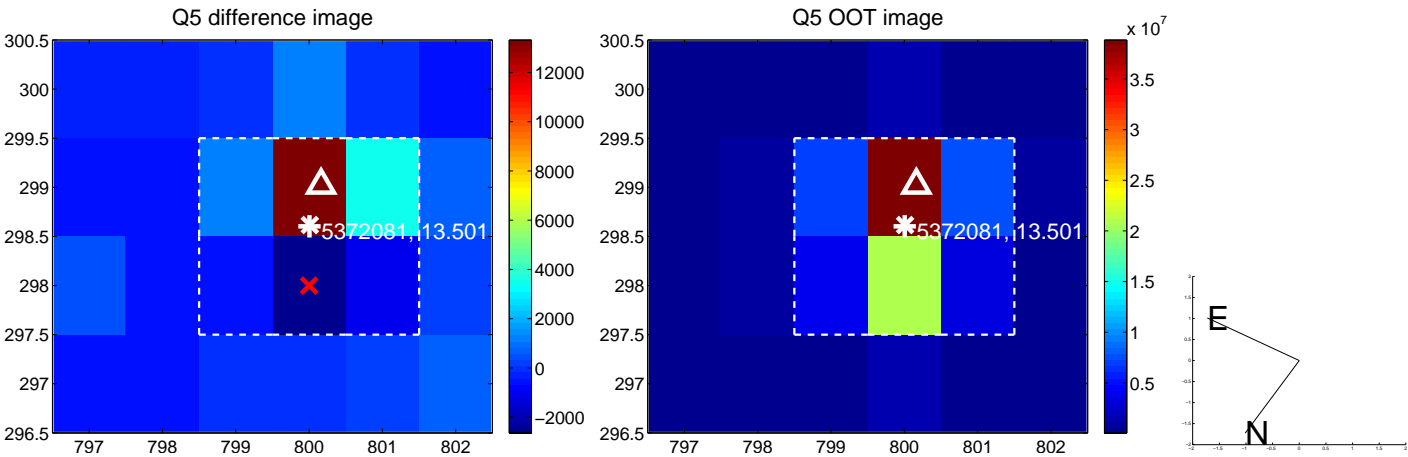


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

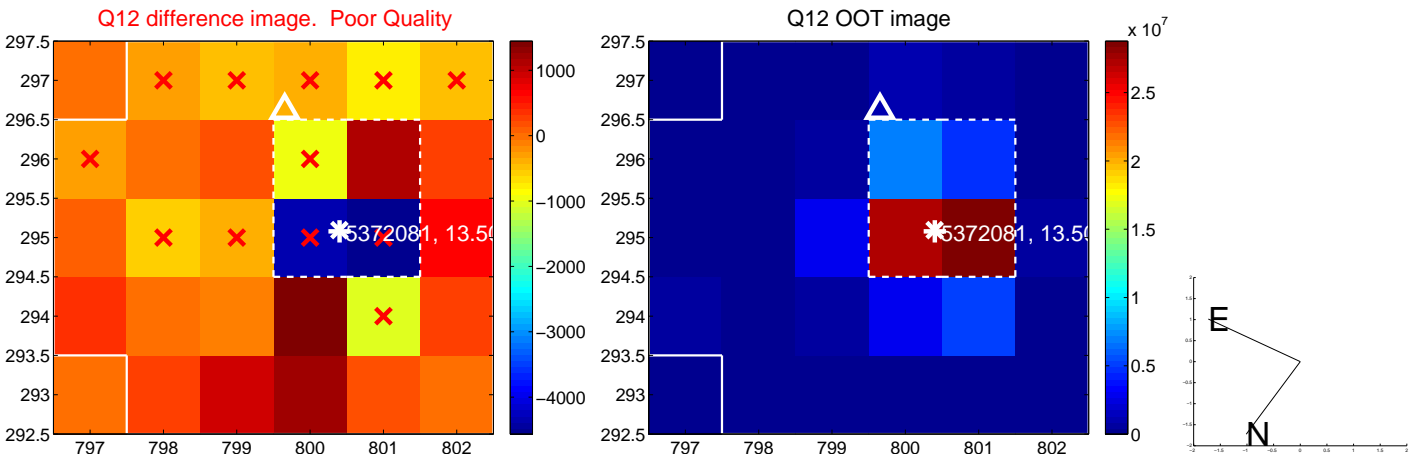
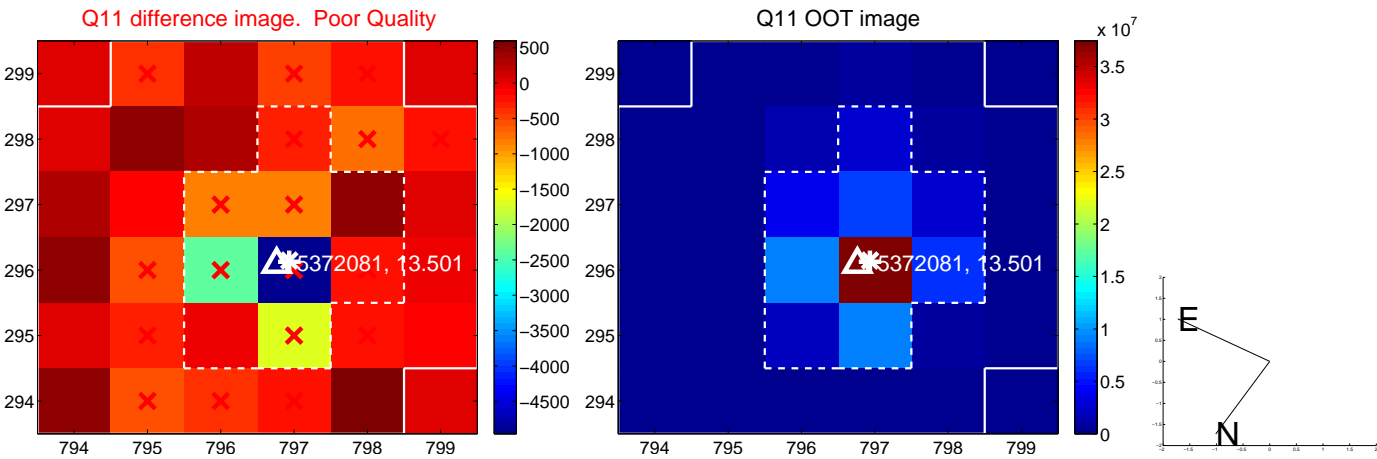
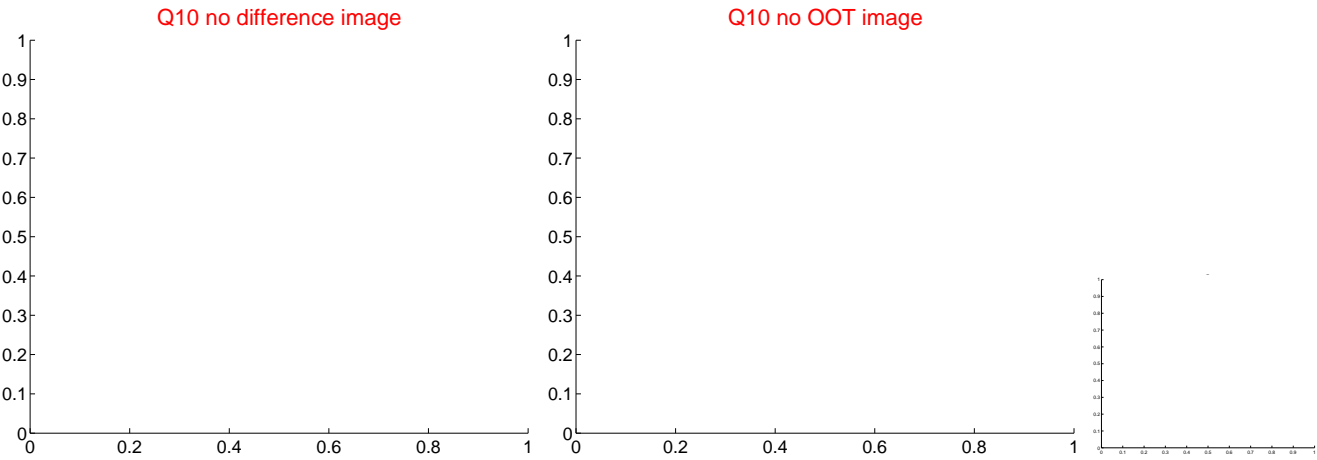
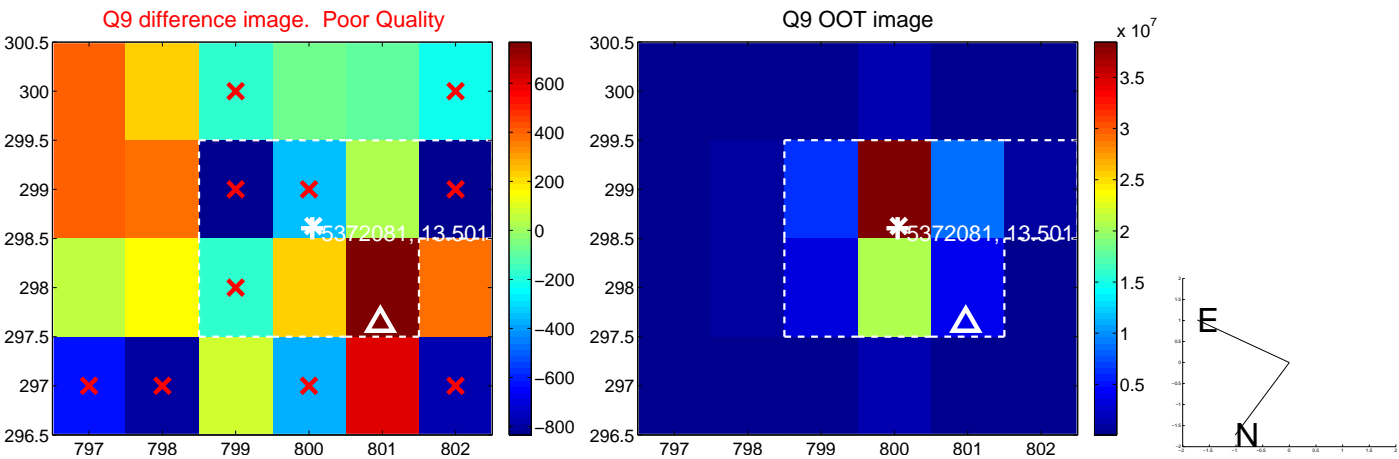
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



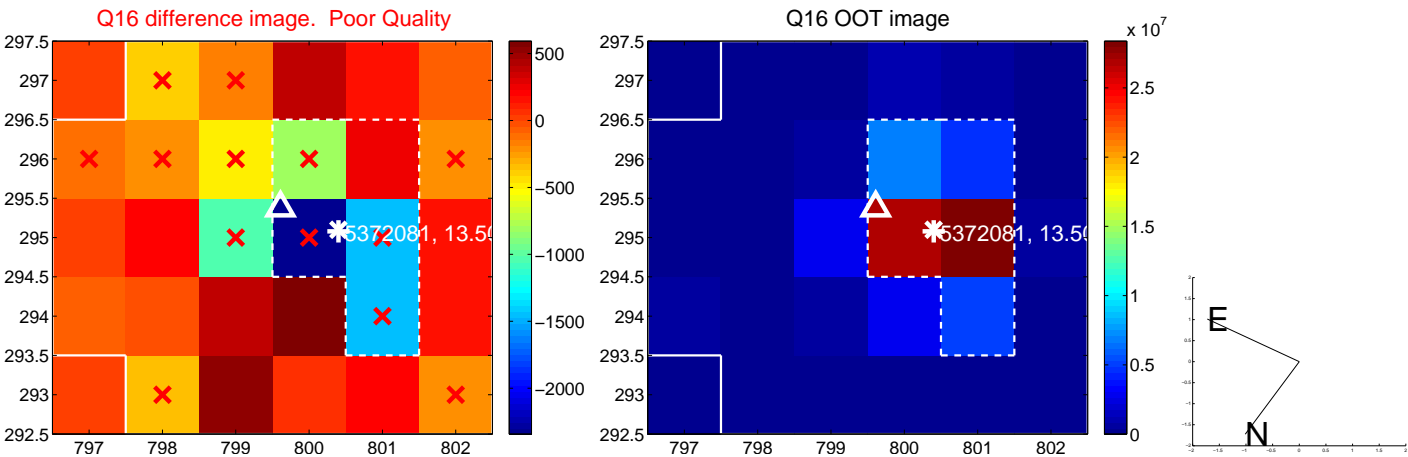
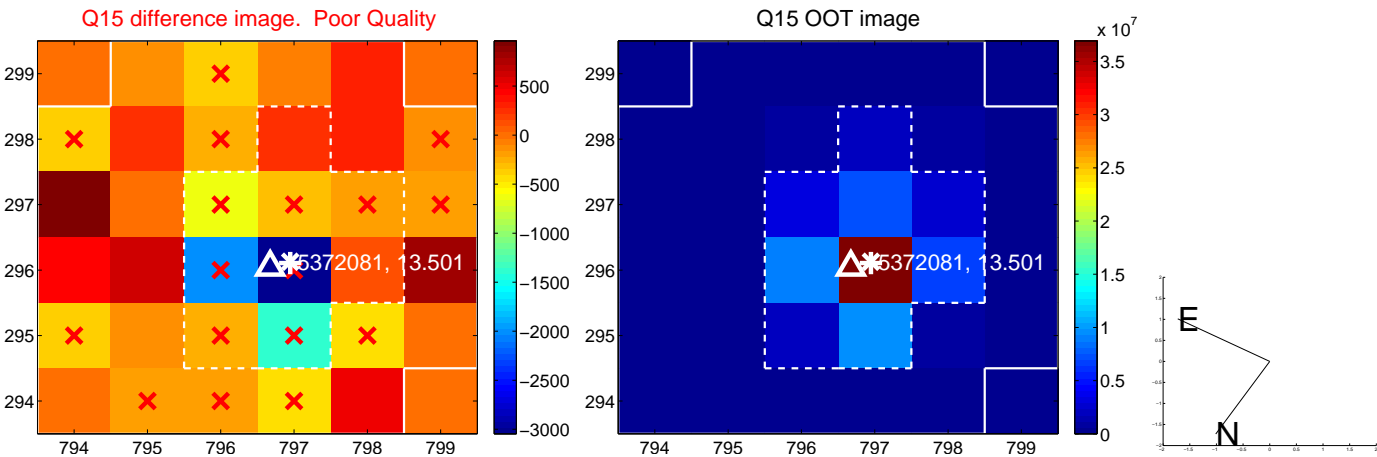
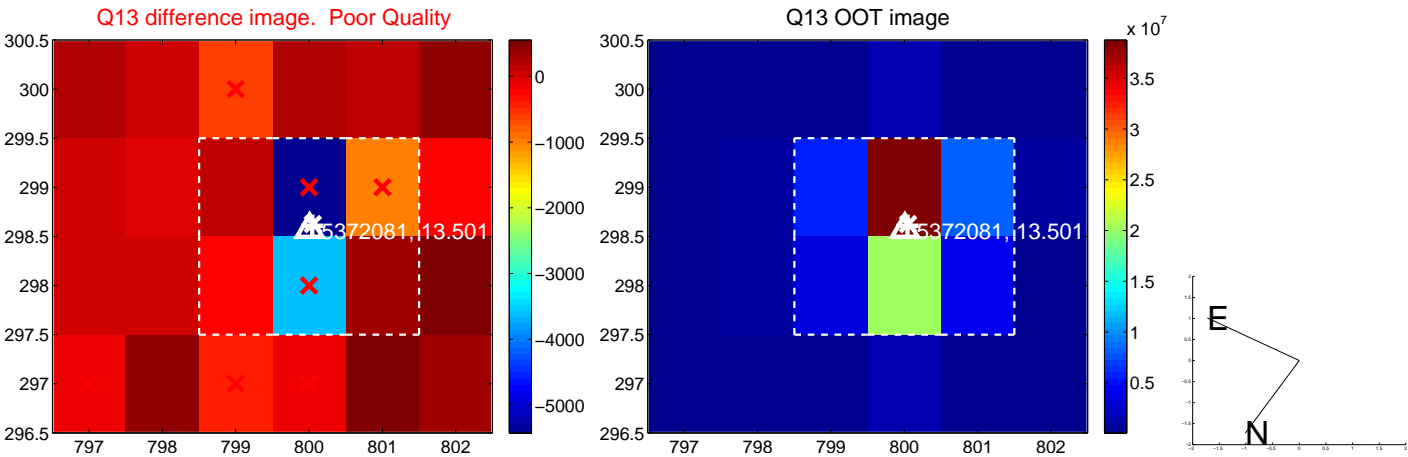
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



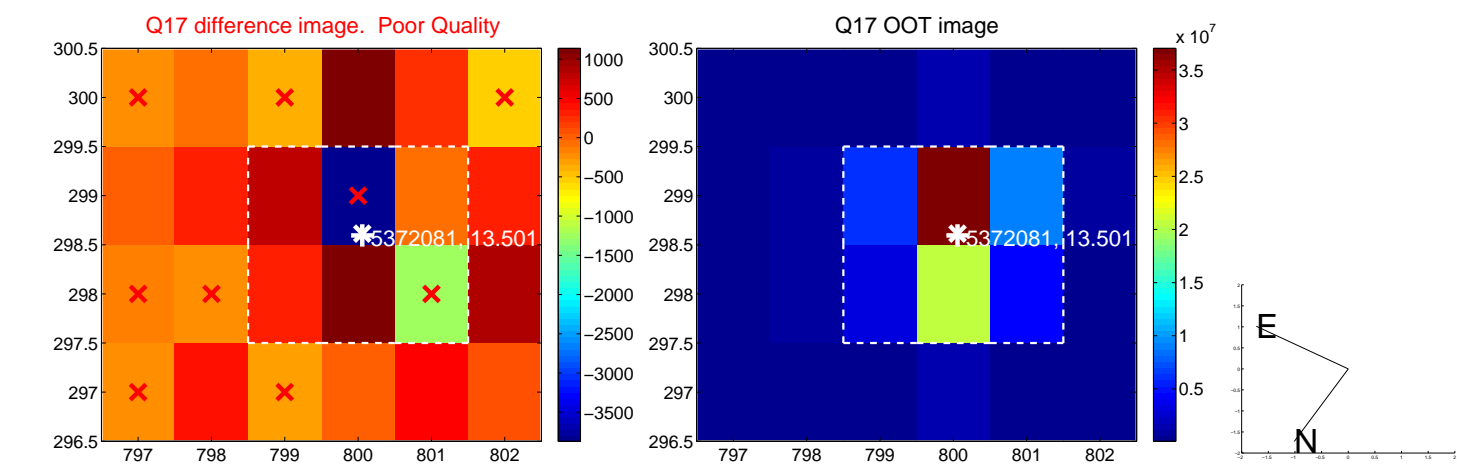
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



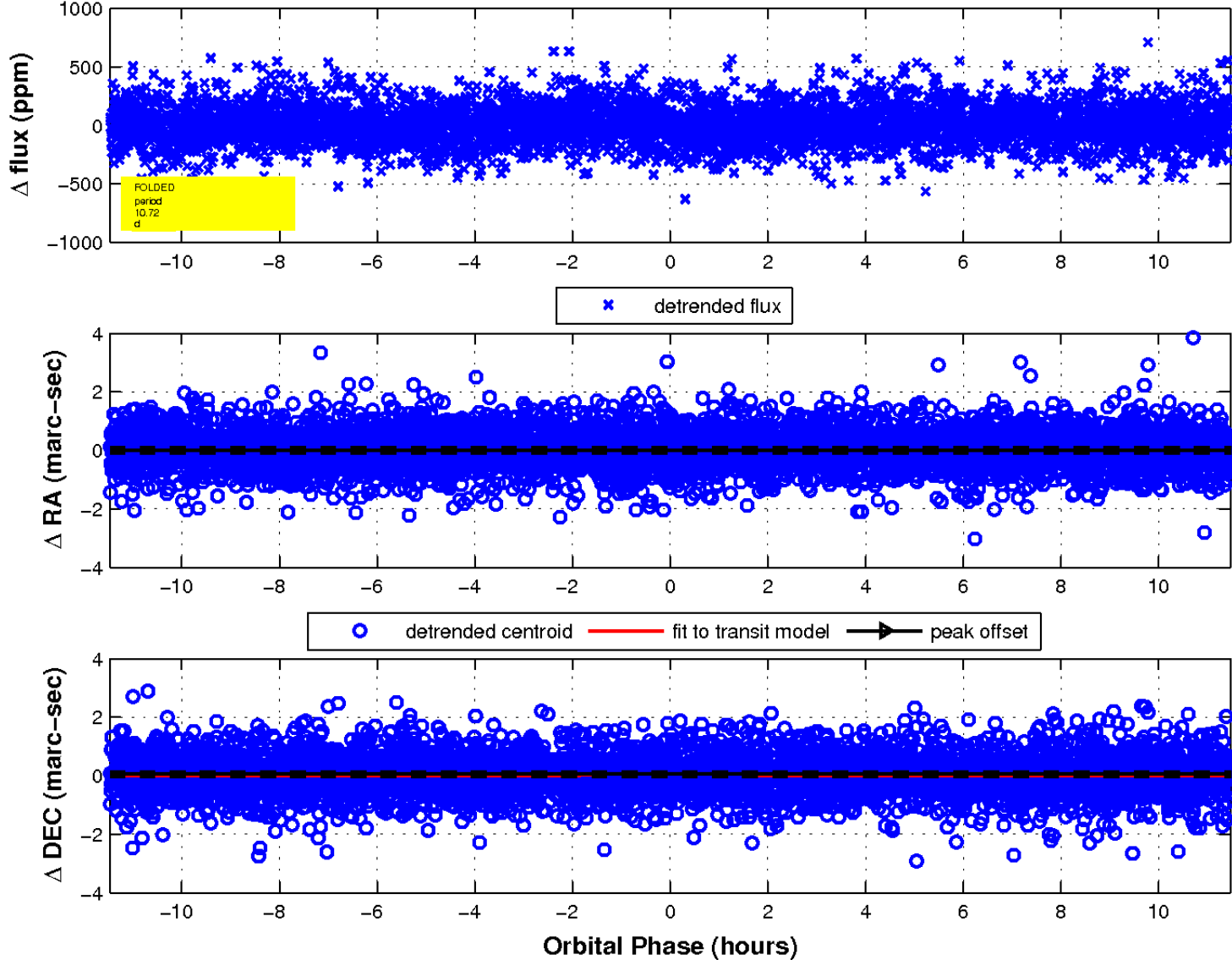
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

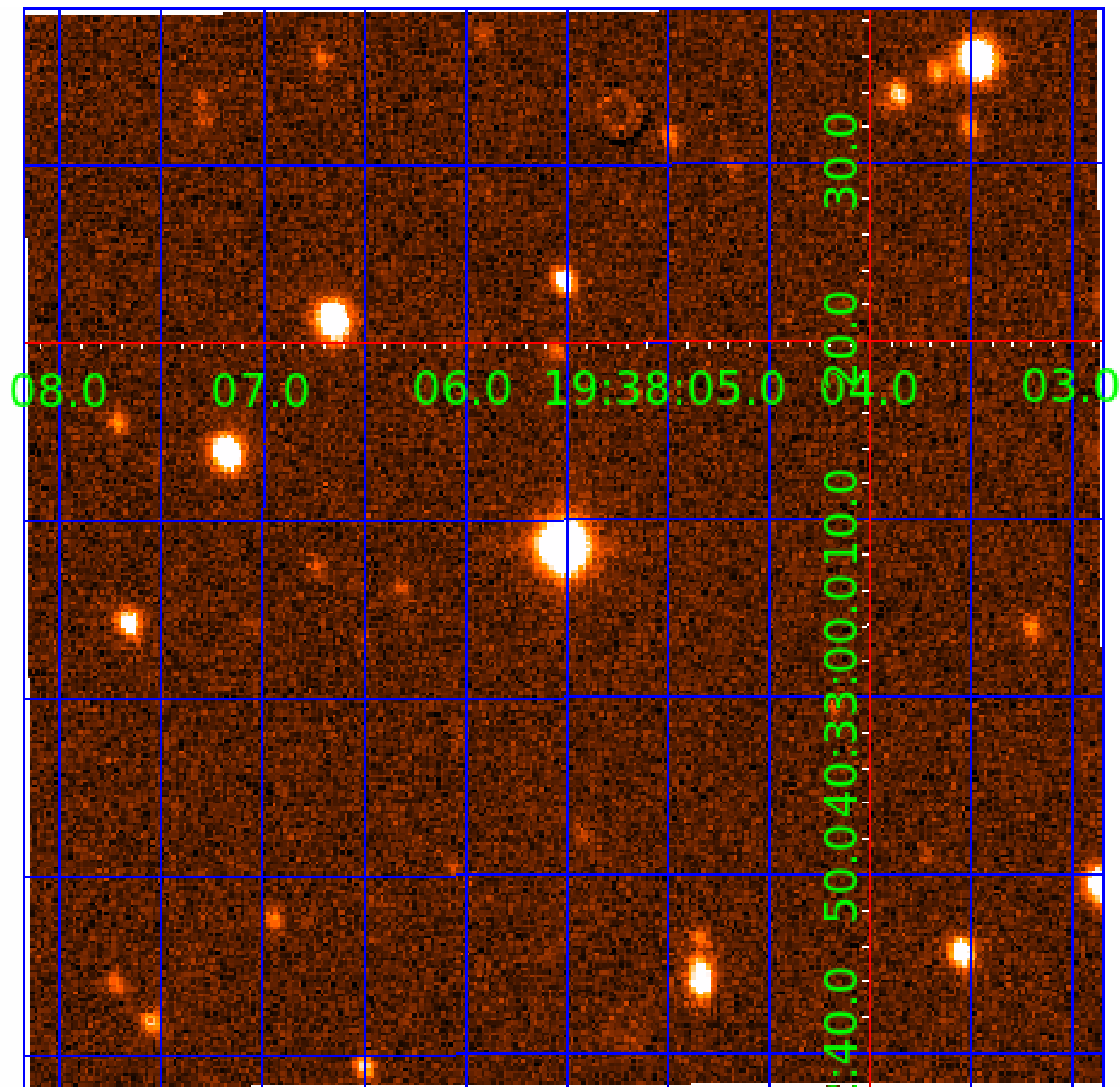


fluxWeightedCentroids, Planet 7 of 8



UKIRT Image

Declination



KIC 005372081

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})
005372081-01	OBS	No	1.532264	132.484753	3.2	9.907	8.2	1.7	1.01	6340	0.21	2091.00
005372081-02	OBS	No	173.251831	188.728132	64.3	47.095	17.8	3.8	1.01	6340	0.94	3.82
005372081-03	OBS	No	49.261082	157.953926	273.2	2.217	9.1	9.4	1.01	6340	2.12	20.45
005372081-04	OBS	No	49.904496	150.438465	362.3	1.877	9.3	9.0	1.01	6340	2.12	20.10
005372081-05	OBS	No	58.781787	190.236355	217.5	5.313	8.9	9.0	1.01	6340	1.66	16.16
005372081-06	OBS	No	39.420992	168.821592	338.0	1.185	8.2	9.5	1.01	6340	2.31	27.53
005372081-07	OBS	No	10.724962	140.794691	108.8	3.825	9.3	10.9	1.01	6340	1.24	156.17
005372081-08	OBS	No	127.948282	185.844319	300.7	11.956	7.8	7.5	1.01	6340	1.79	5.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005372081-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005372081-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005372081-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005372081-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
005372081-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005372081-06	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005372081-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005372081-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

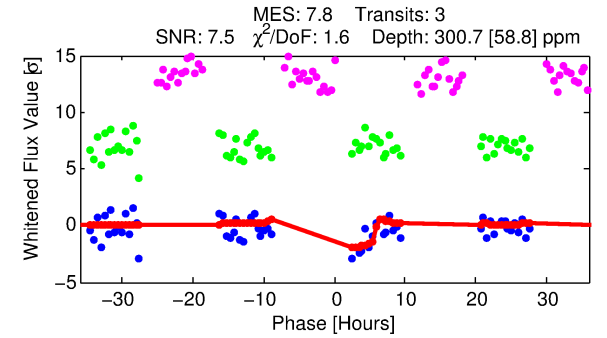
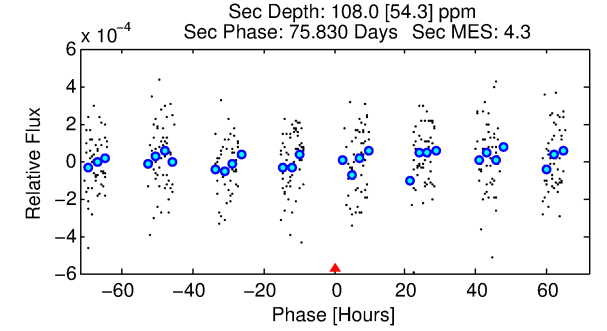
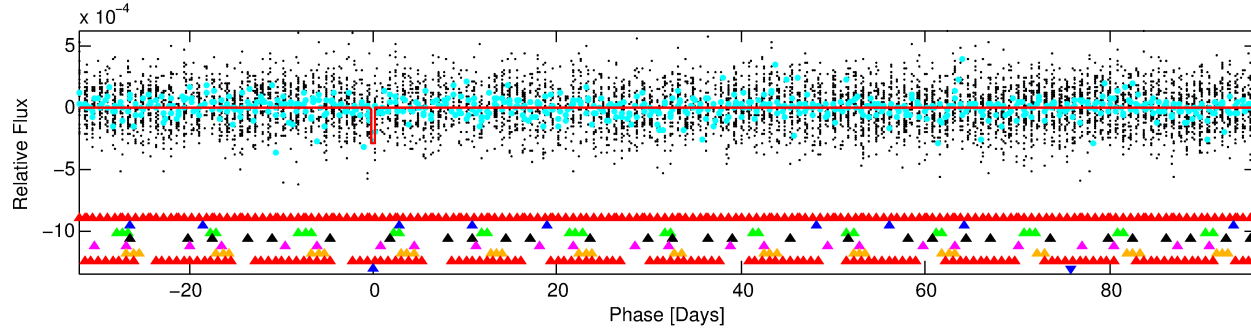
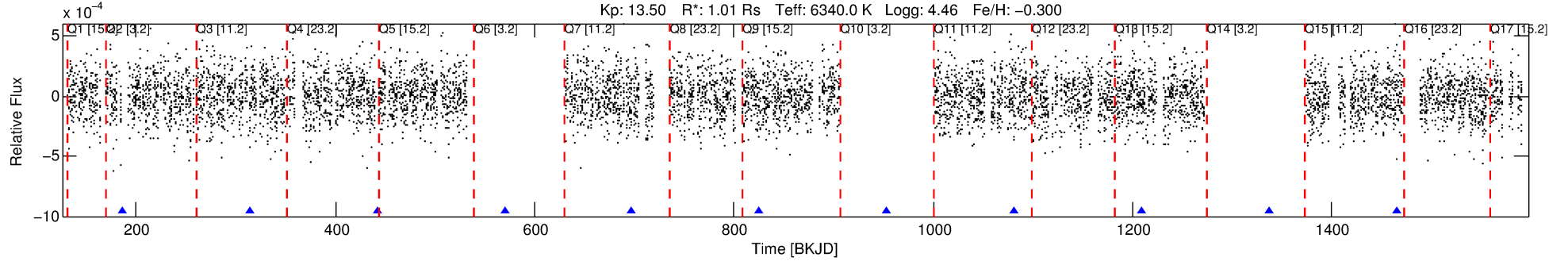
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005372081-08

No Significant Match Found

DV One-Page Summary

KIC: 5372081 Candidate: 8 of 8 Period: 127.948 d

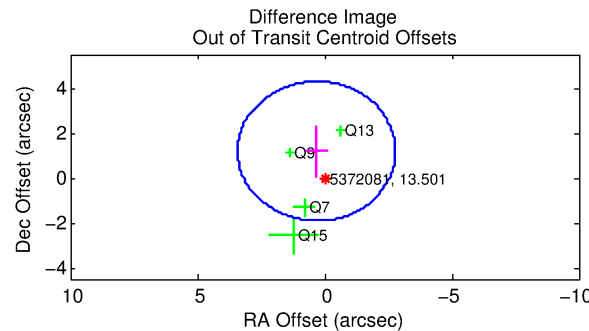
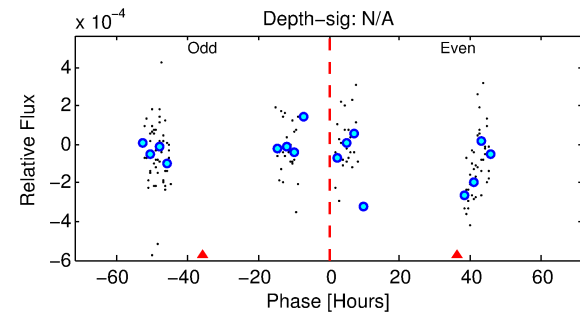
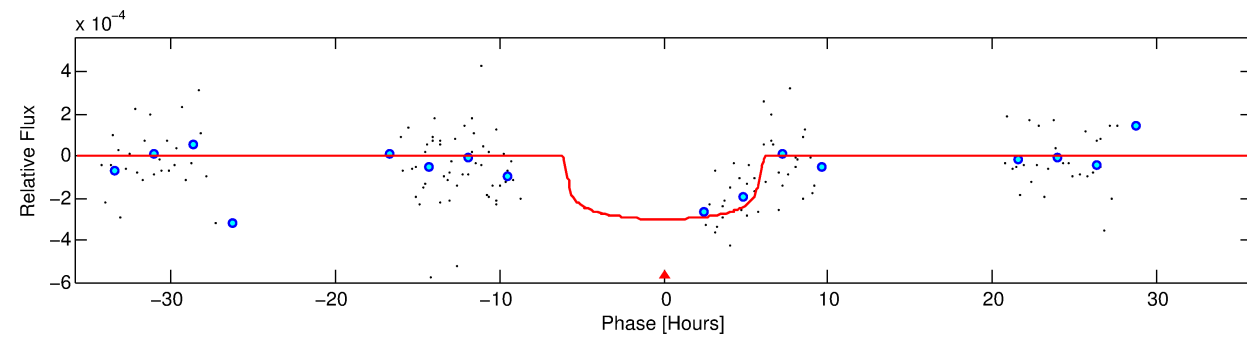


DV Fit Results:

Period = 127.94828 [0.00460] d
Epoch = 185.8443 [0.1071] BKJD
Rp/R* = 0.0163 [0.0335]
a/R* = 74.82 [837.62]
b = 0.44 [19.78]
Seff = 5.73 [2.09]
Teff = 395 [36] K
Rp = 1.79 [3.73] Re
a = 0.5077 [0.1201] AU
Ag = 4753.63 [19780.69] [0.24σ]
Teffp = 5065 [5253] K [0.89σ]

DV Diagnostic Results:

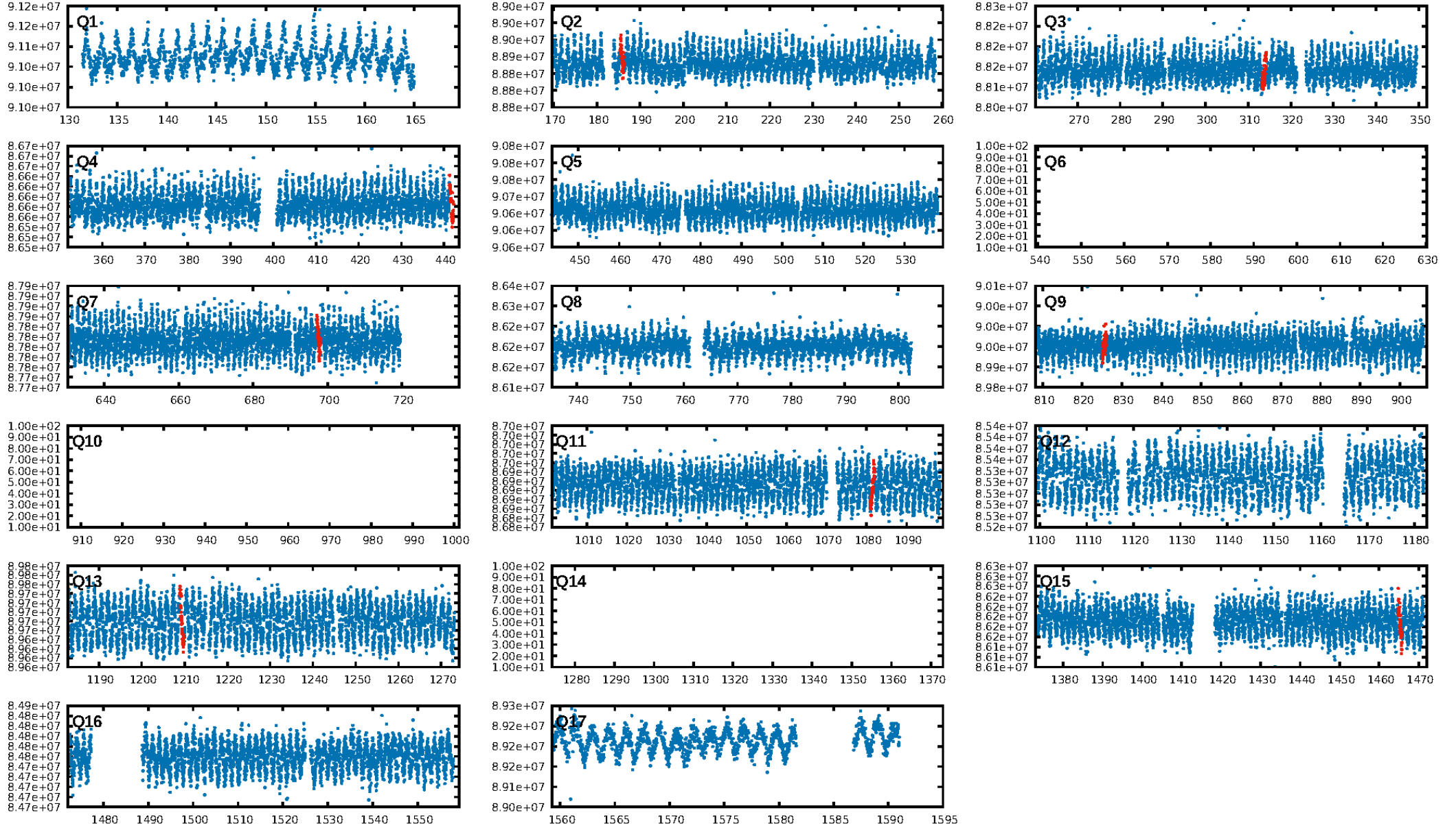
ShortPeriod-sig: 100.0% [126.88σ]
LongPeriod-sig: 100.0% [22.38σ]
ModelChiSquare2-sig: 82.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.55e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1088
Centroid-sig: 91.1%
Centroid-so: 0.169 arcsec [0.27σ]
OotOffset-rm: 1.231 arcsec [1.19σ]
OotOffset-st: 0.2/0/2 [4]
KicOffset-rm: 1.312 arcsec [1.34σ]
KicOffset-st: 0.2/0/2 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.00 [0/7]



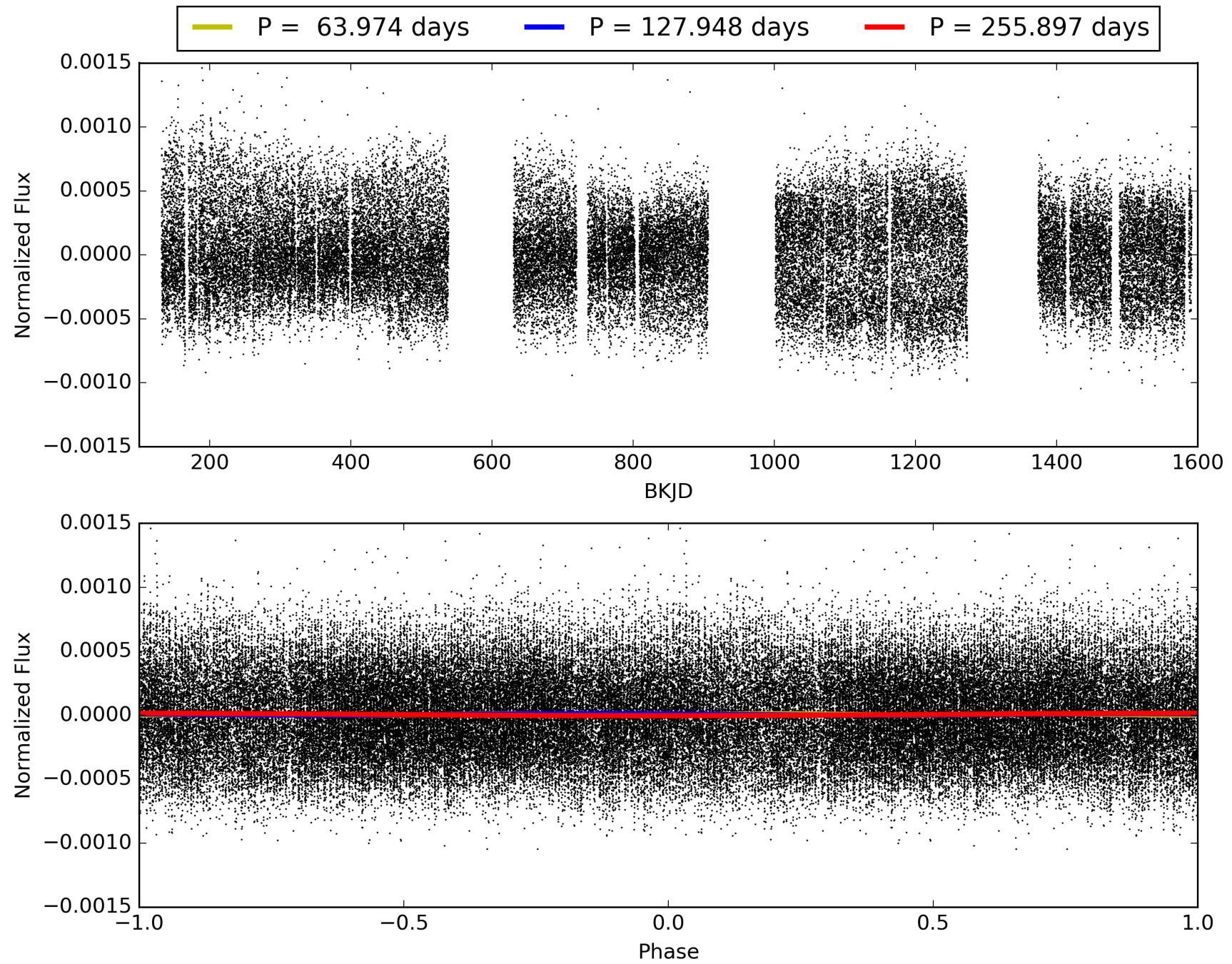
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:11:50 Z

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

TCE 005372081-08, PDC Light Curves

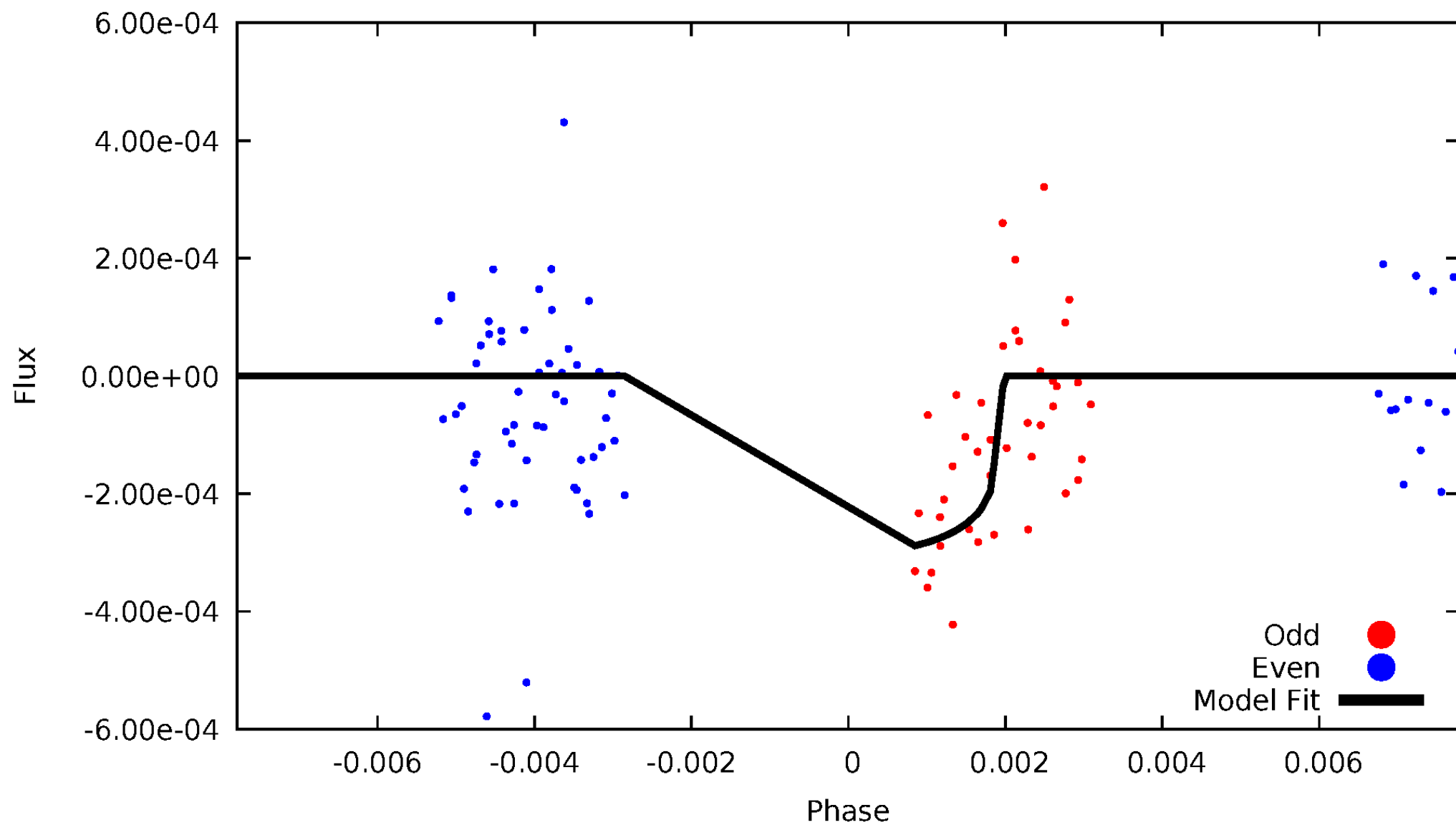


TCE 005372081-08



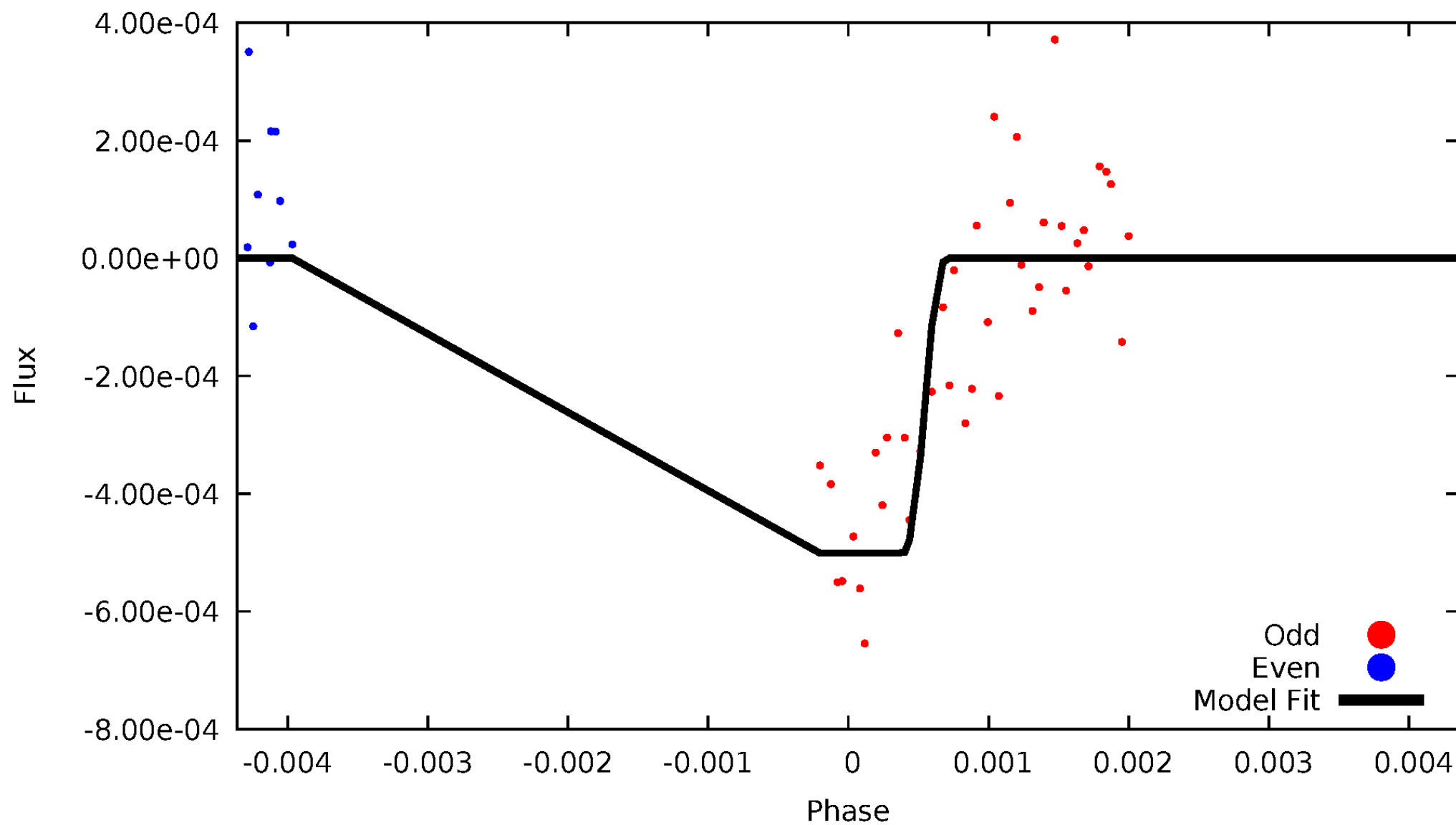
DV Odd/Even

TCE 005372081-08



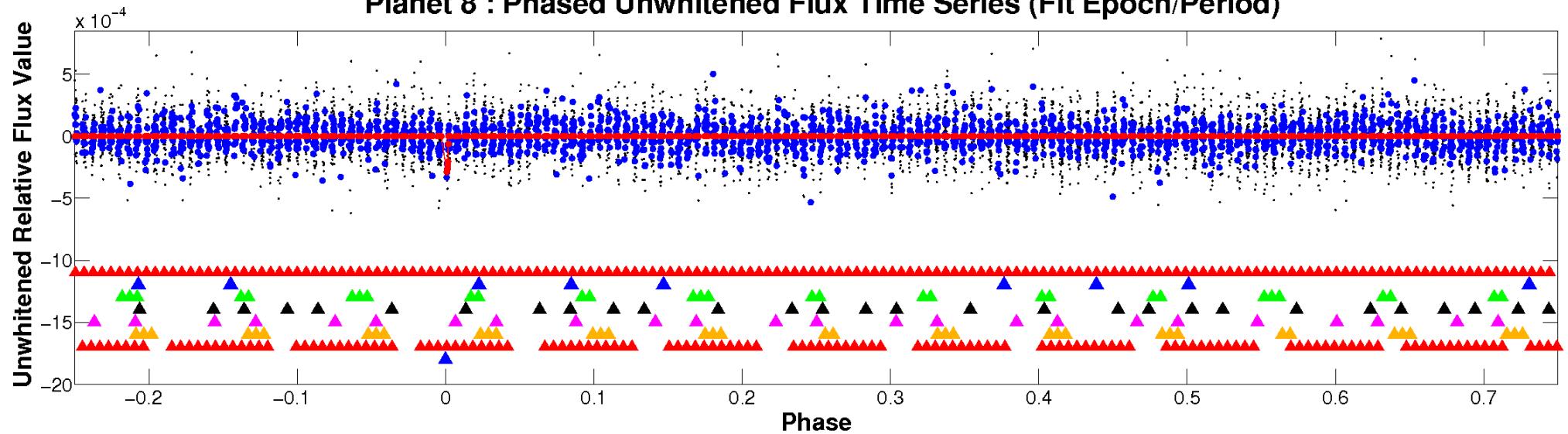
ALT Odd/Even

TCE 005372081-08

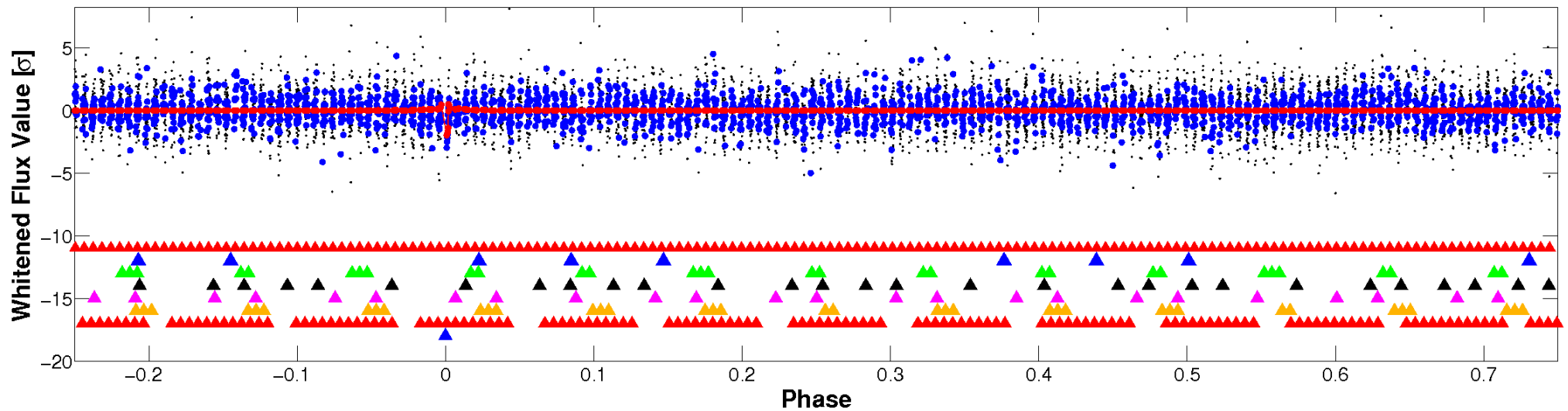


Non-Whitened Vs. Whitened Light Curve

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

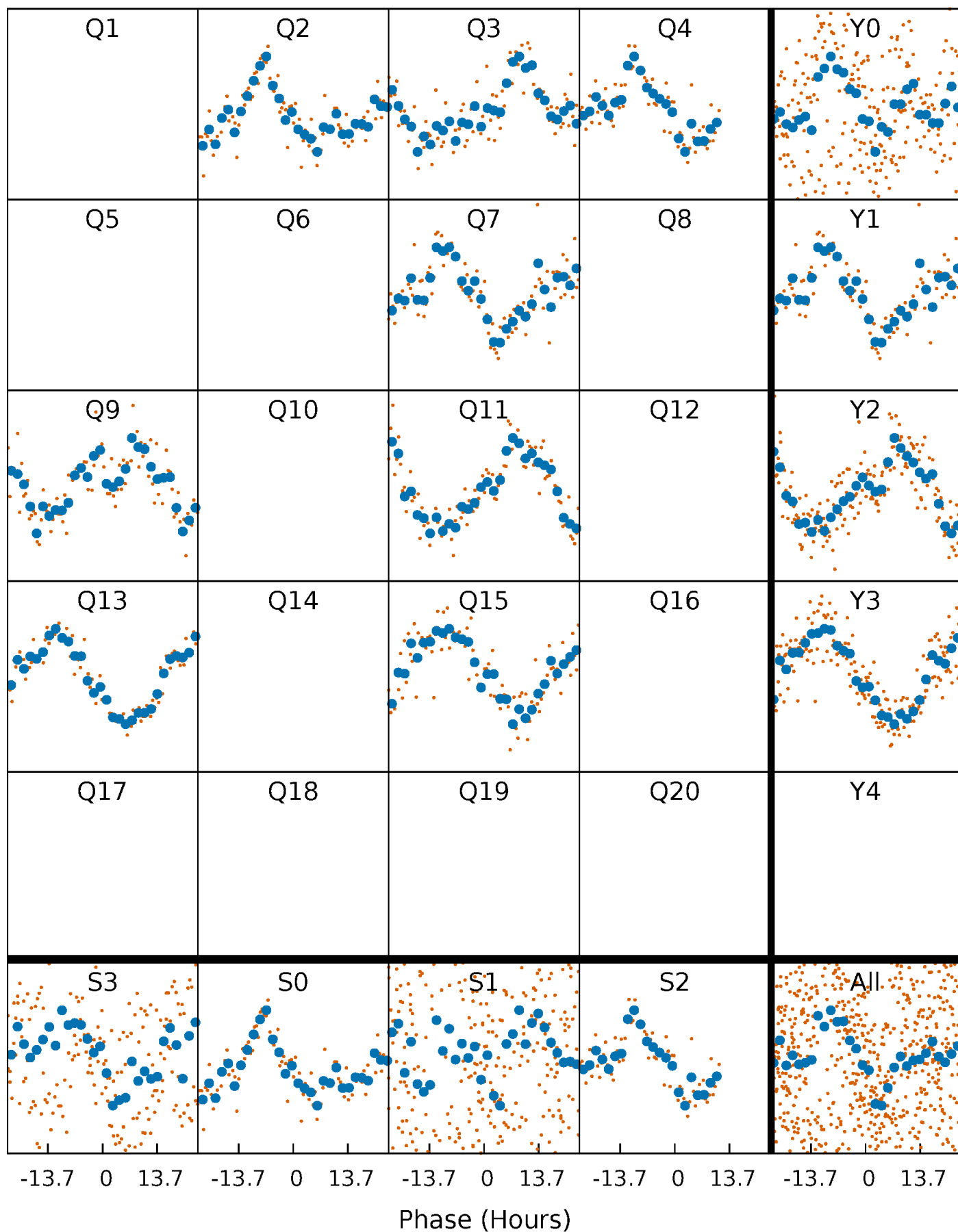


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



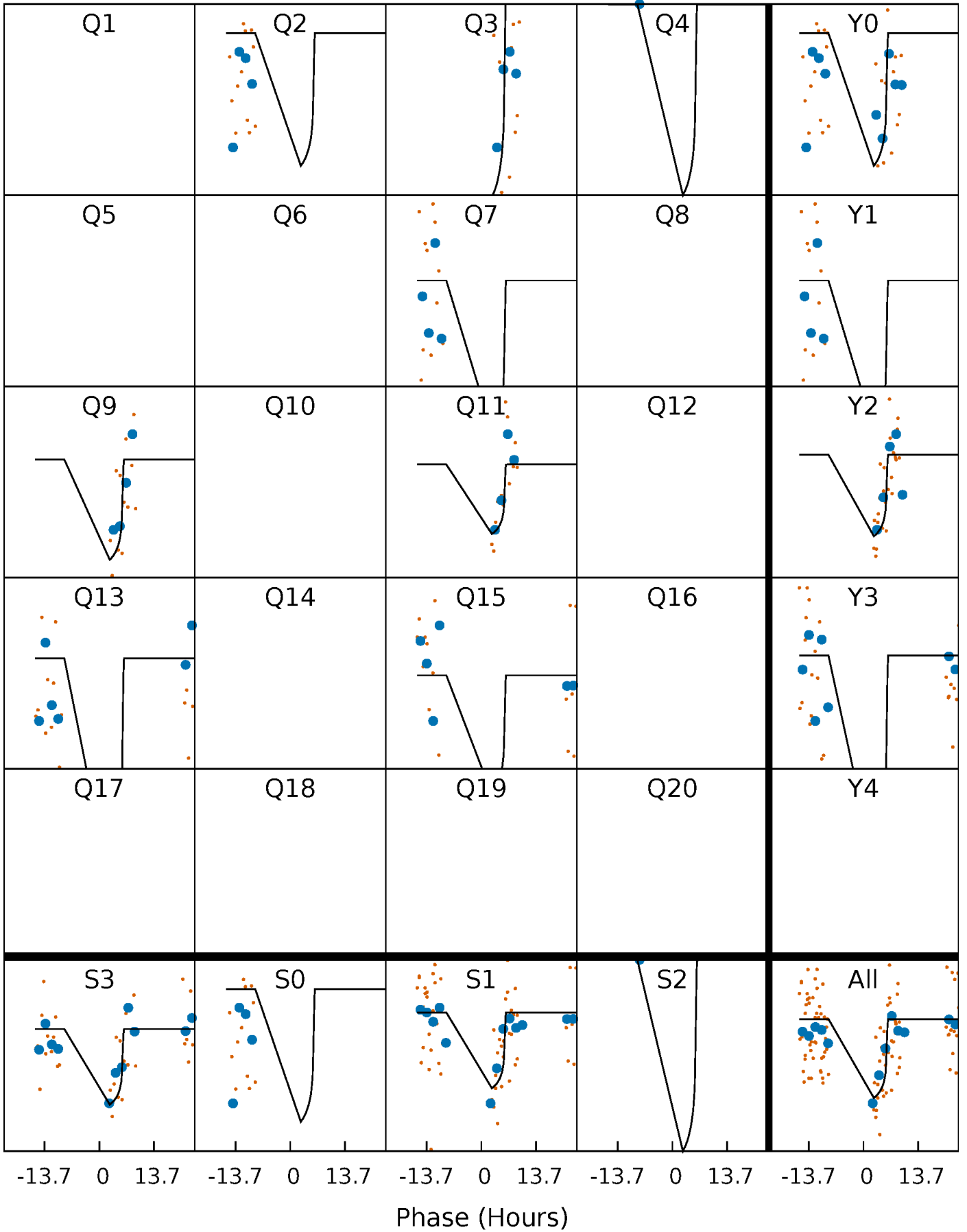
PDC Quarter-Phased Transit Curves

TCE 005372081-08 P=127.948282 Days $T_0=185.844319$ (BKJD)



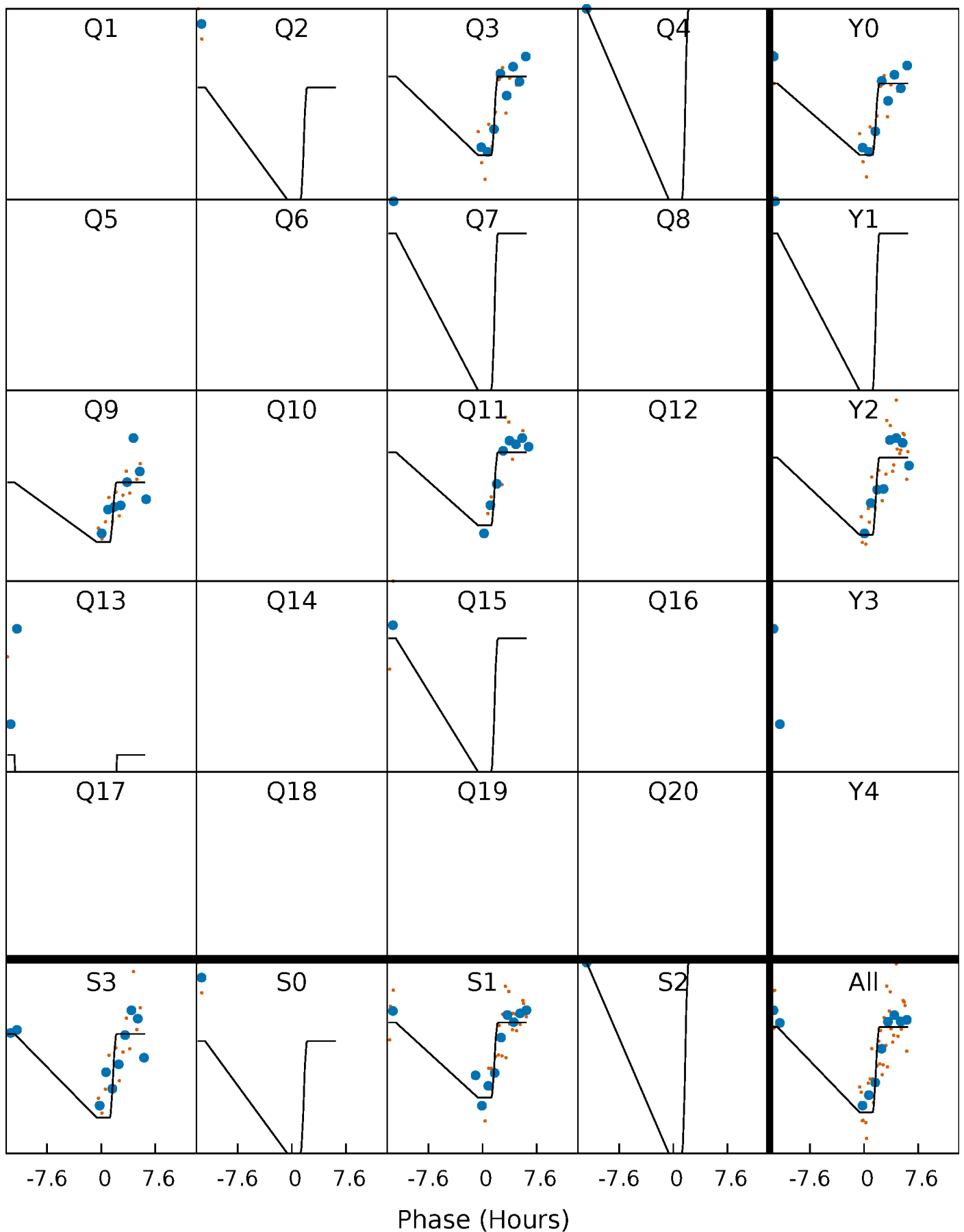
DV Quarter-Phased Transit Curves

TCE 005372081-08 P=127.948282 Days $T_0=185.844319$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

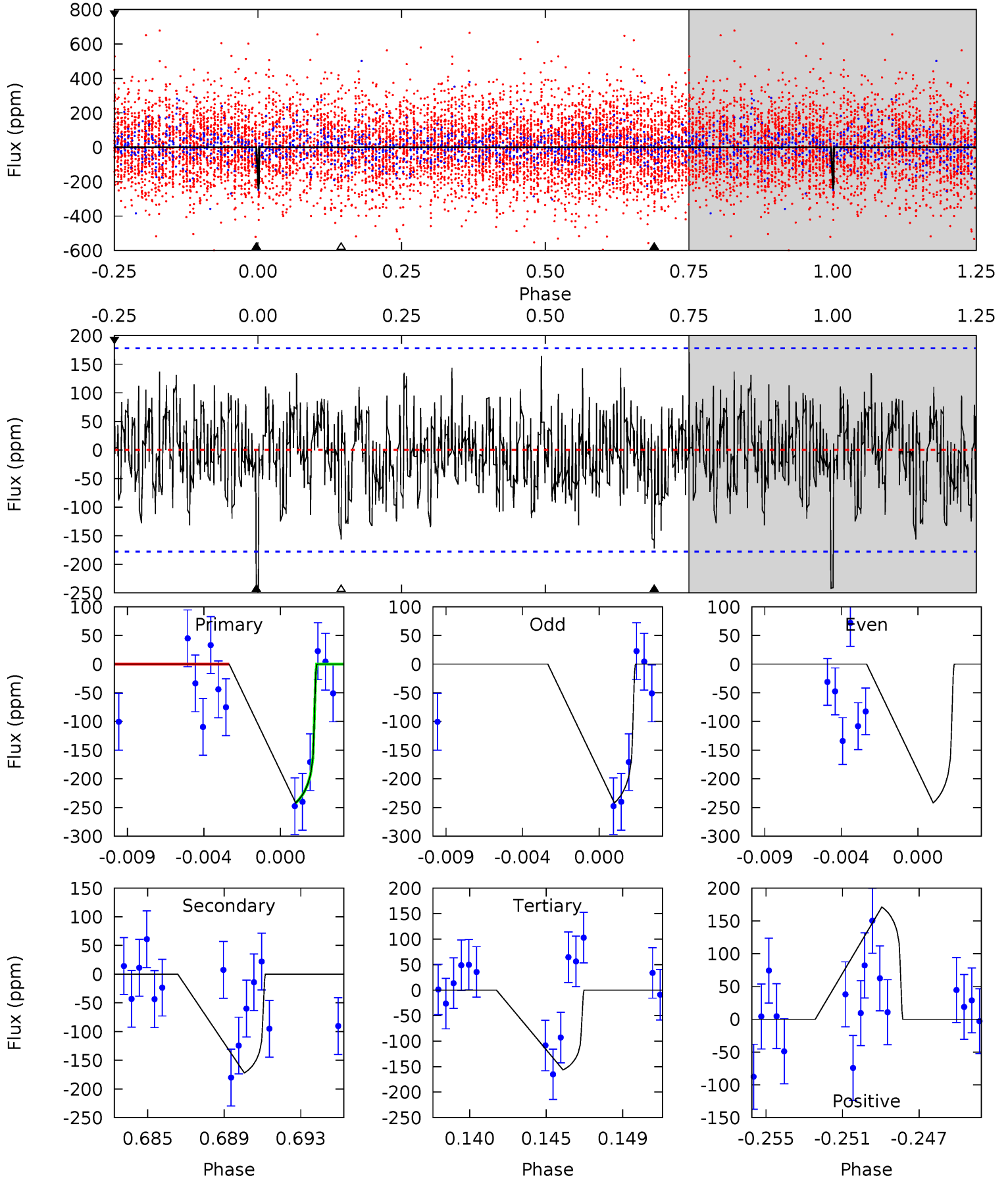
TCE 005372081-08 P=127.942090 Days $T_0=186.006165$ (BKJD)



DV Model-Shift Uniqueness Test

005372081-08, P = 127.948282 Days, E = 57.896037 Days

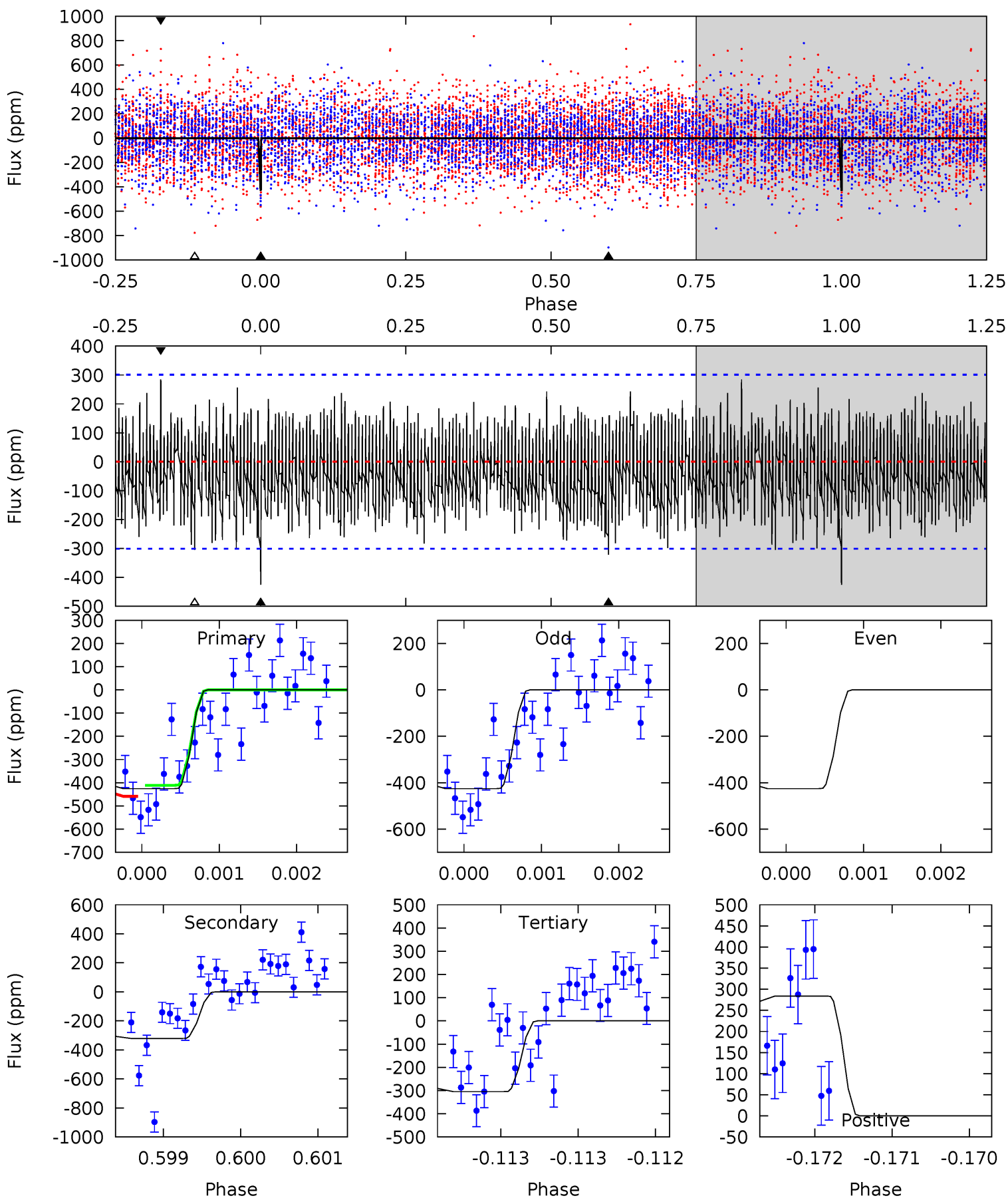
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.06	5.02	4.57	4.99	5.19	2.86	1.41	2.49	2.07	0.46	0.03	0	1.00	0.41	0



Alt Model-Shift Uniqueness Test

005372081-08, $P = 127.942090$ Days, $E = 58.064075$ 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	5.85	5.55	5.18	5.48	3.34	1.99	2.20	2.58	0.30	0.67	0	0.92	0.40	0.30



Stellar Parameters For KIC 005372081

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6340^{+151}_{-189}	$4.457^{+0.050}_{-0.188}$	$-0.300^{+0.250}_{-0.350}$	$1.010^{+0.284}_{-0.122}$	$1.066^{+0.133}_{-0.146}$	$1.458^{+0.381}_{-0.734}$
	+2%/-3%	+1%/-4%	+83%/-117%	+28%/-12%	+12%/-14%	+26%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005372081-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-172 ± 34	$3.45^{+3.40}_{-2.32}$	562^{+34}_{-25}	4383^{+2991}_{-915}	1986^{+16590}_{-1506}
Alt.	-321 ± 55	$3.93^{+3.49}_{-2.53}$	562^{+38}_{-24}	4744^{+3198}_{-1007}	2893^{+19155}_{-2118}

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

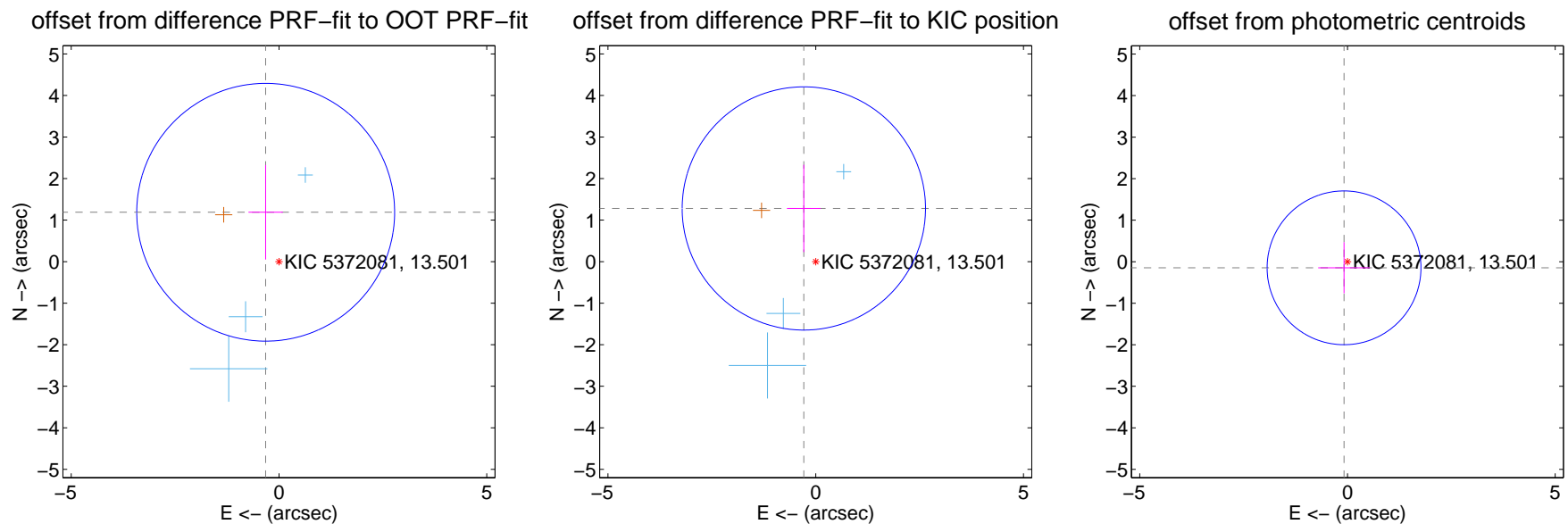
DV Centroid Data

Supplemental centroid analysis for 005372081-08. Kepler magnitude: 13.50. Transit SNR 7.48

There are 3 quarters with good PRF difference image offsets

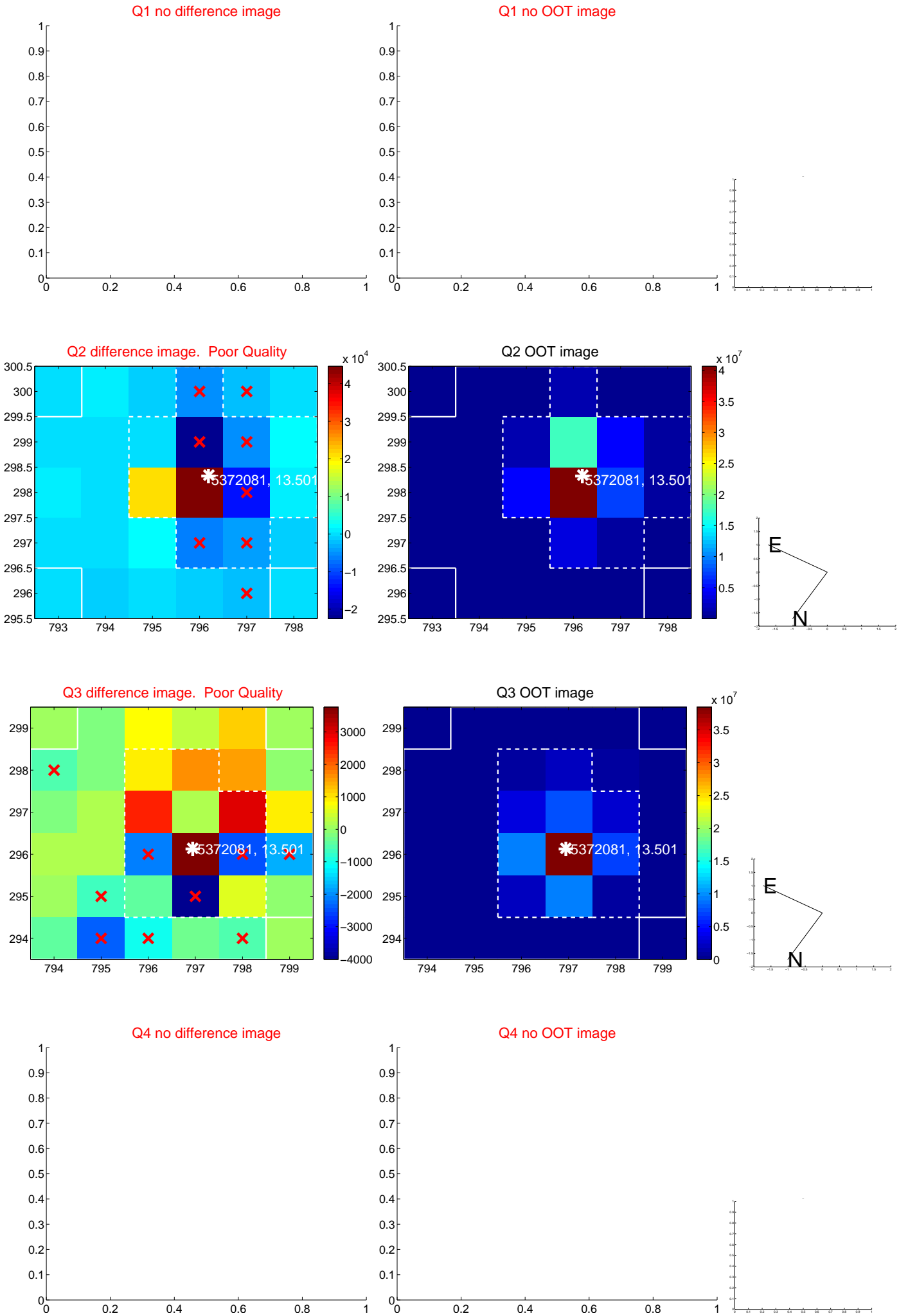
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.231 ± 1.034	1.19	0.320 ± 0.414	1.189 ± 1.139
PRF-fit source offset from KIC position	1.312 ± 0.976	1.34	0.286 ± 0.406	1.281 ± 1.052
photometric centroid source offset	0.17 ± 0.62	0.27	0.08 ± 0.62	-0.15 ± 0.62

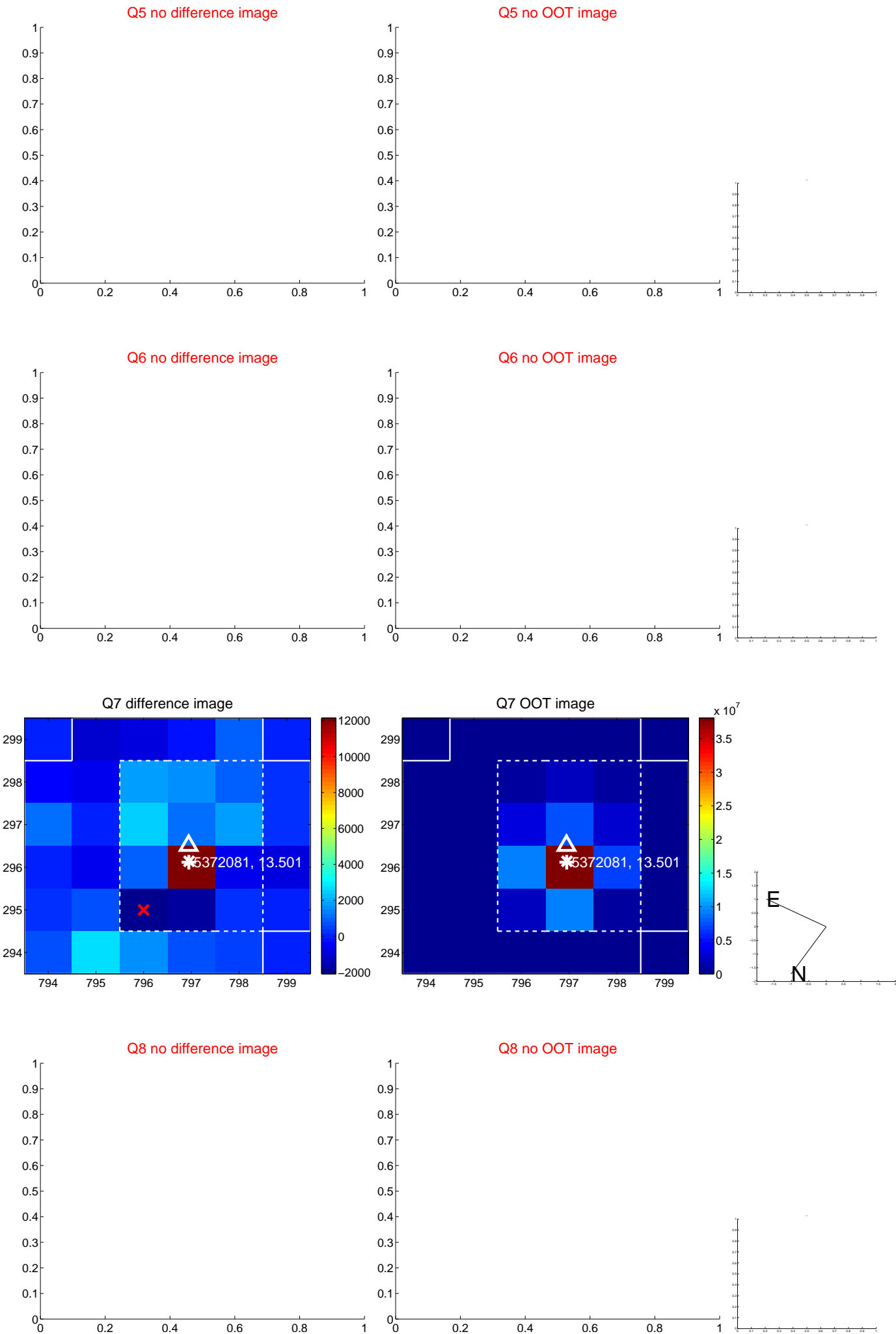


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

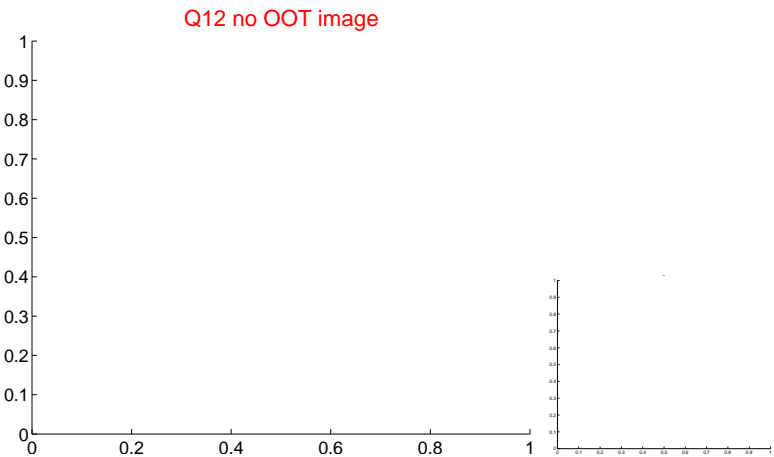
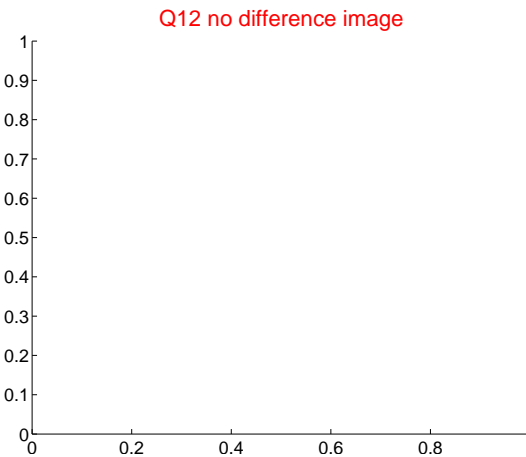
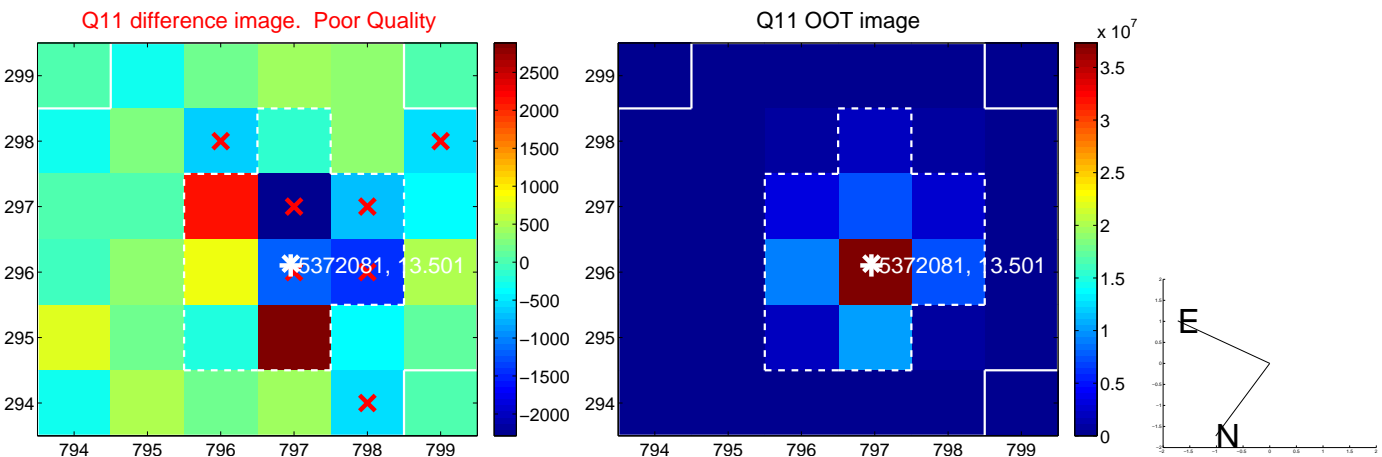
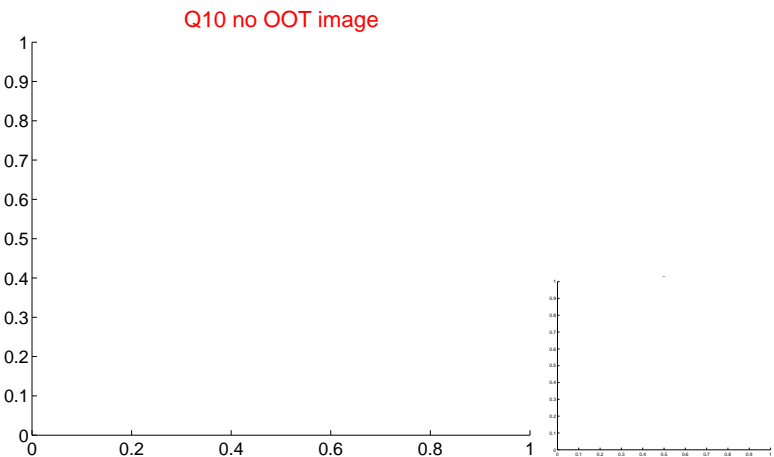
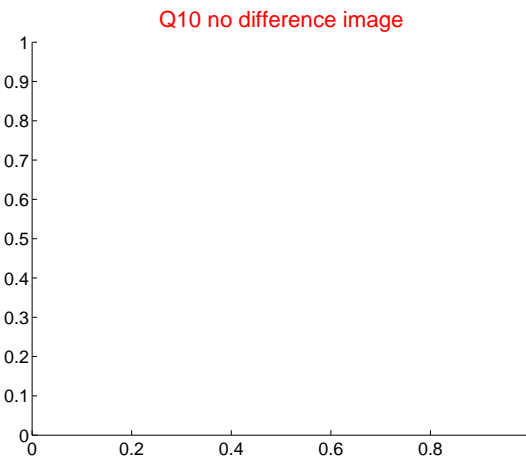
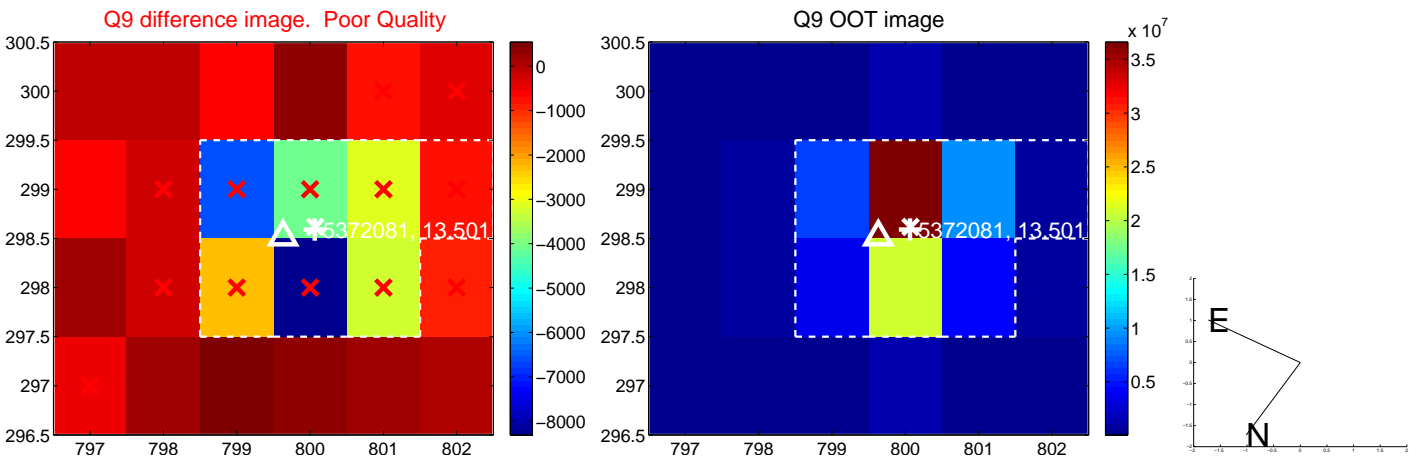
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



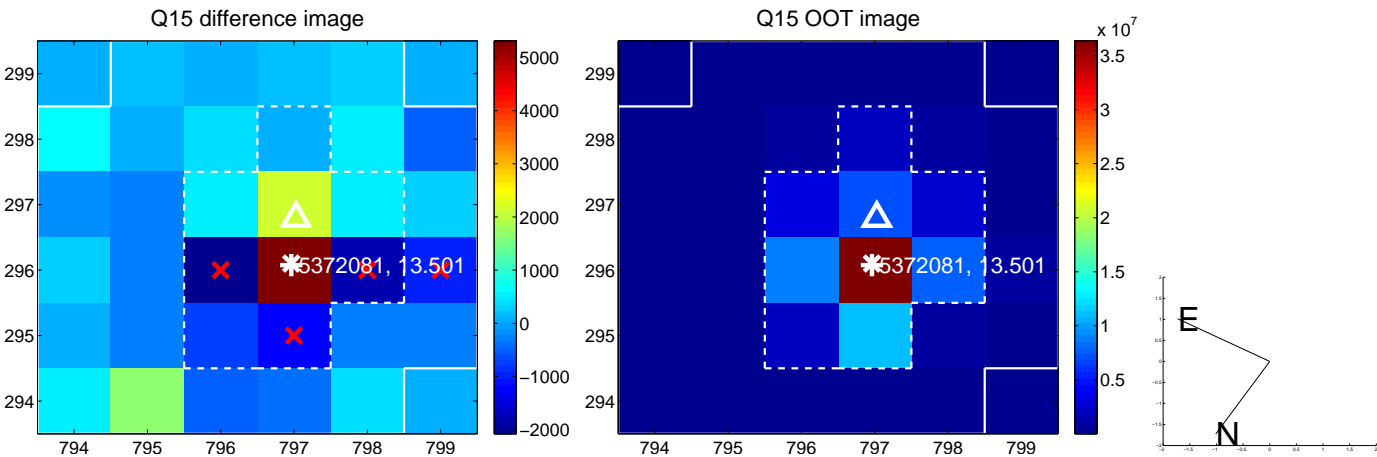
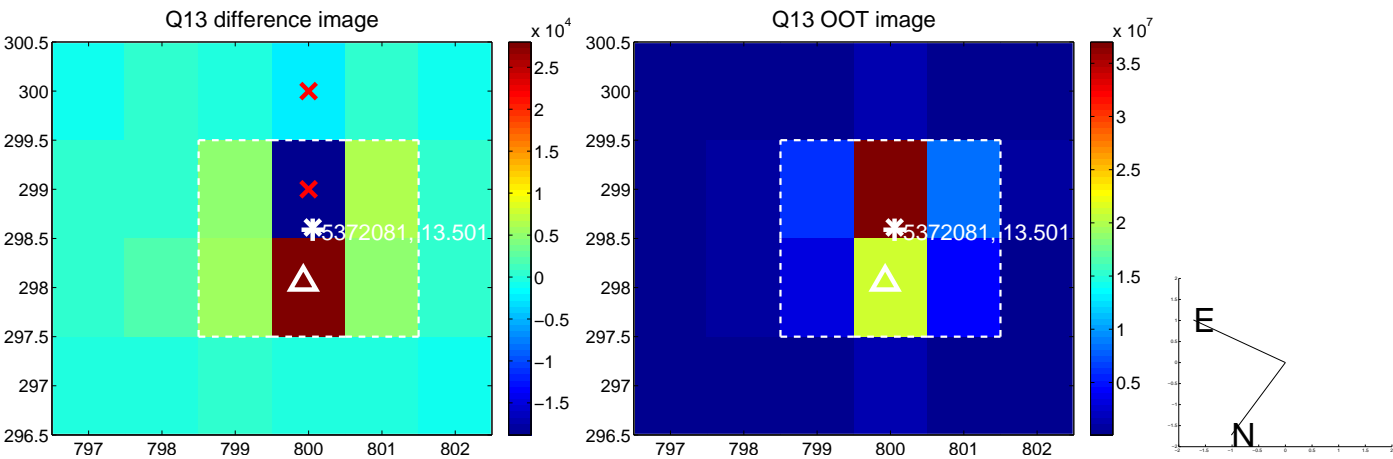
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



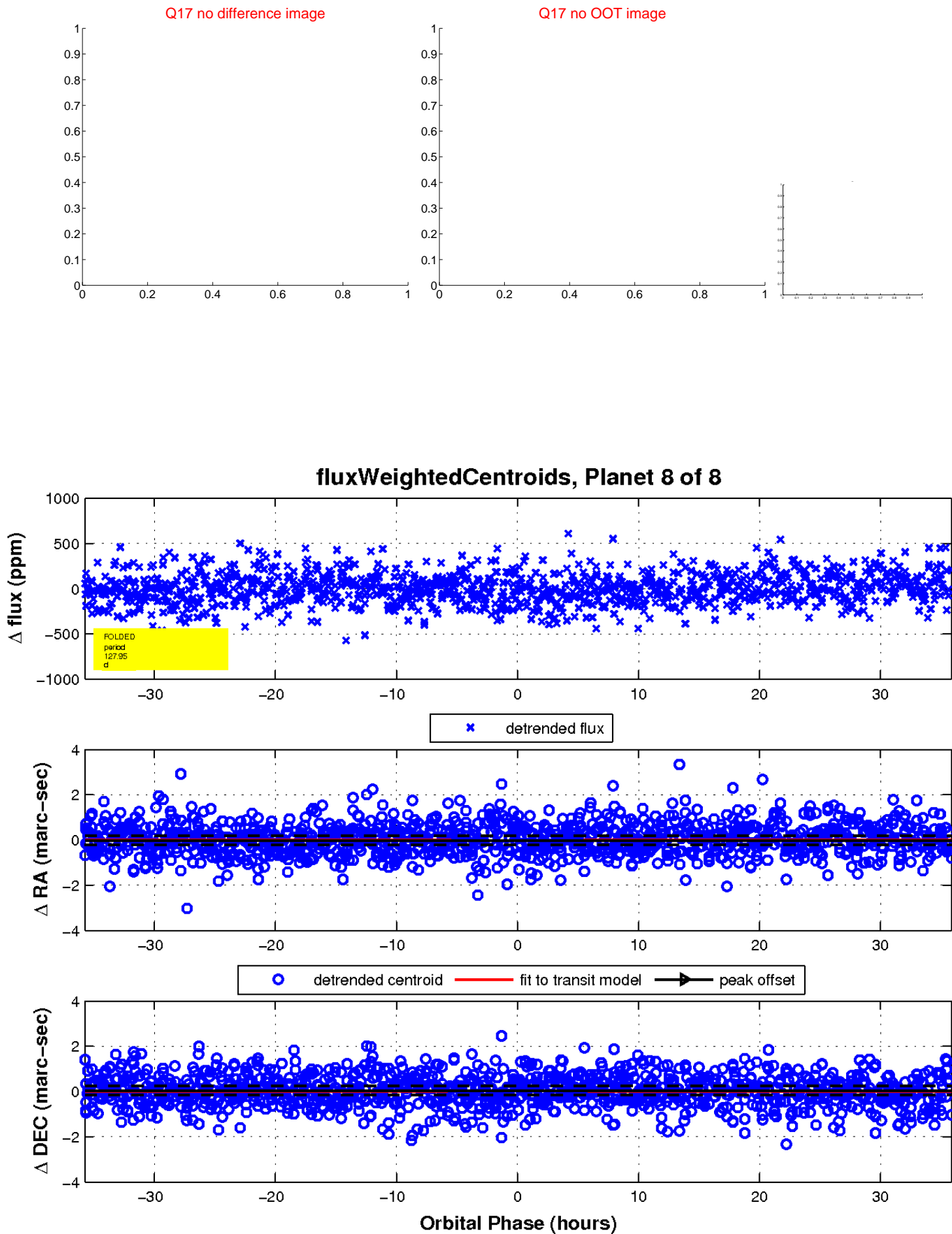
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

