

KIC 004679562

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})
004679562-01	OBS	No	1.692257	131.618355	24.7	6.842	10.9	6.2	3.19	7650	1.62	26205.00
004679562-02	OBS	No	0.966938	132.304429	36.8	2.719	8.9	7.1	3.19	7650	2.25	55268.10
004679562-03	OBS	No	52.283236	153.390200	265.7	6.741	8.1	7.4	3.19	7650	5.73	270.31
004679562-04	OBS	No	110.723491	137.532362	314.5	7.909	8.2	5.8	3.19	7650	5.93	99.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004679562-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004679562-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004679562-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
004679562-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

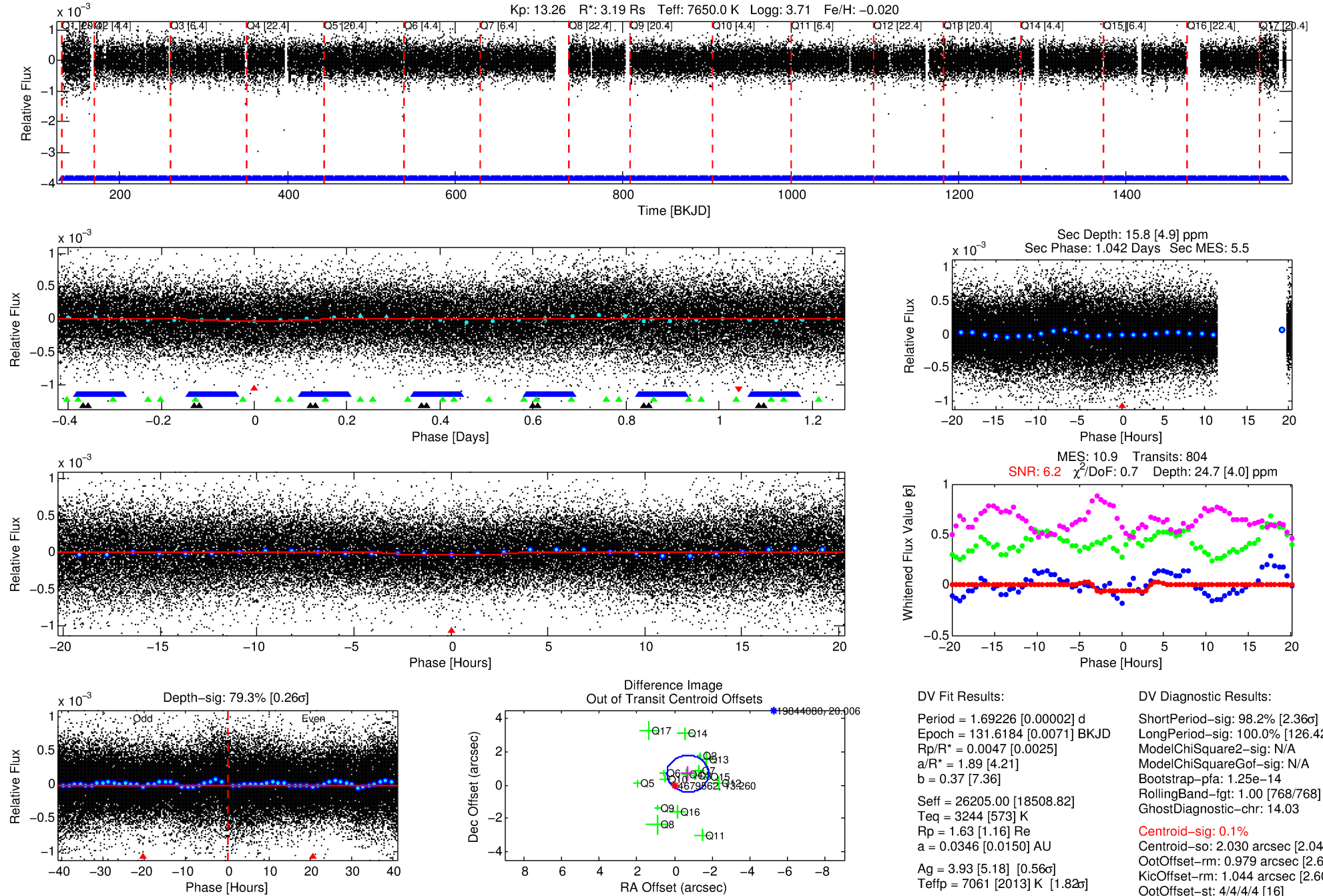
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004679562-01

No Significant Match Found

DV One-Page Summary

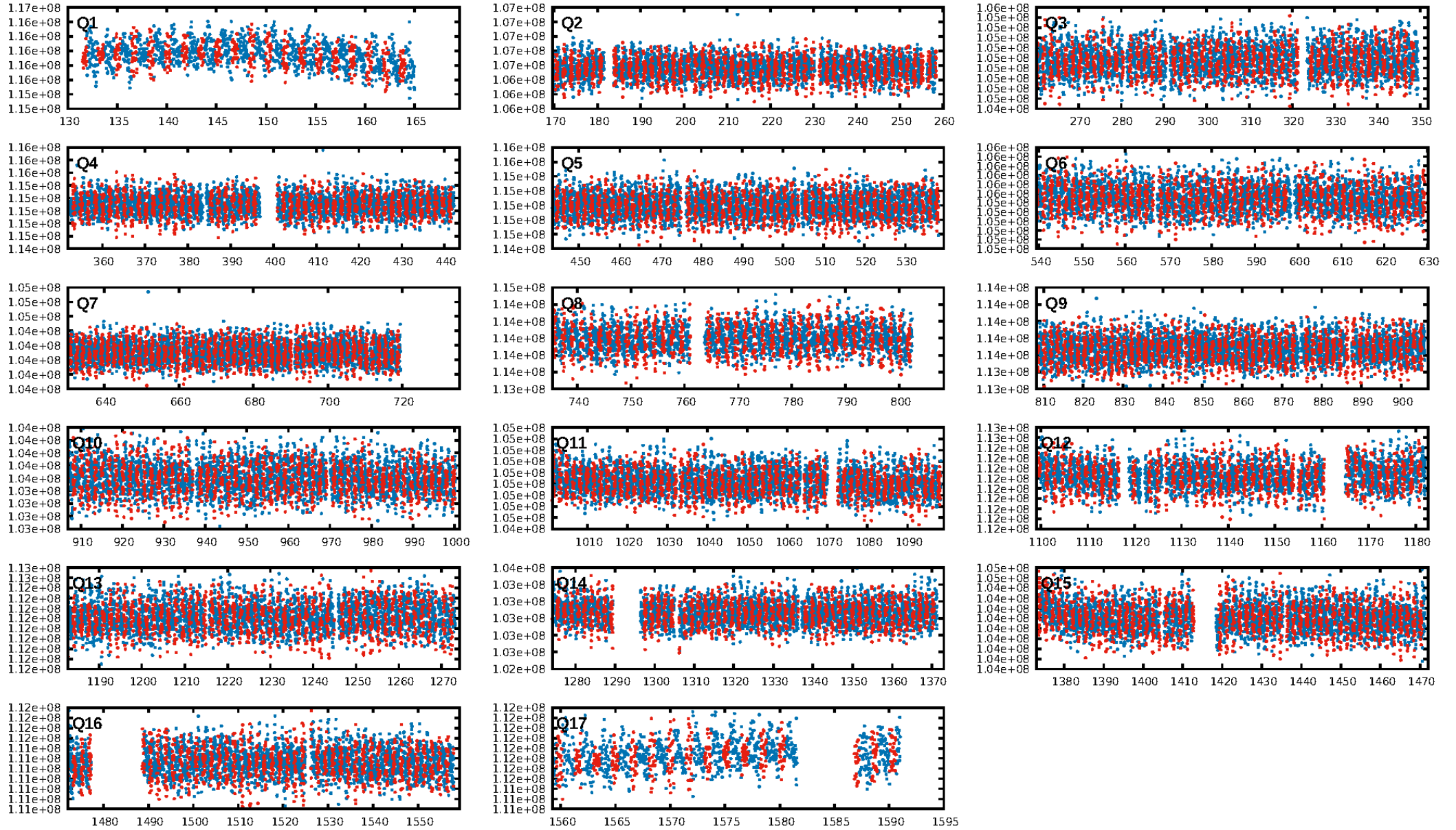
KIC: 4679562 Candidate: 1 of 4 Period: 1.692 d



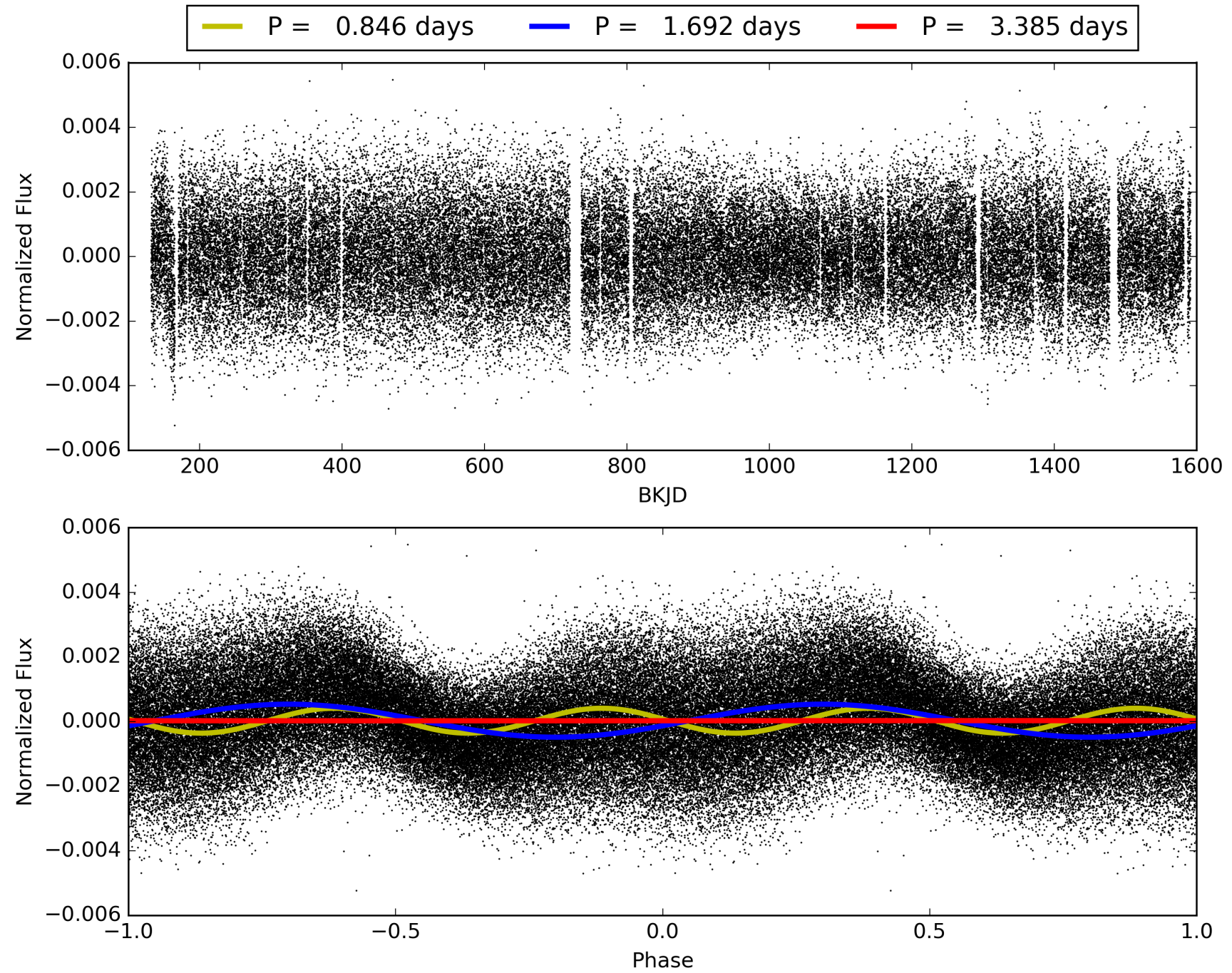
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:00:29 Z

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

TCE 004679562-01, PDC Light Curves

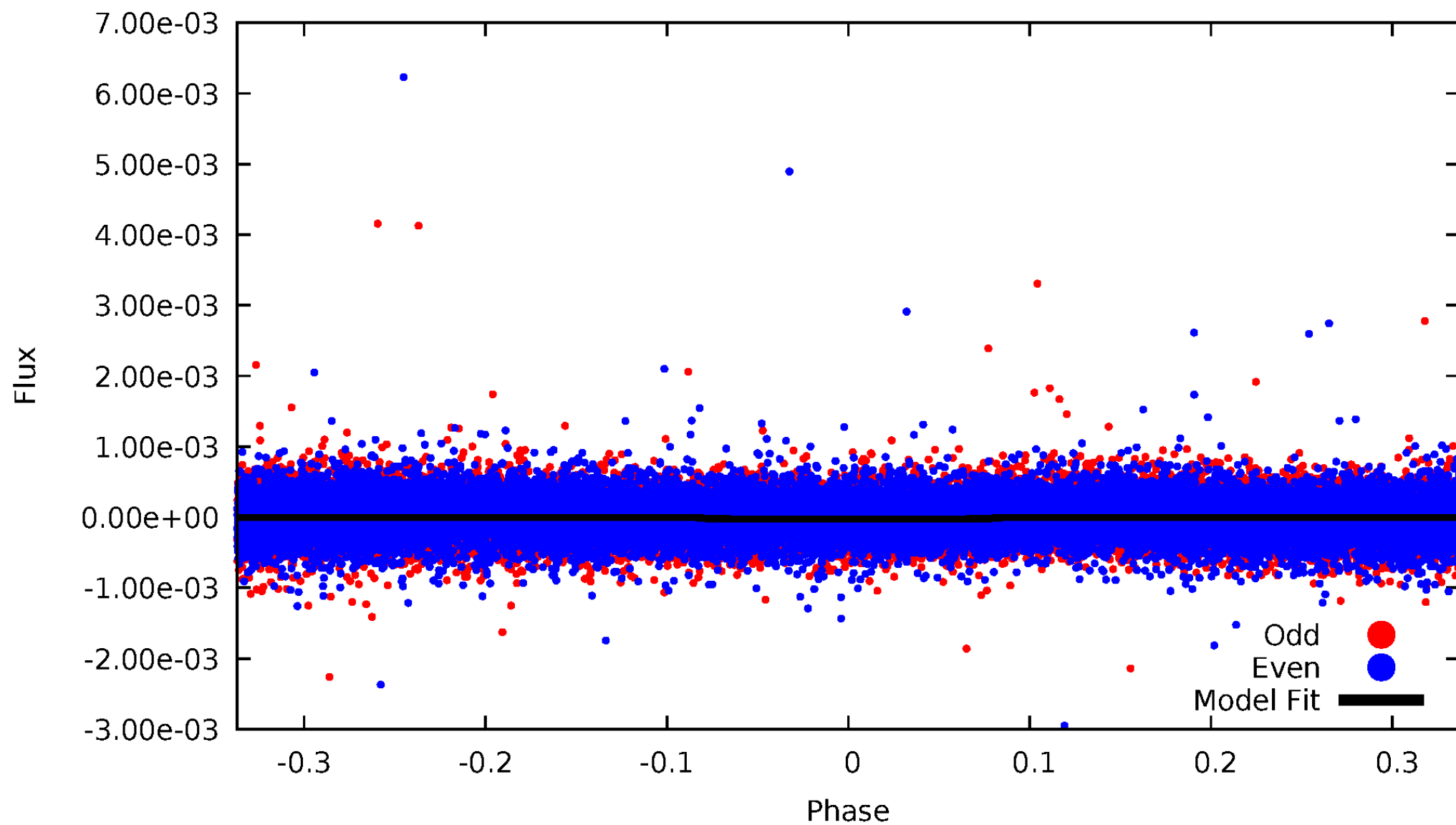


TCE 004679562-01



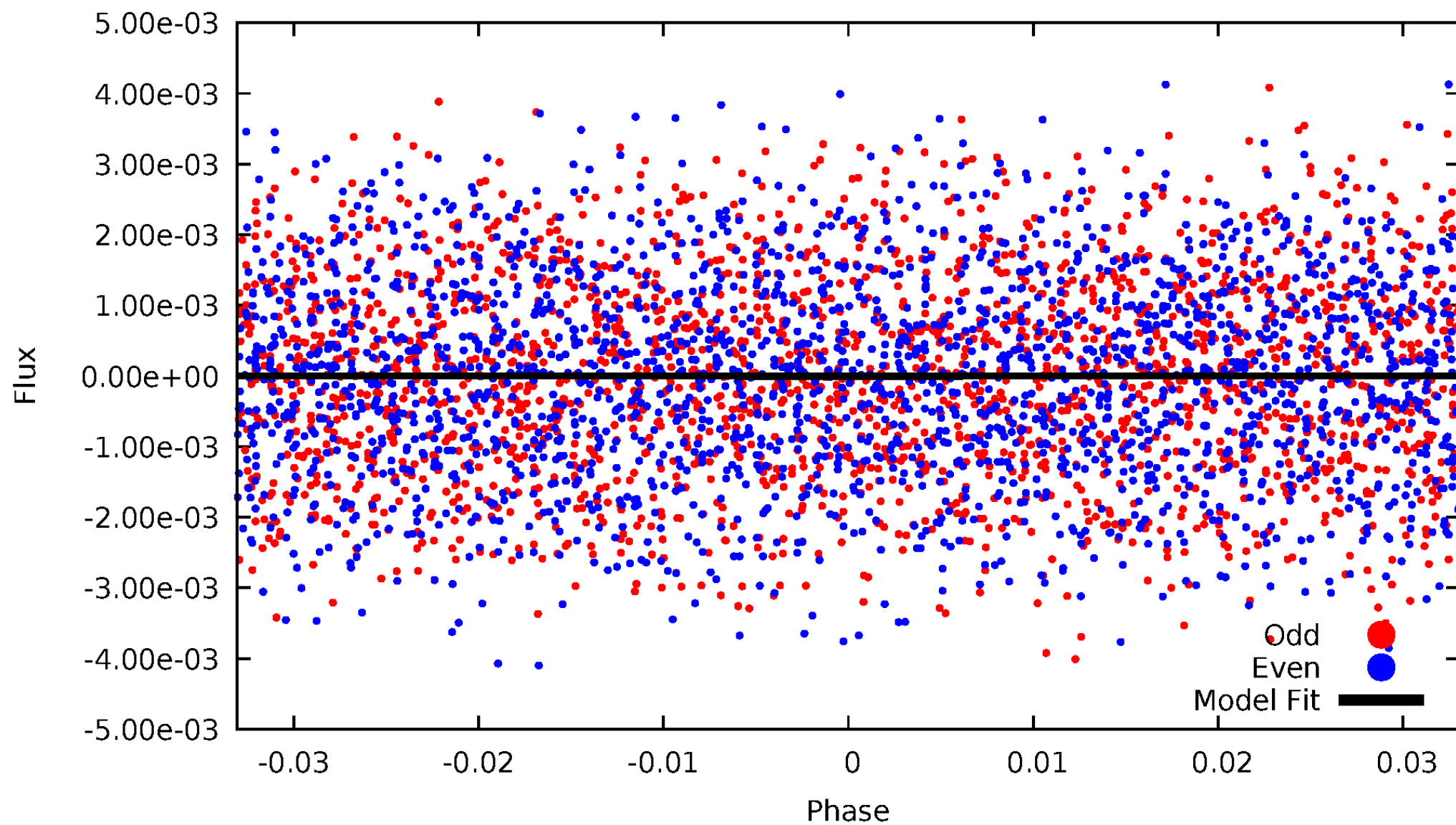
DV Odd/Even

TCE 004679562-01



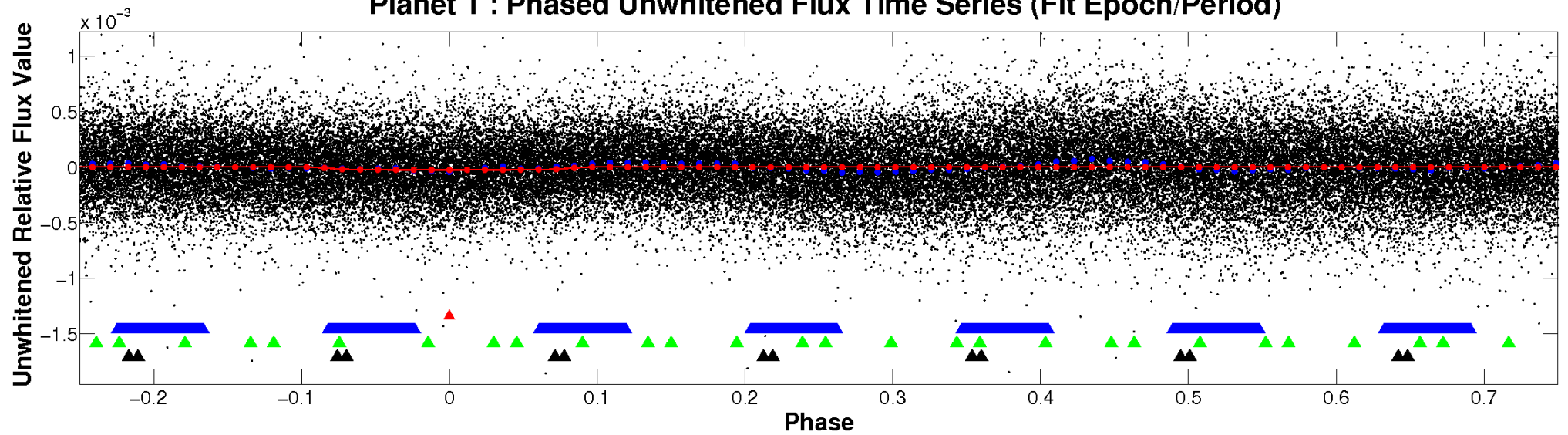
ALT Odd/Even

TCE 004679562-01

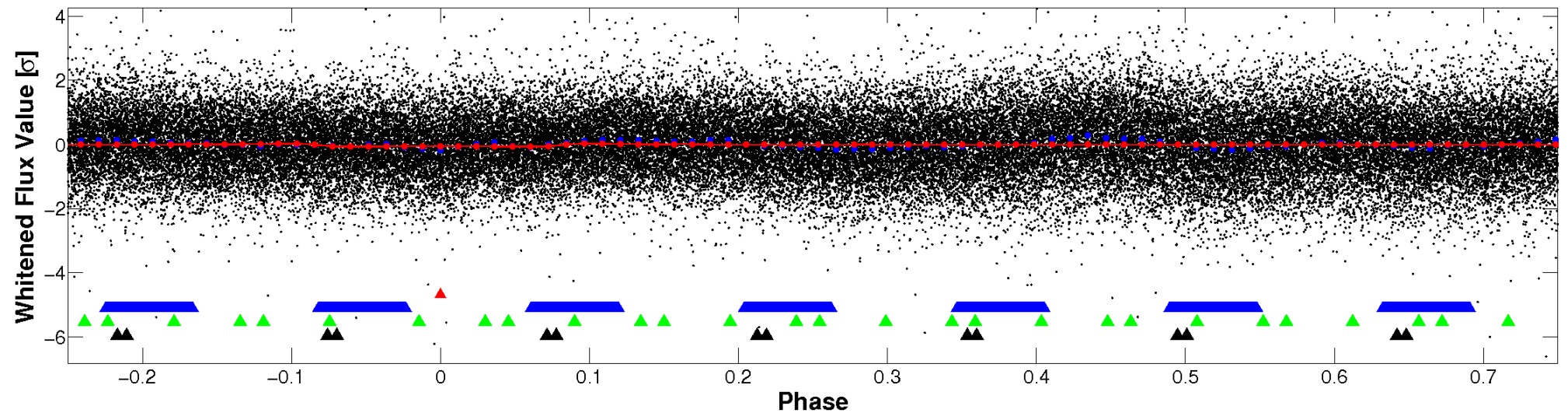


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

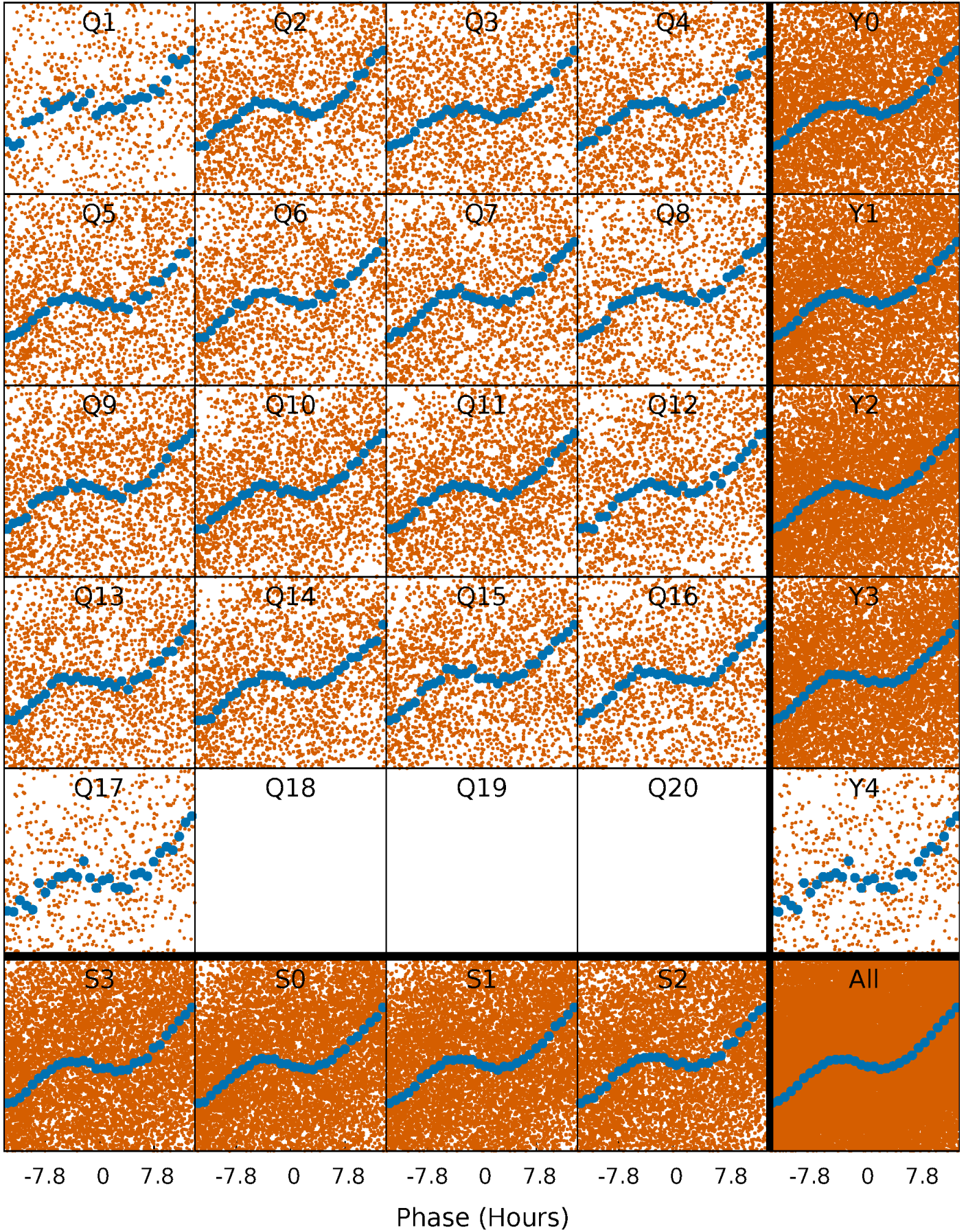


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



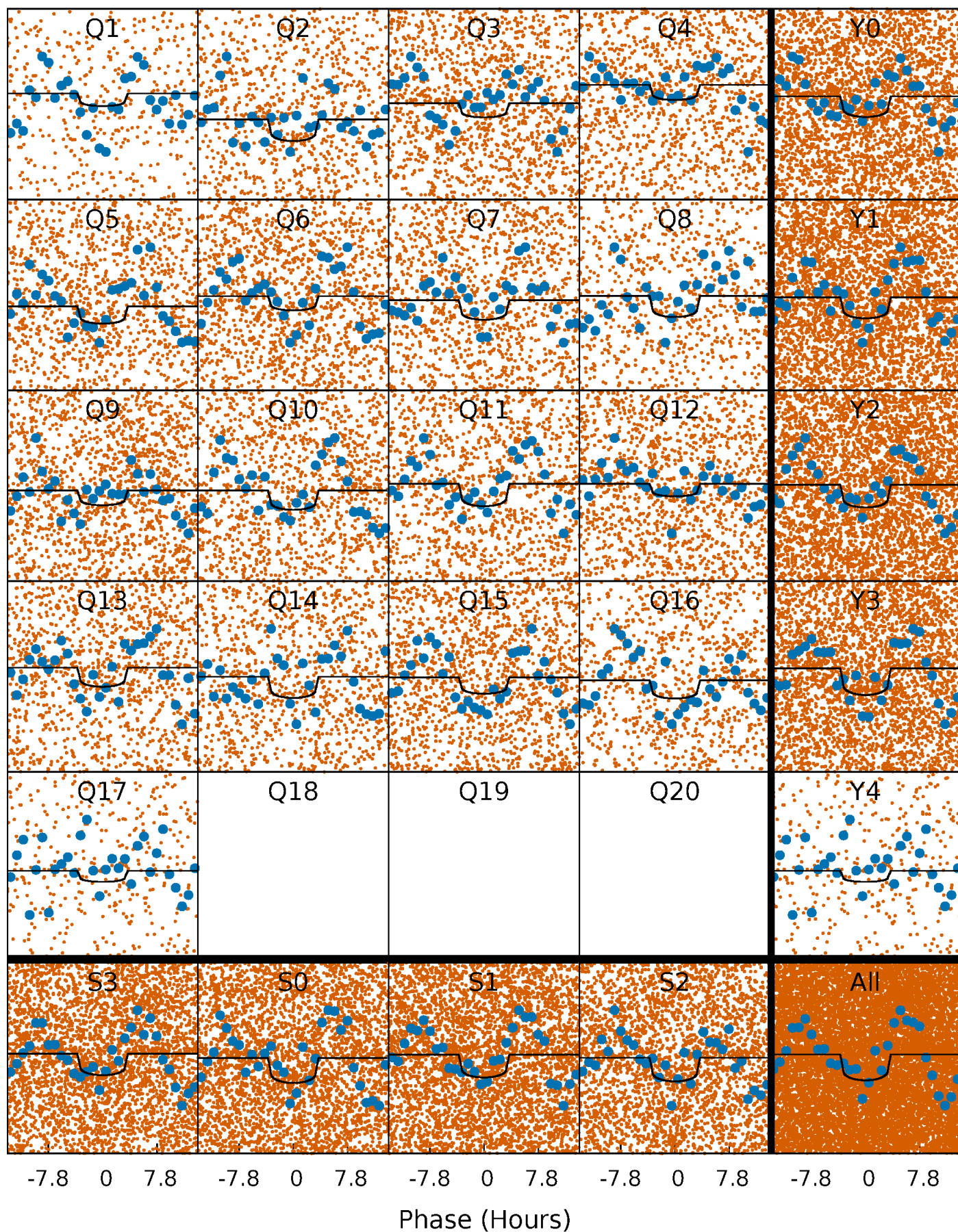
PDC Quarter-Phased Transit Curves

TCE 004679562-01 P= 1.692257 Days $T_0=131.618355$ (BKJD)



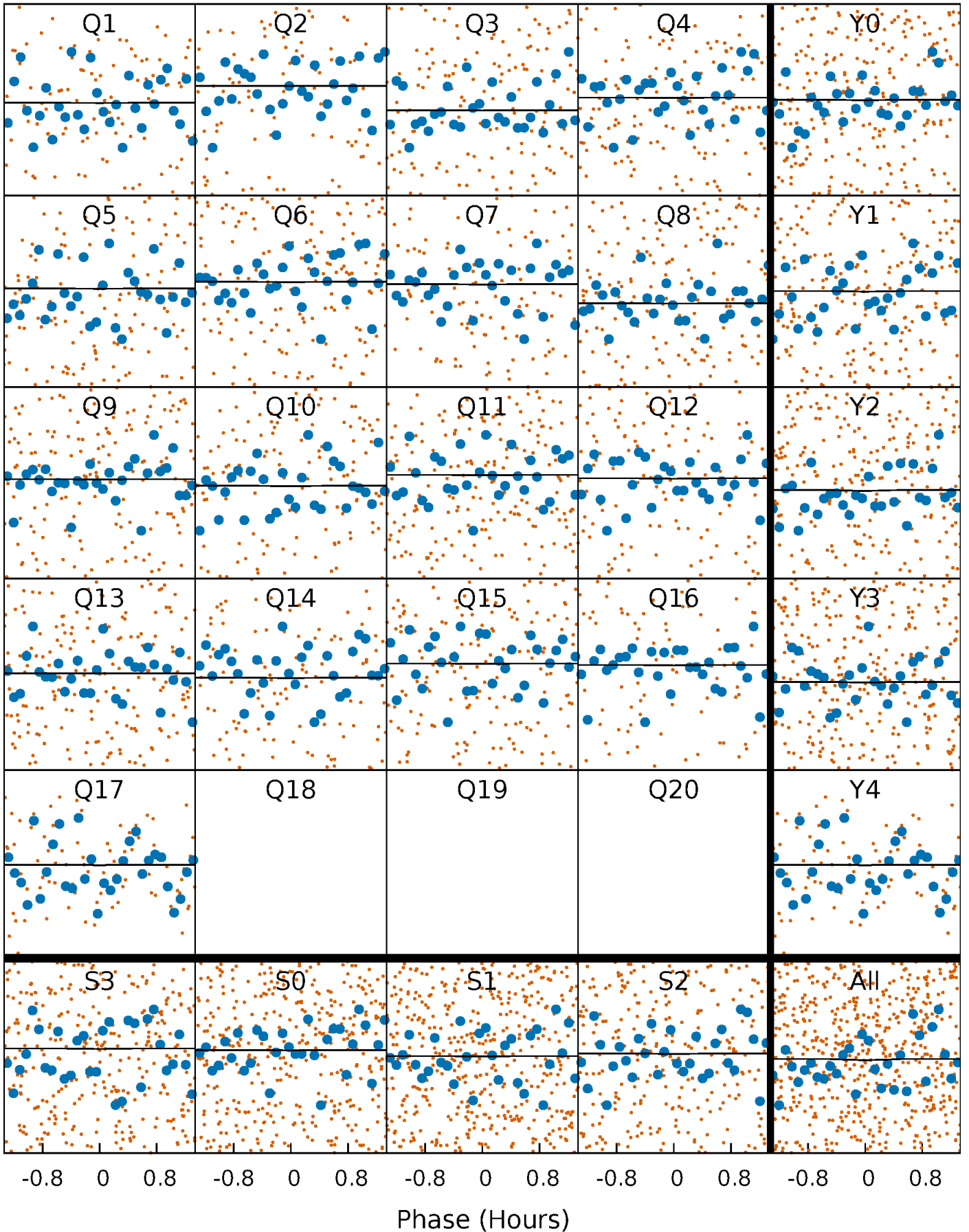
DV Quarter-Phased Transit Curves

TCE 004679562-01 P= 1.692257 Days $T_0=131.618355$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

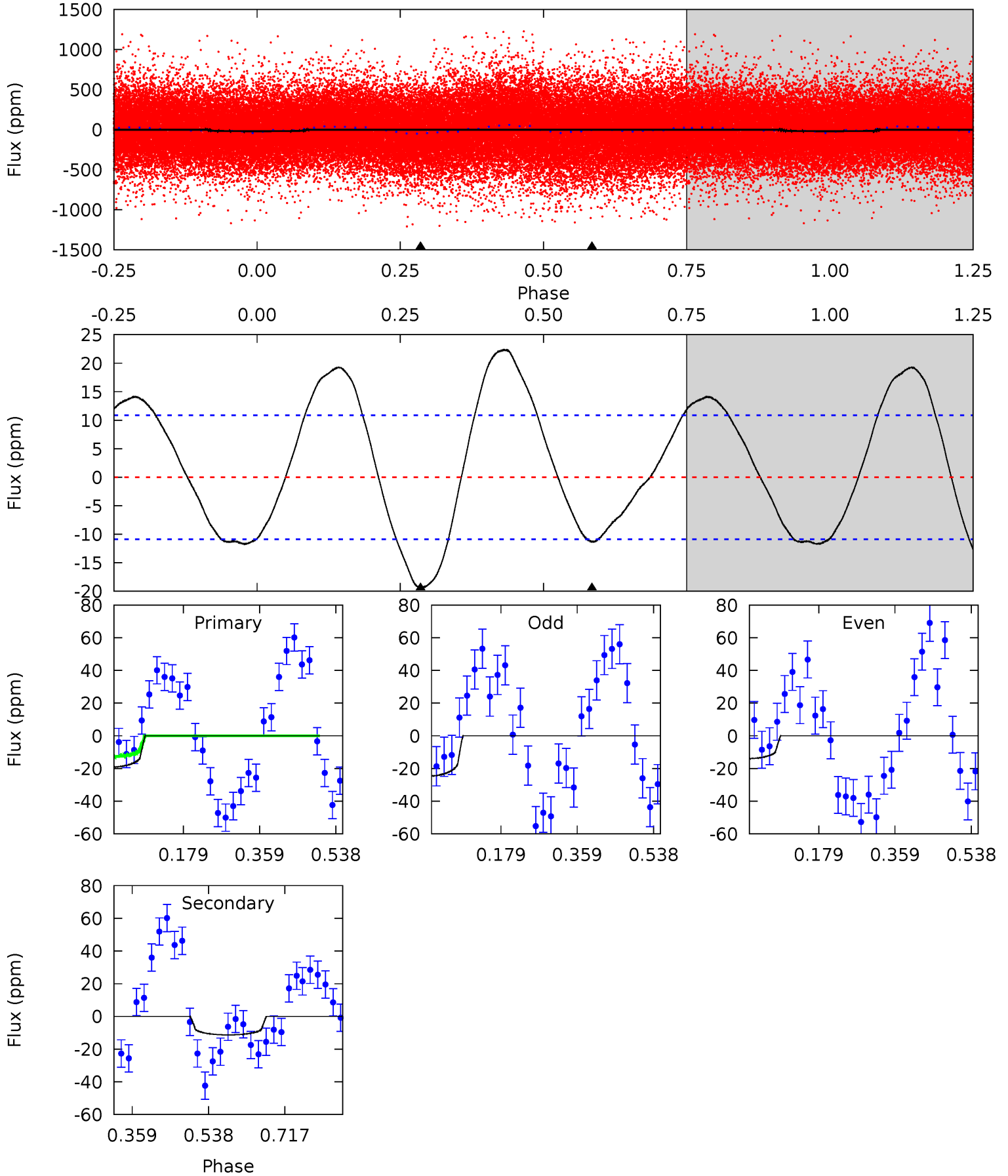
TCE 004679562-01 P= 1.692257 Days $T_0=131.750162$ (BKJD)



DV Model-Shift Uniqueness Test

004679562-01, P = 1.692257 Days, E = 129.926098 Days

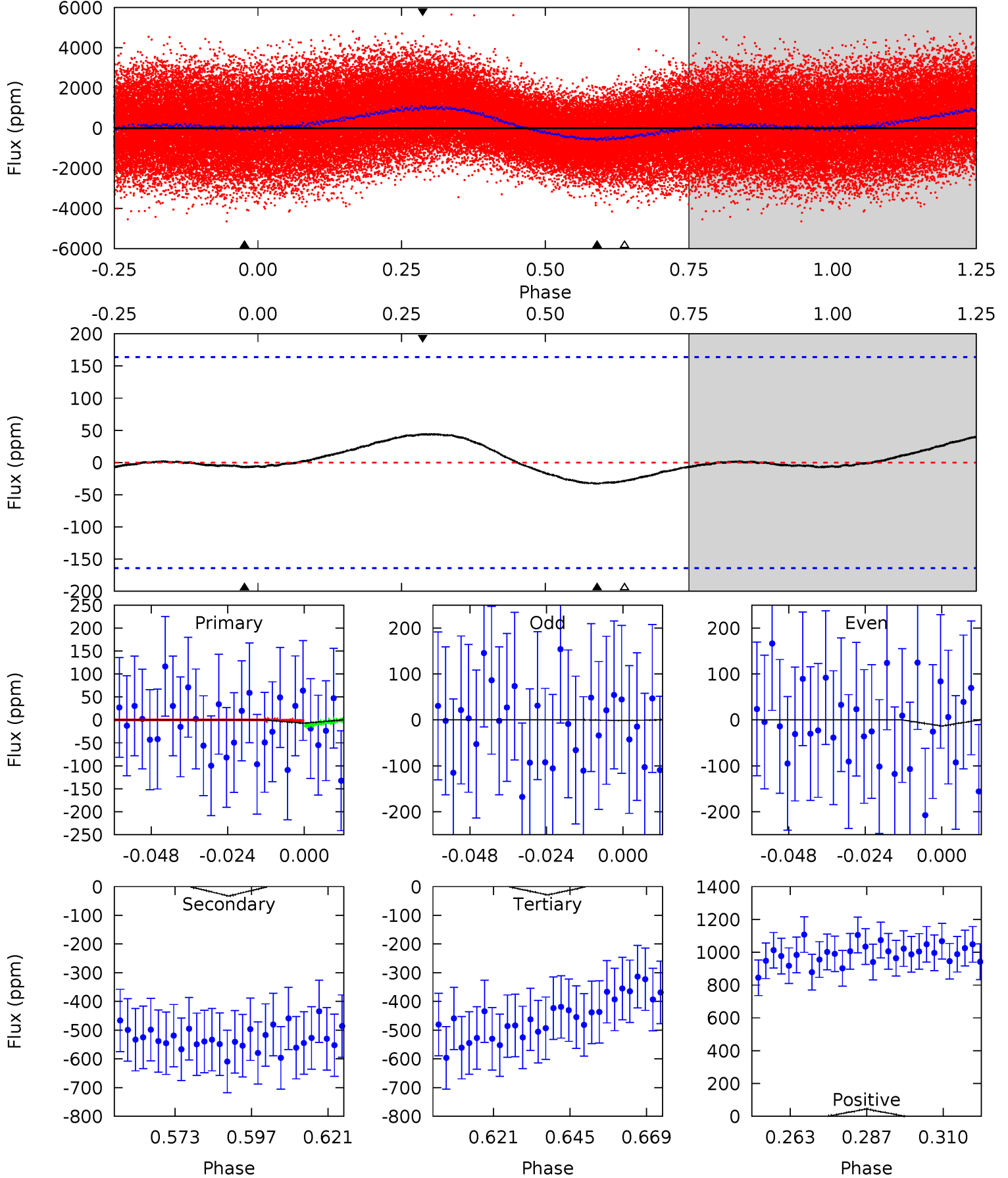
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.90	4.62	0	0	4.44	1.34	3.91	7.90	7.90	4.62	4.62	2.10	0.98	0.54	2.65



Alt Model-Shift Uniqueness Test

004679562-01, P = 1.692257 Days, E = 130.057905 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.21	0.97	0.85	1.31	4.86	2.26	0.64	-0.63	-1.09	0.12	-0.34	0.18	1.86	0.57	0.16



Stellar Parameters For KIC 004679562

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7650^{+212}_{-318}	$3.713^{+0.400}_{-0.075}$	$-0.020^{+0.200}_{-0.350}$	$3.193^{+0.459}_{-1.470}$	$1.918^{+0.104}_{-0.417}$	$0.083^{+0.289}_{-0.021}$
	+3%/-4%	+11%/-2%	+1000%/-1750%	+14%/-46%	+5%/-22%	+348%/-25%
Source	KIC0	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 004679562-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 2	$1.48^{+0.85}_{-0.75}$	4370^{+324}_{-508}	6134^{+2849}_{-1311}	$3.282^{+9.550}_{-1.944}$
Alt.	-33 ± 34	$0.79^{+0.67}_{-0.52}$	4373^{+299}_{-499}	12266^{+37526}_{-16915}	26^{+234}_{-26}

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

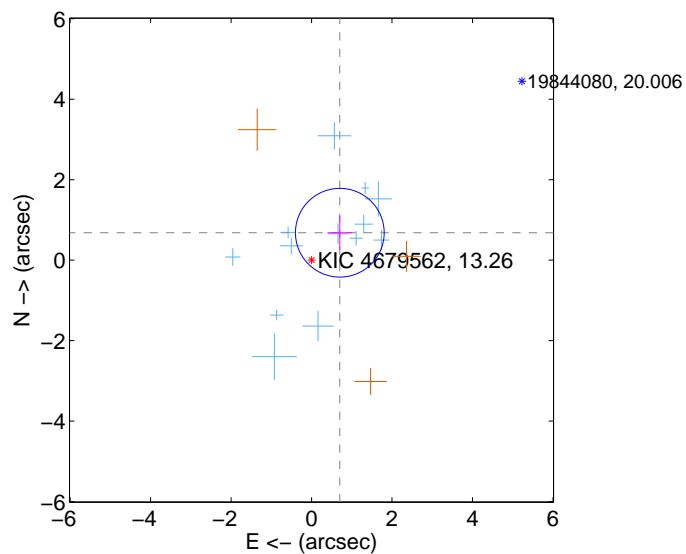
Supplemental centroid analysis for 004679562-01. Kepler magnitude: 13.26. Transit SNR 6.24

There are 13 quarters with good PRF difference image offsets

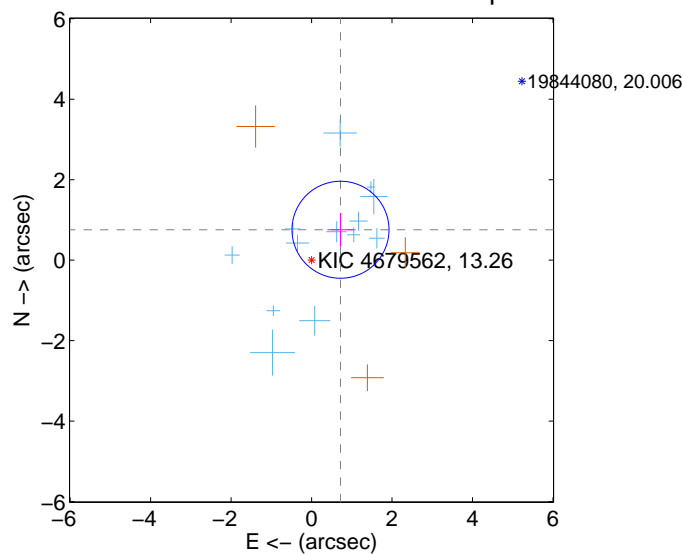
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.979 ± 0.368	2.66	-0.703 ± 0.309	0.682 ± 0.419
PRF-fit source offset from KIC position	1.044 ± 0.402	2.60	-0.719 ± 0.325	0.756 ± 0.418
photometric centroid source offset	2.03 ± 0.99	2.04	-1.24 ± 1.00	1.61 ± 0.99

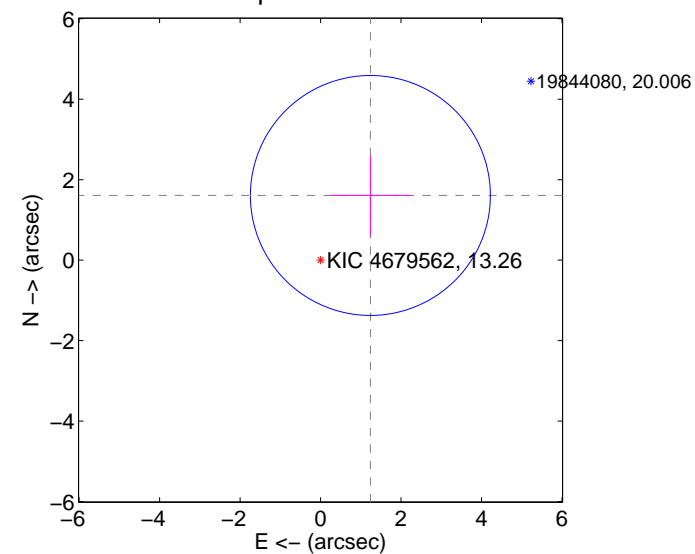
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

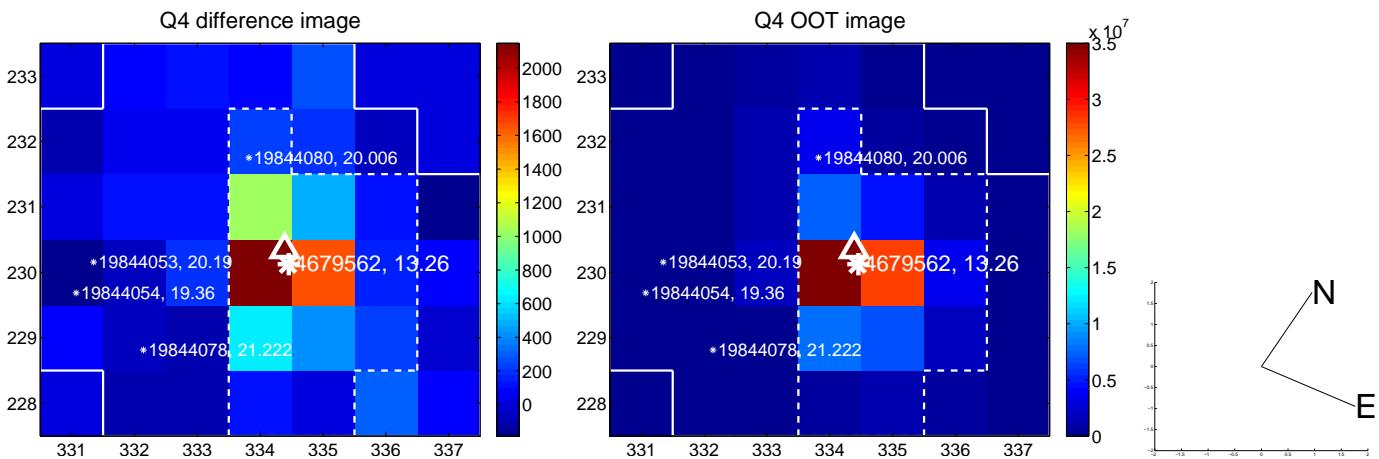
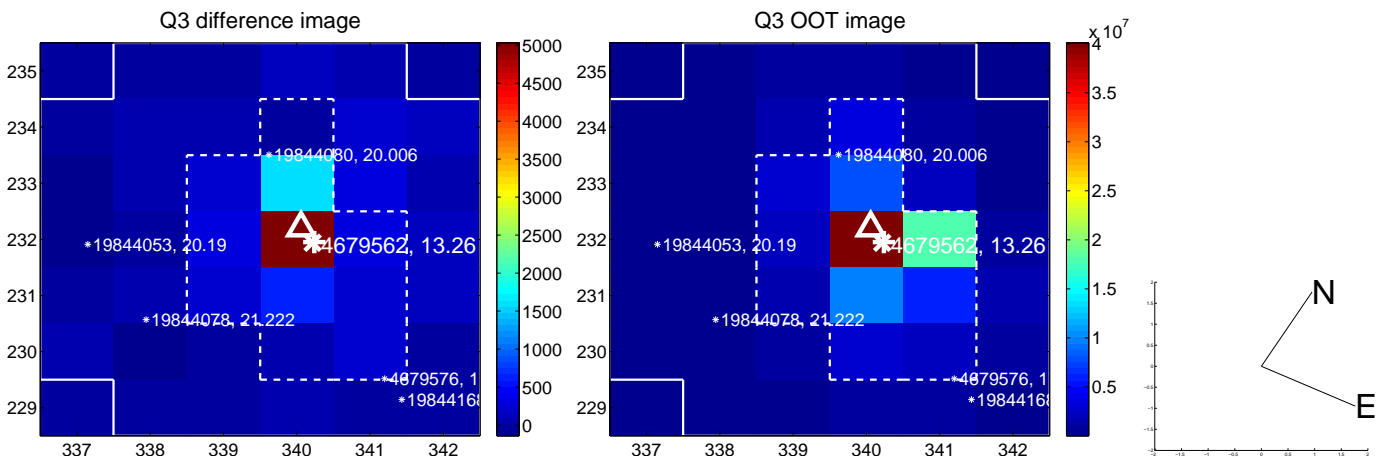
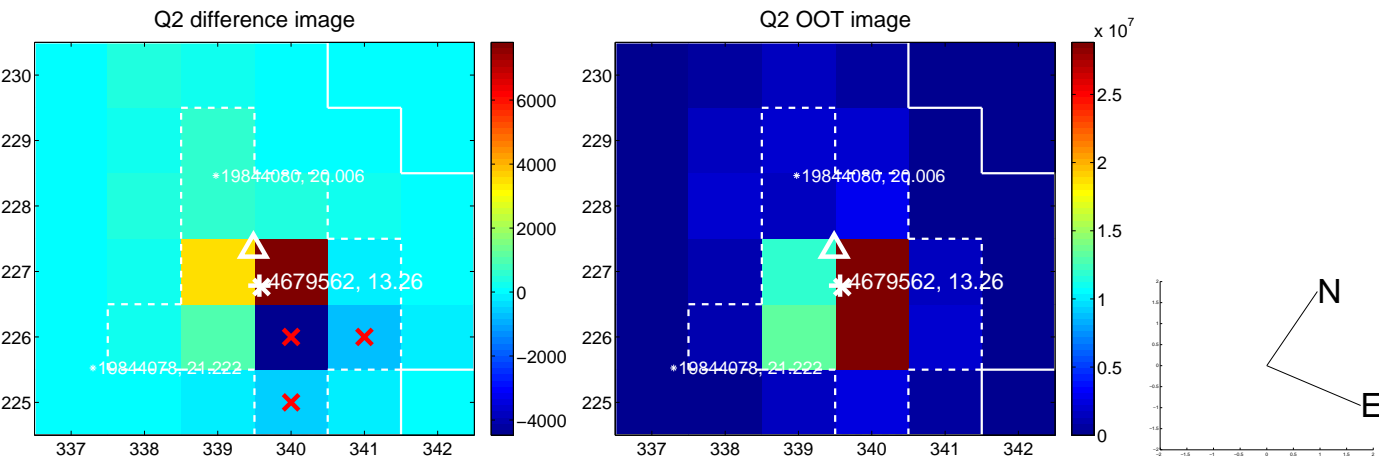
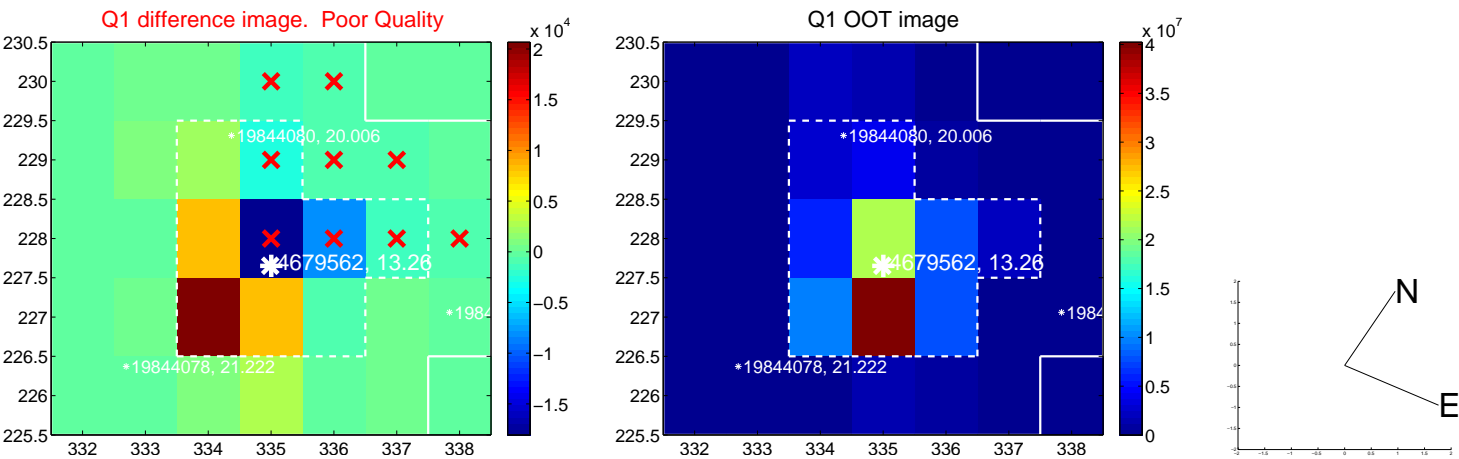


offset from photometric centroids

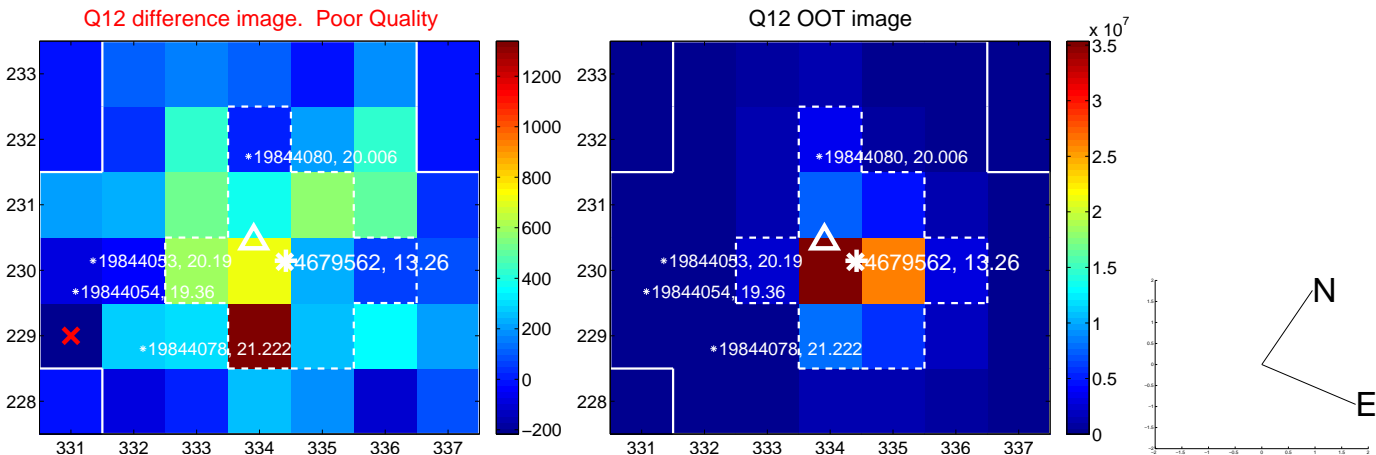
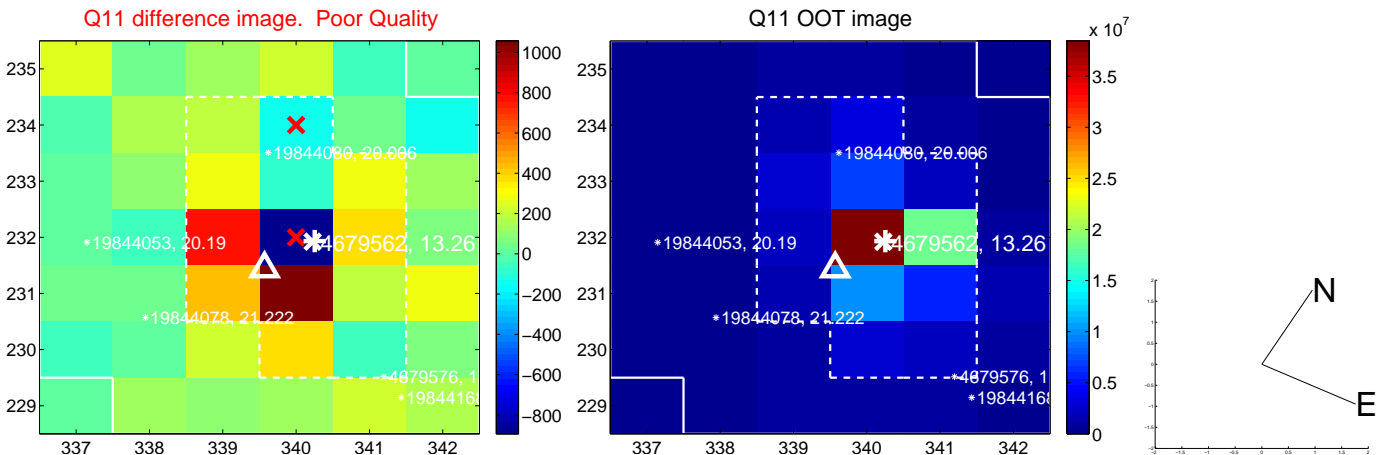
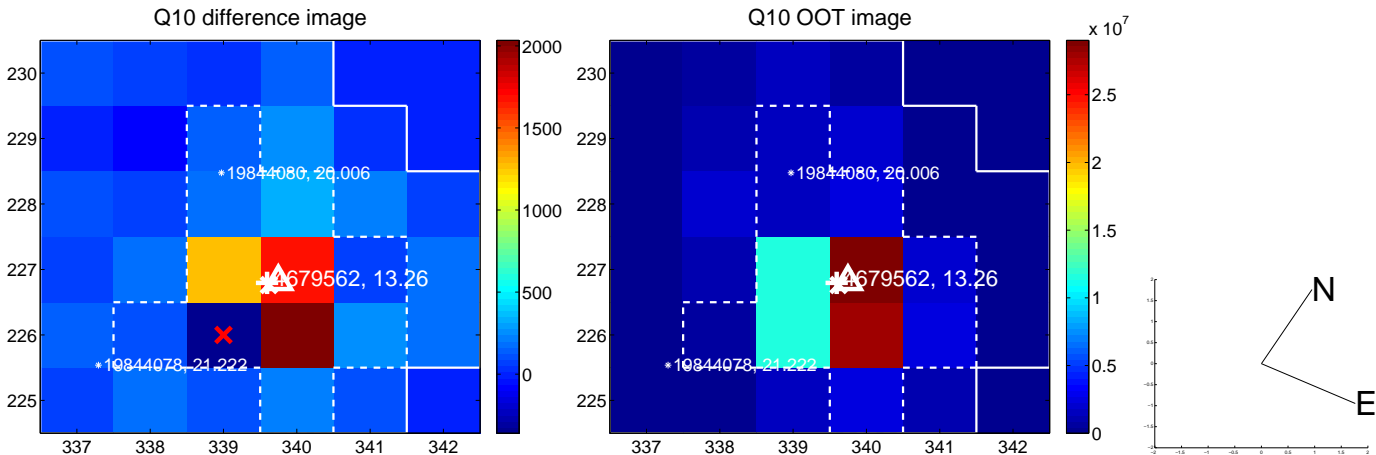
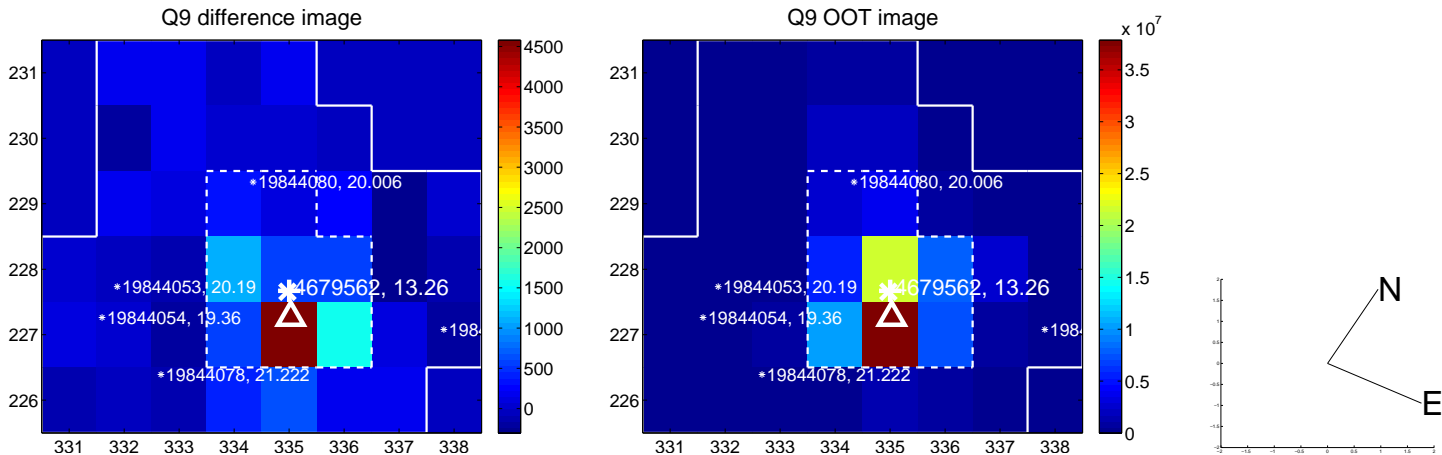


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

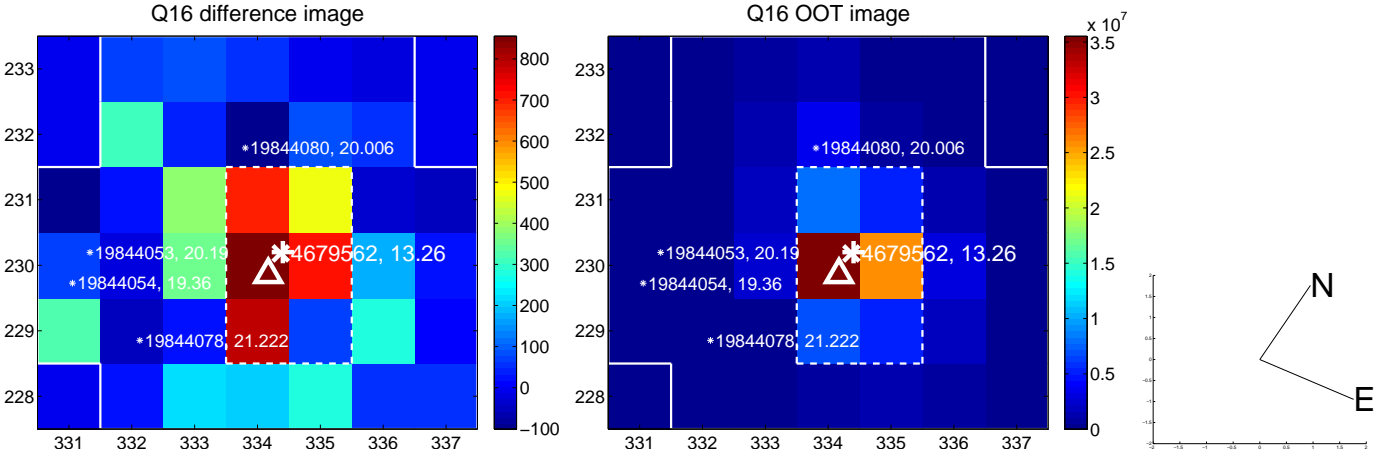
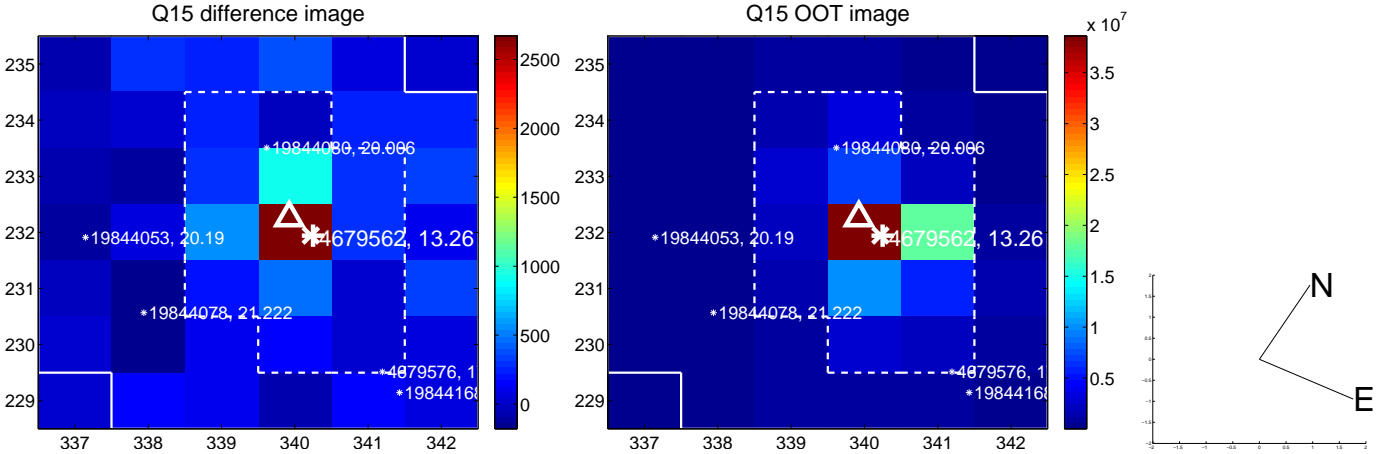
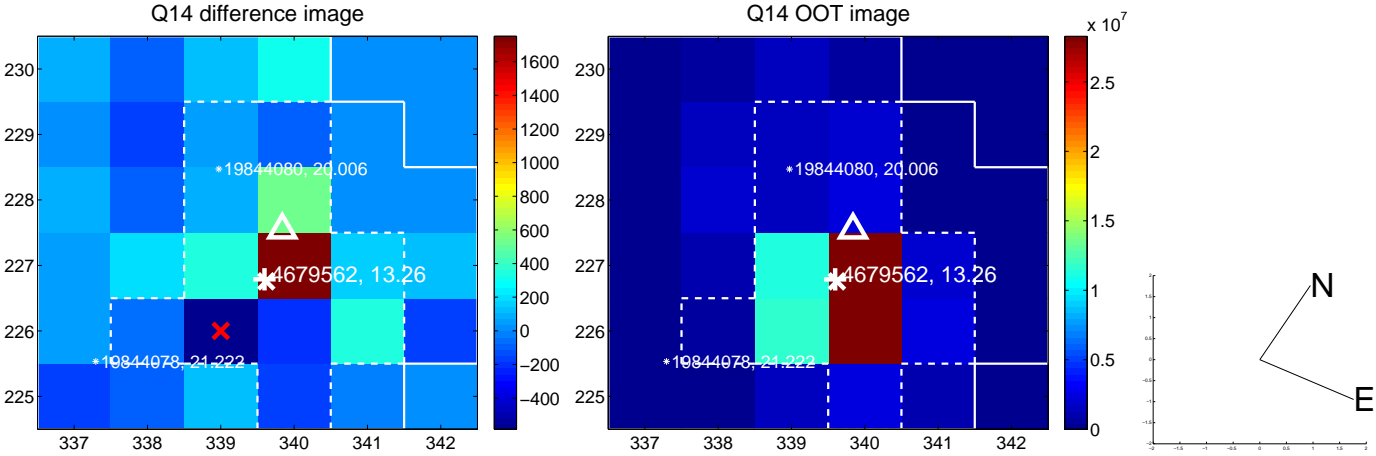
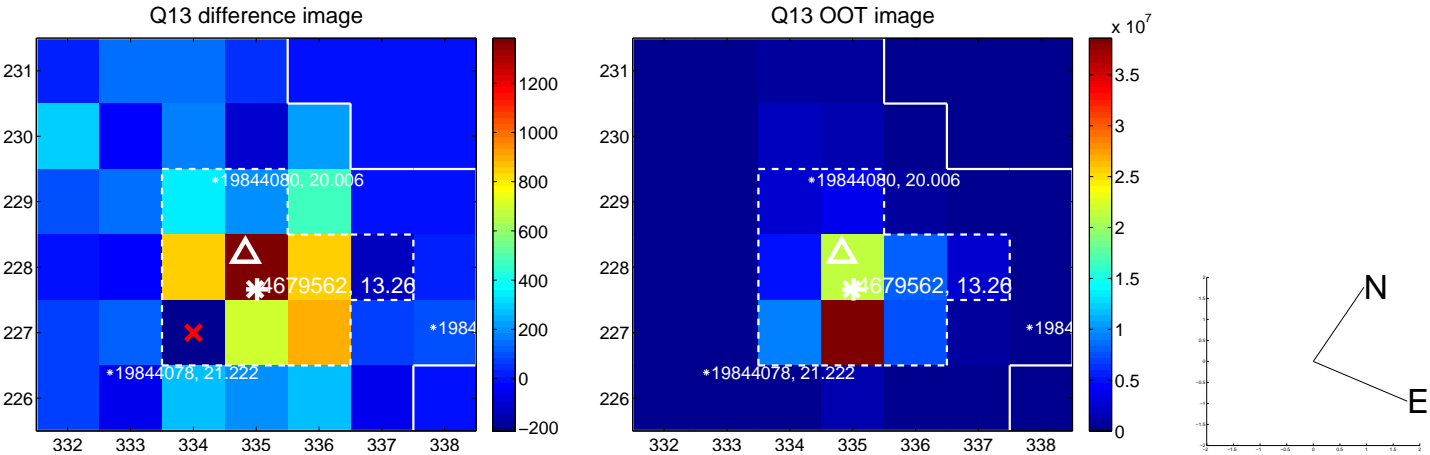
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

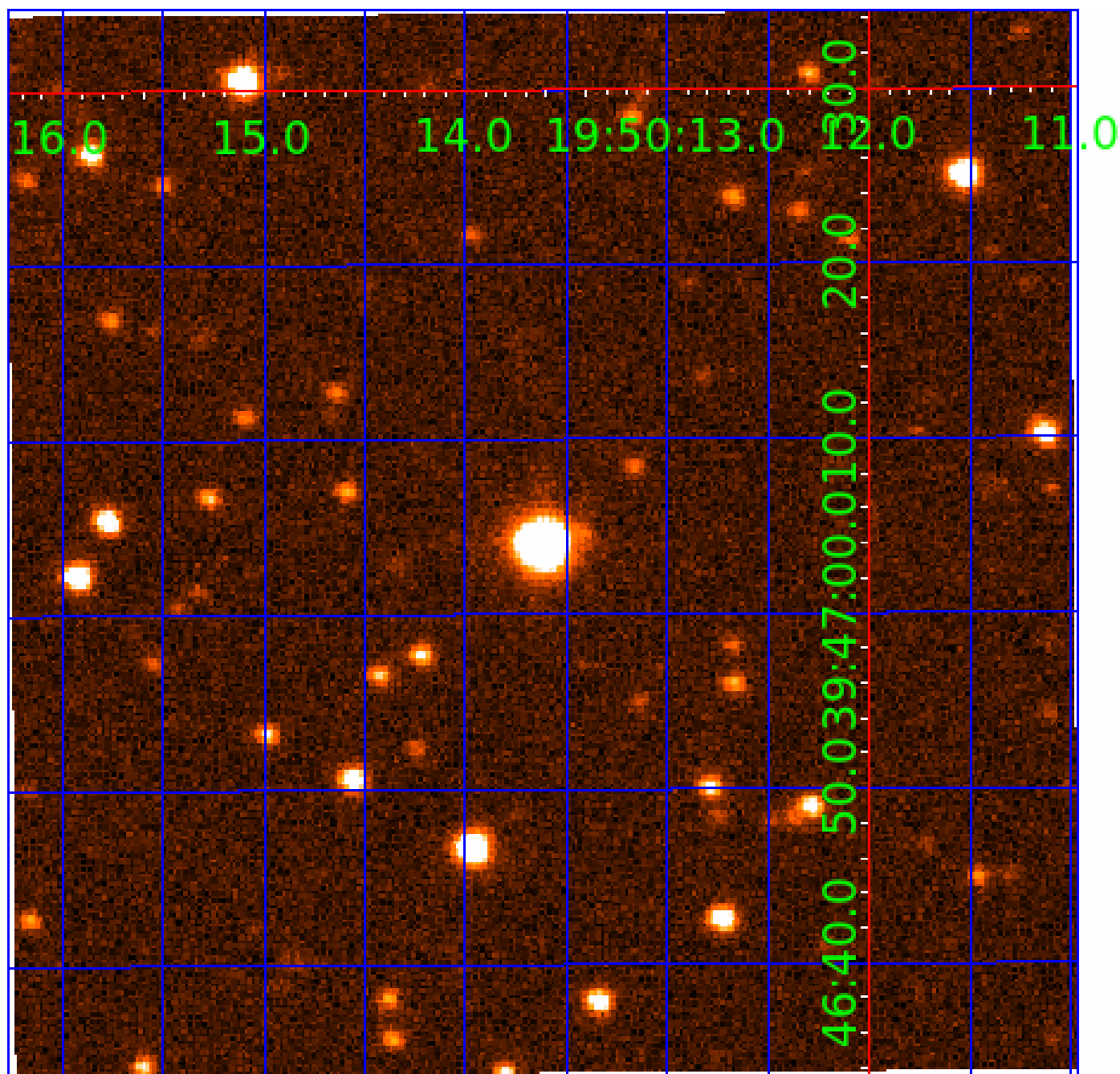


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004679562

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})
004679562-01	OBS	No	1.692257	131.618355	24.7	6.842	10.9	6.2	3.19	7650	1.62	26205.00
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004679562-03	OBS	No	52.283236	153.390200	265.7	6.741	8.1	7.4	3.19	7650	5.73	270.31
004679562-04	OBS	No	110.723491	137.532362	314.5	7.909	8.2	5.8	3.19	7650	5.93	99.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004679562-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004679562-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004679562-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
004679562-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

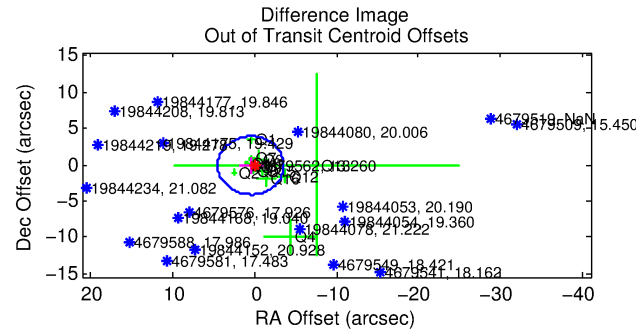
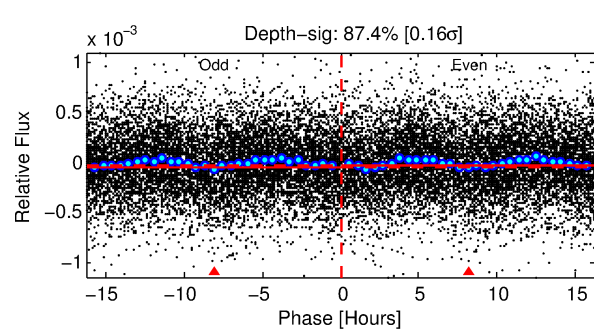
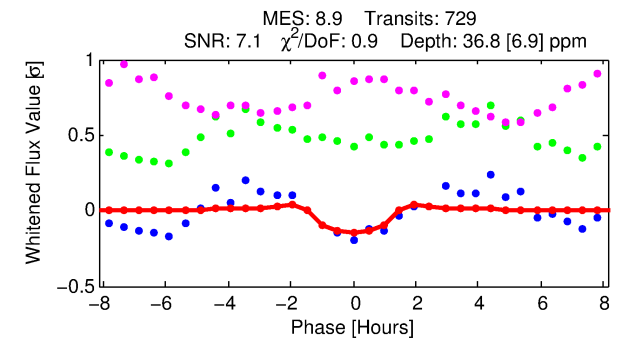
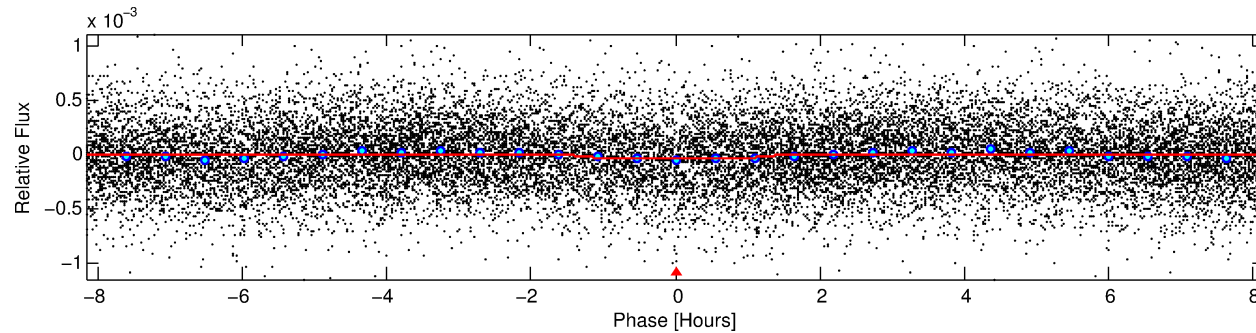
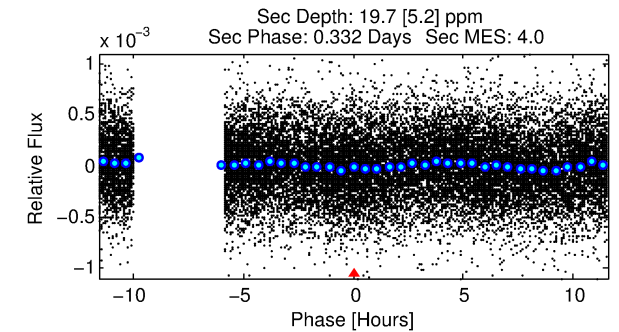
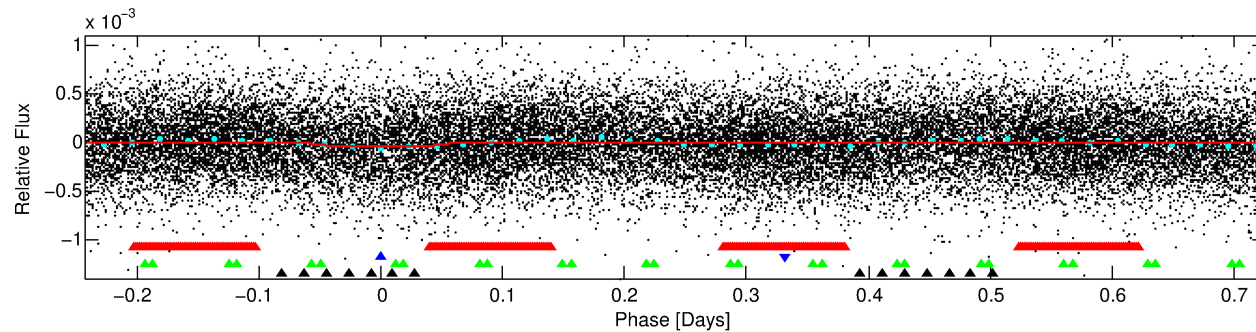
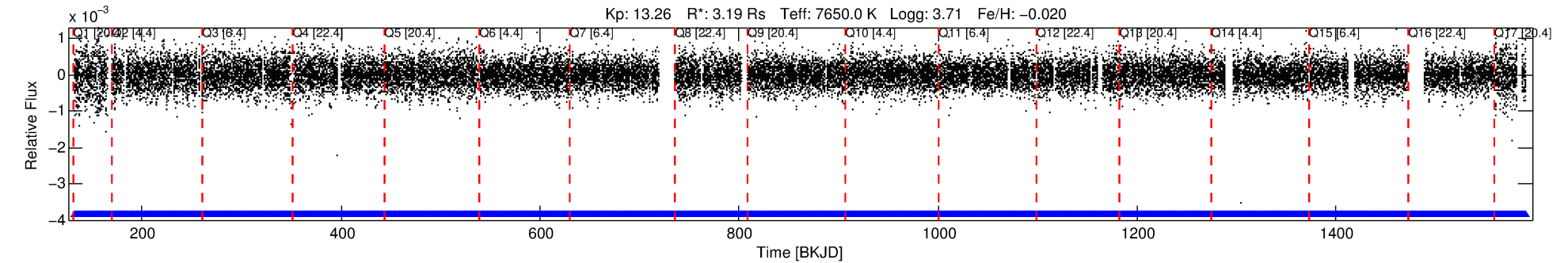
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004679562-02

No Significant Match Found

DV One-Page Summary

KIC: 4679562 Candidate: 2 of 4 Period: 0.967 d



DV Fit Results:

Period = 0.96694 [0.00001] d
Epoch = 132.3044 [0.0046] BKJD
Rp/R* = 0.0064 [0.0034]
a/R* = 1.56 [2.95]
b = 0.90 [0.72]
Seff = 55268.10 [39036.33]
Teff = 3910 [690] K
Rp = 2.25 [1.56] Re
a = 0.0238 [0.0103] AU
Ag = 1.22 [1.55] [0.14σ]
Teffp = 6348 [1722] K [1.31σ]

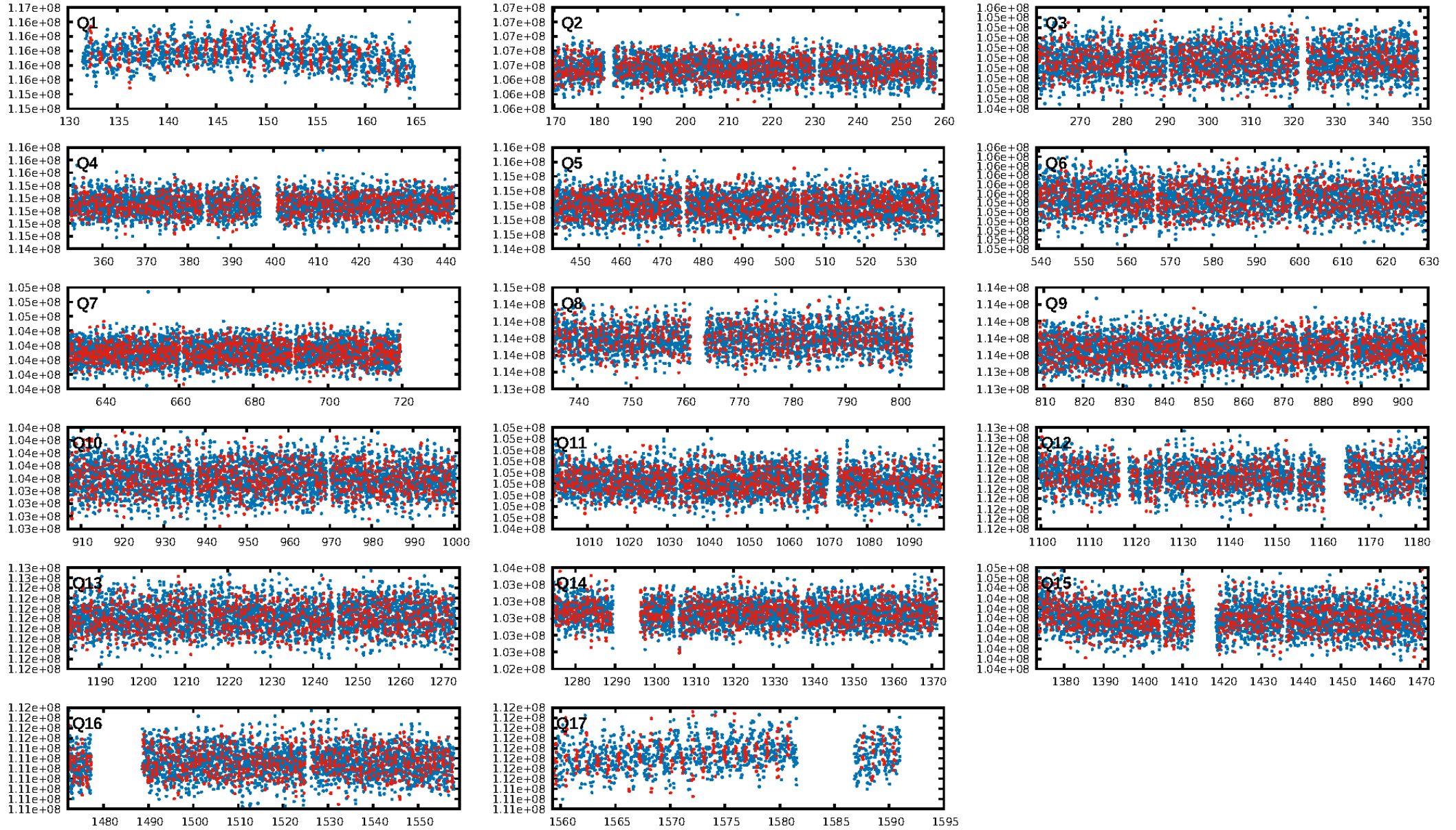
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 98.2% [2.36σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.51e-12
RollingBand-fgt: 1.00 [695/695]
GhostDiagnostic-chr: 0.4526
Centroid-sig: 5.0%
Centroid-so: 1.148 arcsec [1.51σ]
OotOffset-rm: 0.482 arcsec [0.36σ]
KicOffset-rm: 0.467 arcsec [0.34σ]
OotOffset-st: 2/4/4/3 [13]
KicOffset-st: 2/4/4/3 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 1.00 [17/17]

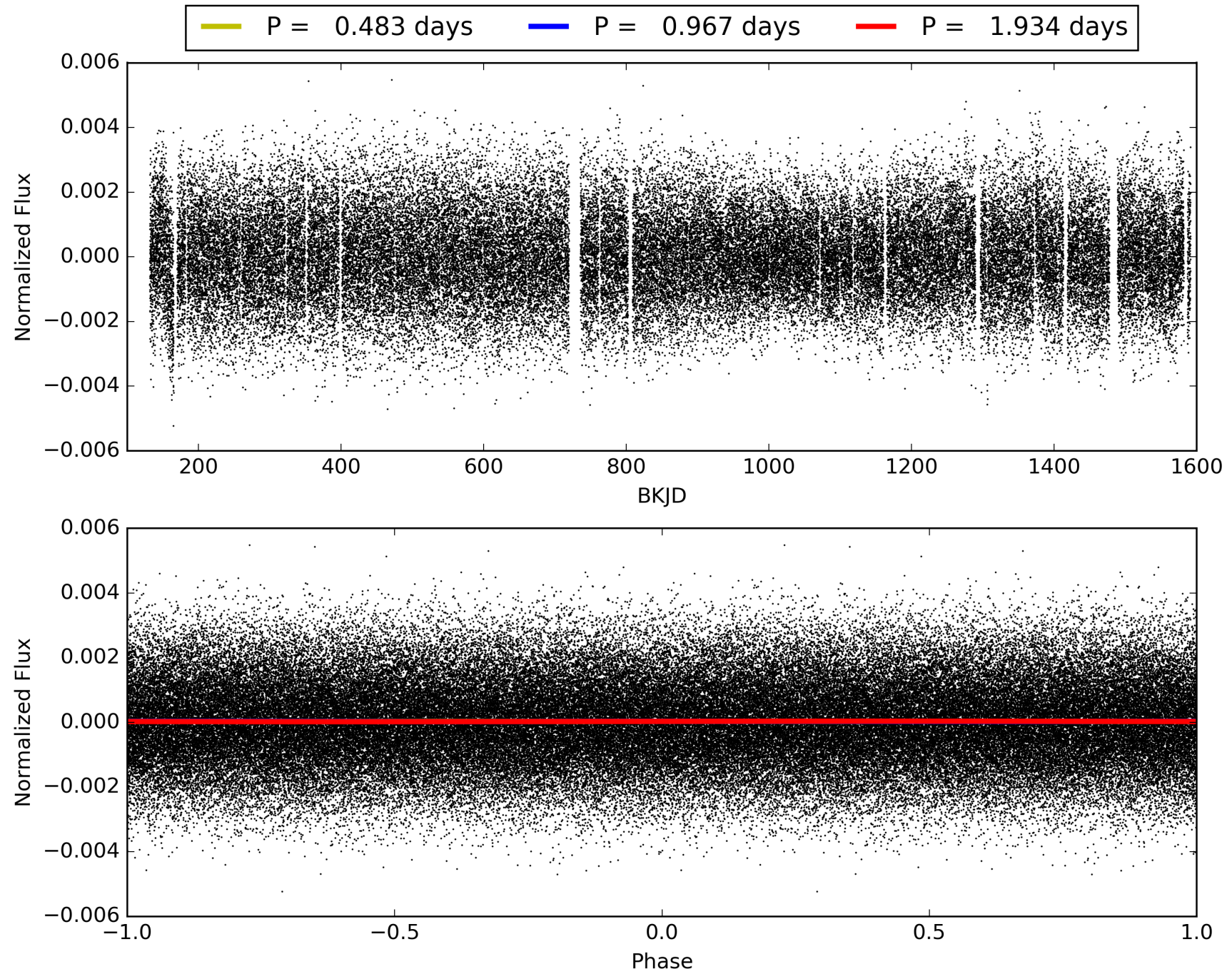
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:00:41 Z

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

TCE 004679562-02, PDC Light Curves

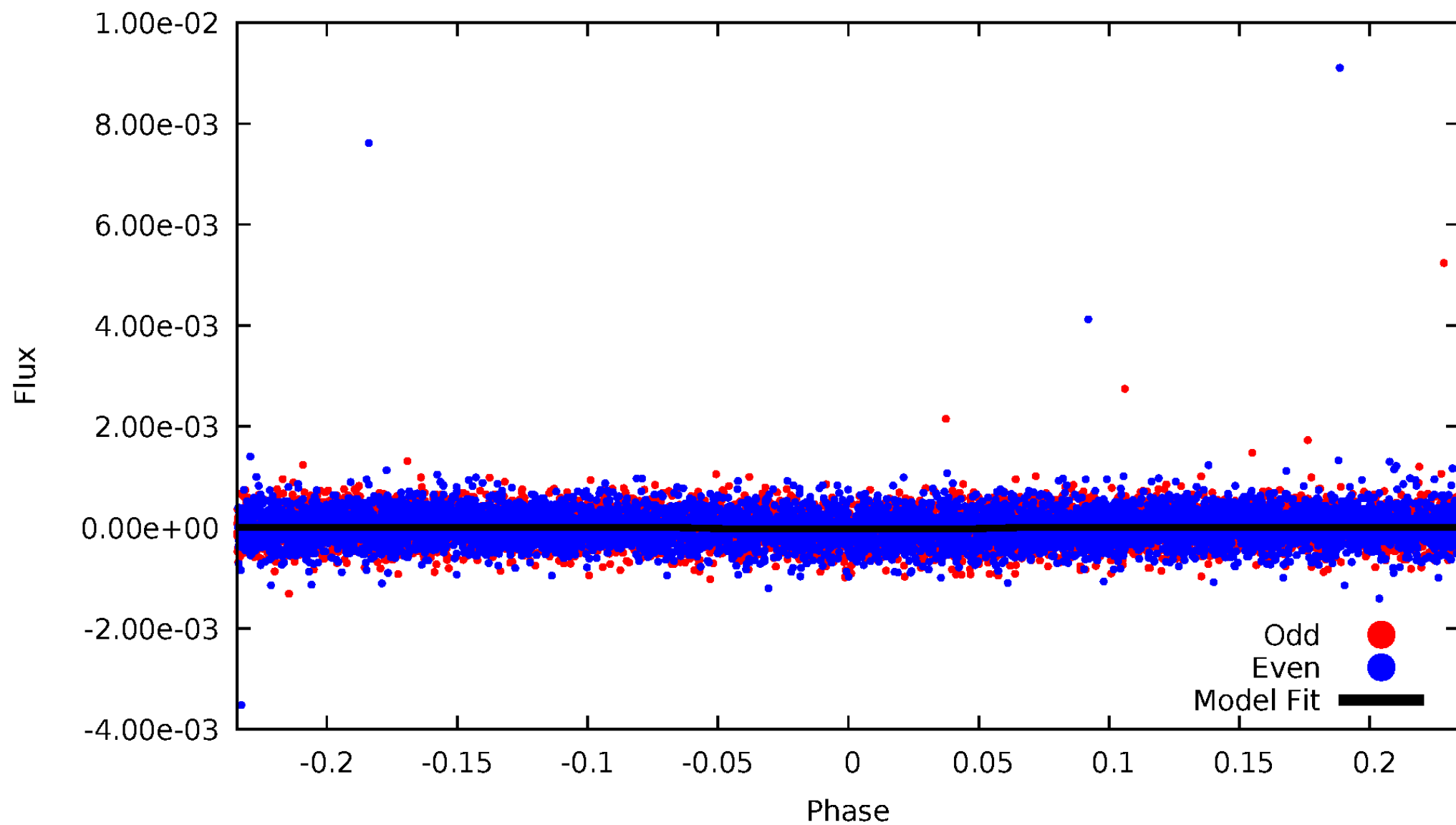


TCE 004679562-02



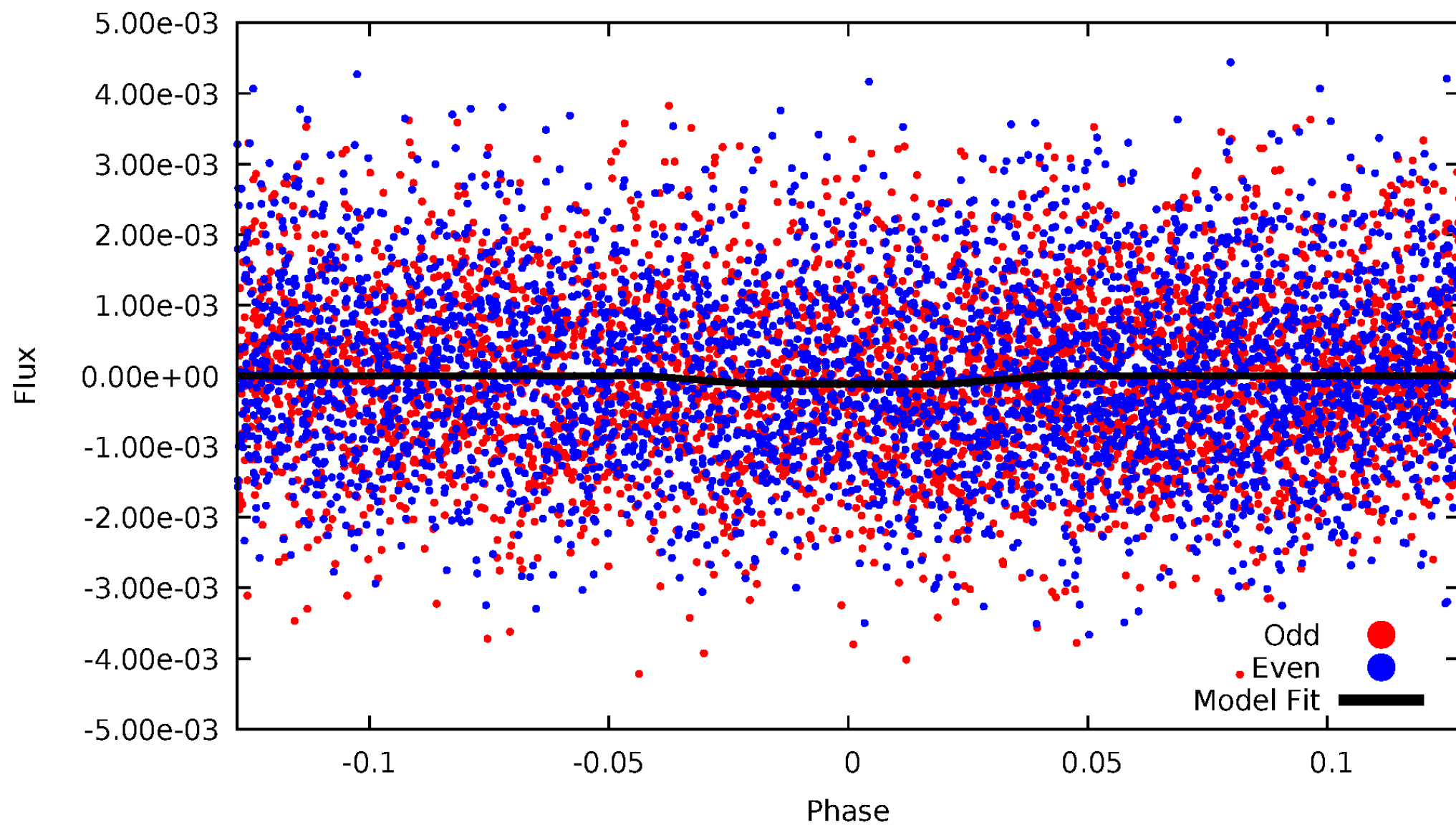
DV Odd/Even

TCE 004679562-02



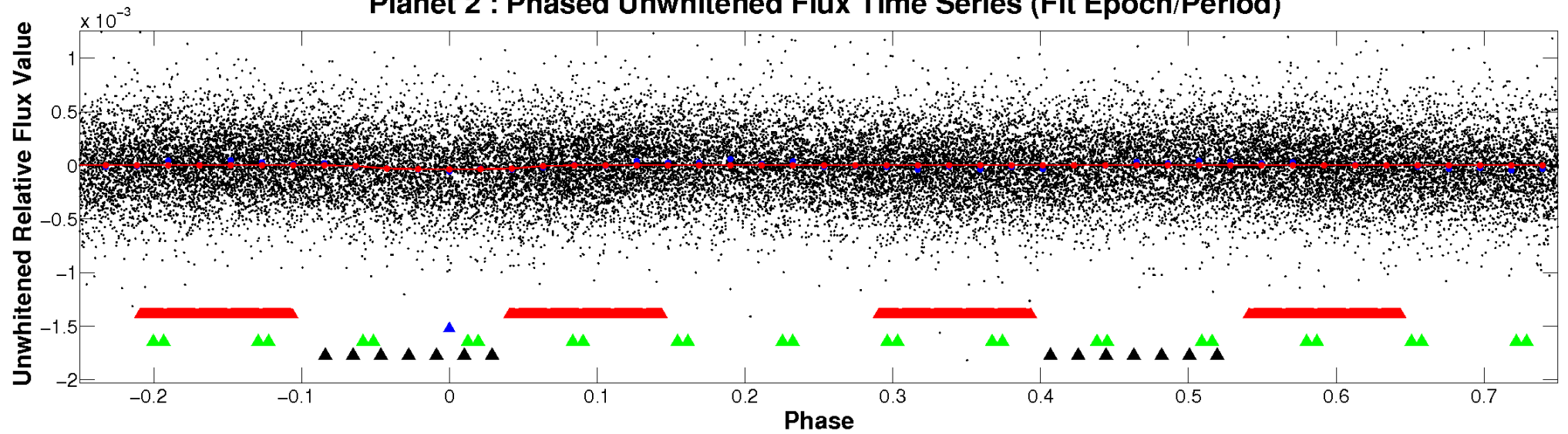
ALT Odd/Even

TCE 004679562-02

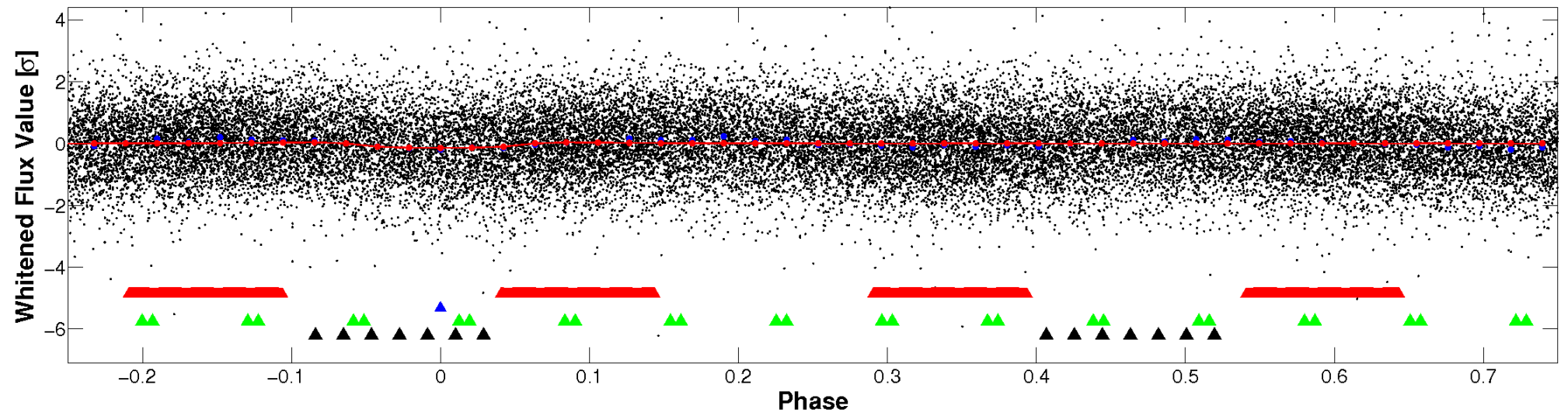


Non-Whitened Vs. Whitened Light Curve

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

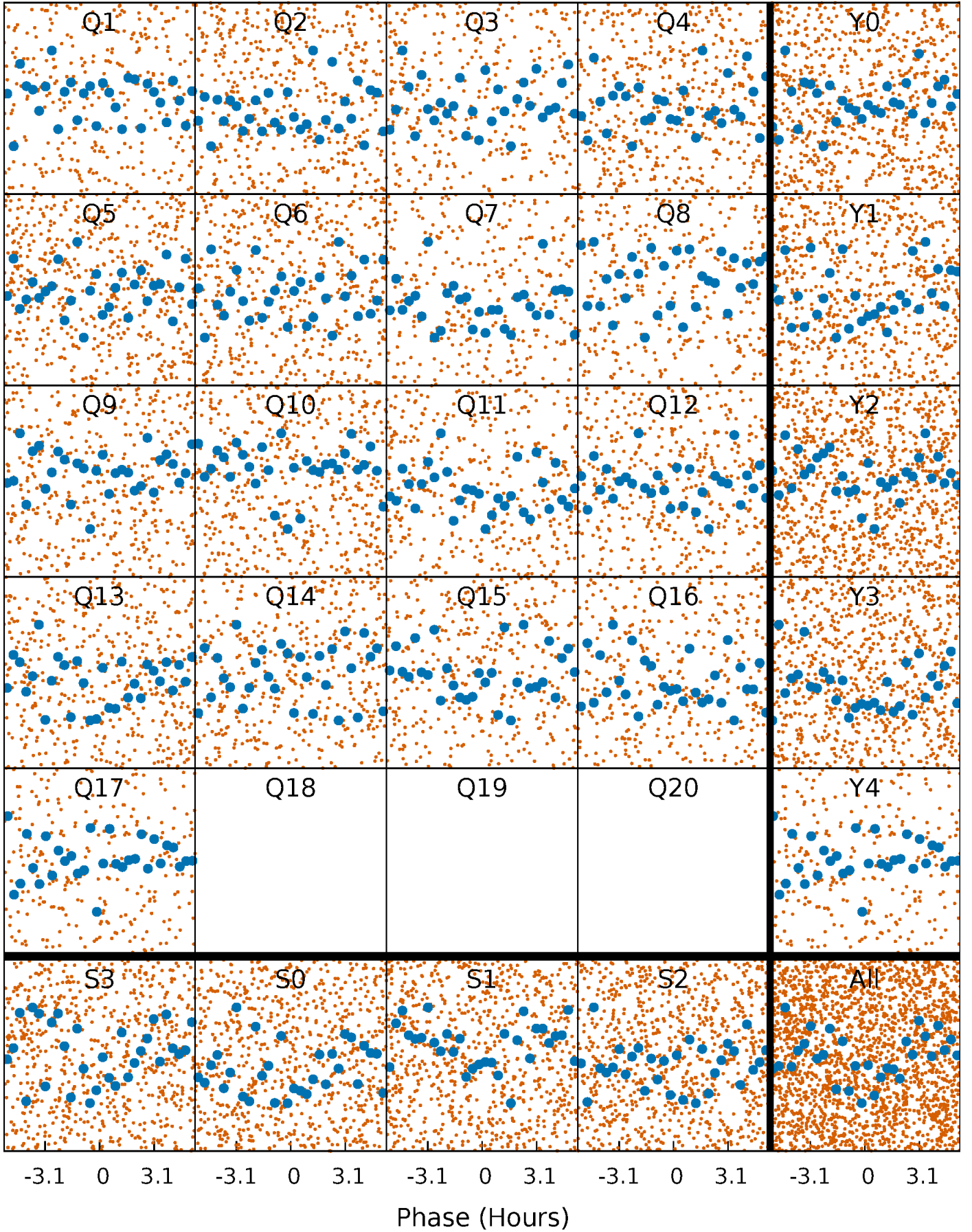


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



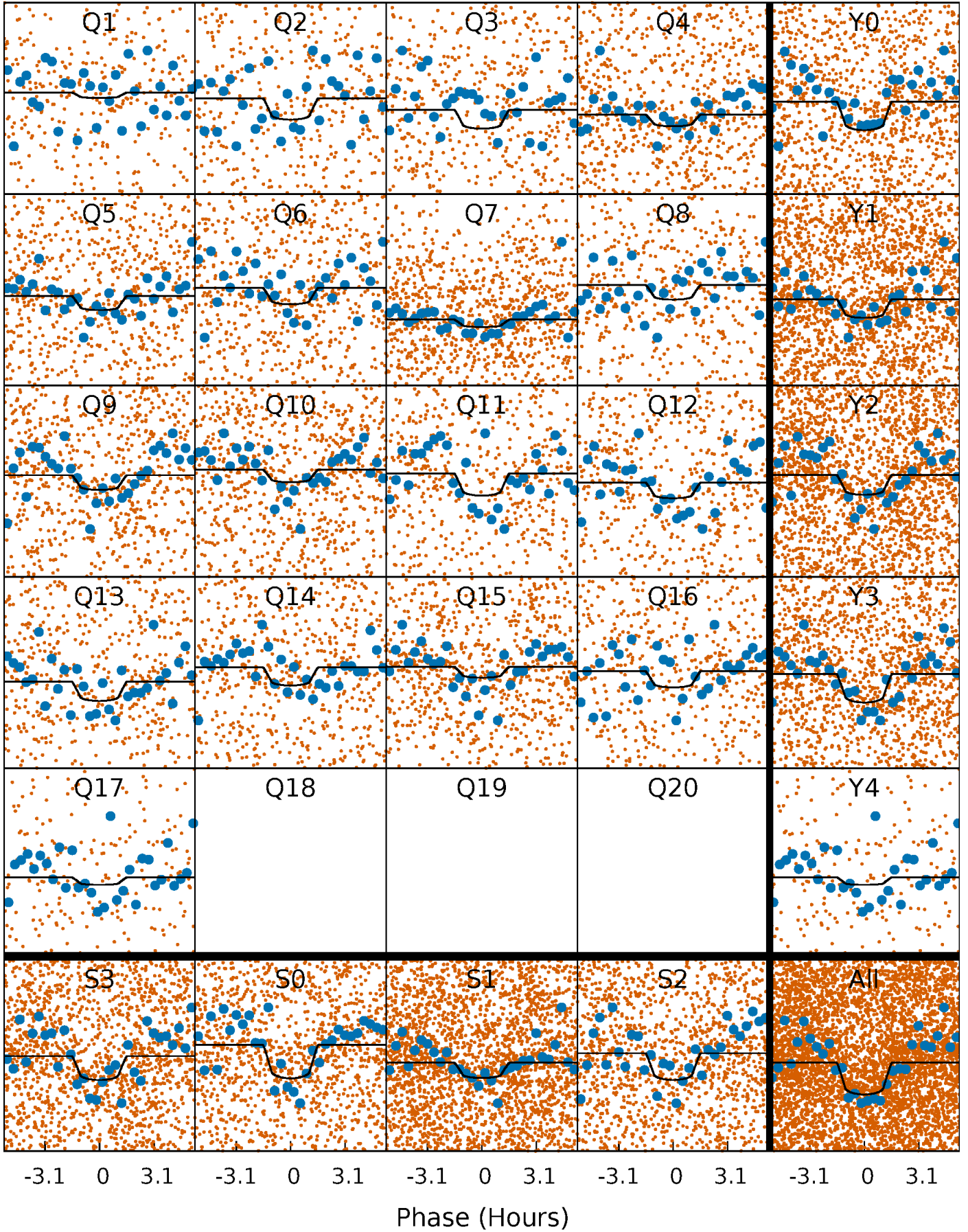
PDC Quarter-Phased Transit Curves

TCE 004679562-02 P= 0.966938 Days $T_0=132.304429$ (BKJD)



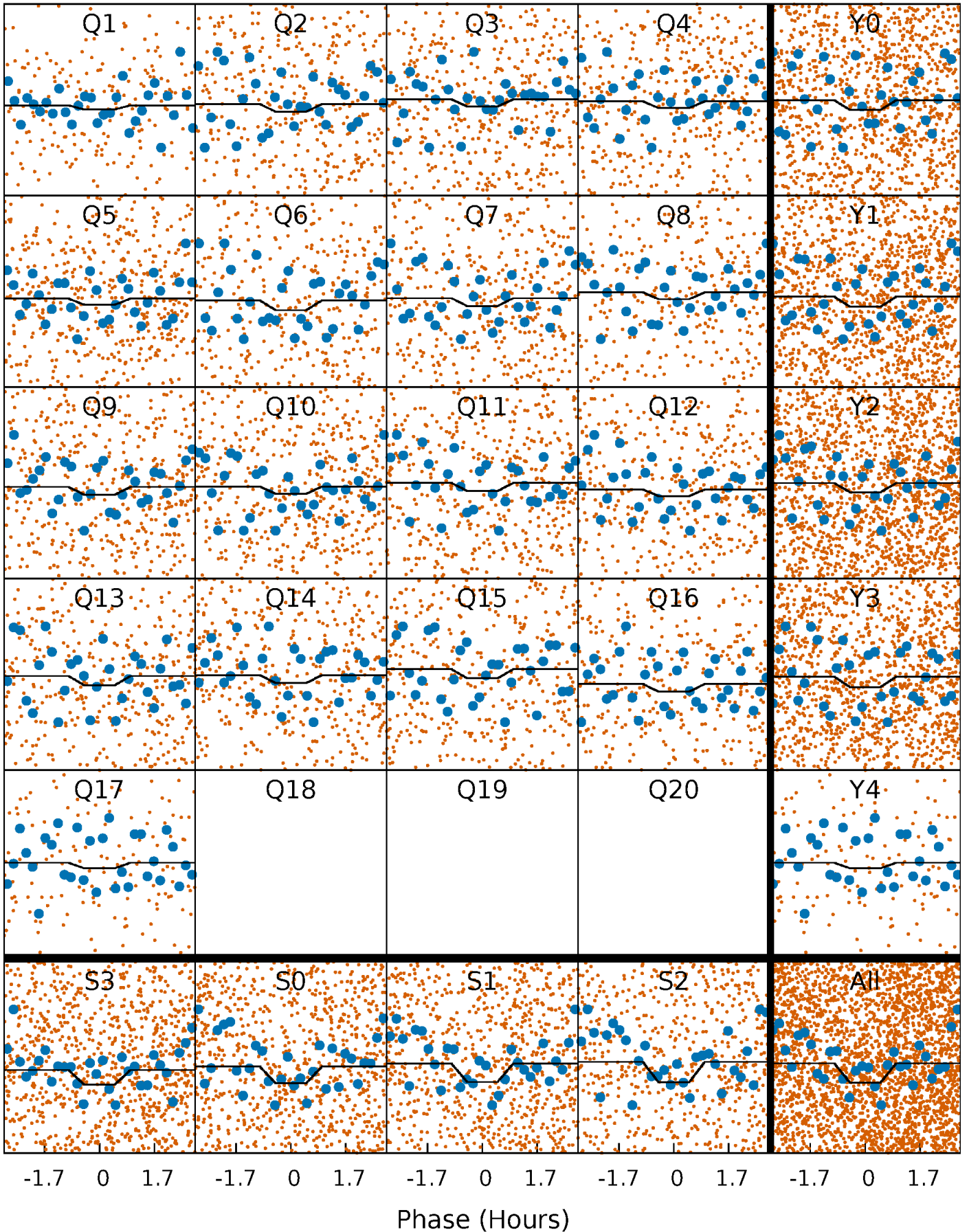
DV Quarter-Phased Transit Curves

TCE 004679562-02 P= 0.966938 Days $T_0=132.304429$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

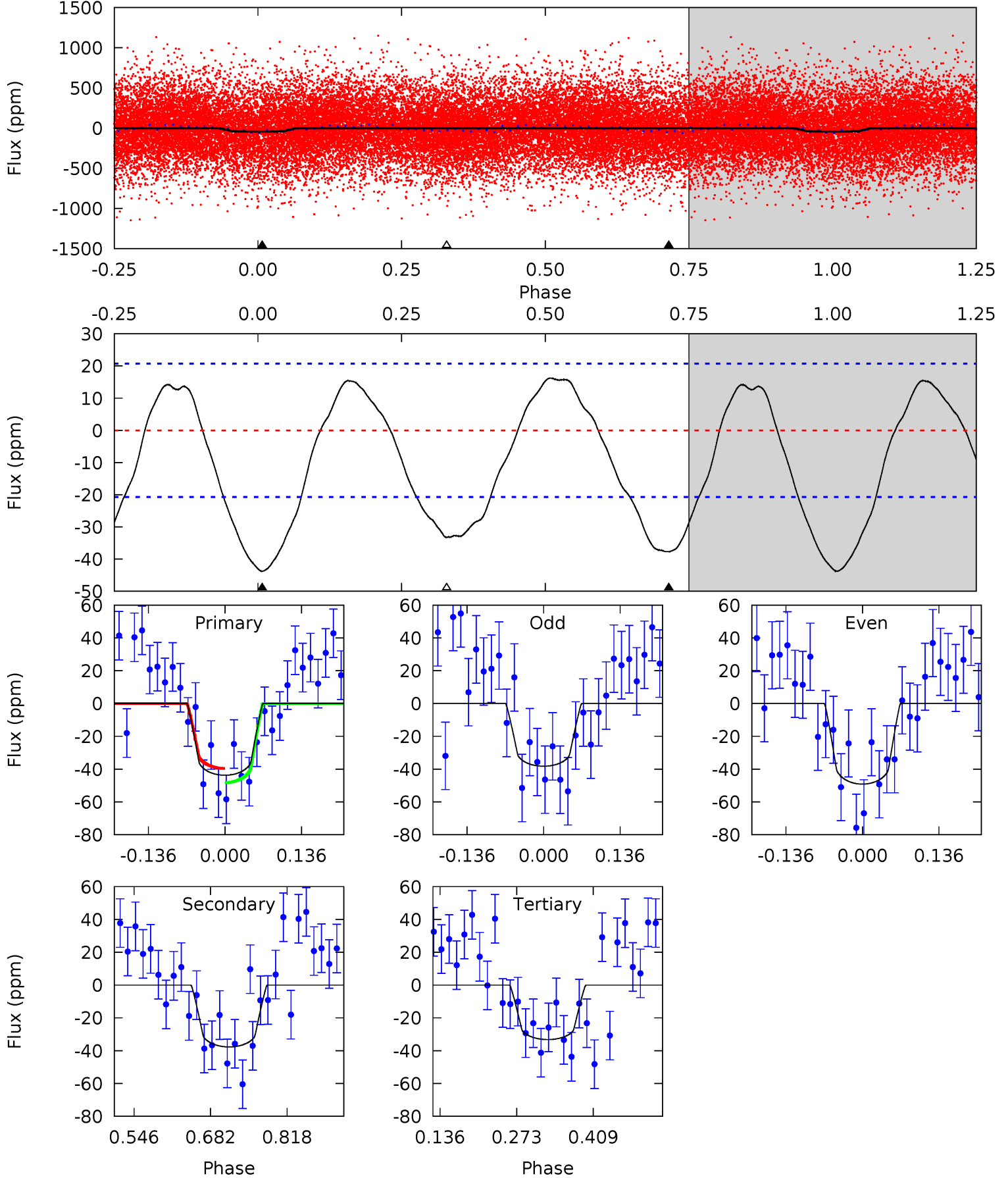
TCE 004679562-02 P= 0.966961 Days $T_0=132.306048$ (BKJD)



DV Model-Shift Uniqueness Test

004679562-02, P = 0.966938 Days, E = 131.337491 Days

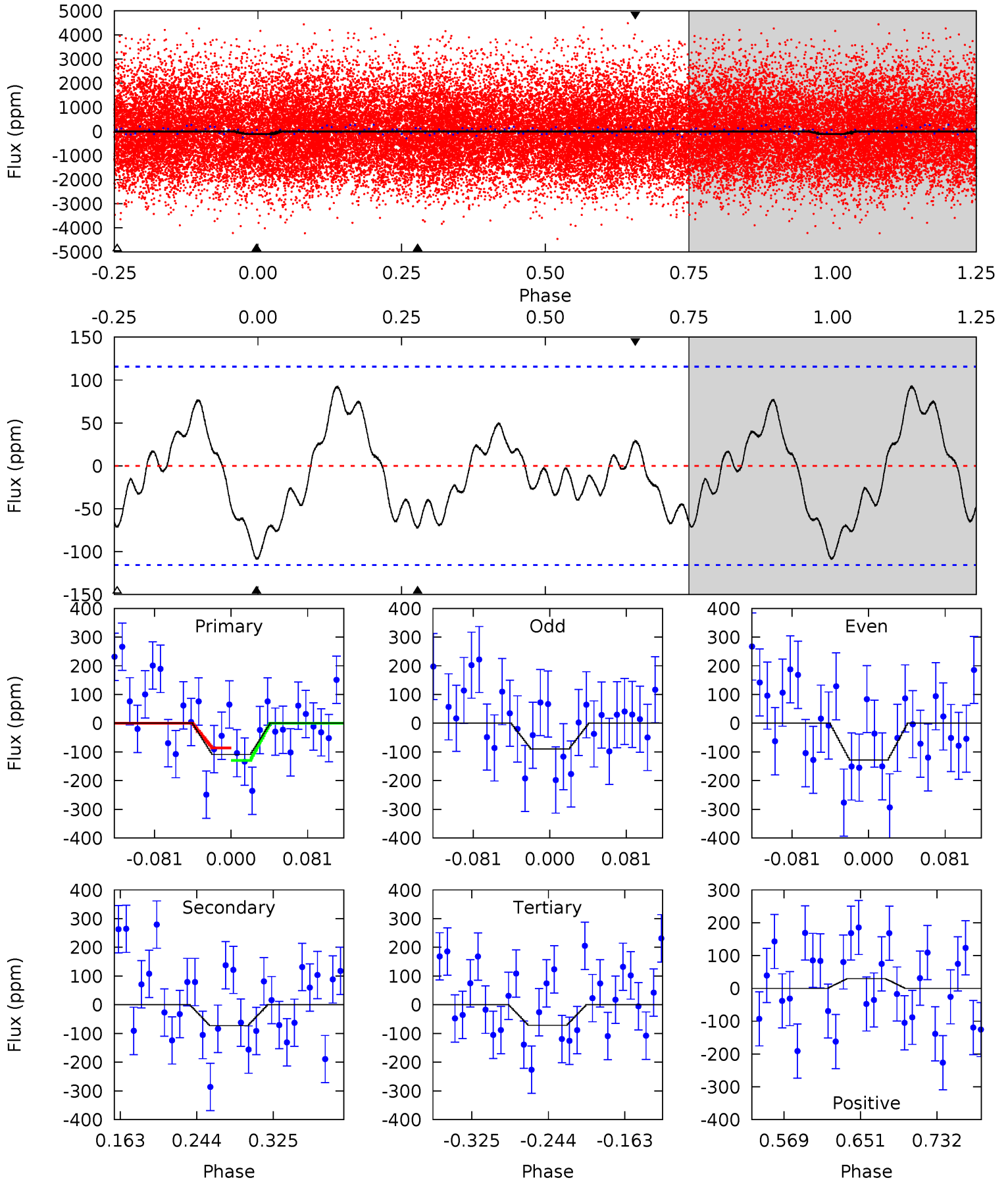
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.51	8.19	7.22	0	4.50	1.49	3.99	2.29	9.51	0.97	8.19	1.19	1.10	0.27	0.94



Alt Model-Shift Uniqueness Test

004679562-02, P = 0.966961 Days, E = 131.339087 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.35	2.89	2.86	1.18	4.61	1.74	1.48	1.49	3.16	0.03	1.71	0.78	0.52	0.46	0.86



Stellar Parameters For KIC 004679562

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7650^{+212}_{-318}	$3.713^{+0.400}_{-0.075}$	$-0.020^{+0.200}_{-0.350}$	$3.193^{+0.459}_{-1.470}$	$1.918^{+0.104}_{-0.417}$	$0.083^{+0.289}_{-0.021}$
	+3%/-4%	+11%/-2%	+1000%/-1750%	+14%/-46%	+5%/-22%	+348%/-25%
Source	KIC0	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 004679562-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-38 ± 5	$1.96^{+1.24}_{-0.97}$	5266^{+381}_{-545}	7060^{+4538}_{-1644}	$2.907^{+8.820}_{-1.819}$
Alt.	-73 ± 25	$3.25^{+1.35}_{-1.13}$	5269^{+364}_{-592}	6377^{+1780}_{-1321}	$1.964^{+2.812}_{-1.095}$

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 $A_{obs} \gg 1.0$

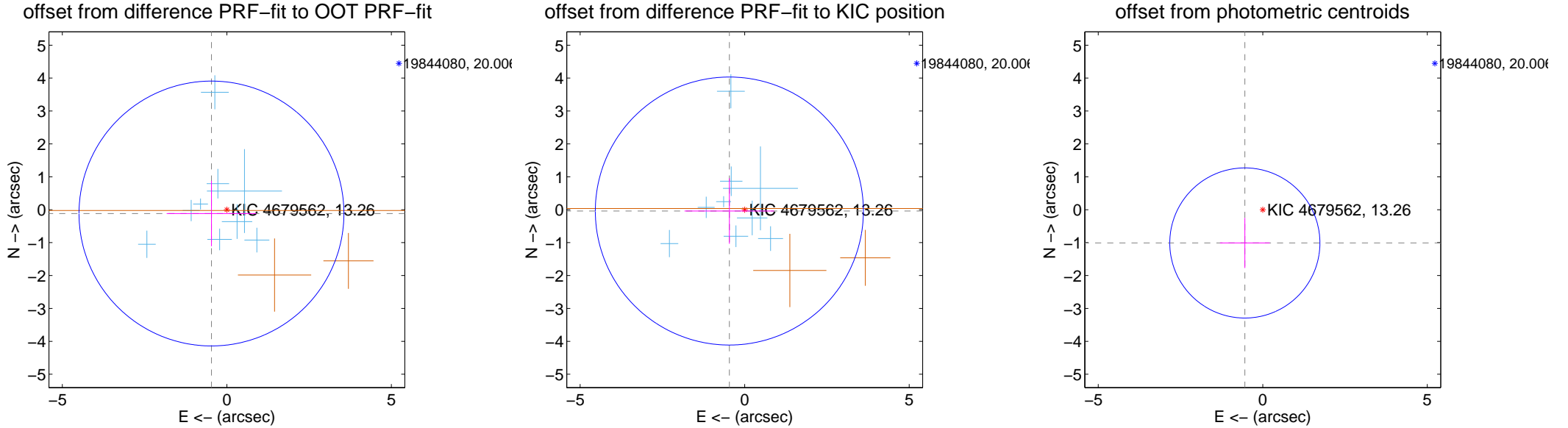
DV Centroid Data

Supplemental centroid analysis for 004679562-02. Kepler magnitude: 13.26. Transit SNR 7.14

There are 9 quarters with good PRF difference image offsets

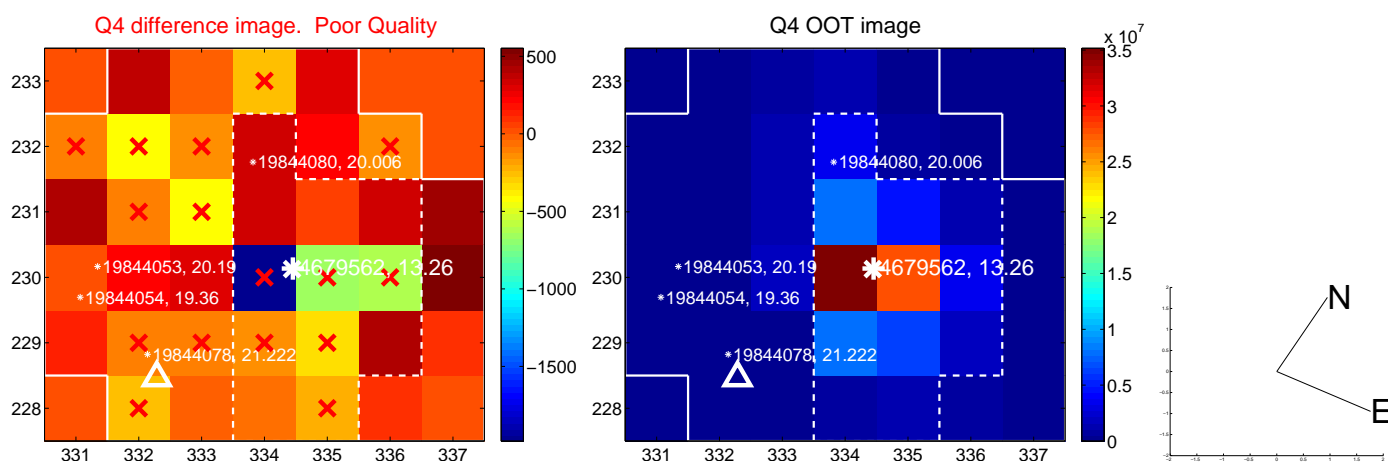
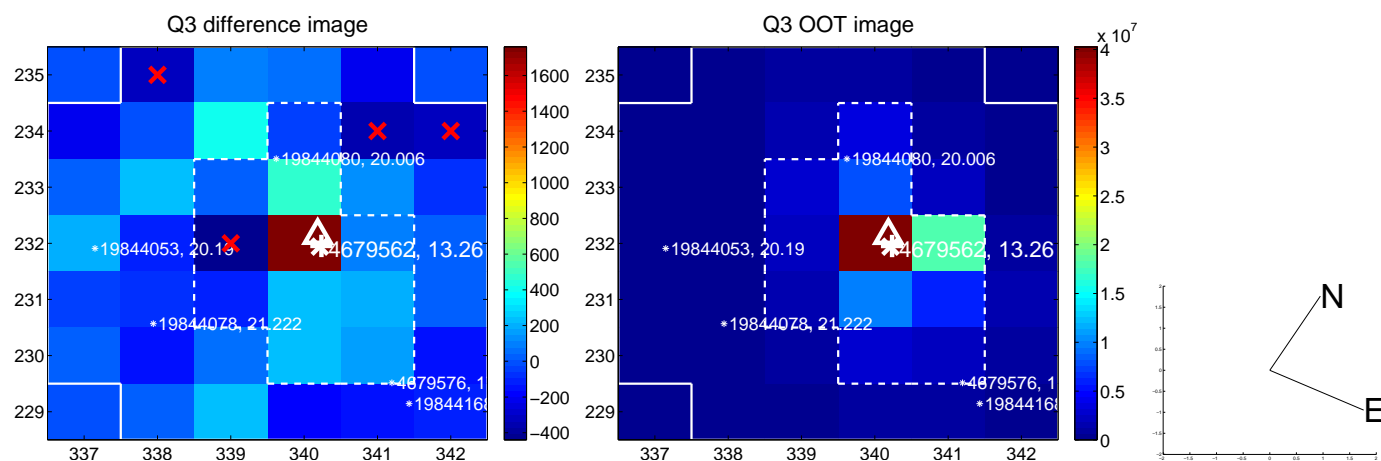
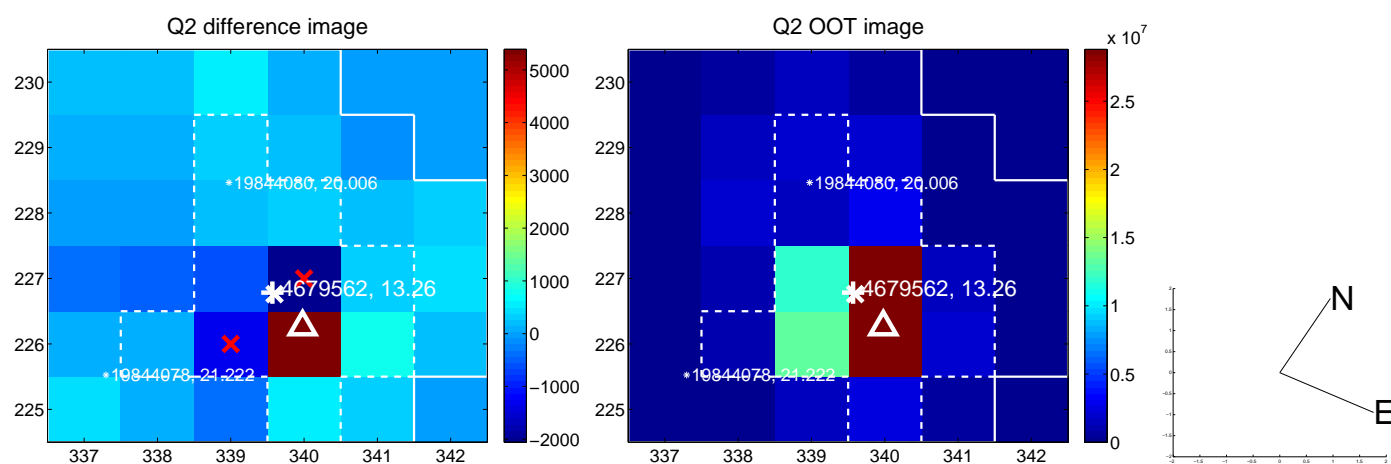
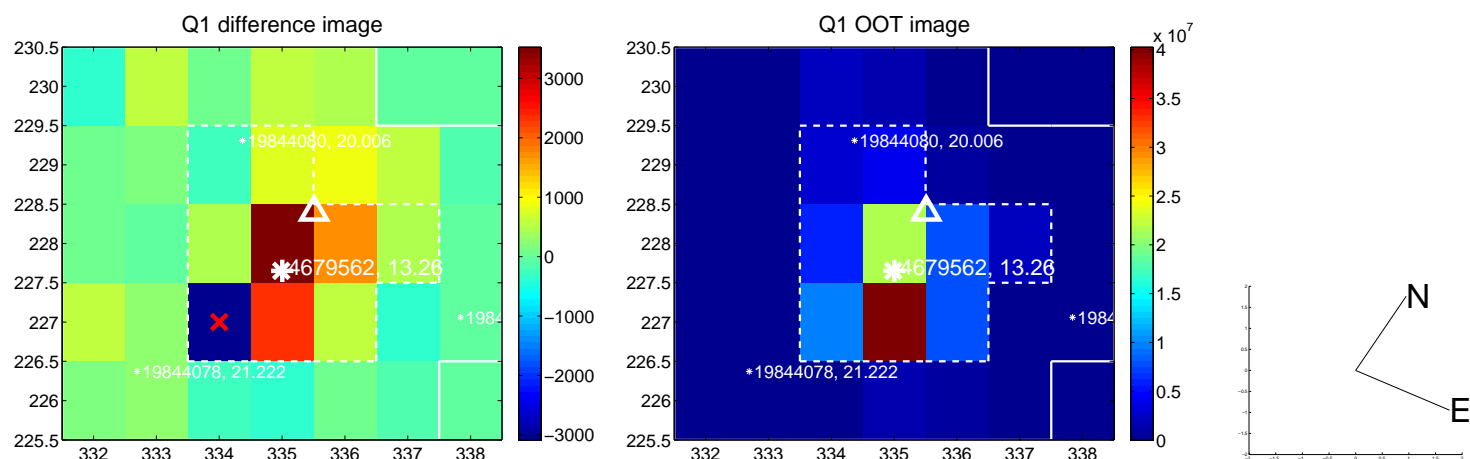
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.482 ± 1.341	0.36	0.467 ± 1.360	-0.116 ± 0.995
PRF-fit source offset from KIC position	0.467 ± 1.357	0.34	0.465 ± 1.360	-0.040 ± 0.995
photometric centroid source offset	1.15 ± 0.76	1.51	0.54 ± 0.76	-1.01 ± 0.76

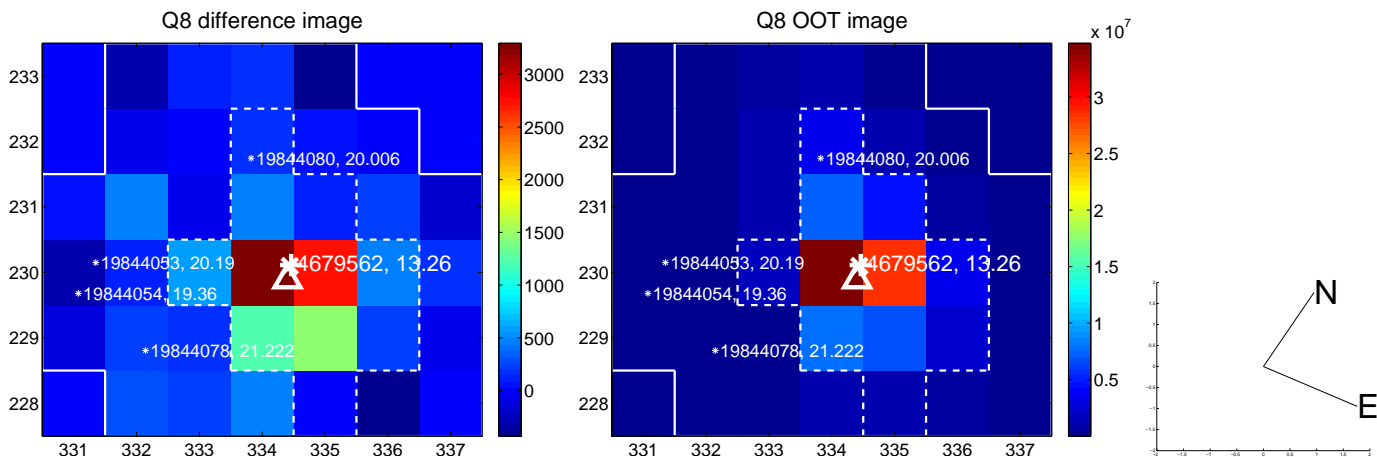
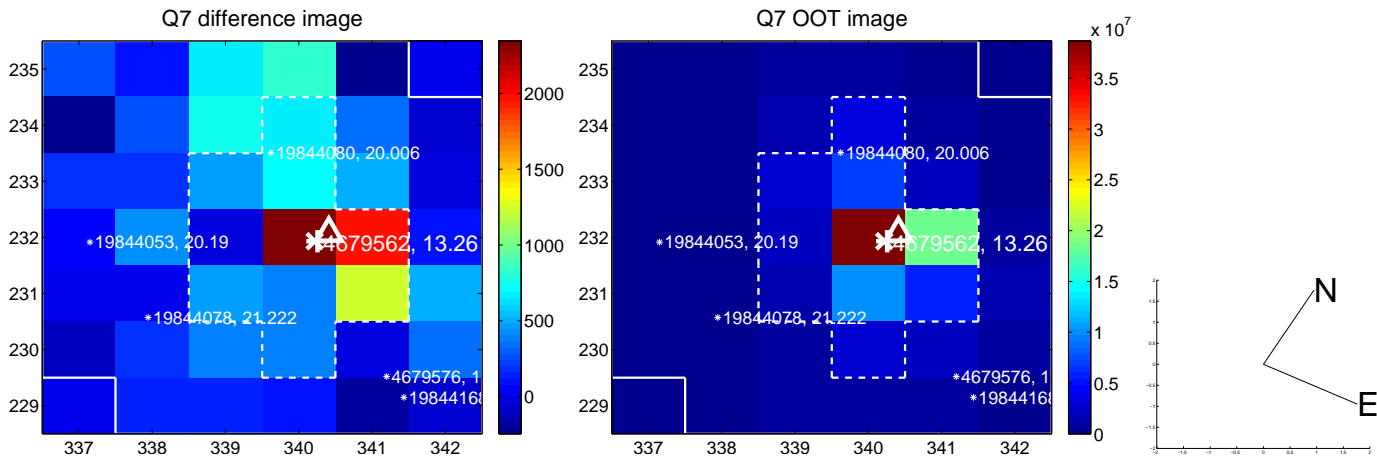
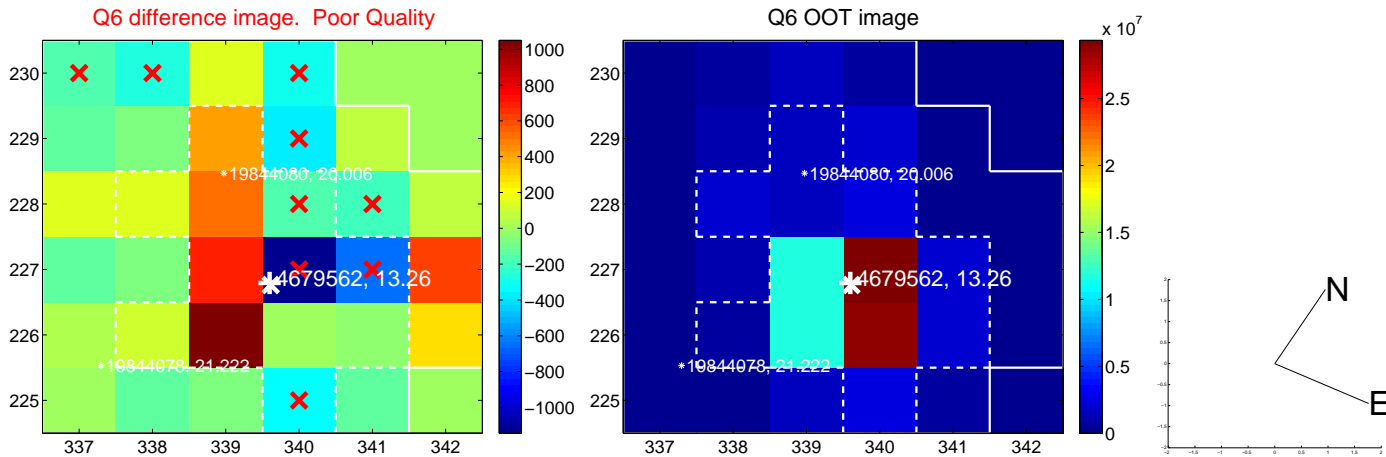
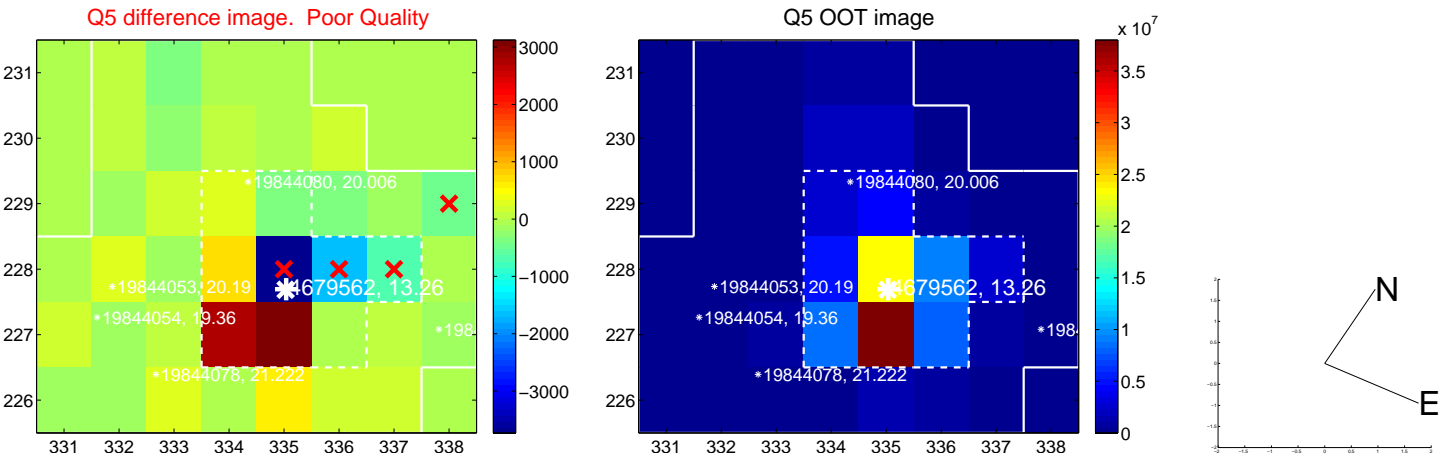


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

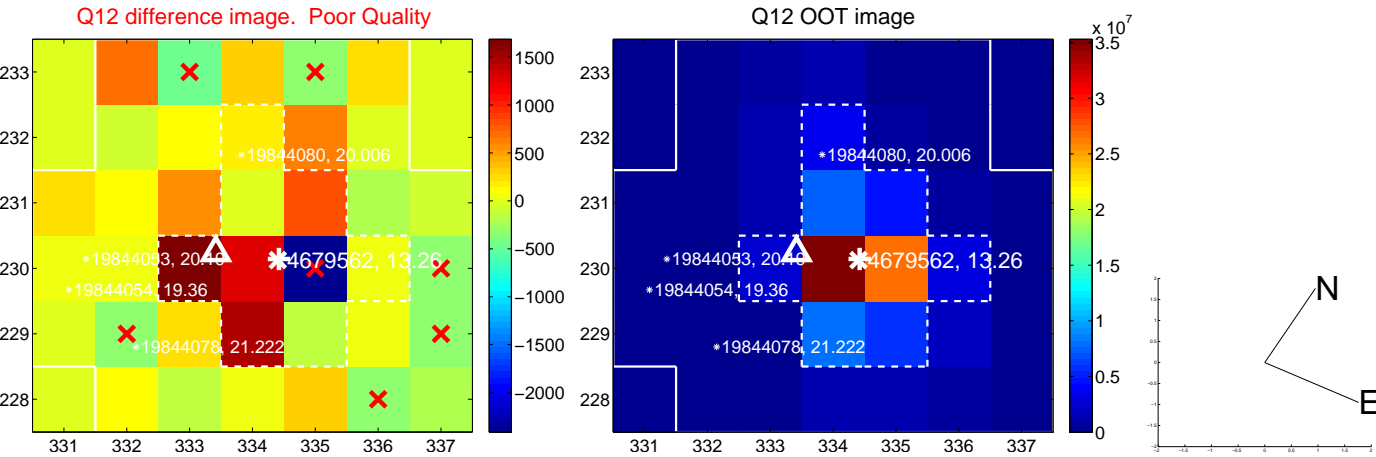
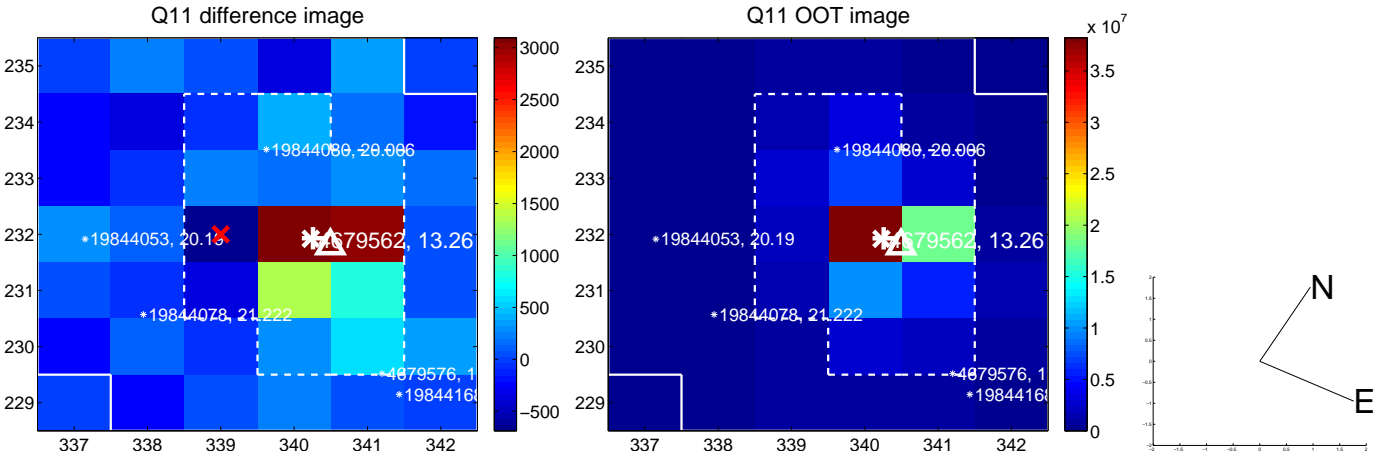
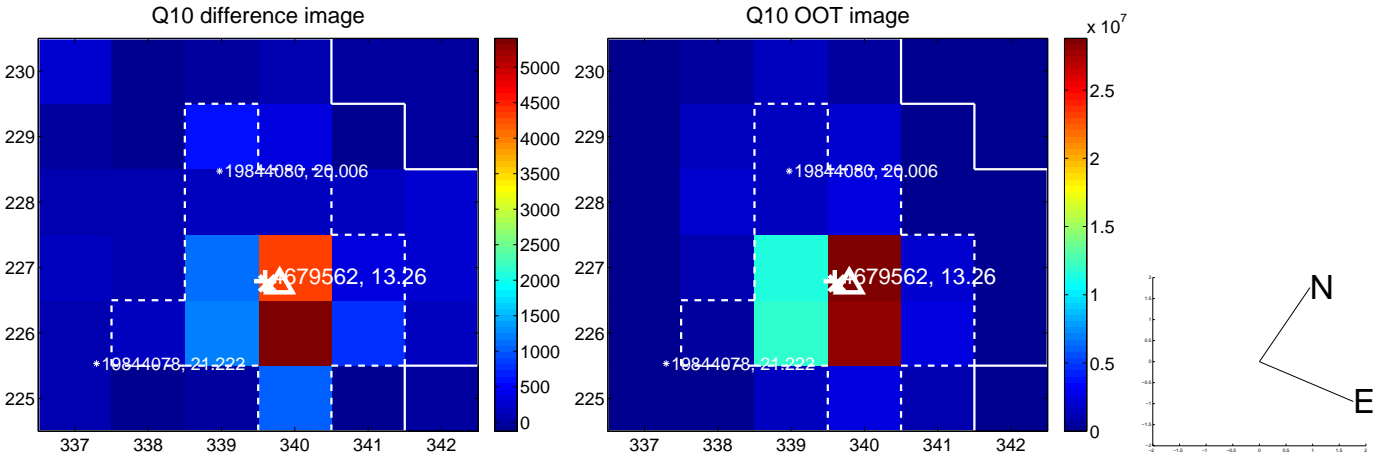
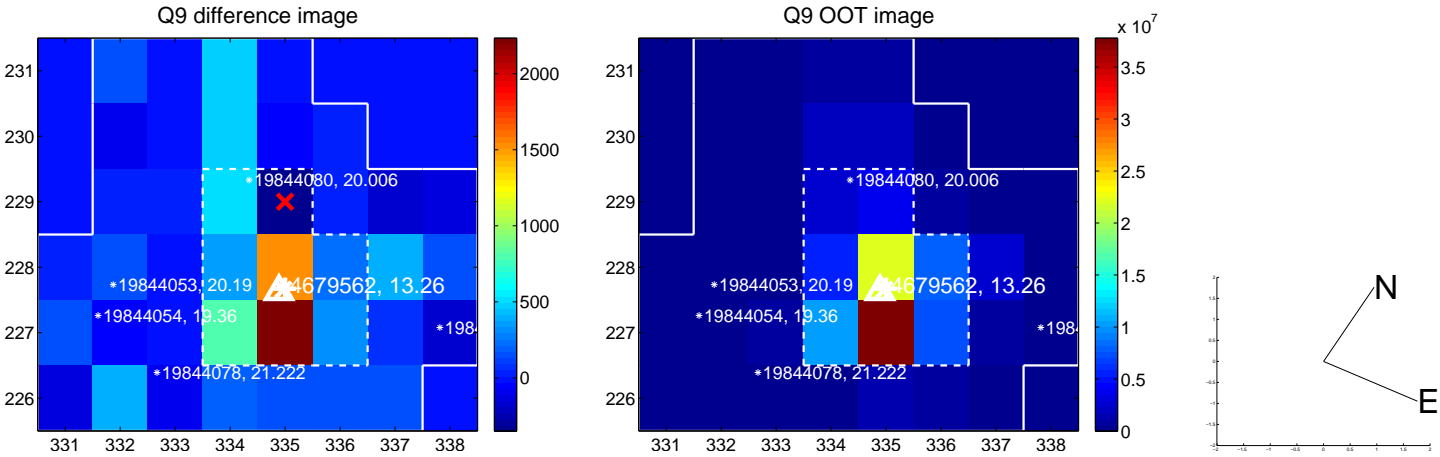
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



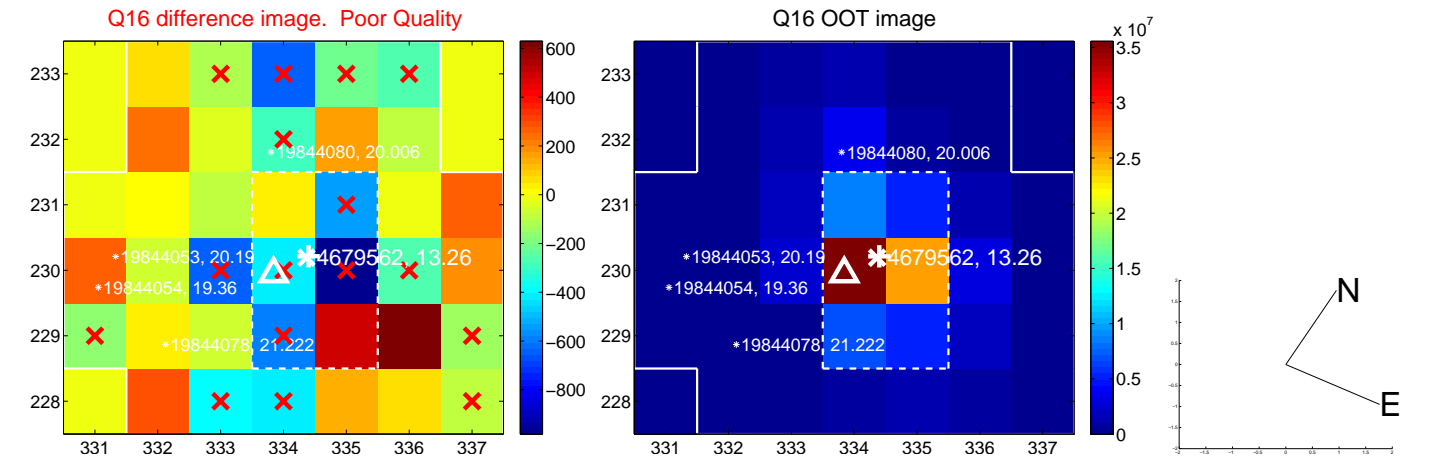
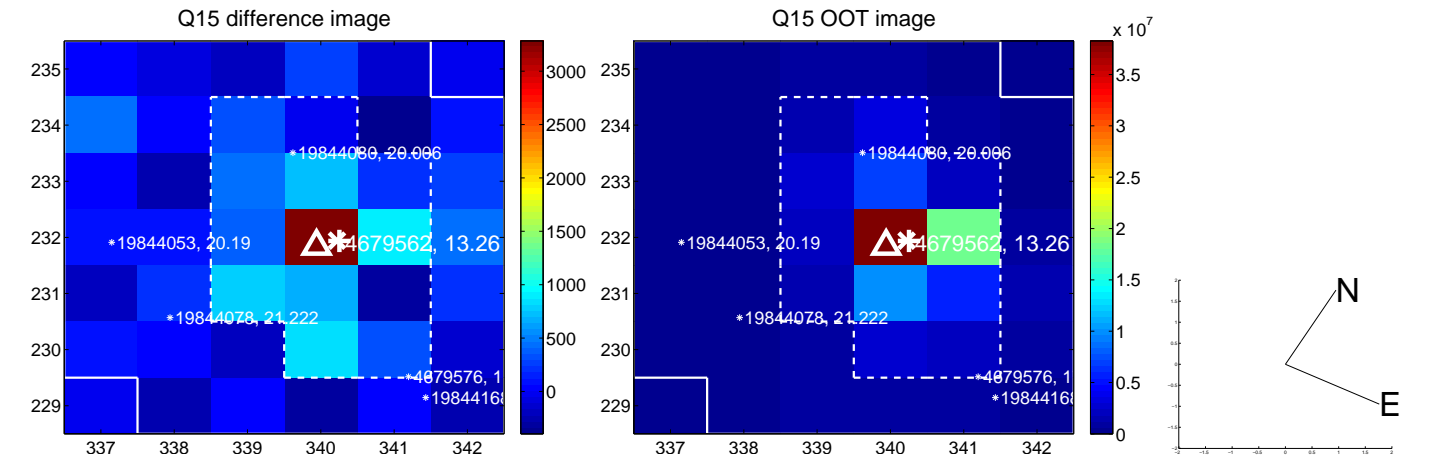
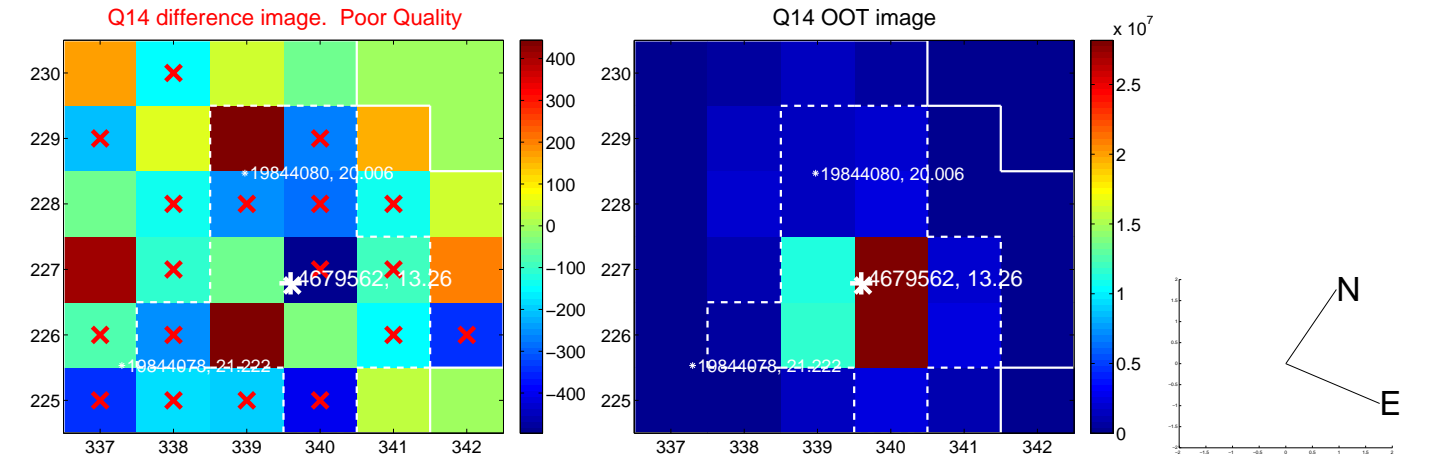
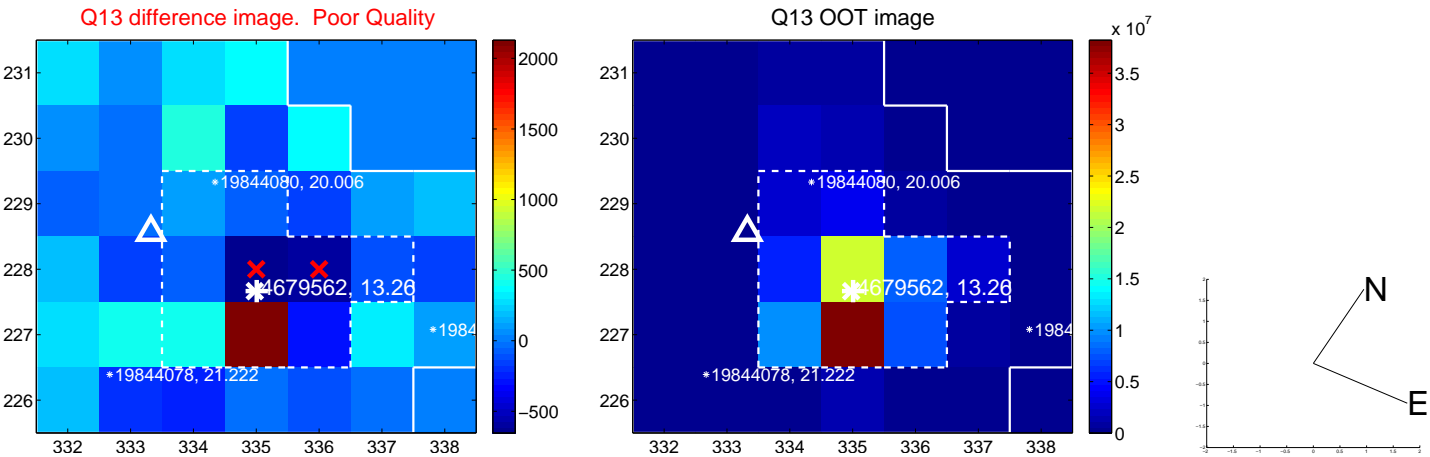
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



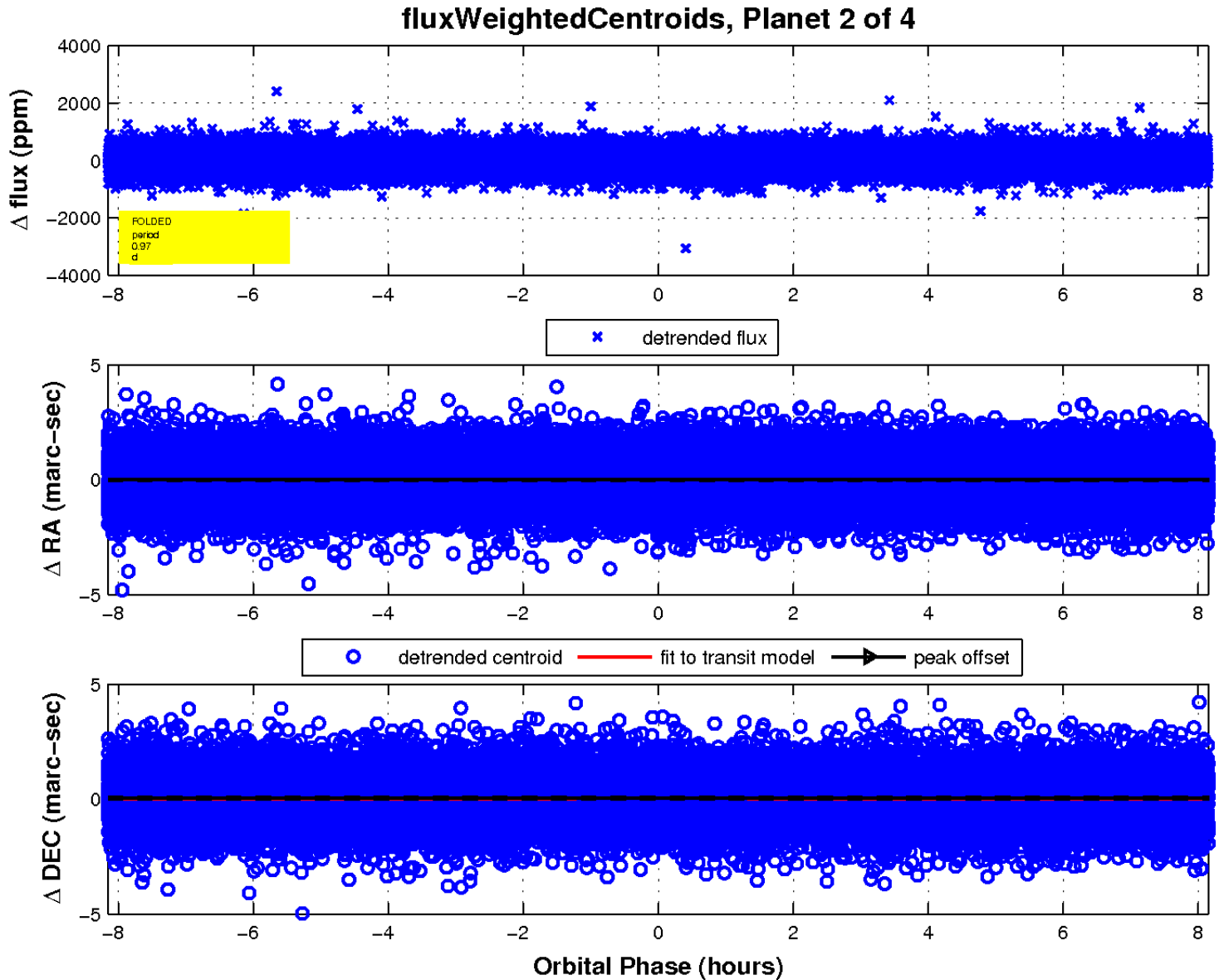
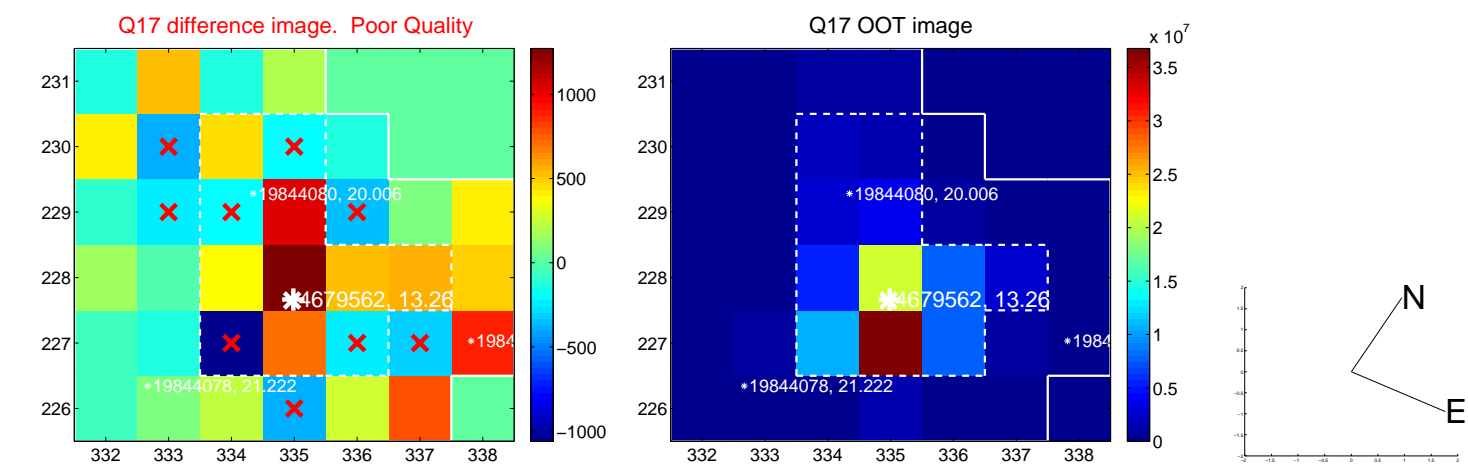
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

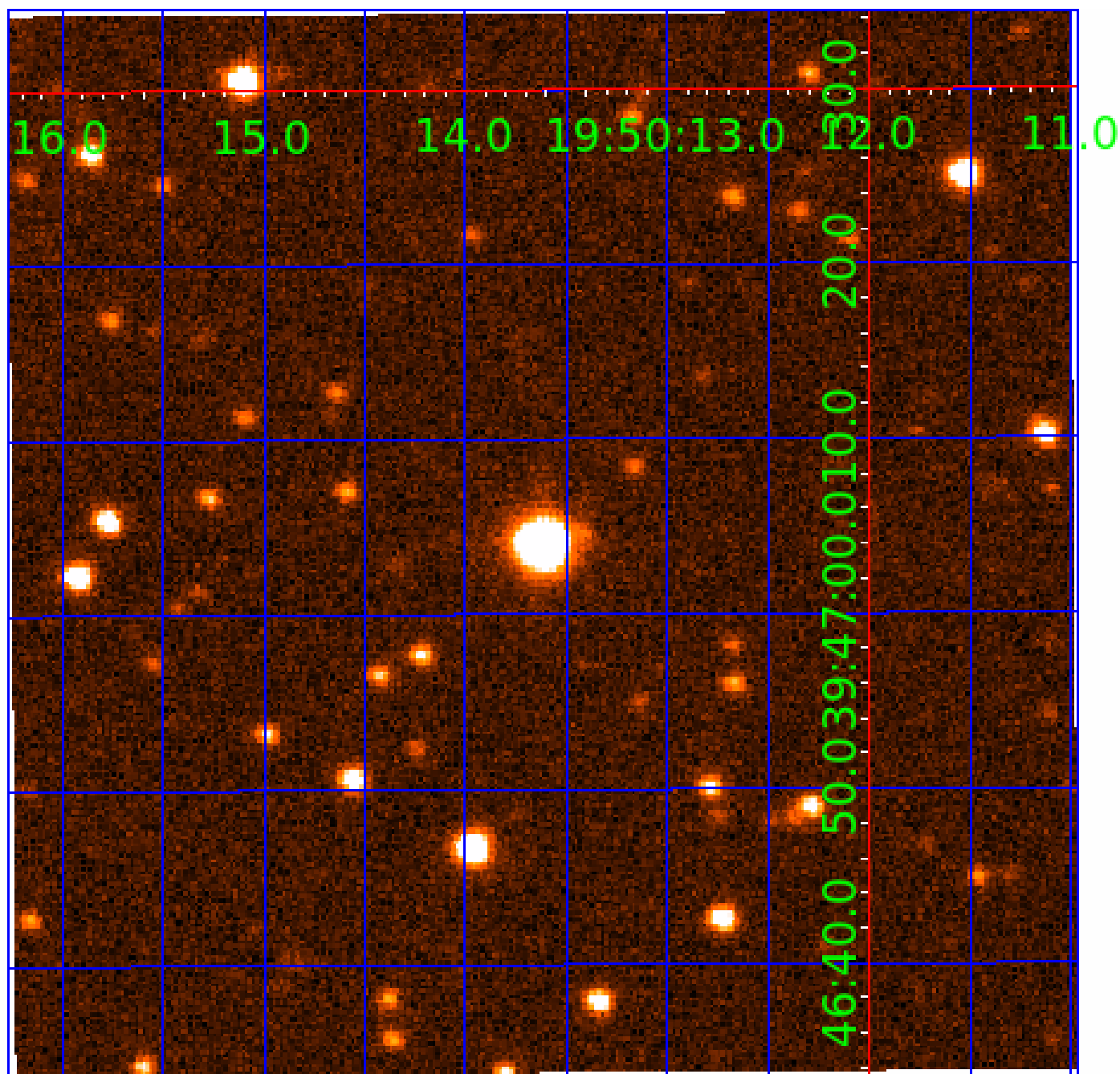


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004679562

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})
004679562-01	OBS	No	1.692257	131.618355	24.7	6.842	10.9	6.2	3.19	7650	1.62	26205.00
004679562-02	OBS	No	0.966938	132.304429	36.8	2.719	8.9	7.1	3.19	7650	2.25	55268.10
004679562-03	OBS	No	52.283236	153.390200	265.7	6.741	8.1	7.4	3.19	7650	5.73	270.31
004679562-04	OBS	No	110.723491	137.532362	314.5	7.909	8.2	5.8	3.19	7650	5.93	99.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004679562-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004679562-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004679562-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
004679562-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

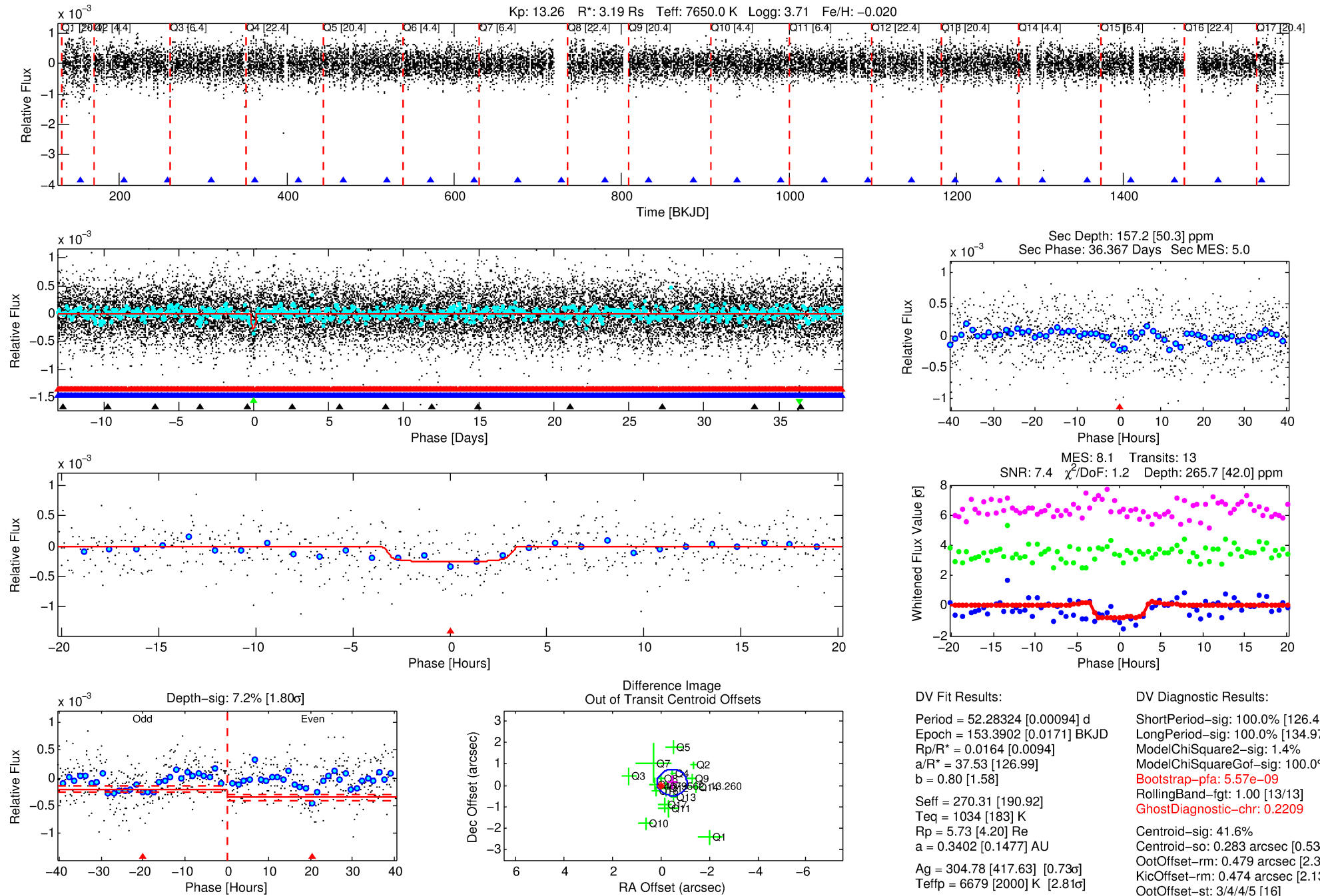
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004679562-03

No Significant Match Found

DV One-Page Summary

KIC: 4679562 Candidate: 3 of 4 Period: 52.283 d



DV Fit Results:

Period = 52.28324 [0.00094] d
Epoch = 153.3902 [0.0171] BKJD
Rp/R* = 0.0164 [0.0094]
a/R* = 37.53 [126.99]
b = 0.80 [1.58]
Seff = 270.31 [190.92]
Teq = 1034 [183] K
Rp = 5.73 [4.20] Re
a = 0.3402 [0.1477] AU
Ag = 304.78 [417.63] [0.73 σ]
Teff = 6679 [2000] K [2.81 σ]

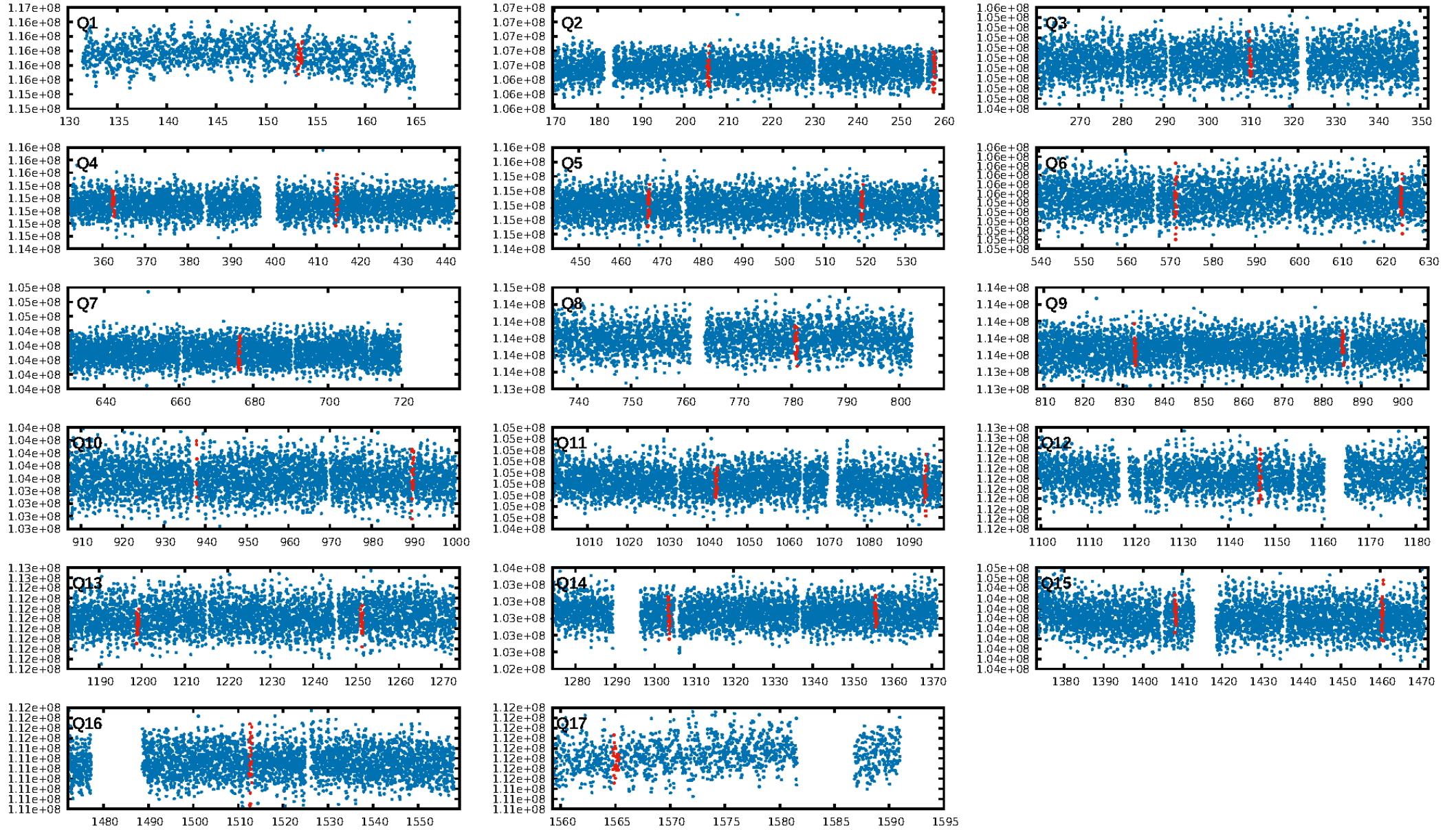
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [126.42 σ]
LongPeriod-sig: 100.0% [134.97 σ]
ModelChiSquare2-sig: 1.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.57e-09
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: 0.2209
Centroid-sig: 41.6%
Centroid-so: 0.283 arcsec [0.53 σ]
OotOffset-rm: 0.479 arcsec [2.34 σ]
KicOffset-rm: 0.474 arcsec [2.13 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.62 [10/16]
DiffImageOverlap-fno: 0.00 [0/17]

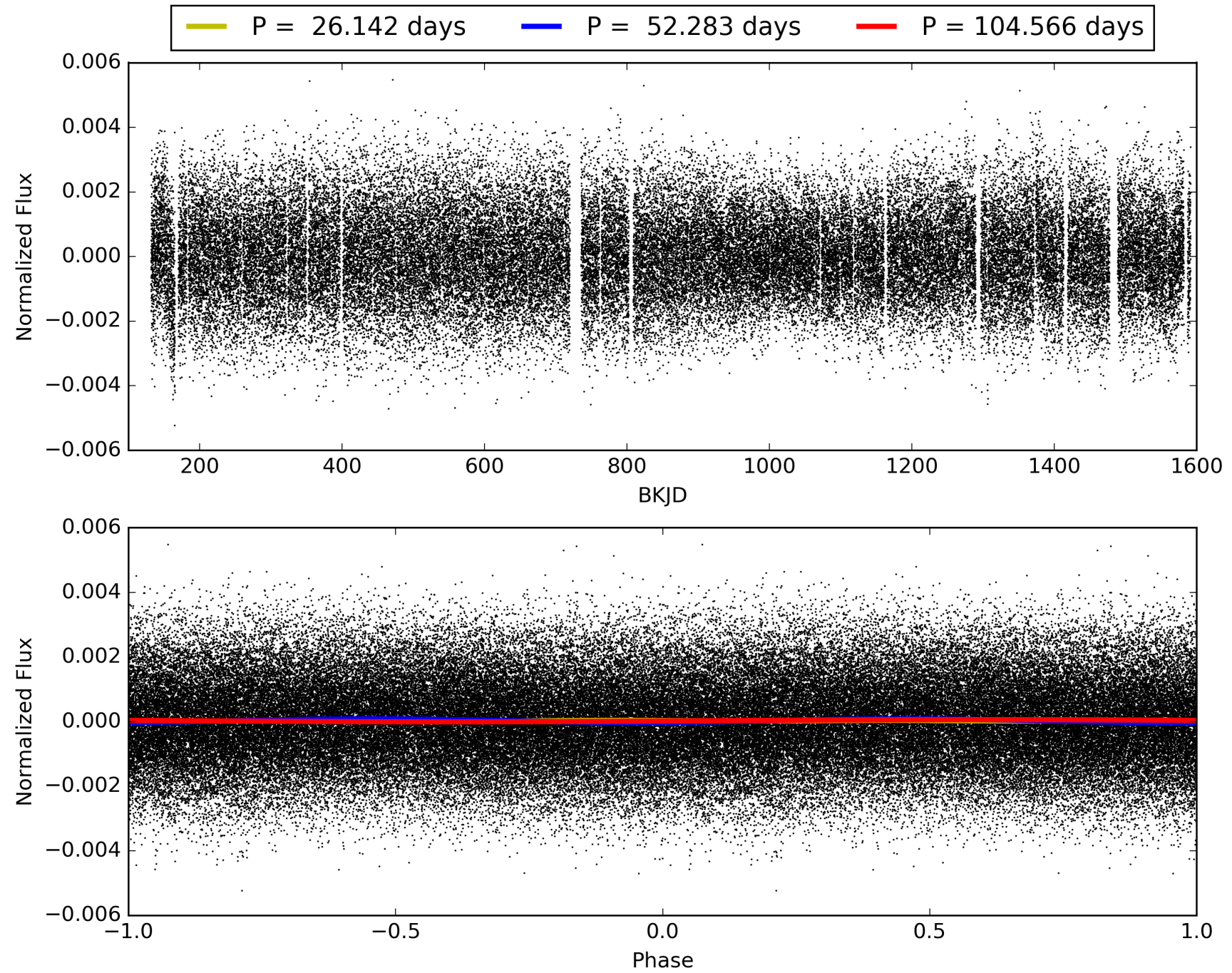
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:00:48 Z

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

TCE 004679562-03, PDC Light Curves

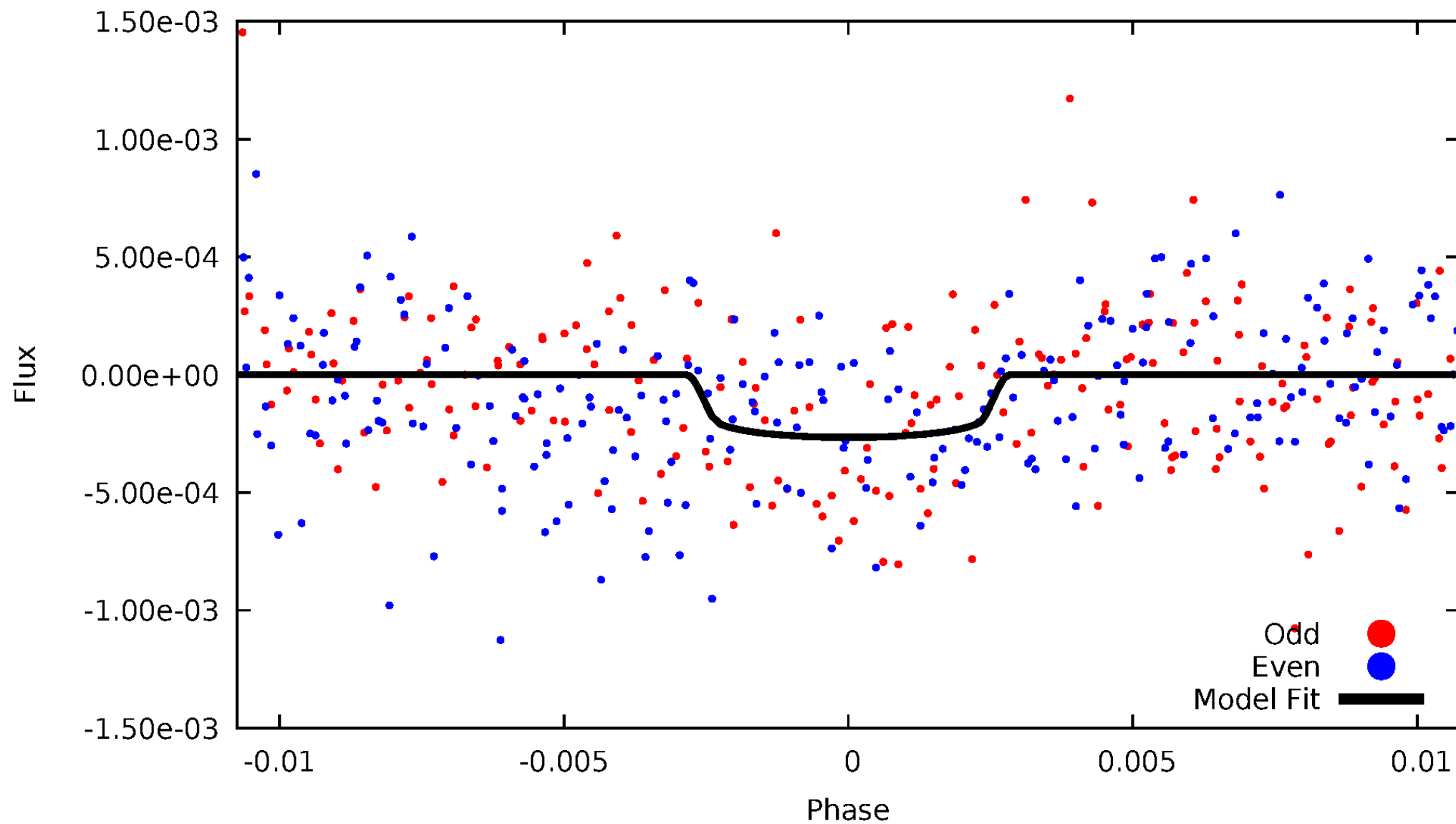


TCE 004679562-03



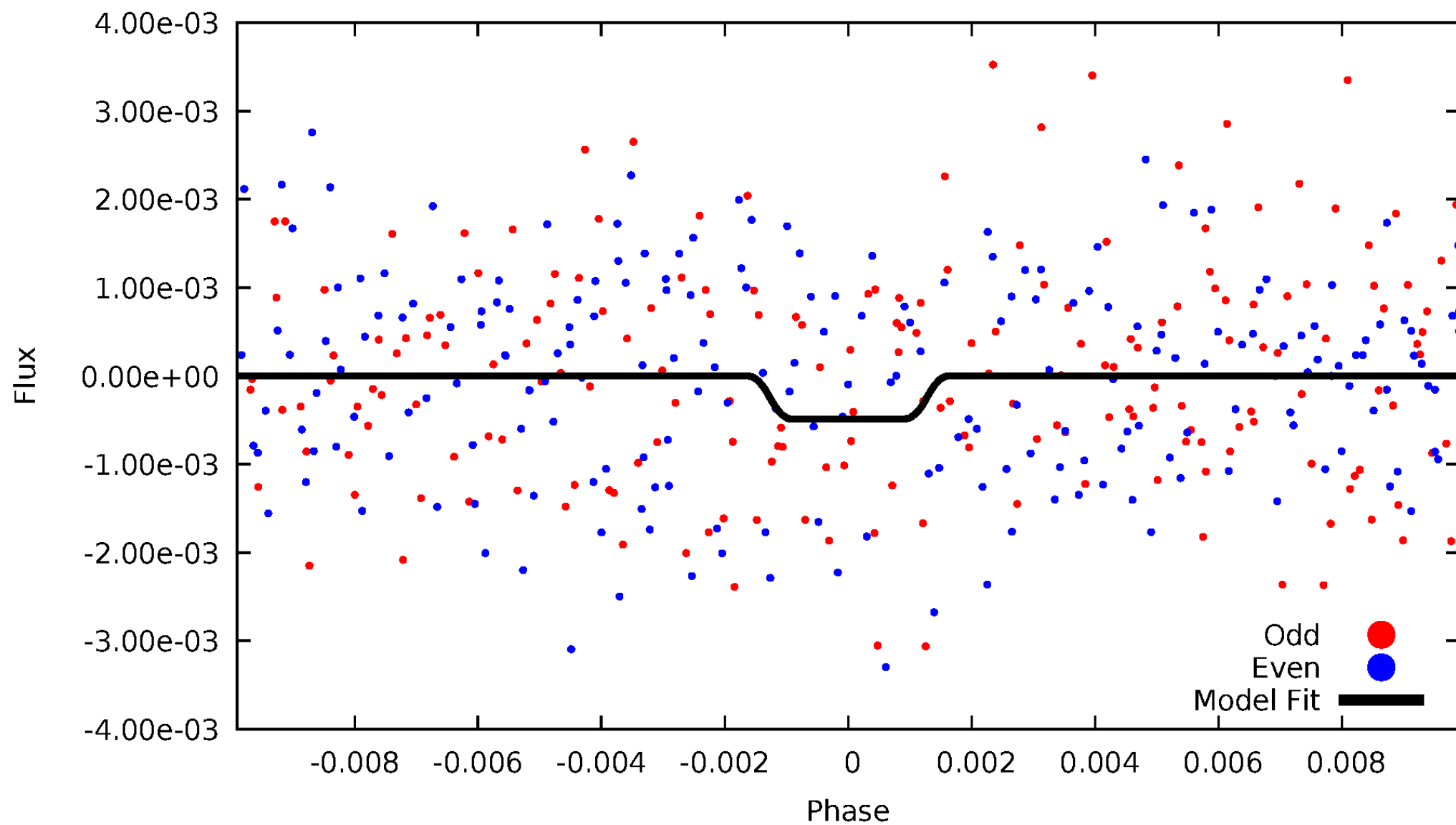
DV Odd/Even

TCE 004679562-03

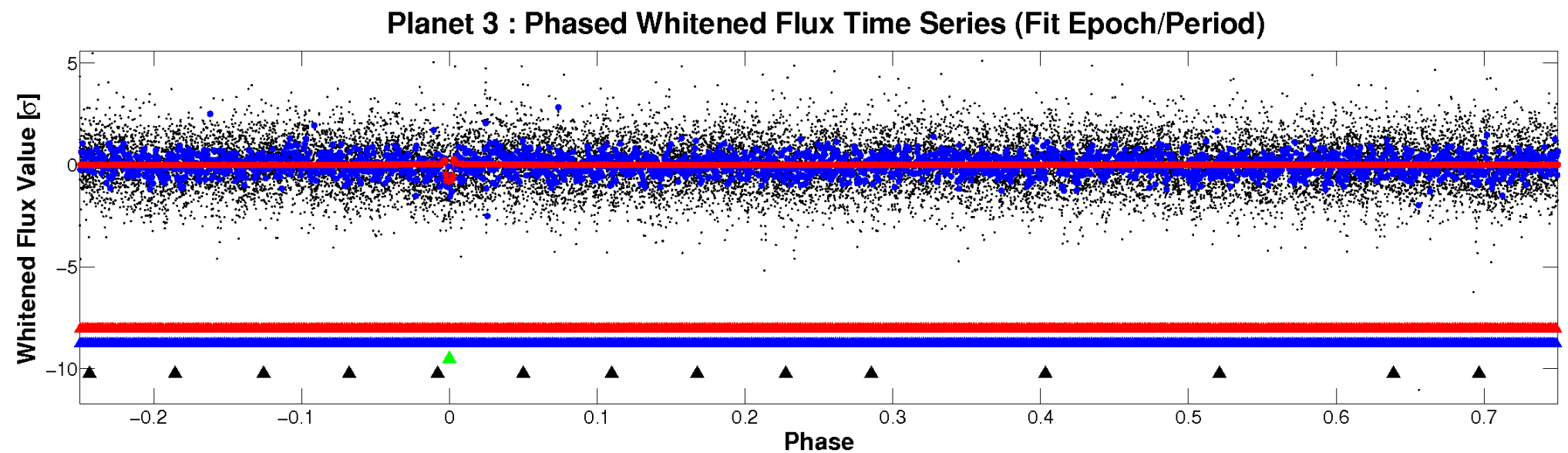
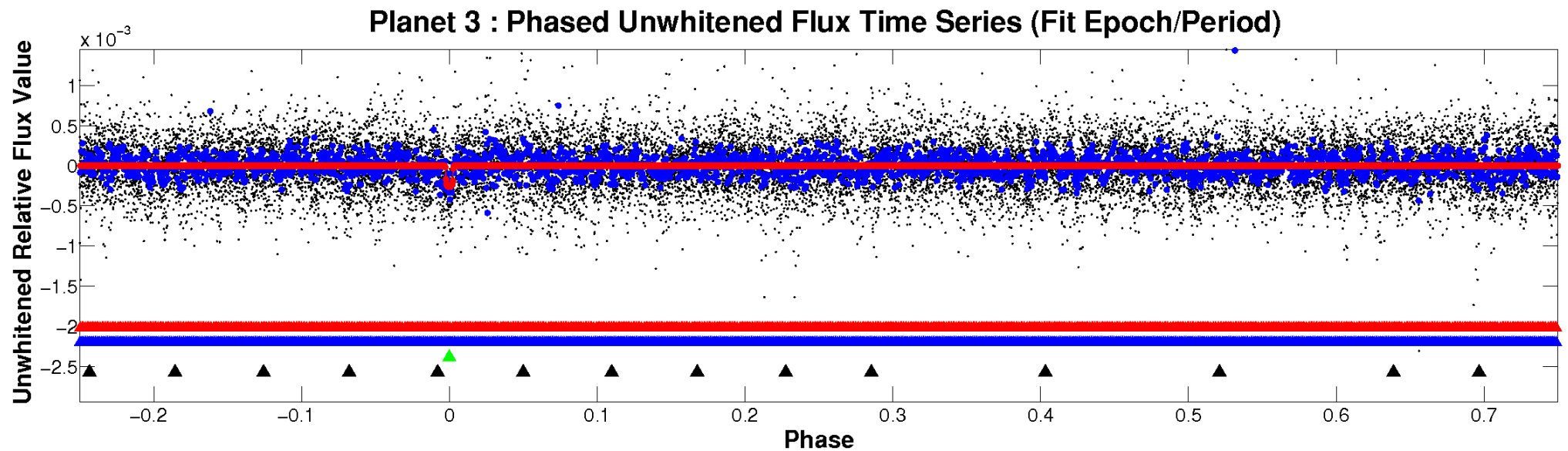


ALT Odd/Even

TCE 004679562-03

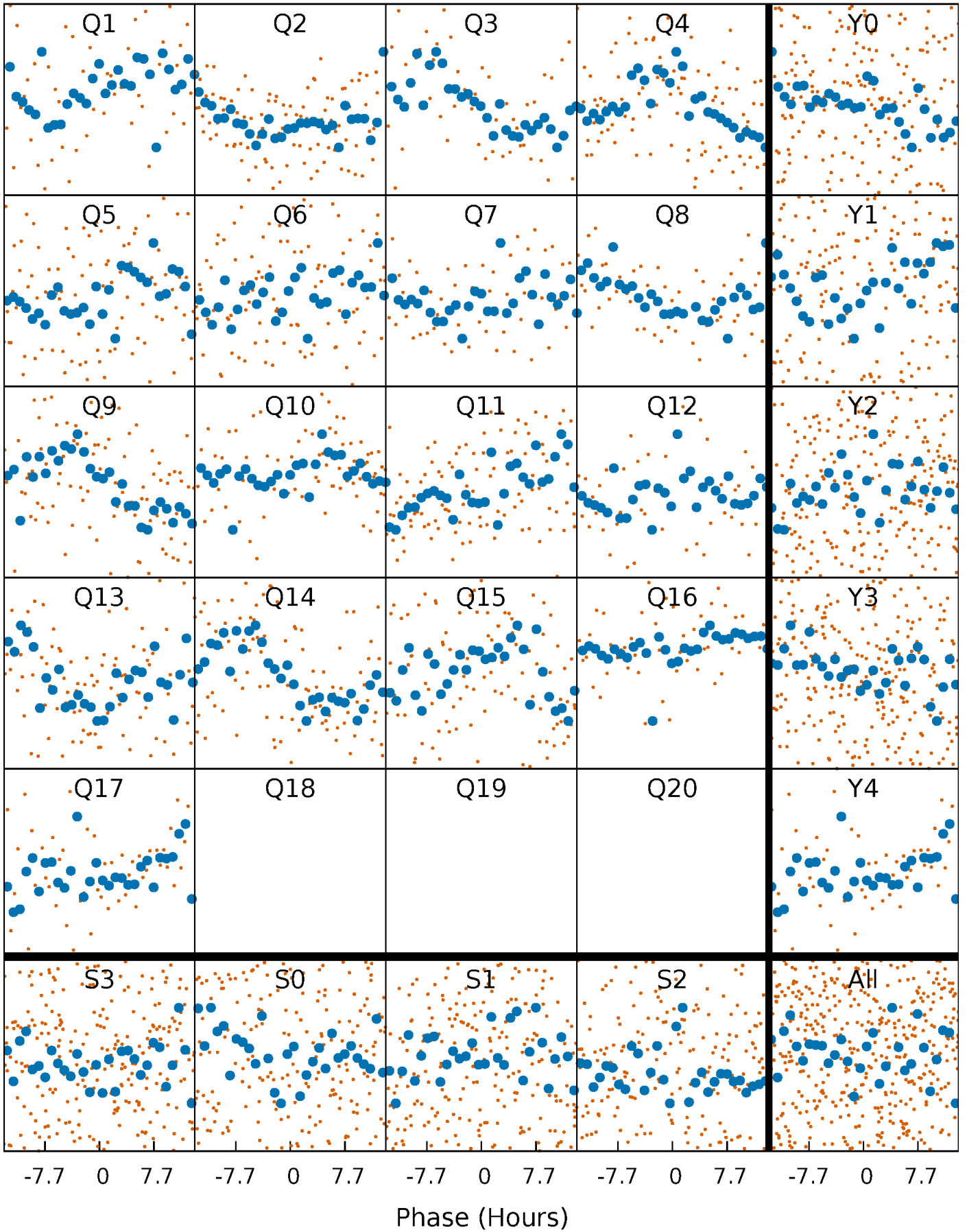


Non-Whitened Vs. Whitened Light Curve



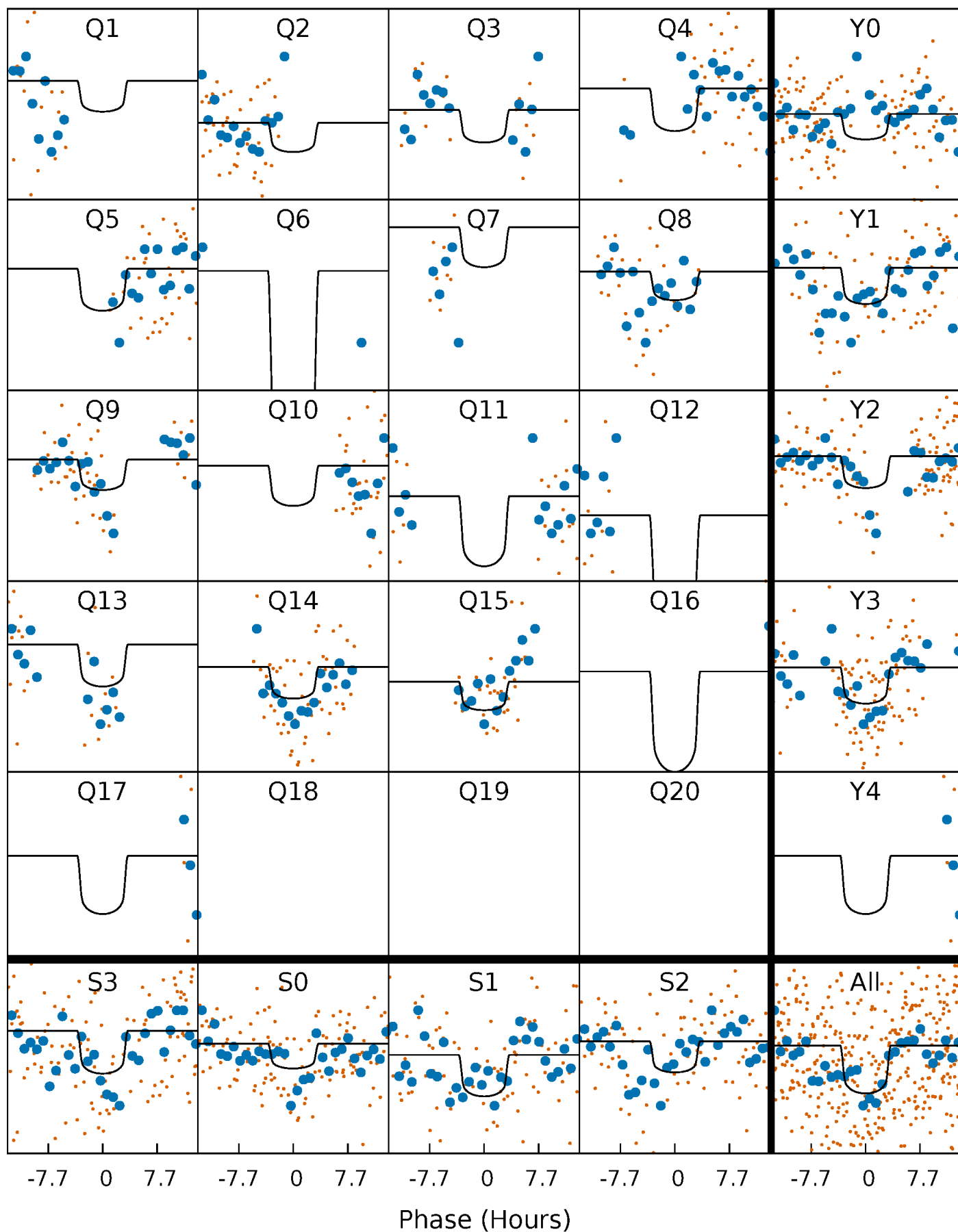
PDC Quarter-Phased Transit Curves

TCE 004679562-03 P= 52.283236 Days $T_0=153.390200$ (BKJD)



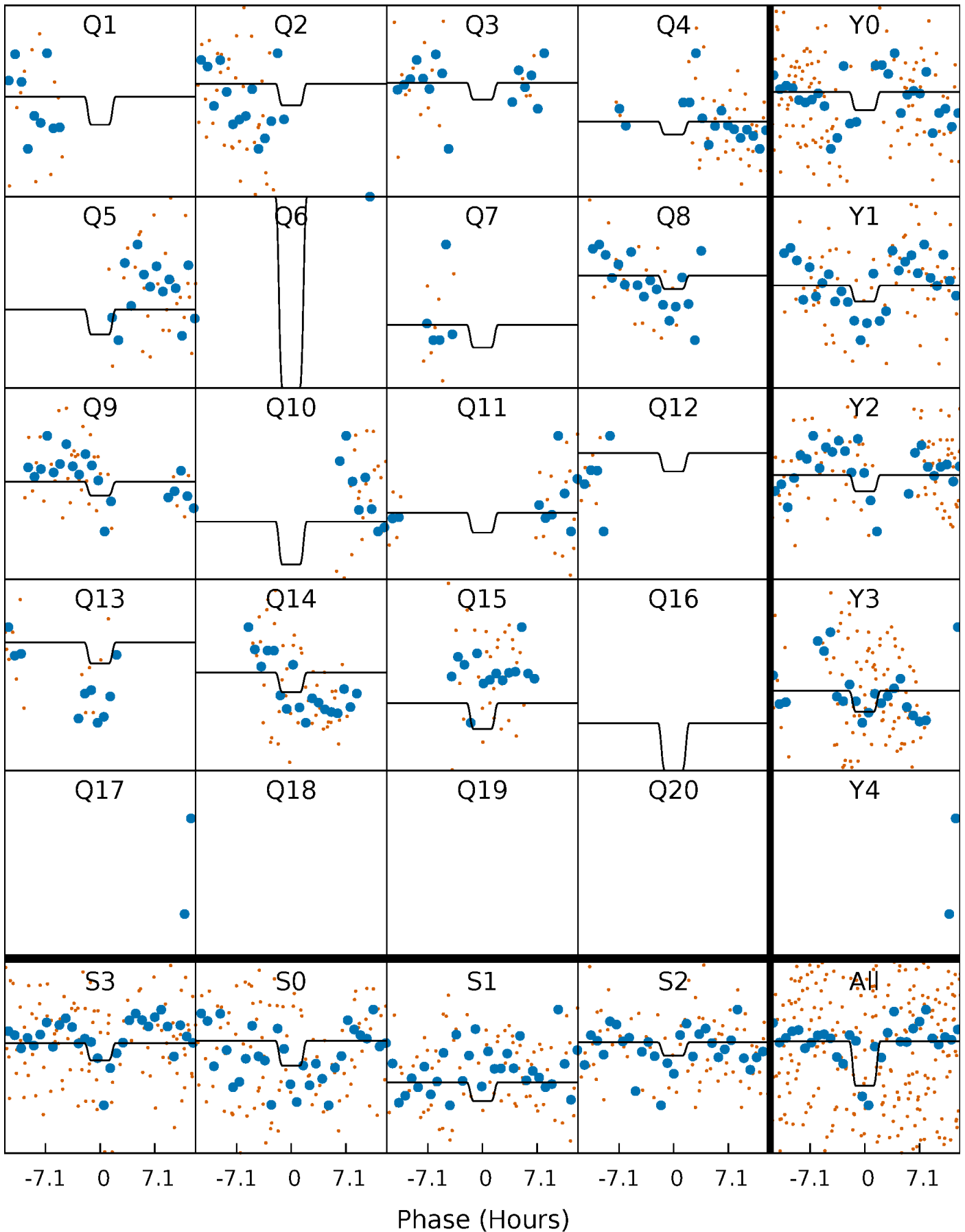
DV Quarter-Phased Transit Curves

TCE 004679562-03 $P = 52.283236$ Days $T_0 = 153.390200$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

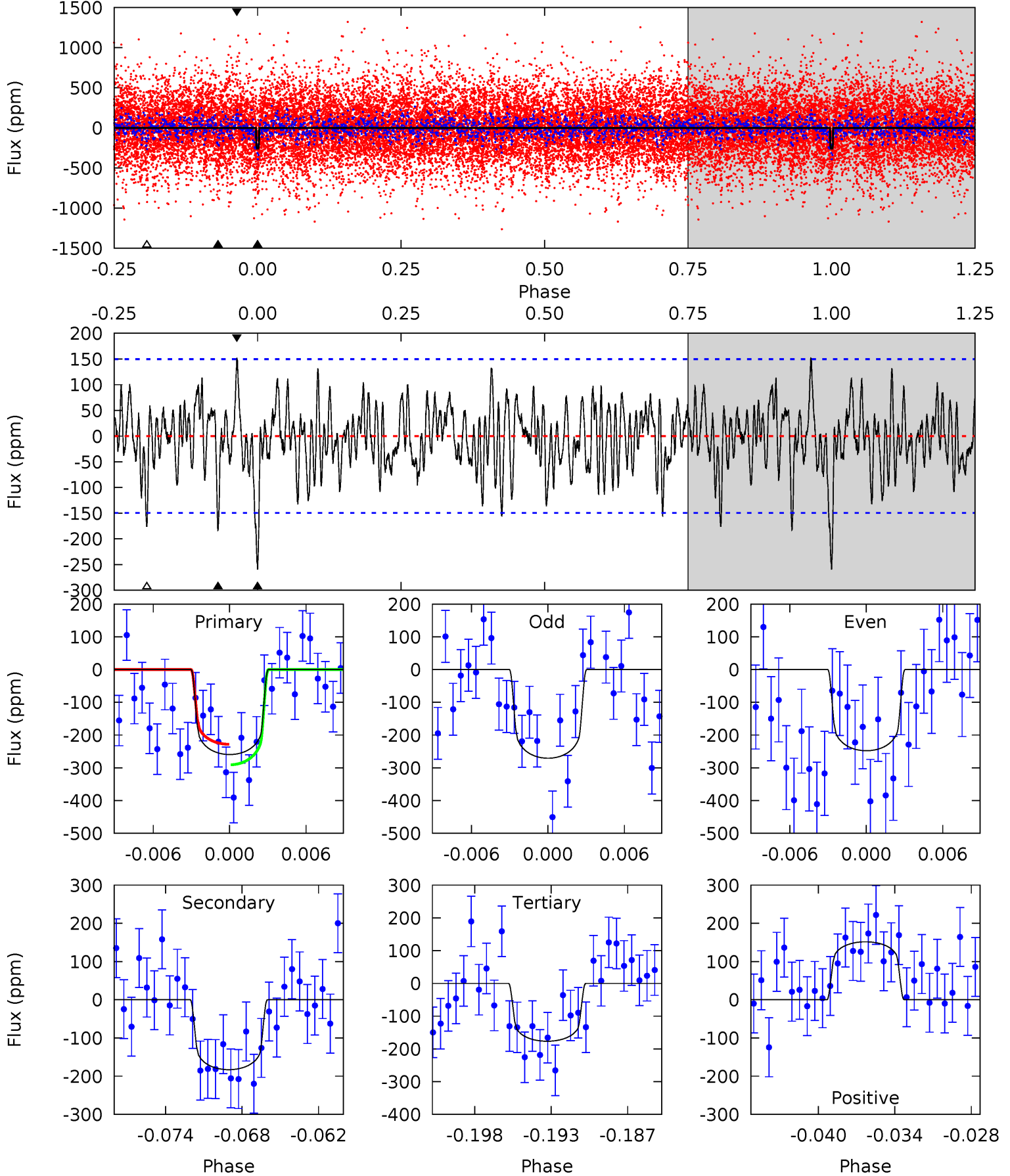
TCE 004679562-03 P= 52.284426 Days $T_0=153.378079$ (BKJD)



DV Model-Shift Uniqueness Test

004679562-03, P = 52.283236 Days, E = 101.106964 Days

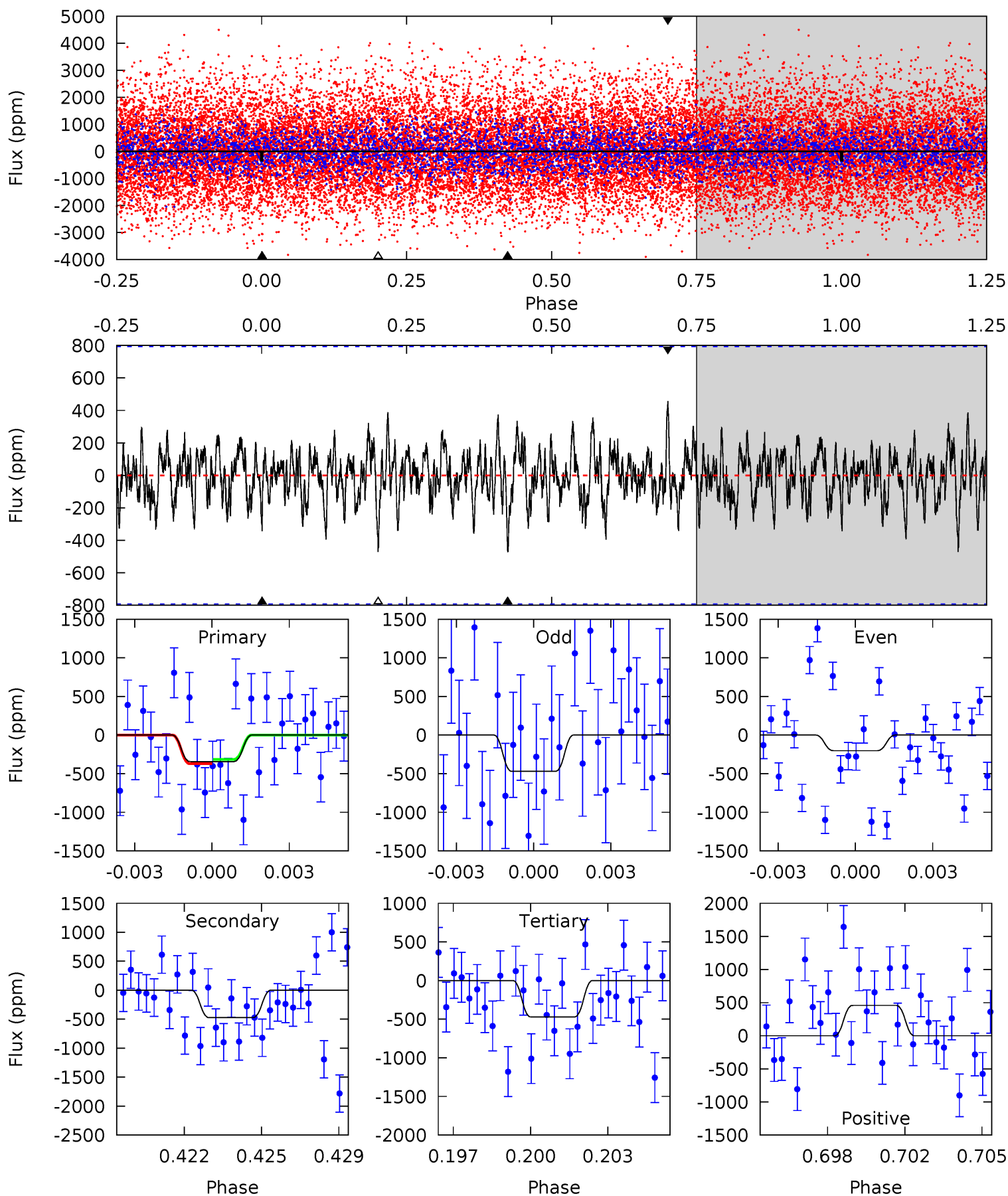
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.91	6.28	6.07	5.21	5.13	2.77	1.83	2.85	3.70	0.22	1.08	0.40	0.72	0.37	1.07



Alt Model-Shift Uniqueness Test

004679562-03, P = 52.284426 Days, E = 101.093653 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.26	3.12	3.11	3.02	5.24	2.95	0.88	-0.85	-0.76	0.01	0.10	0.89	1.40	0.49	0.18



Stellar Parameters For KIC 004679562

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7650^{+212}_{-318}	$3.713^{+0.400}_{-0.075}$	$-0.020^{+0.200}_{-0.350}$	$3.193^{+0.459}_{-1.470}$	$1.918^{+0.104}_{-0.417}$	$0.083^{+0.289}_{-0.021}$
	+3%/-4%	+11%/-2%	+1000%/-1750%	+14%/-46%	+5%/-22%	+348%/-25%
Source	KIC0	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 004679562-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-183 ± 29	$5.16^{+3.33}_{-2.66}$	1398^{+99}_{-147}	6670^{+3481}_{-1254}	431^{+1282}_{-272}
Alt.	-473 ± 152	$6.68^{+3.56}_{-3.15}$	1390^{+93}_{-171}	7524^{+3857}_{-1540}	618^{+1644}_{-366}

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

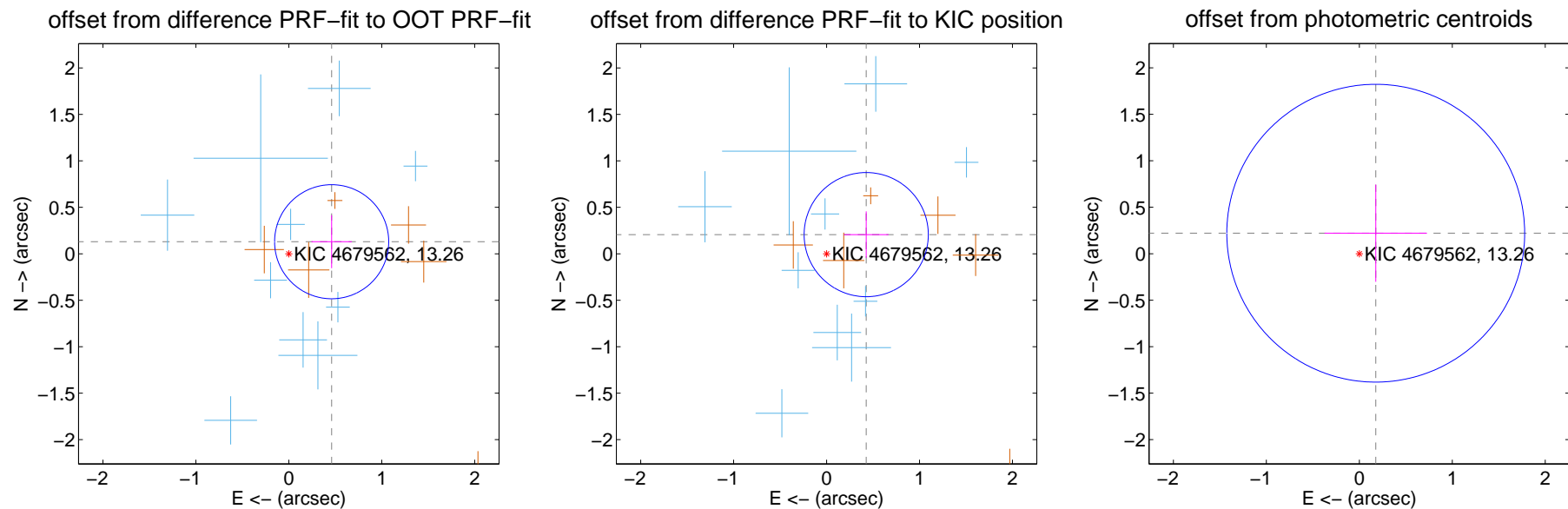
DV Centroid Data

Supplemental centroid analysis for 004679562-03. Kepler magnitude: 13.26. Transit SNR 7.41

There are 10 quarters with good PRF difference image offsets

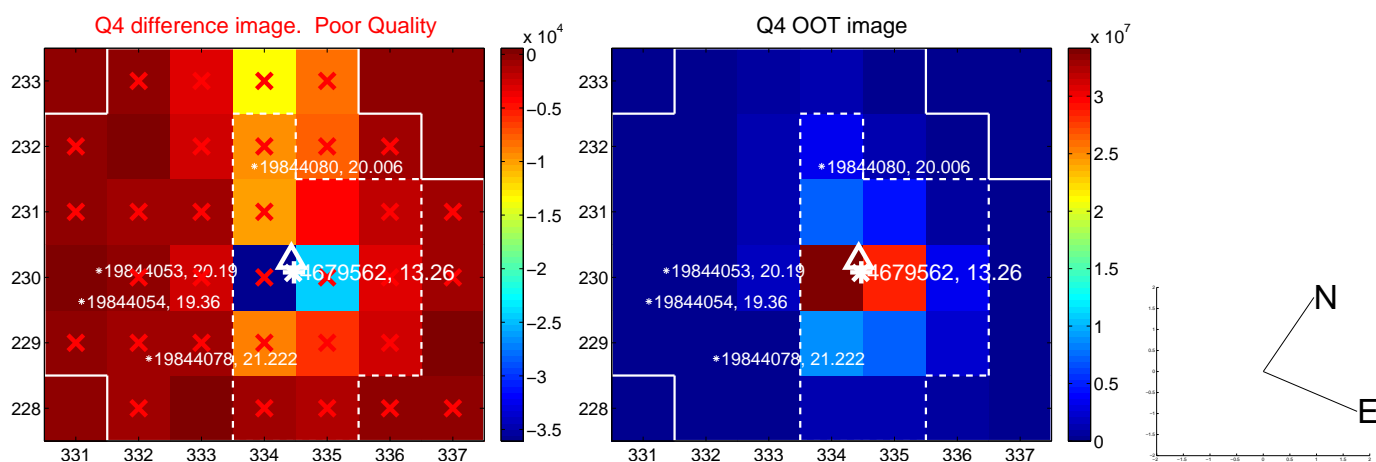
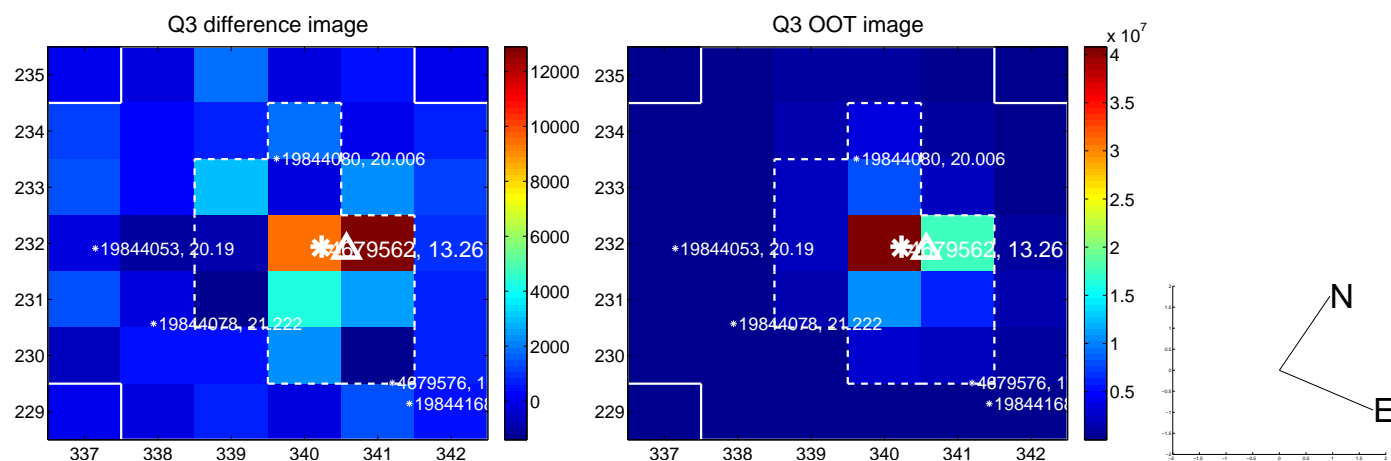
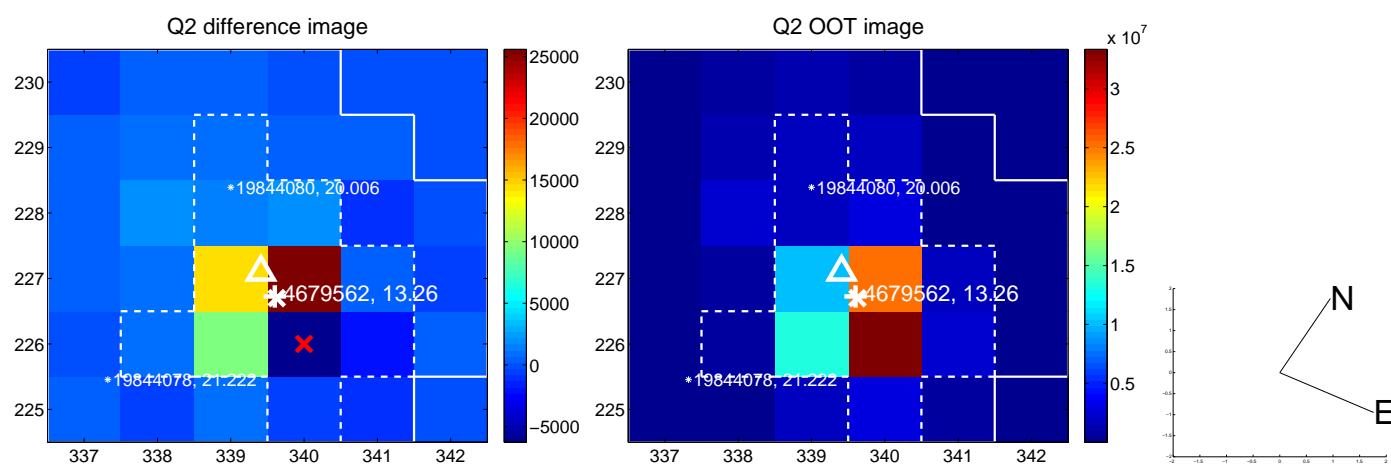
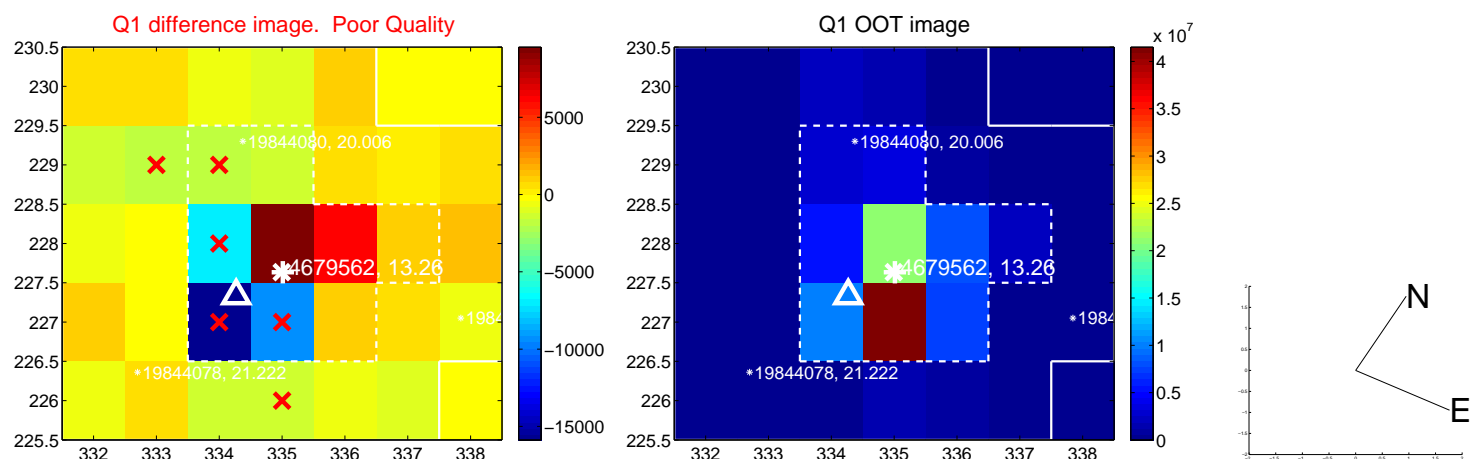
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.479 ± 0.205	2.34	-0.461 ± 0.217	0.130 ± 0.285
PRF-fit source offset from KIC position	0.474 ± 0.223	2.13	-0.427 ± 0.240	0.206 ± 0.250
photometric centroid source offset	0.28 ± 0.53	0.53	-0.18 ± 0.55	0.22 ± 0.52

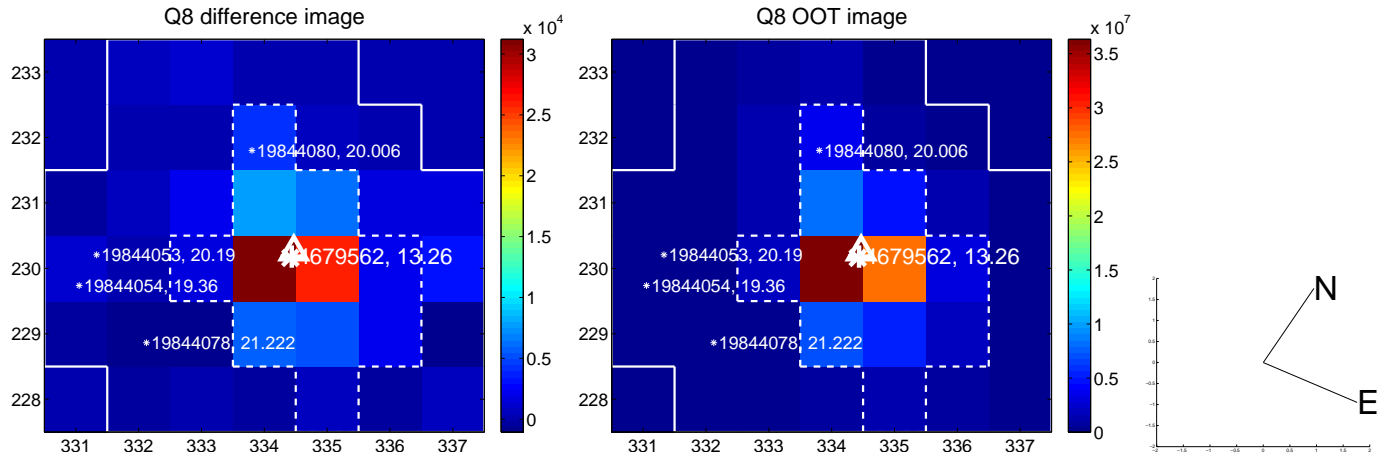
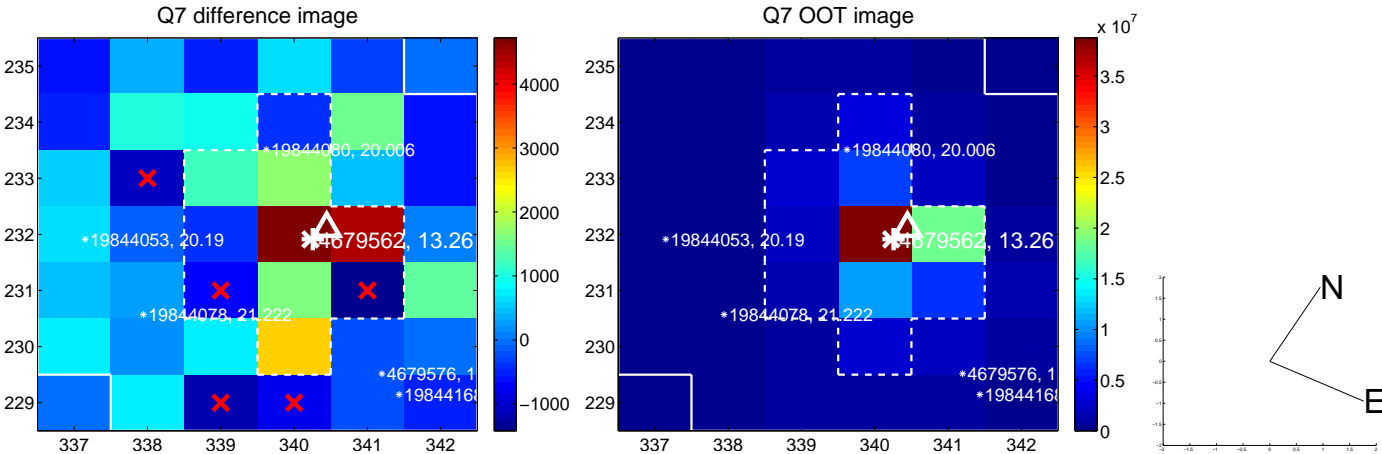
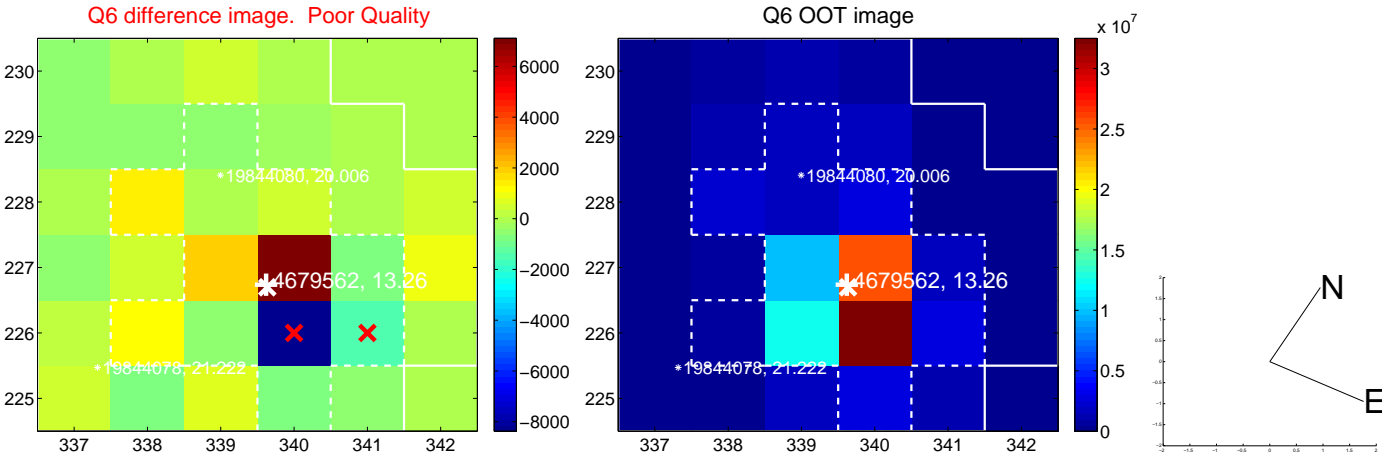
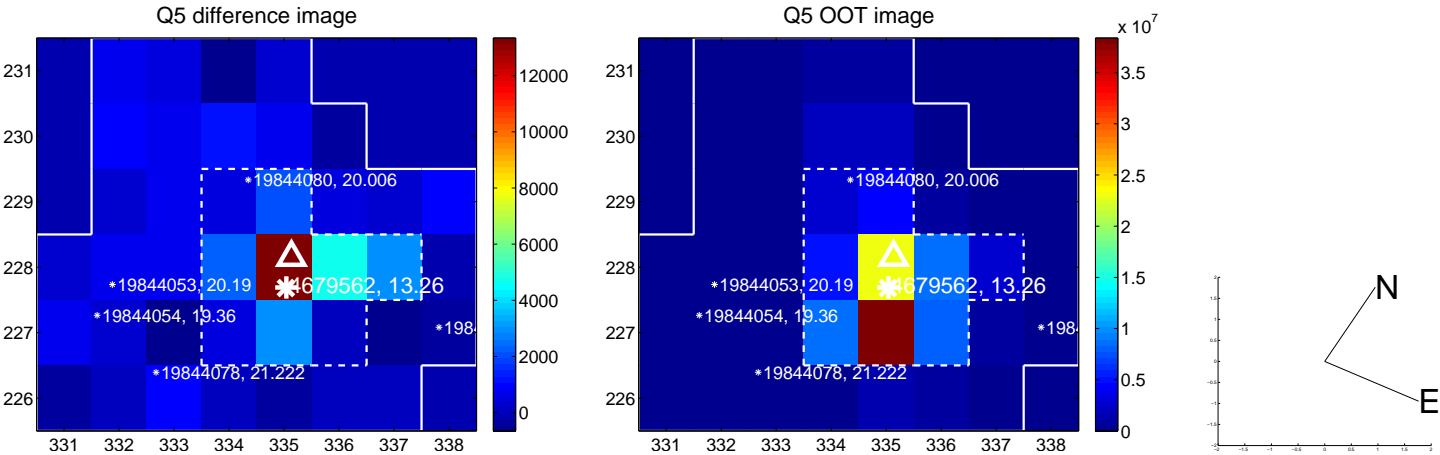


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

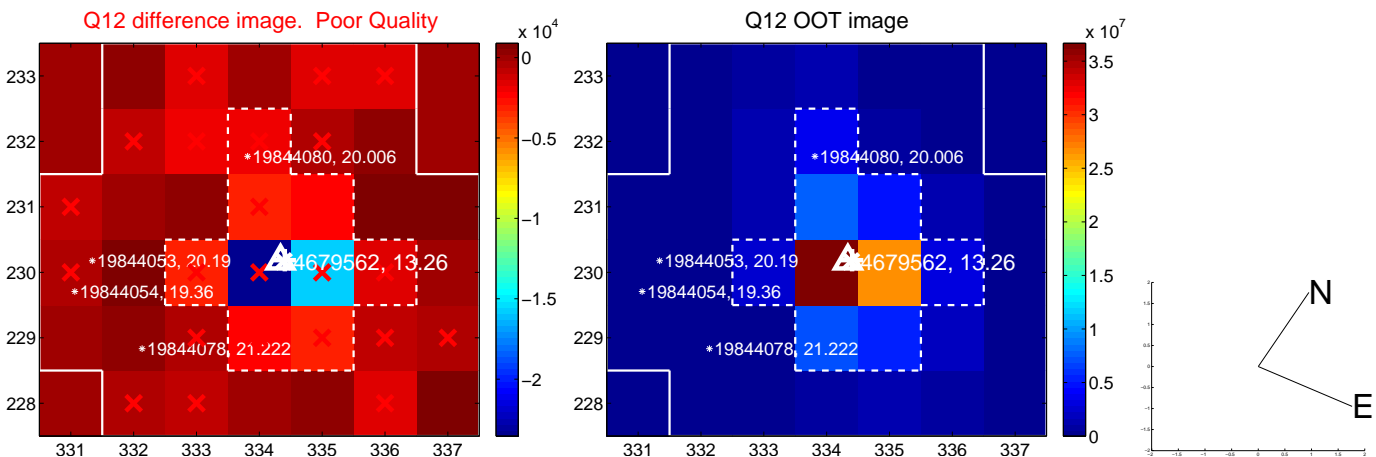
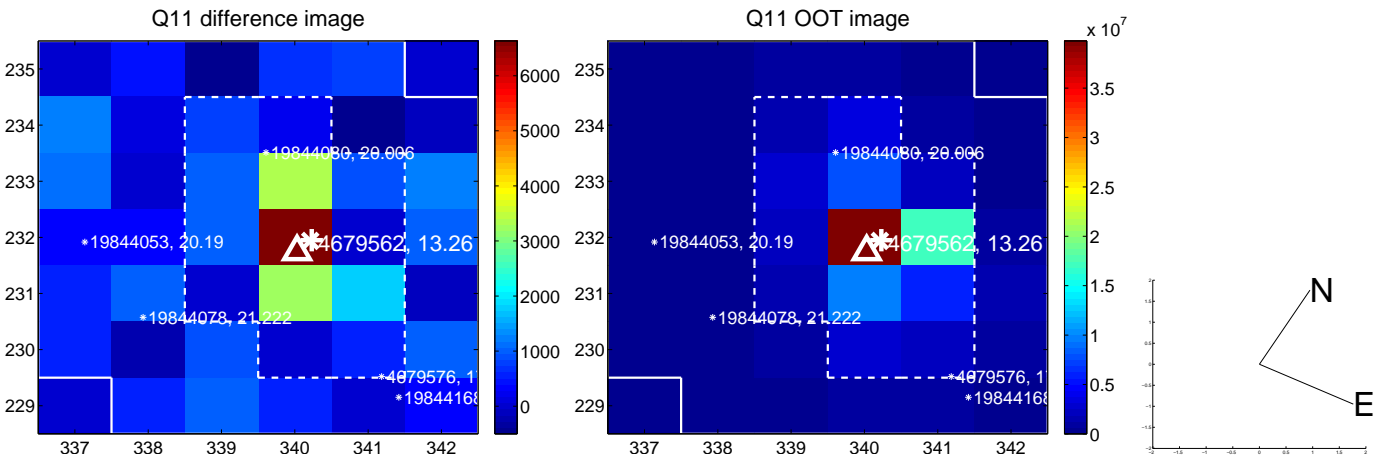
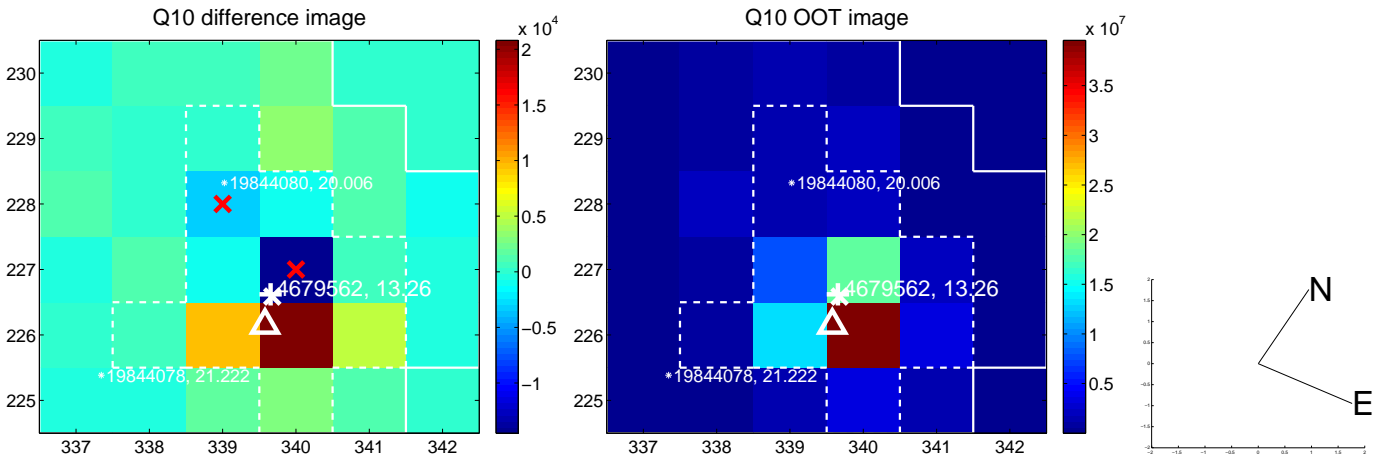
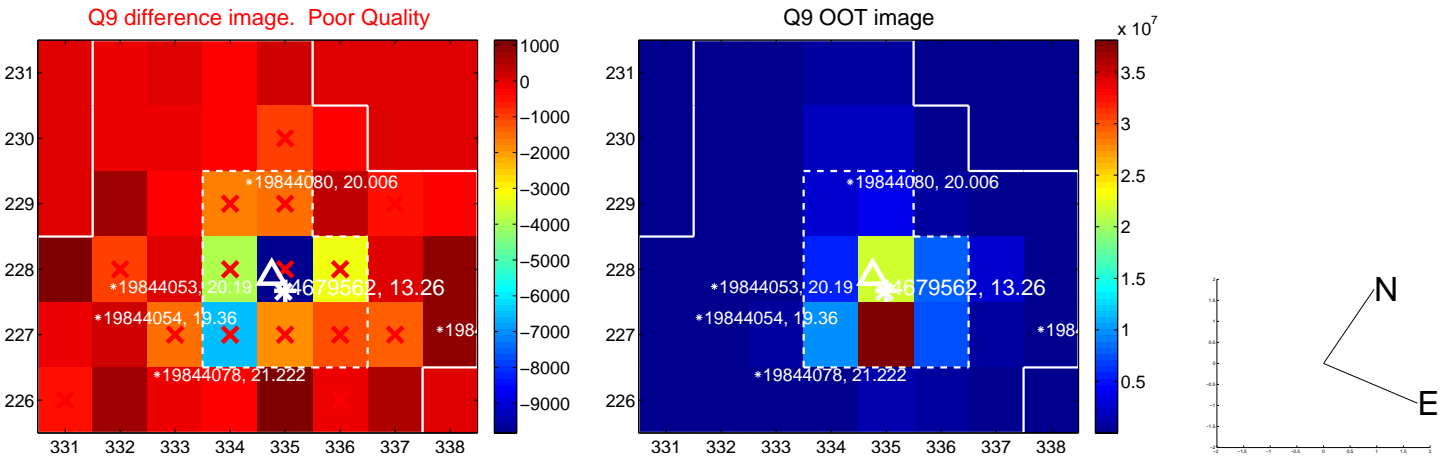
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



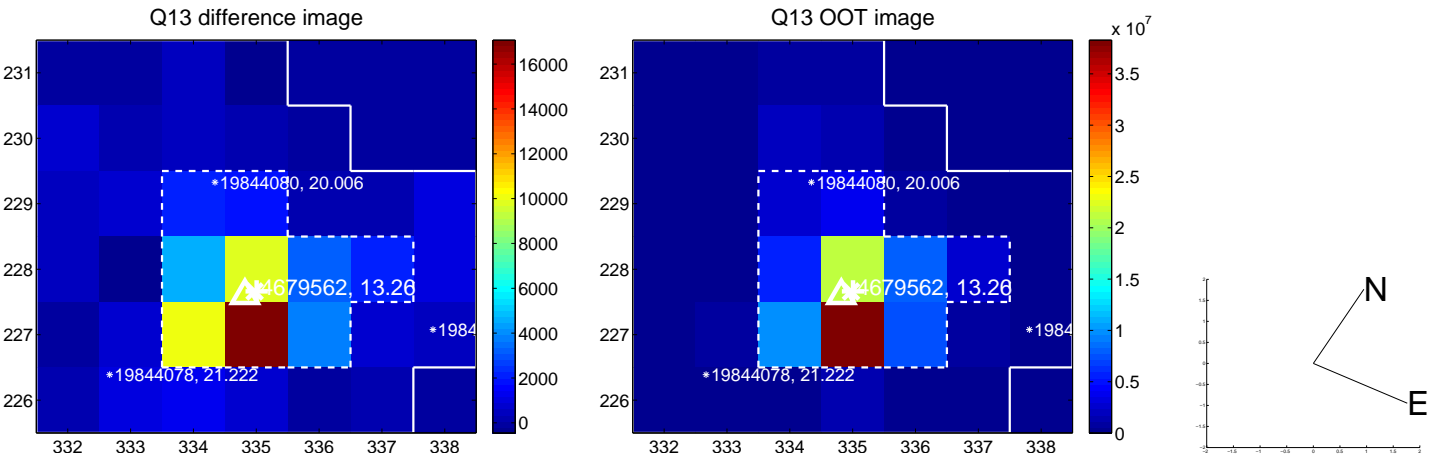
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



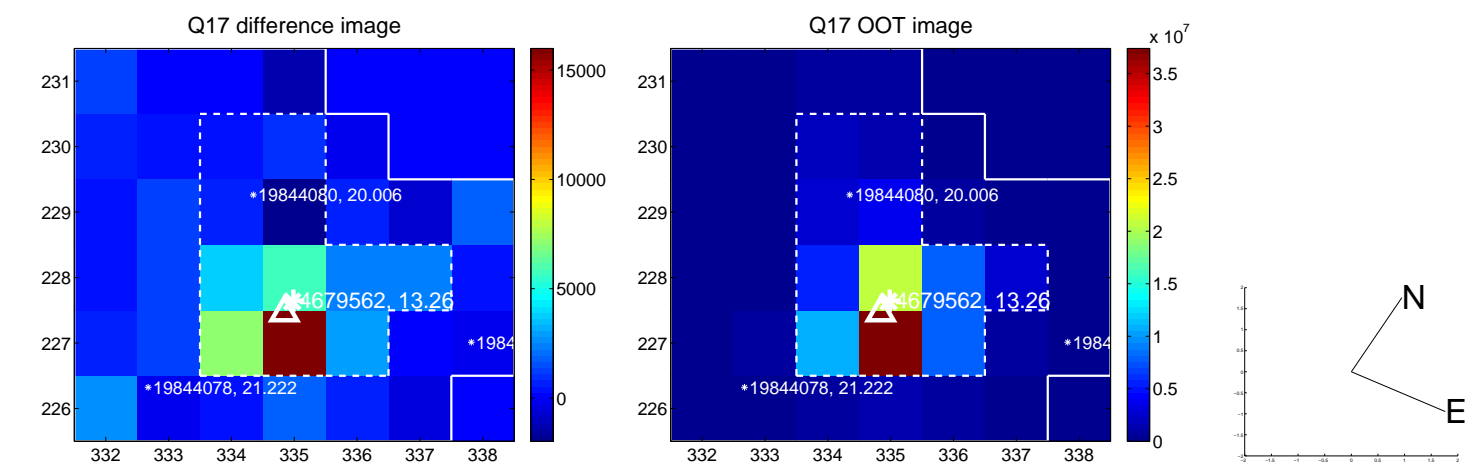
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



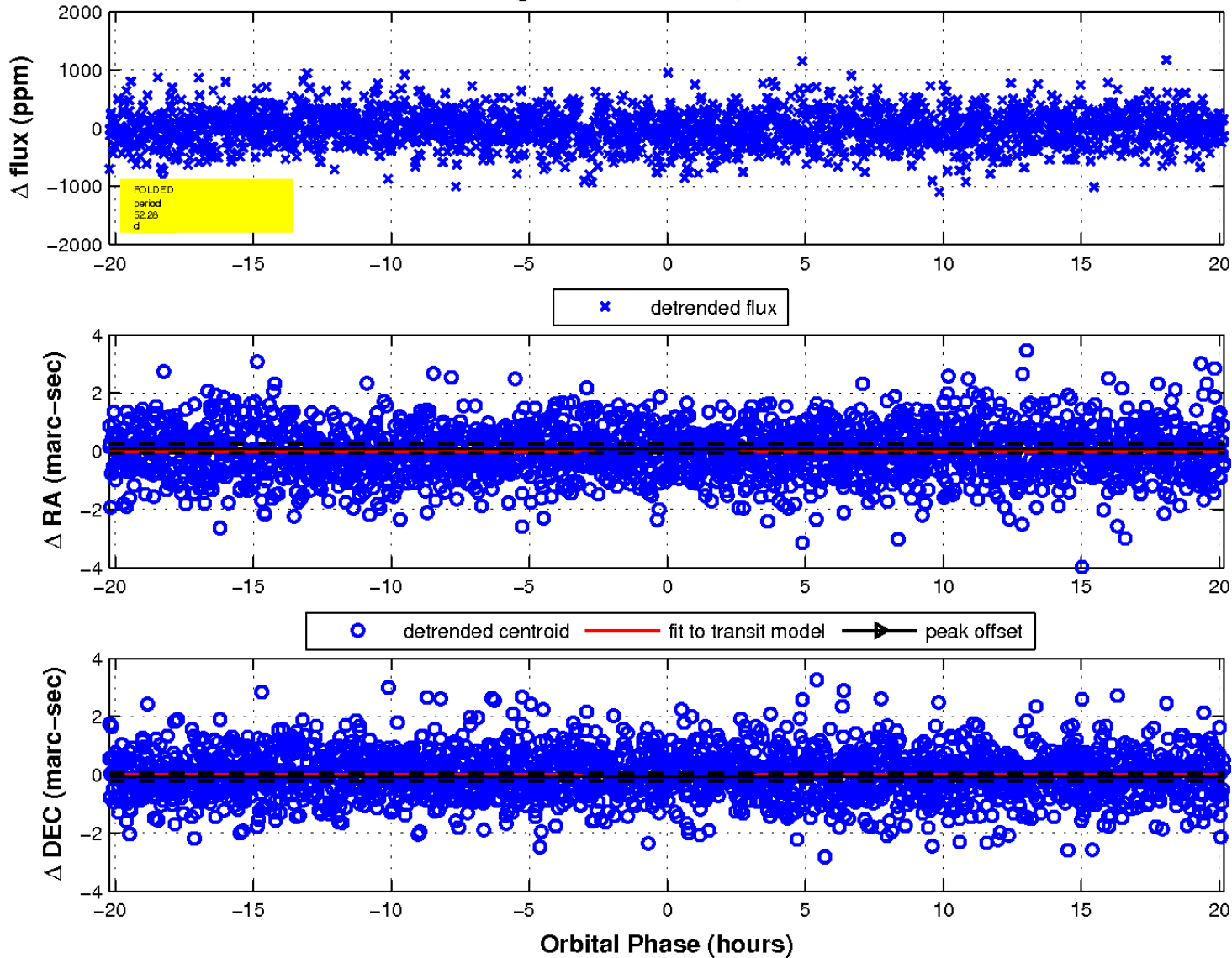
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

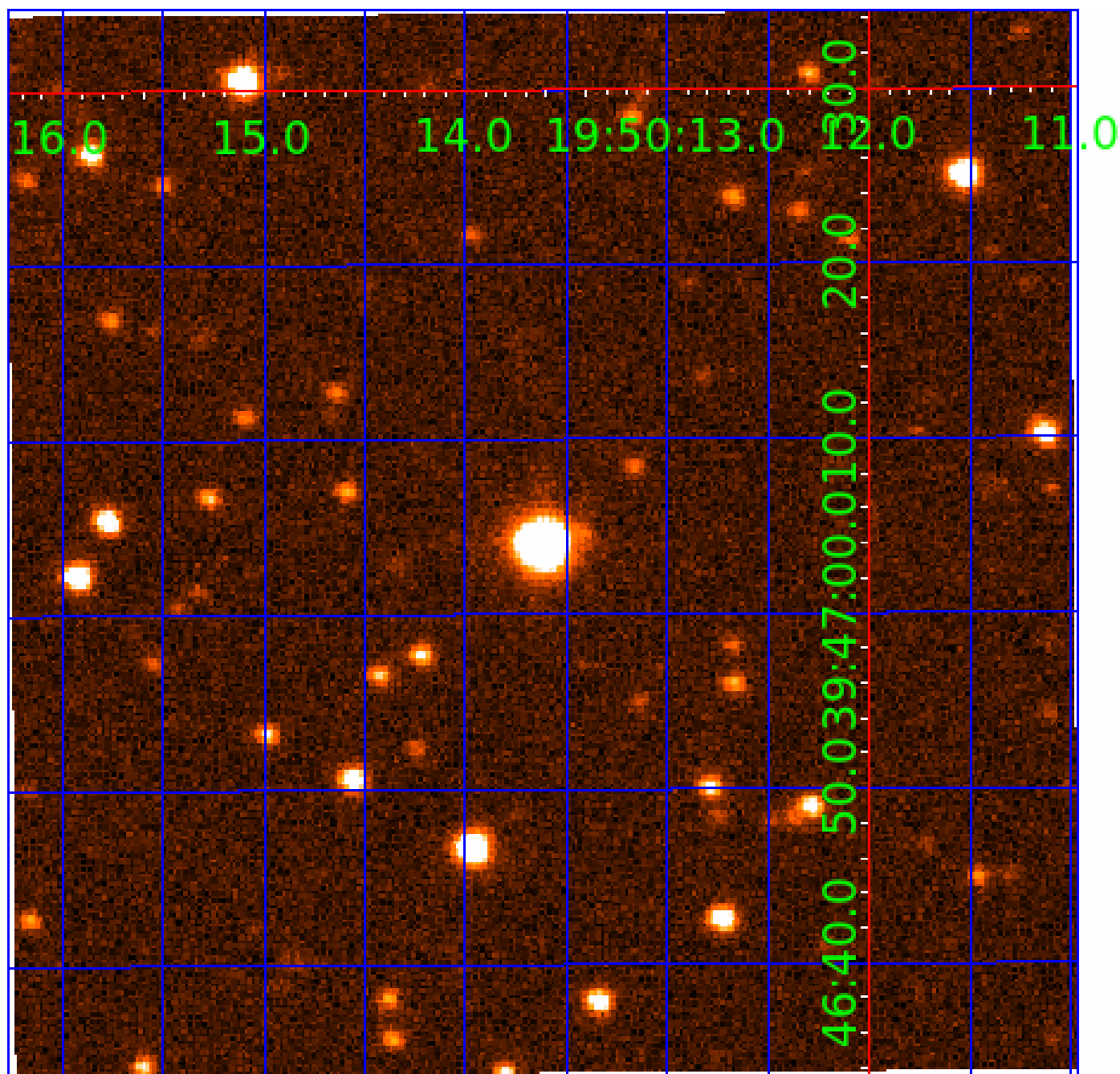


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 004679562

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})
004679562-01	OBS	No	1.692257	131.618355	24.7	6.842	10.9	6.2	3.19	7650	1.62	26205.00
004679562-02	OBS	No	0.966938	132.304429	36.8	2.719	8.9	7.1	3.19	7650	2.25	55268.10
004679562-03	OBS	No	52.283236	153.390200	265.7	6.741	8.1	7.4	3.19	7650	5.73	270.31
004679562-04	OBS	No	110.723491	137.532362	314.5	7.909	8.2	5.8	3.19	7650	5.93	99.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004679562-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004679562-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004679562-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
004679562-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

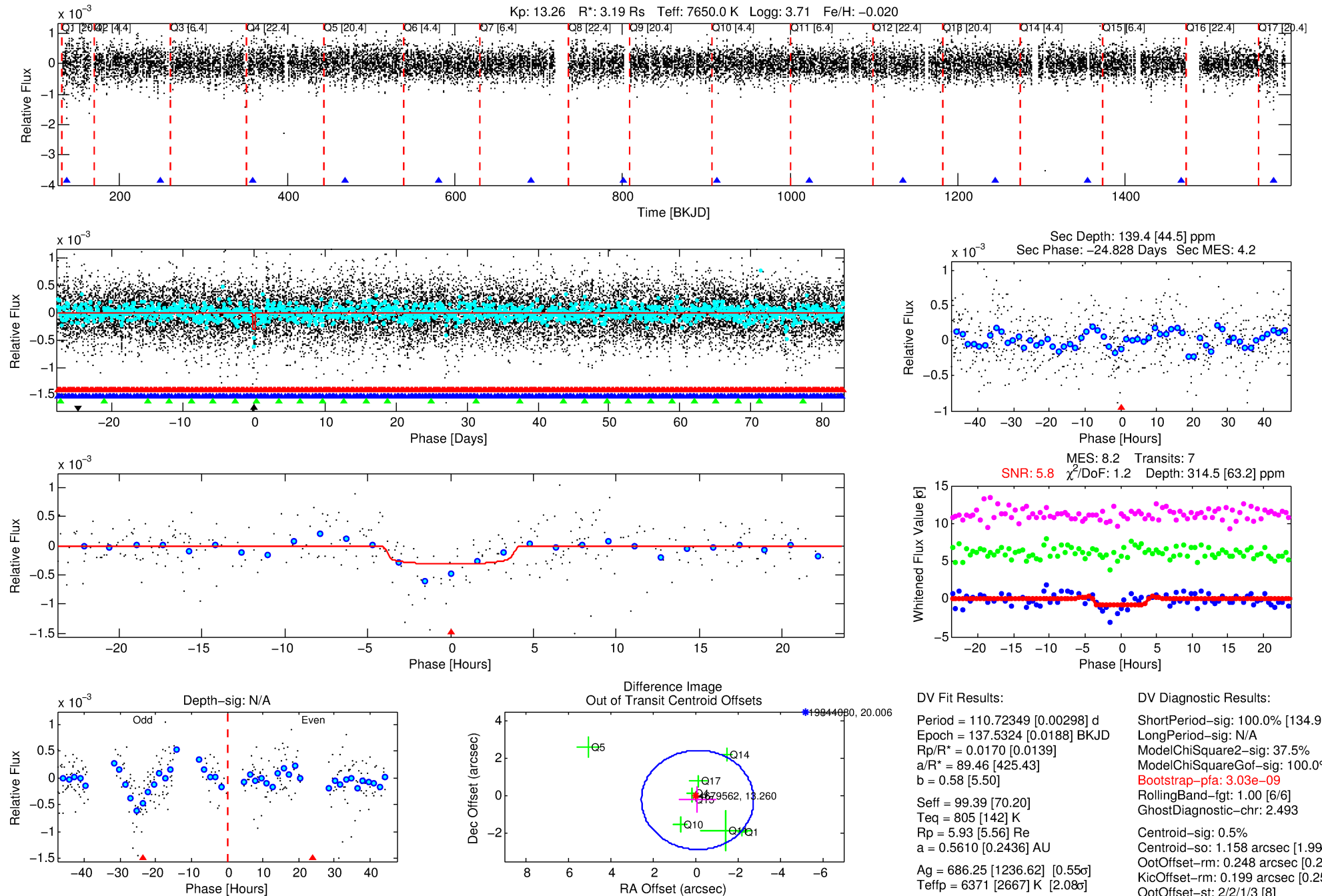
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004679562-04

No Significant Match Found

DV One-Page Summary

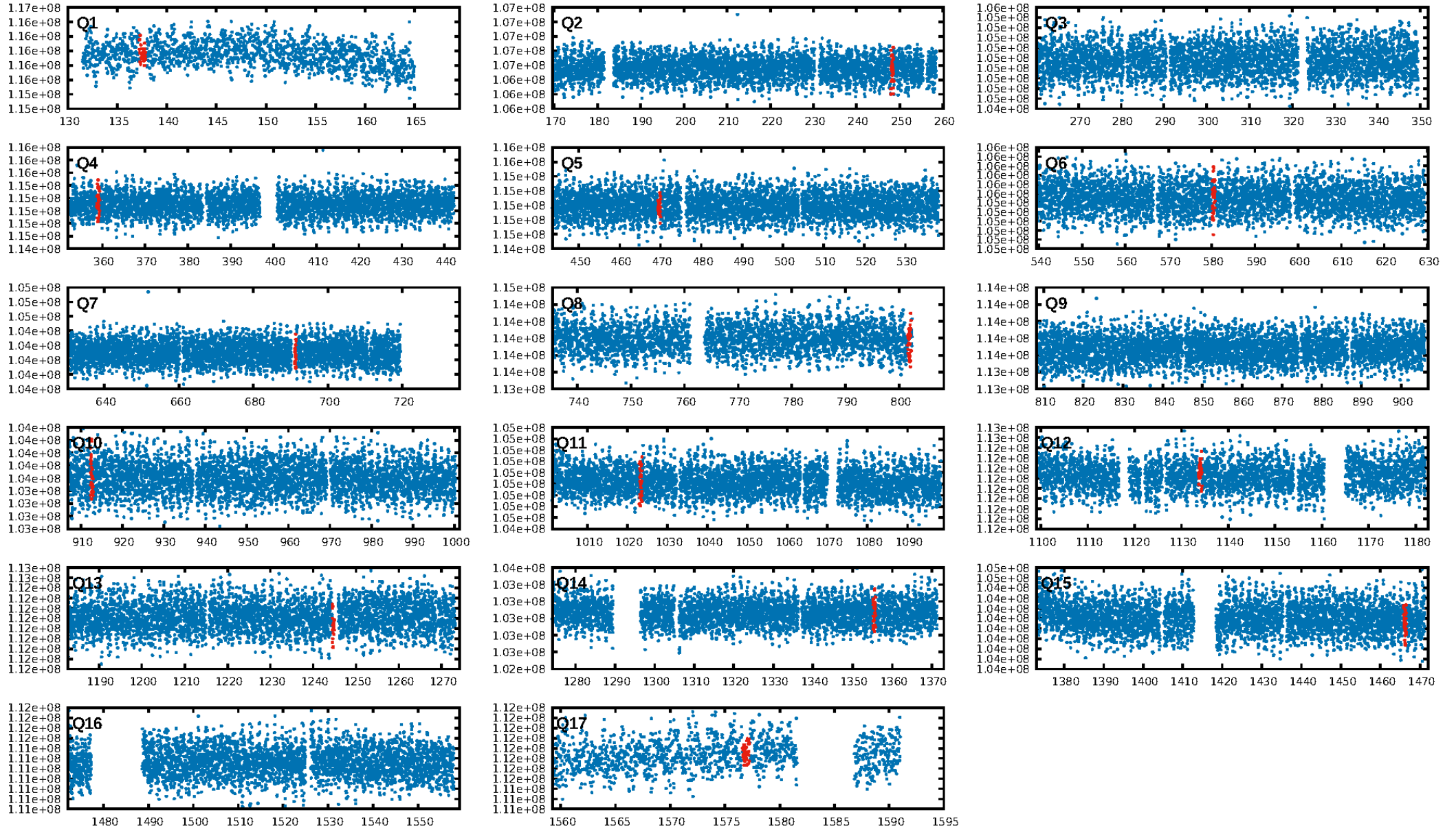
KIC: 4679562 Candidate: 4 of 4 Period: 110.723 d



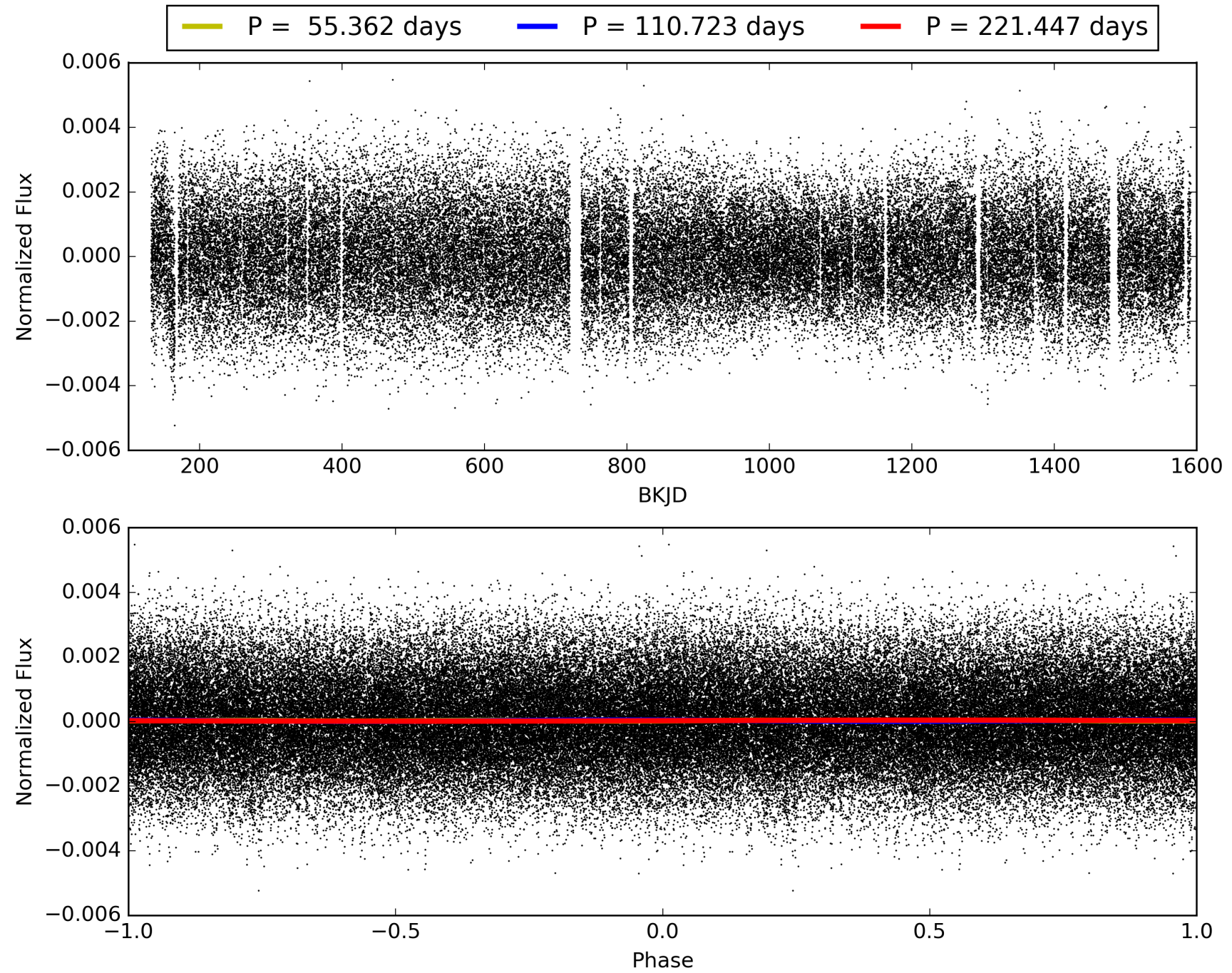
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:00:52 Z

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

TCE 004679562-04, PDC Light Curves

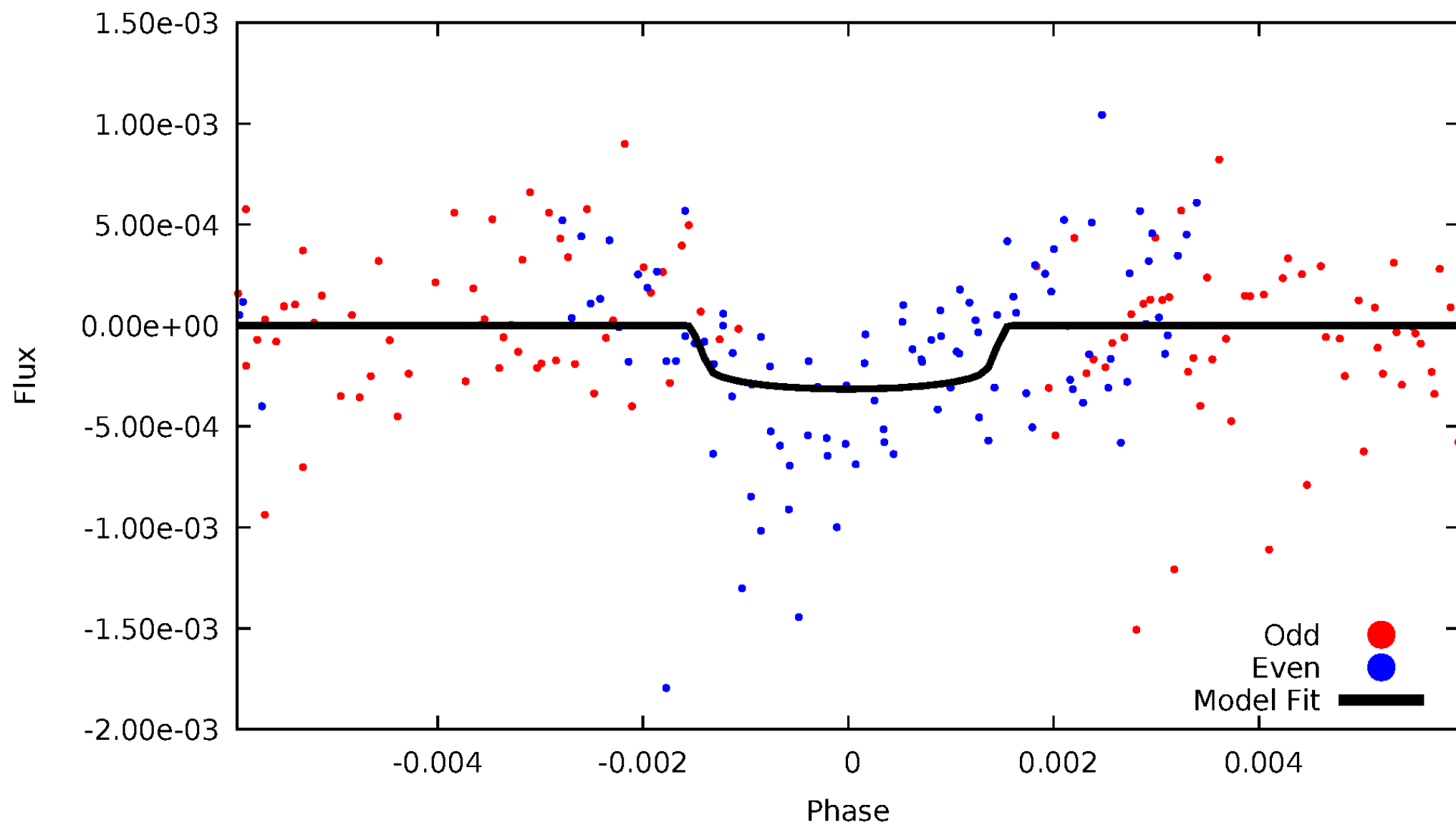


TCE 004679562-04



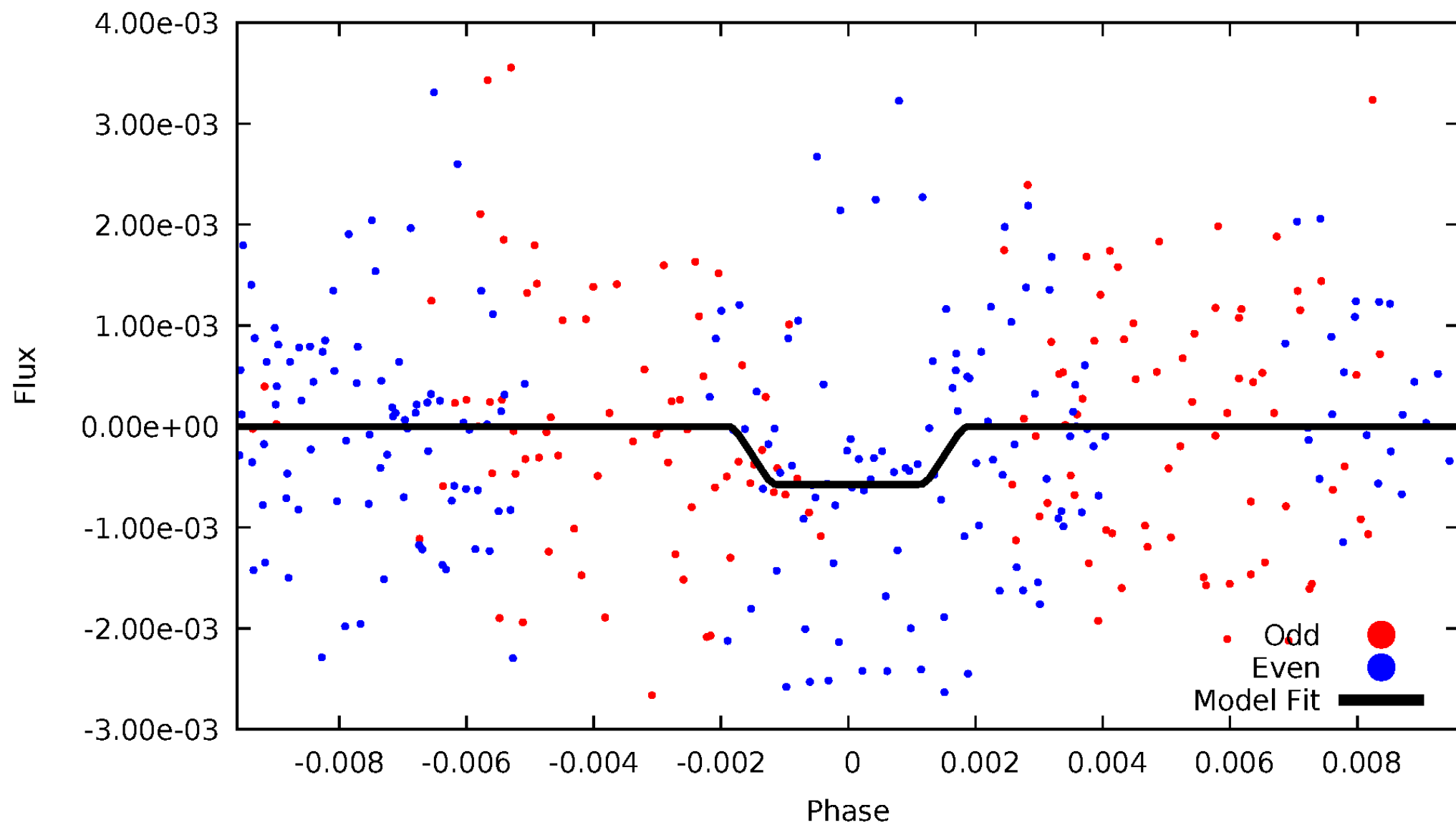
DV Odd/Even

TCE 004679562-04



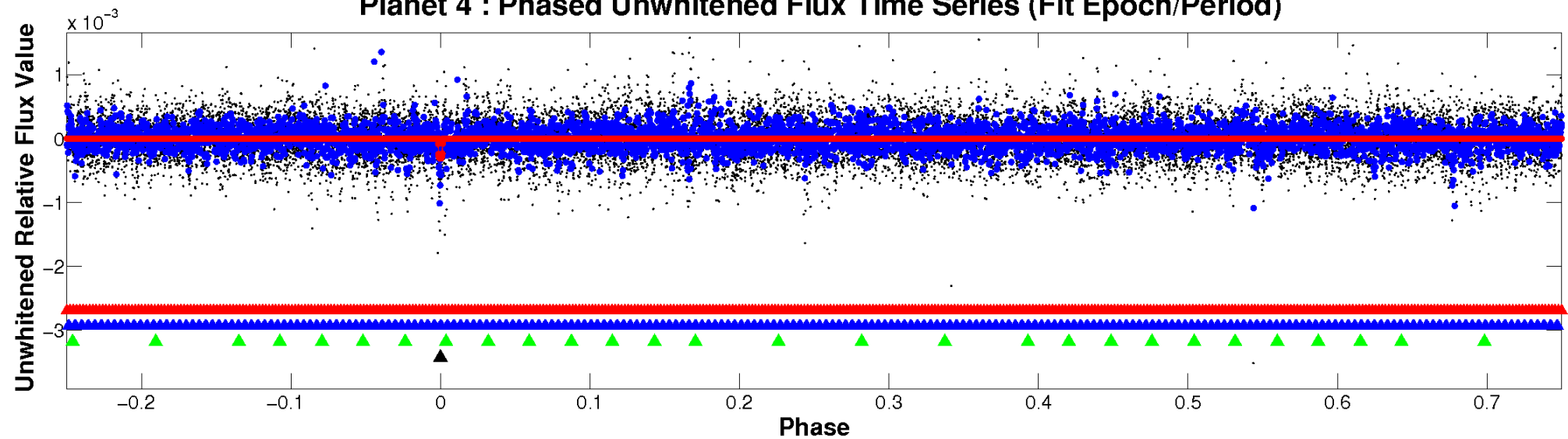
ALT Odd/Even

TCE 004679562-04

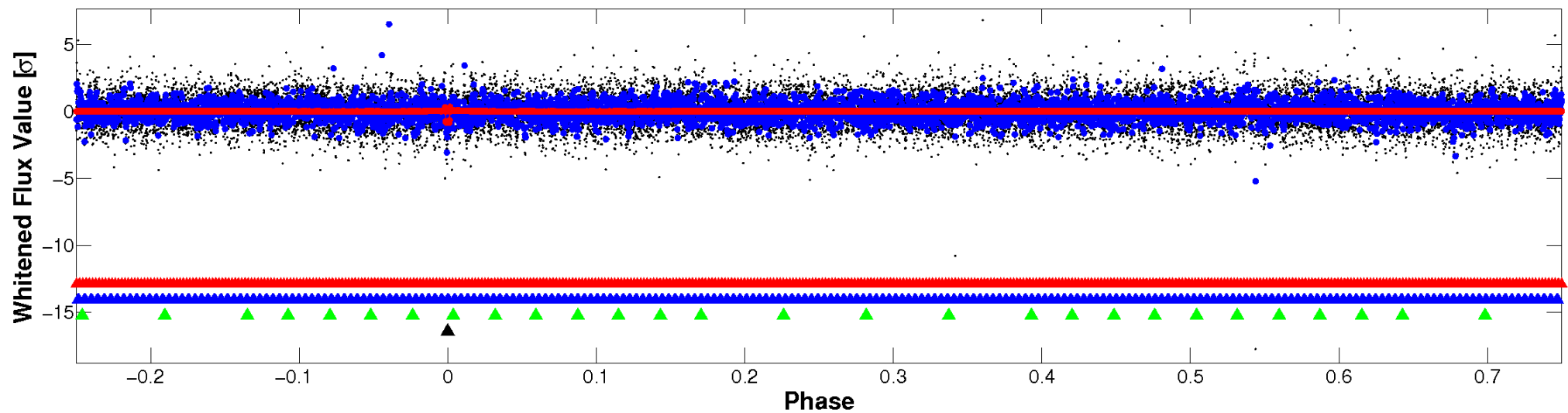


Non-Whitened Vs. Whitened Light Curve

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

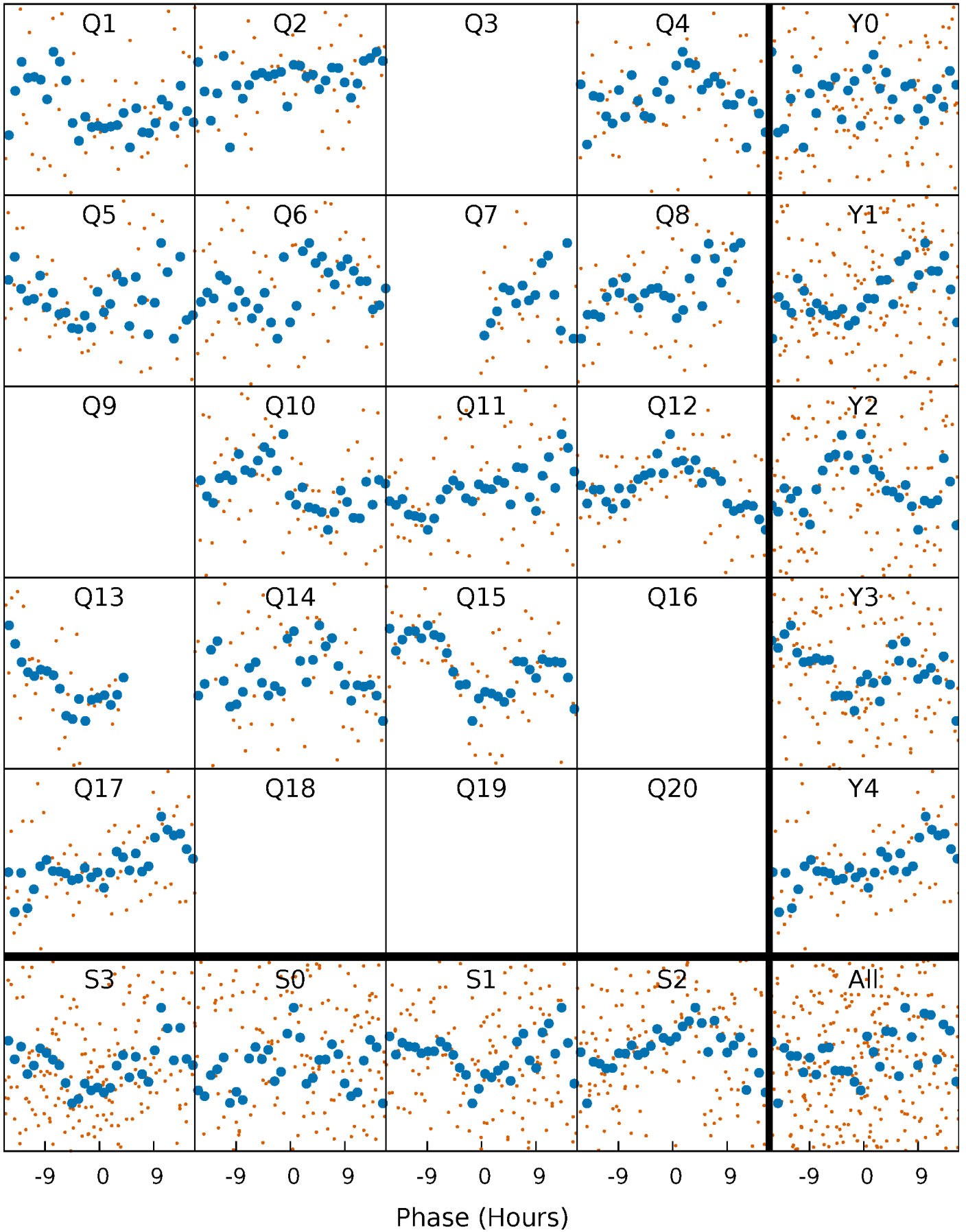


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



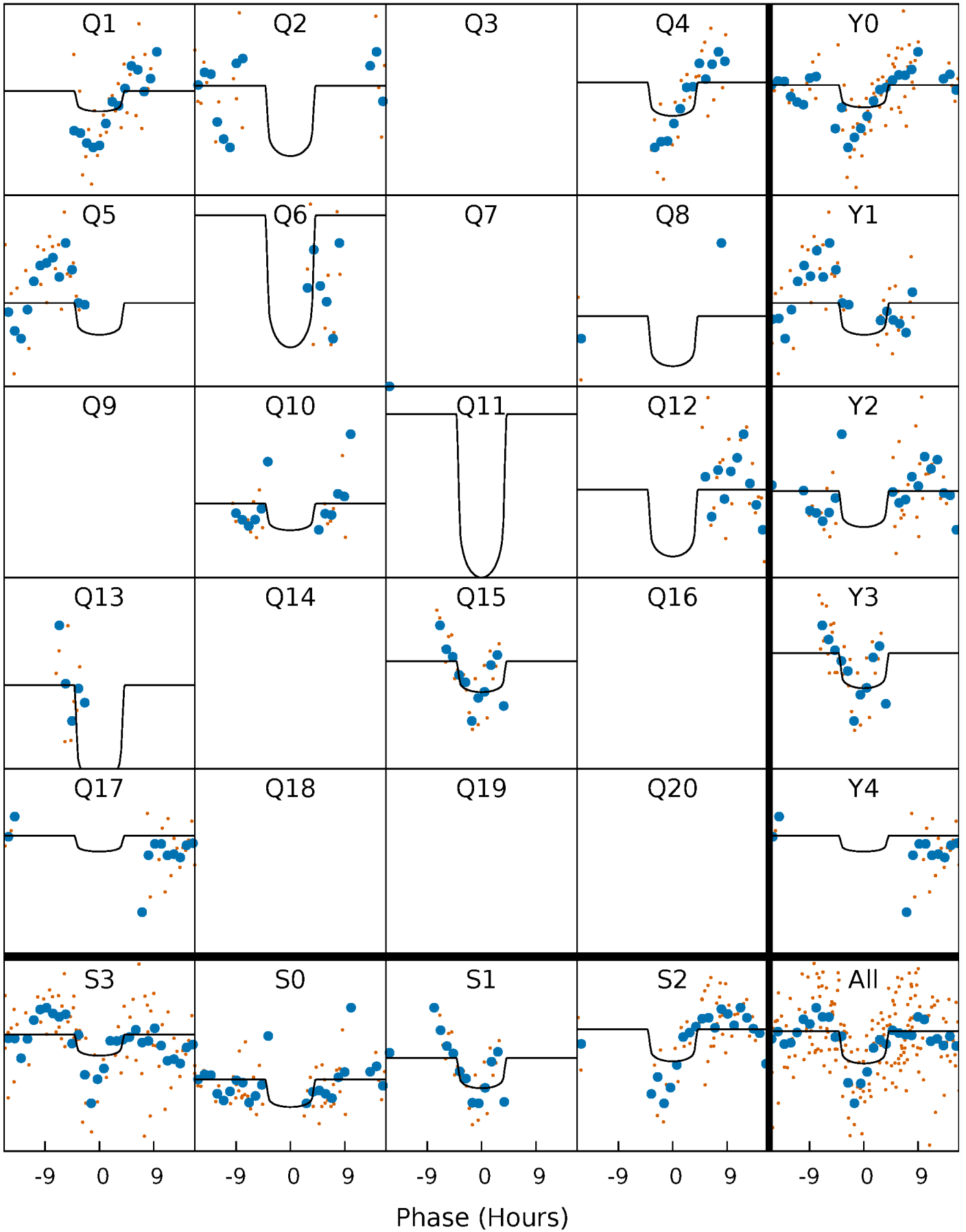
PDC Quarter-Phased Transit Curves

TCE 004679562-04 P=110.723491 Days $T_0=137.532362$ (BKJD)



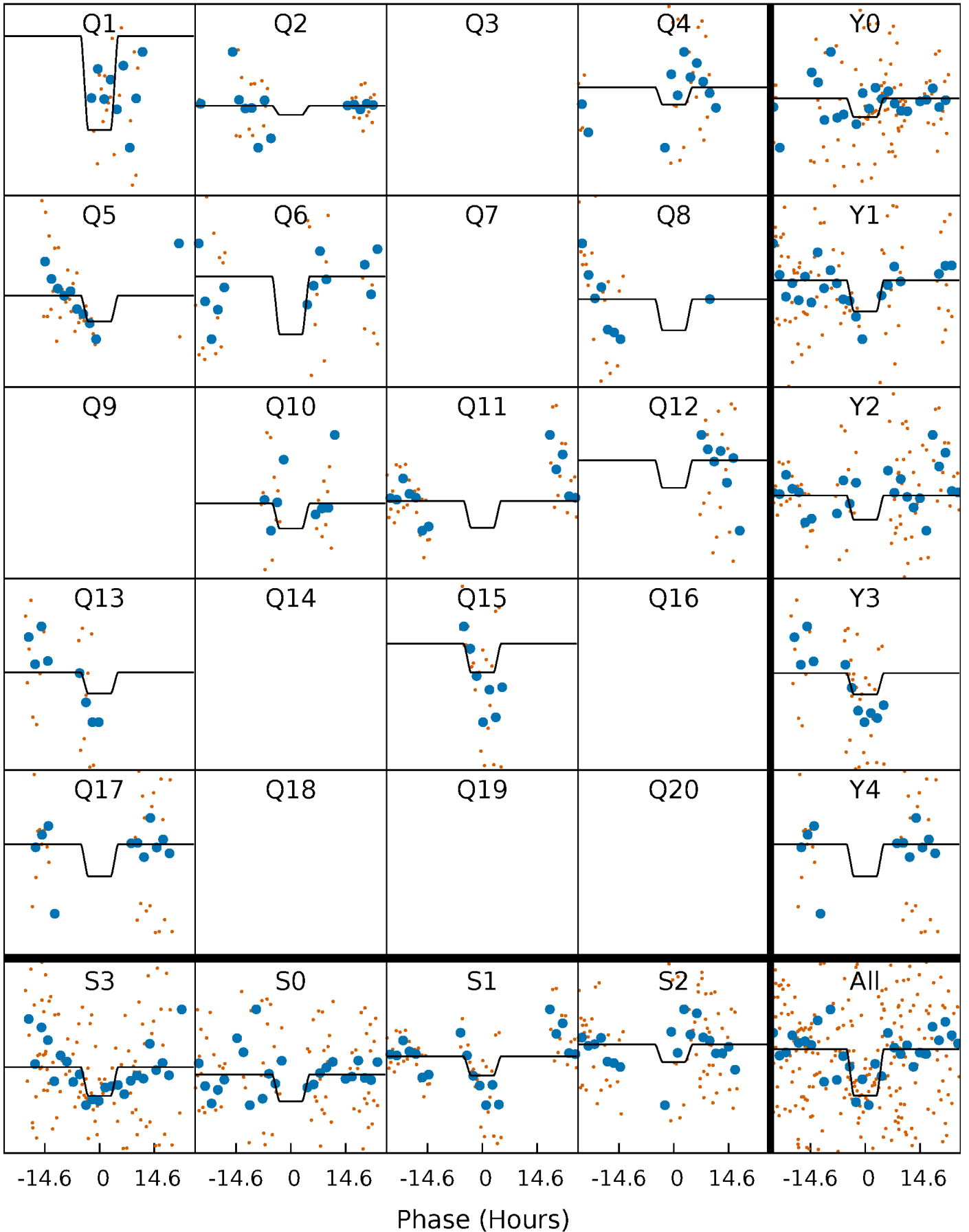
DV Quarter-Phased Transit Curves

TCE 004679562-04 $P=110.723491$ Days $T_0=137.532362$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

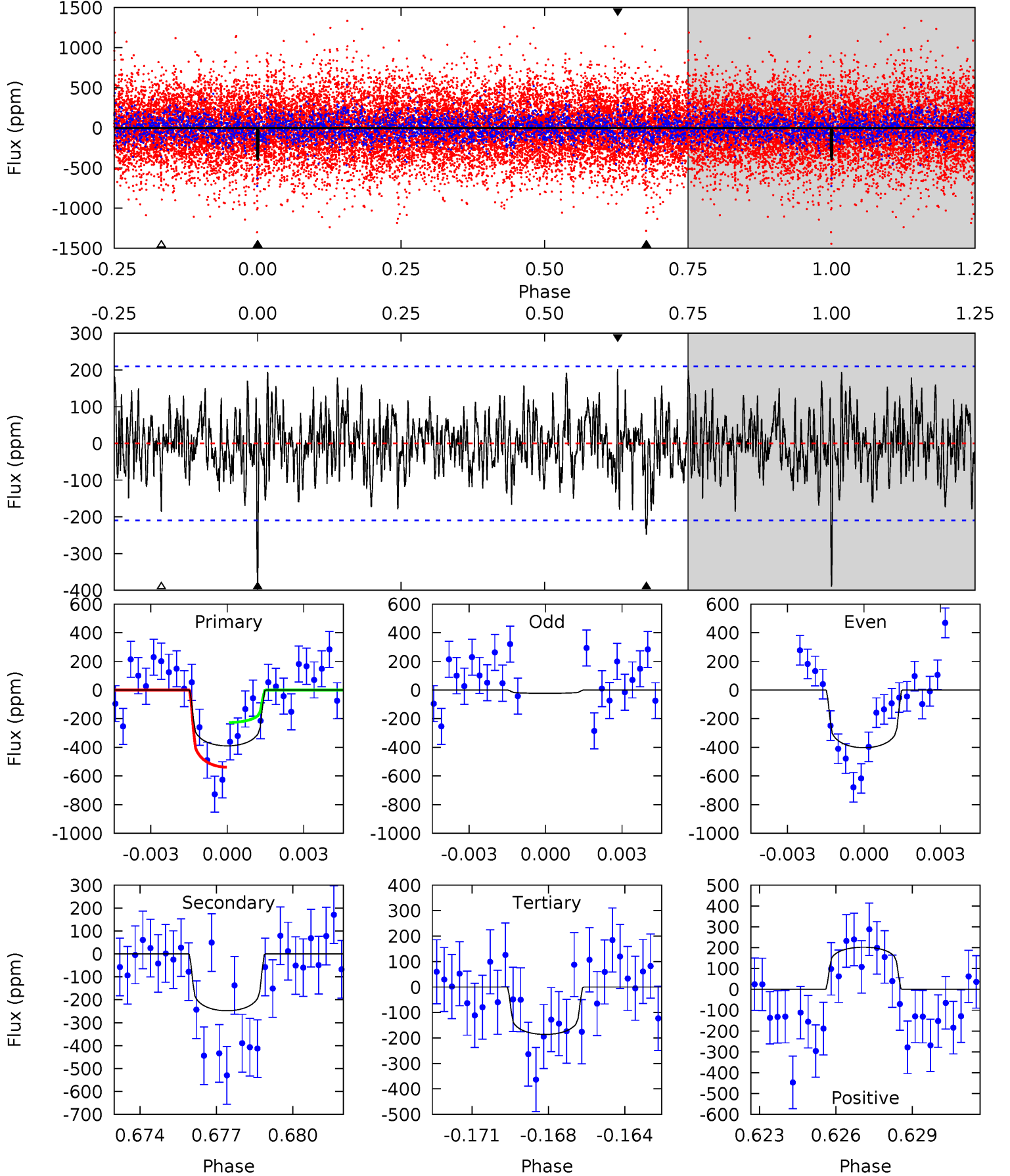
TCE 004679562-04 P=110.723850 Days $T_0=137.460836$ (BKJD)



DV Model-Shift Uniqueness Test

004679562-04, P = 110.723491 Days, E = 26.808871 Days

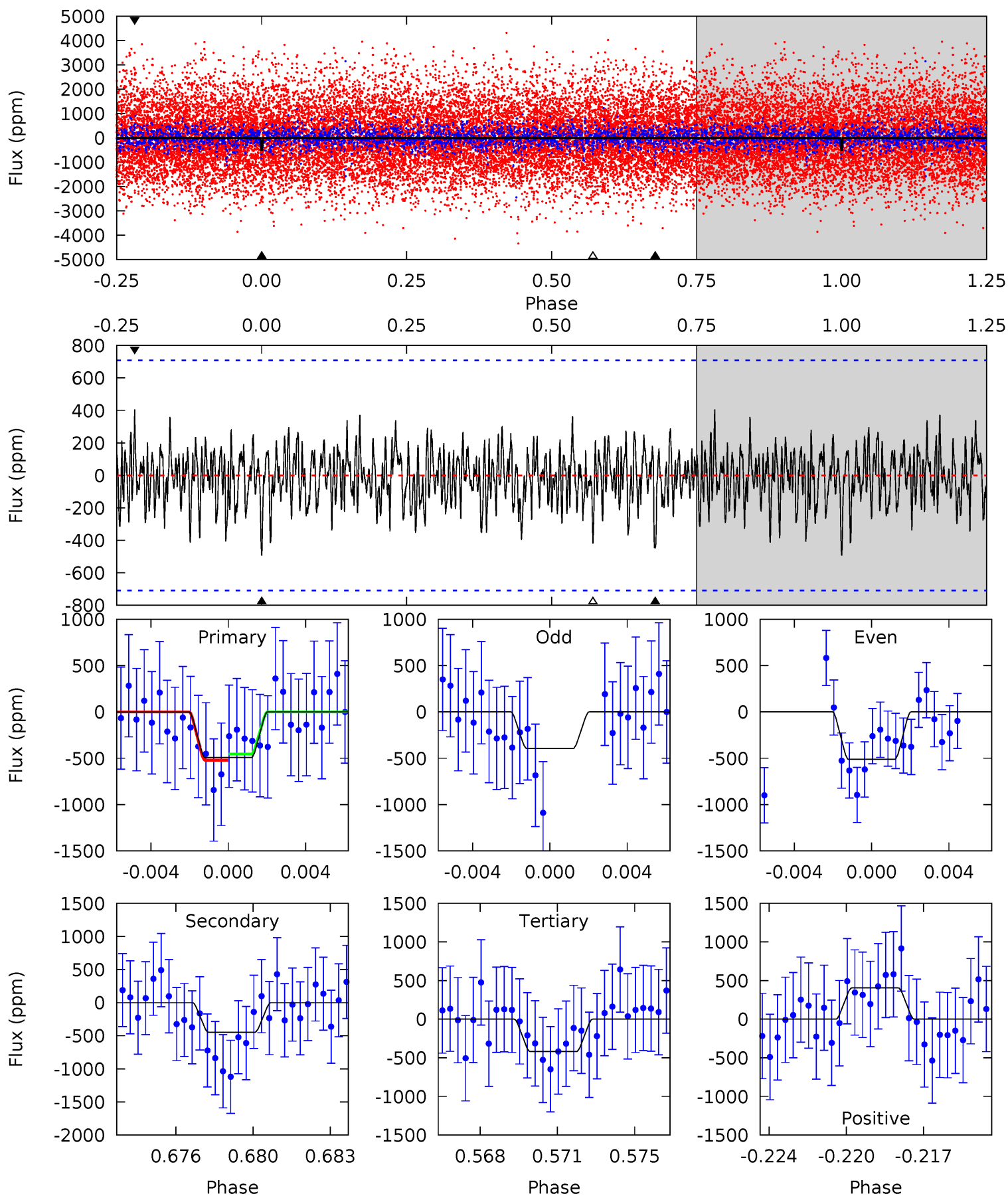
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.75	6.20	4.65	5.06	5.24	2.95	1.62	5.10	4.69	1.55	1.14	2.13	0.99	0.34	3.90



Alt Model-Shift Uniqueness Test

004679562-04, P = 110.723850 Days, E = 26.736986 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.62	3.29	3.08	2.98	5.21	2.90	1.03	0.54	0.64	0.21	0.31	0.33	1.07	0.45	0.24



Stellar Parameters For KIC 004679562

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7650^{+212}_{-318}	$3.713^{+0.400}_{-0.075}$	$-0.020^{+0.200}_{-0.350}$	$3.193^{+0.459}_{-1.470}$	$1.918^{+0.104}_{-0.417}$	$0.083^{+0.289}_{-0.021}$
	+3%/-4%	+11%/-2%	+1000%/-1750%	+14%/-46%	+5%/-22%	+348%/-25%
Source	KIC0	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 004679562-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-248 ± 40	$6.31^{+4.43}_{-3.85}$	1090^{+70}_{-113}	6695^{+5820}_{-1501}	1085^{+6028}_{-728}
Alt.	-447 ± 136	$7.67^{+4.71}_{-4.11}$	1084^{+79}_{-119}	6954^{+4448}_{-1504}	1267^{+5311}_{-804}

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

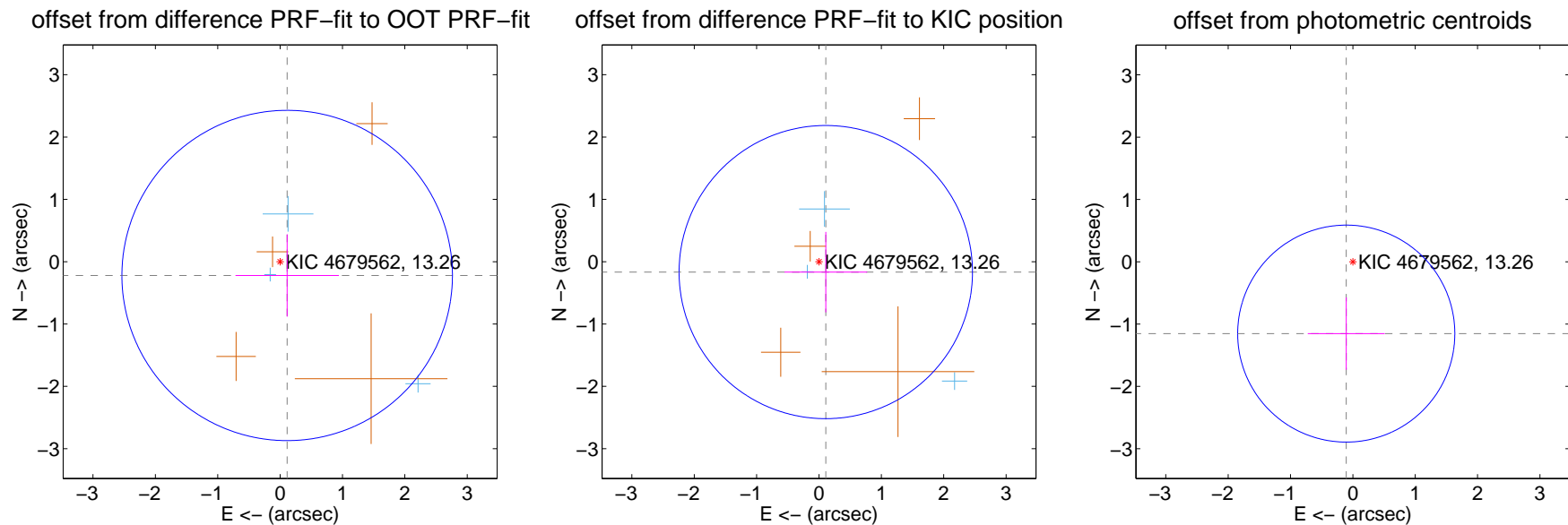
DV Centroid Data

Supplemental centroid analysis for 004679562-04. Kepler magnitude: 13.26. Transit SNR 5.78

There are 3 quarters with good PRF difference image offsets

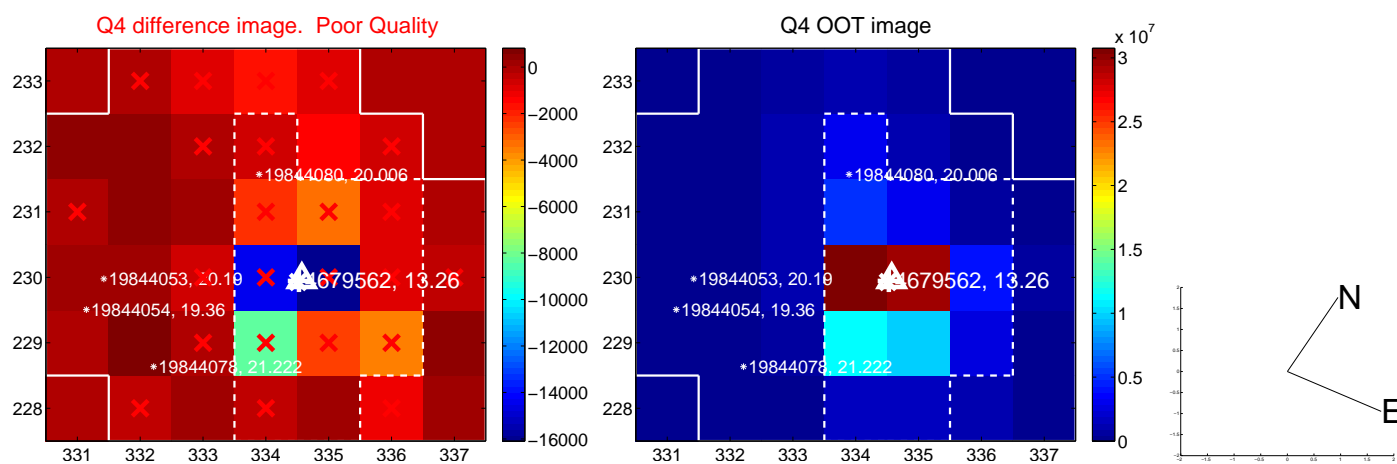
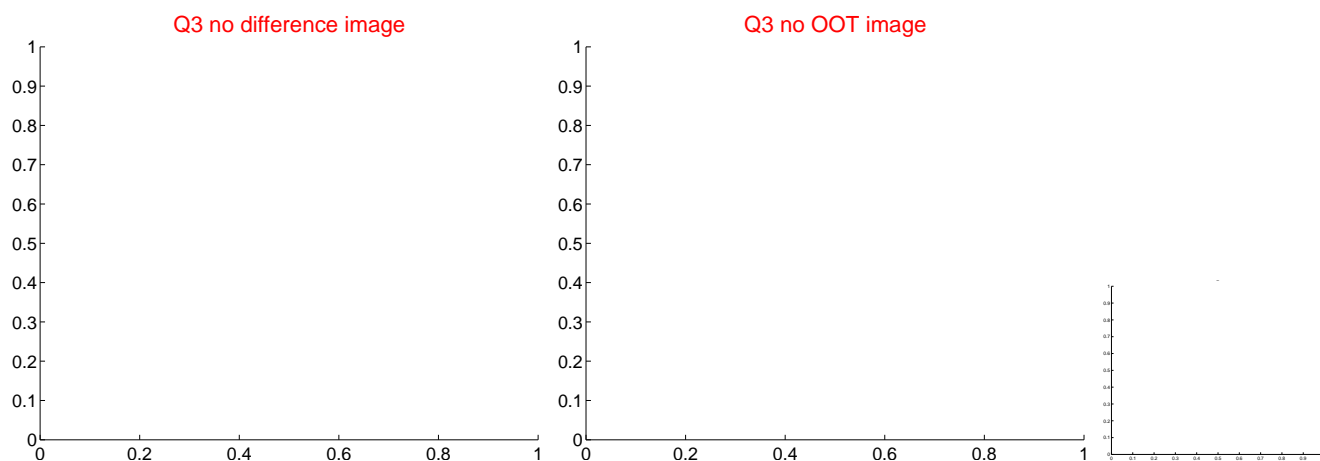
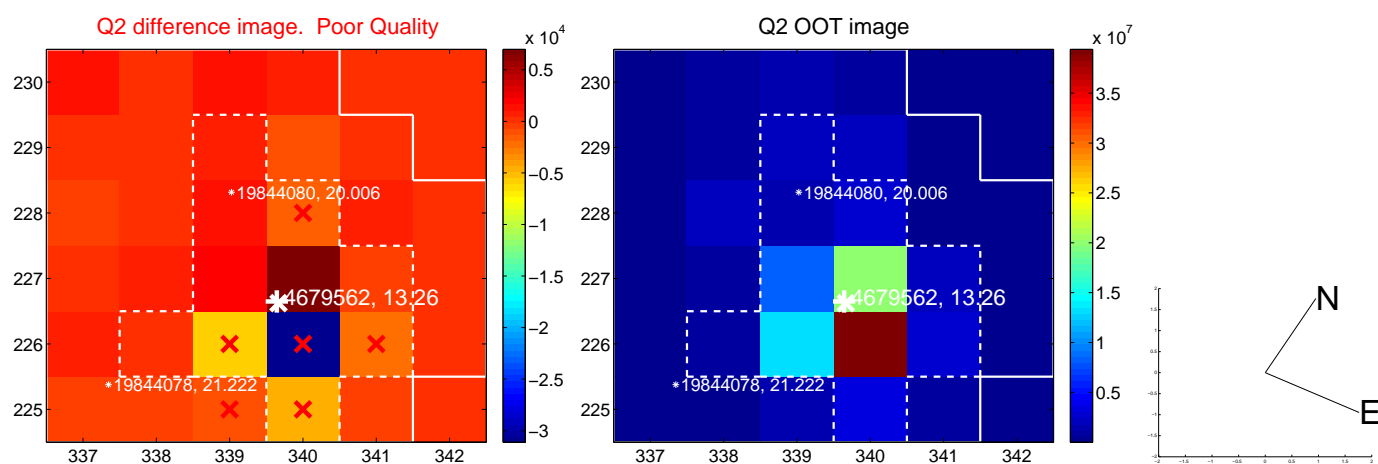
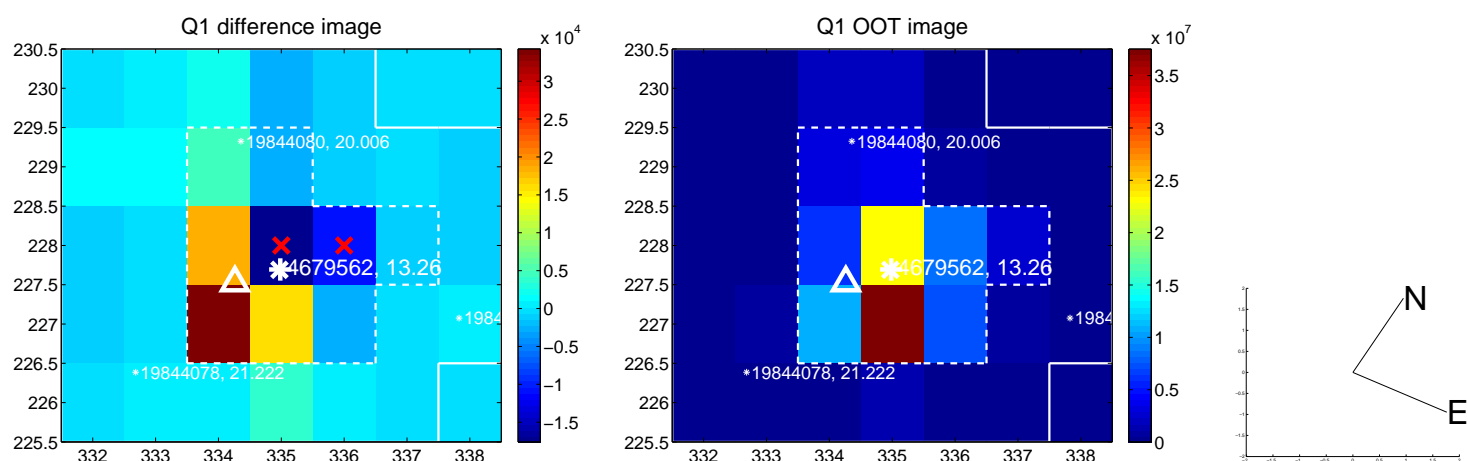
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.248 ± 0.883	0.28	-0.113 ± 0.829	-0.221 ± 0.661
PRF-fit source offset from KIC position	0.199 ± 0.784	0.25	-0.109 ± 0.663	-0.167 ± 0.645
photometric centroid source offset	1.16 ± 0.58	1.99	0.11 ± 0.62	-1.15 ± 0.58

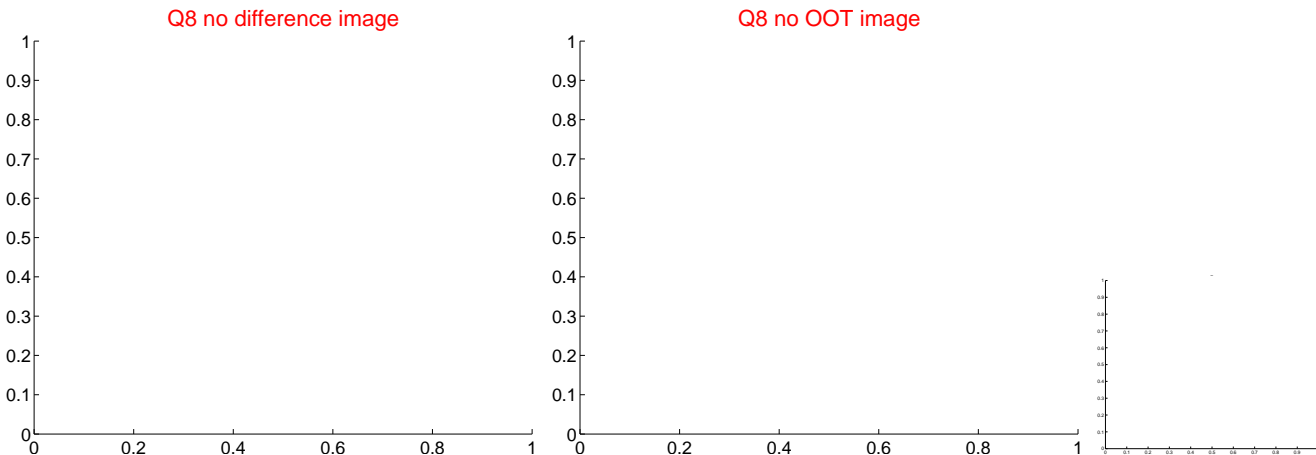
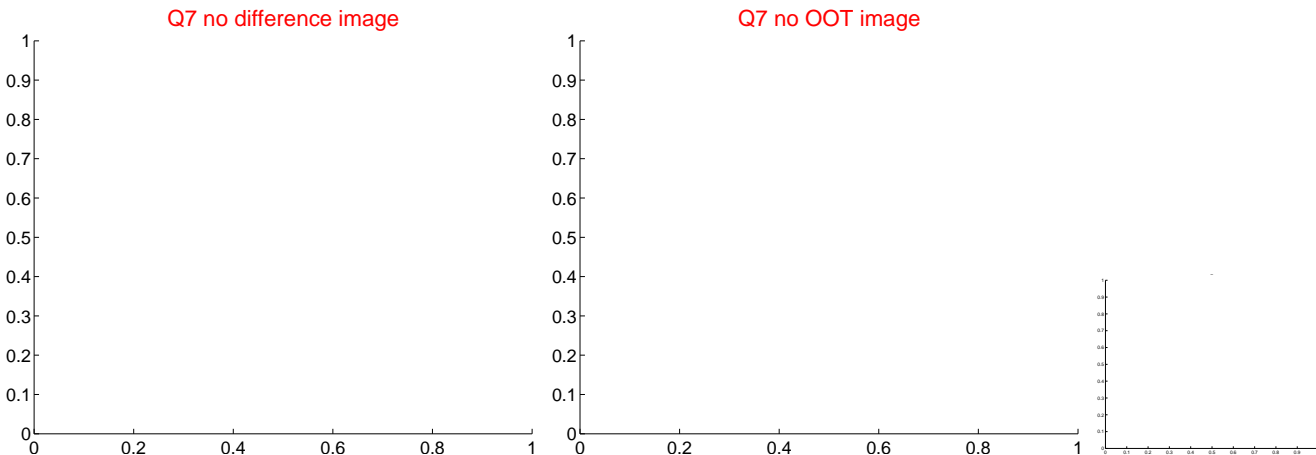
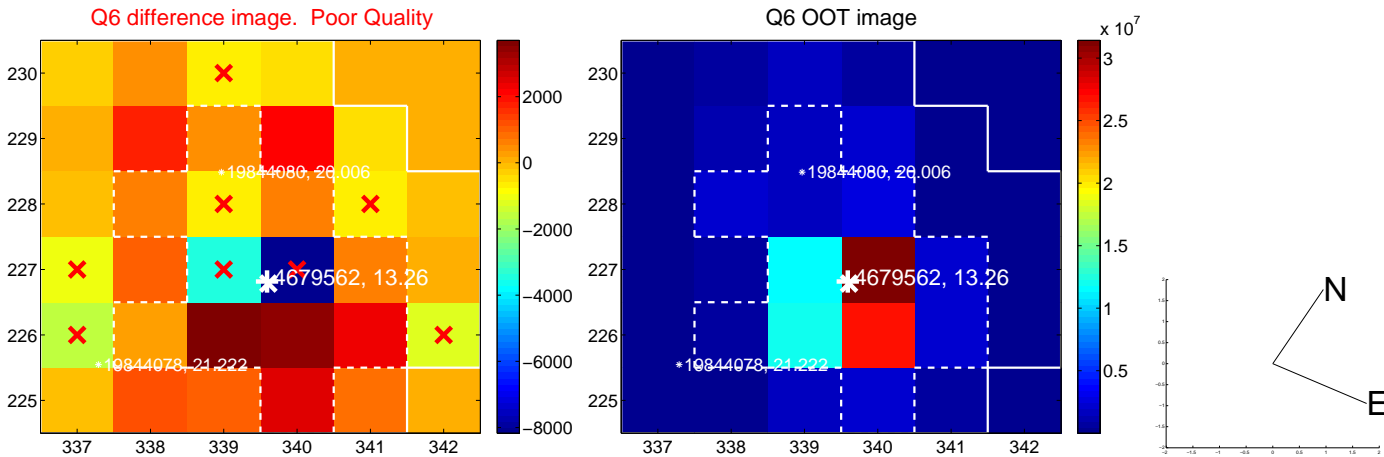
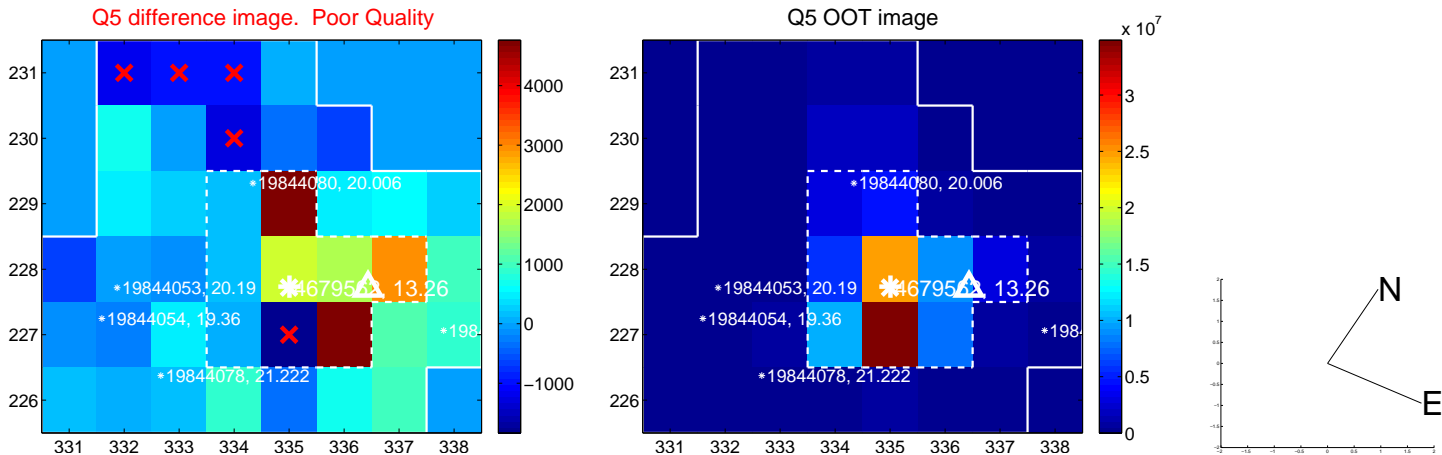


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

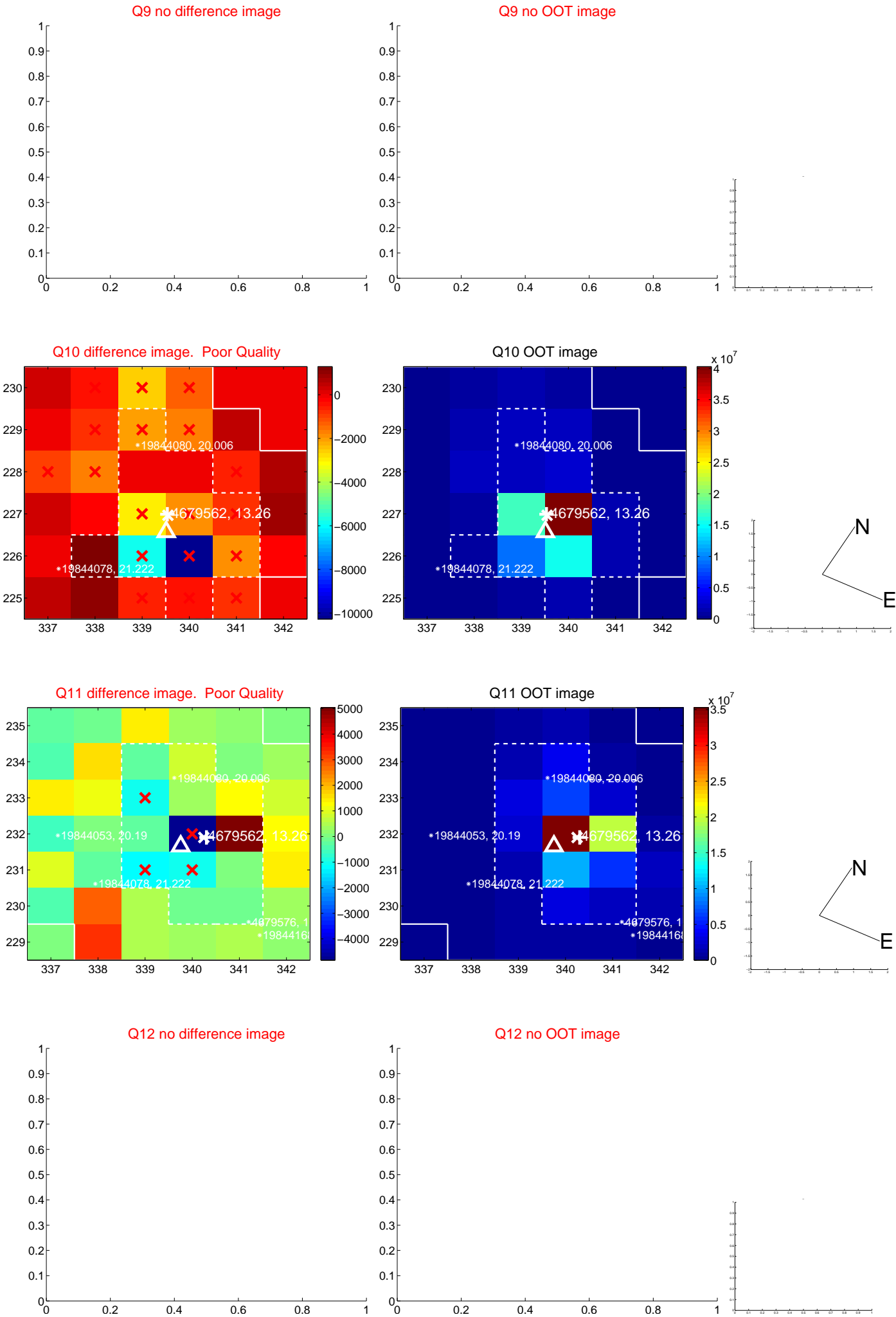
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



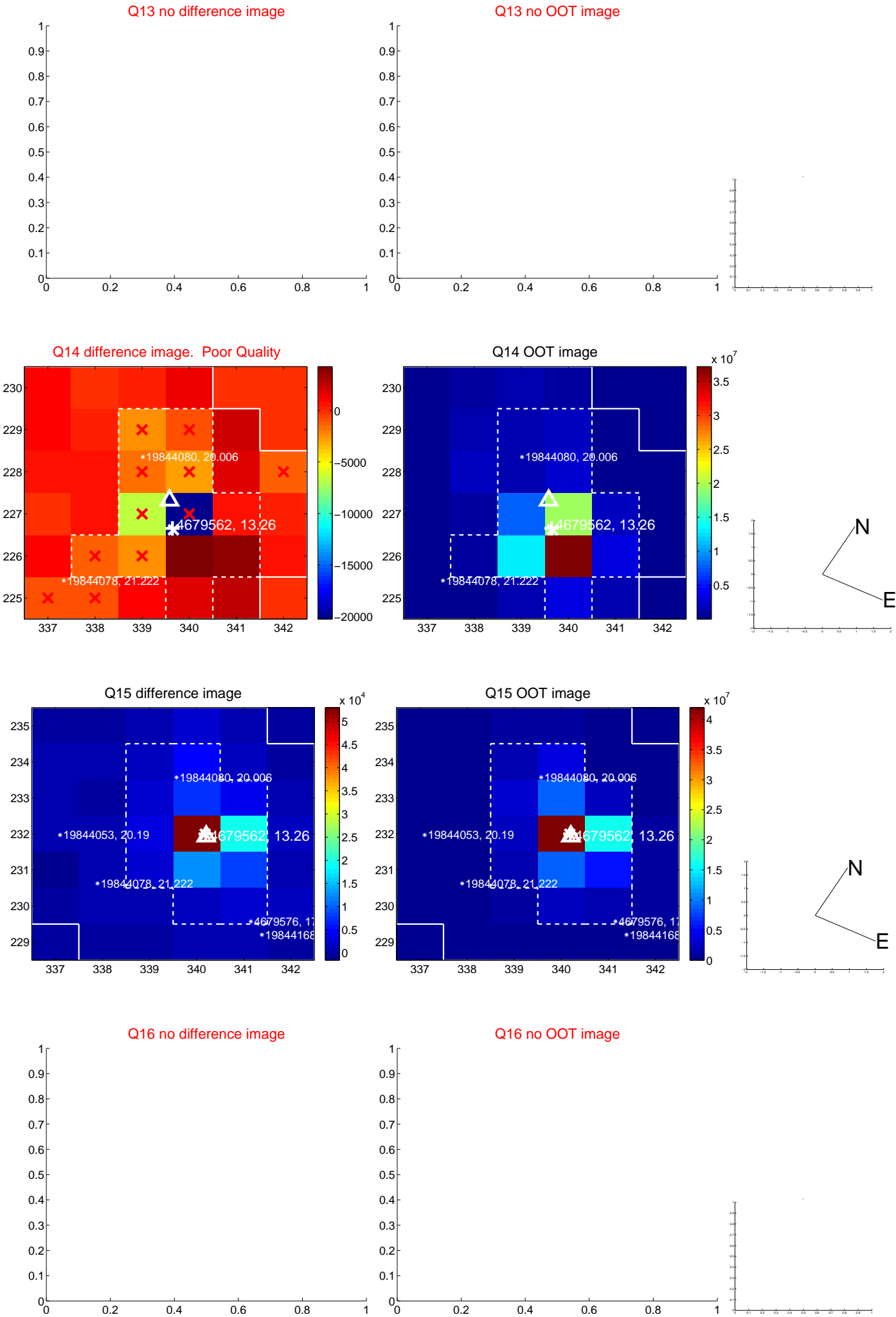
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



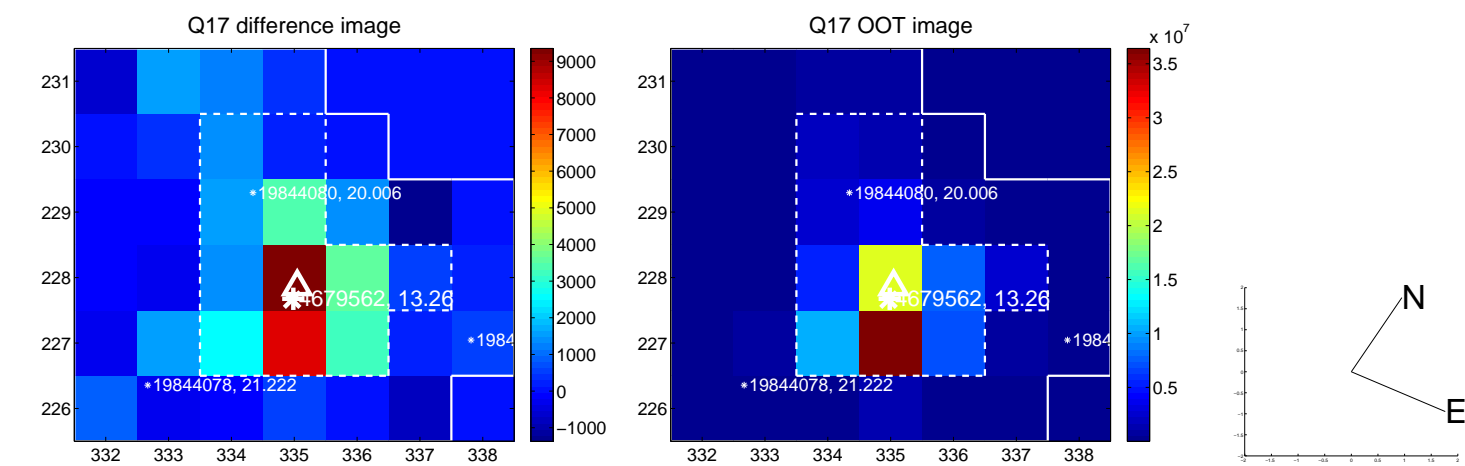
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



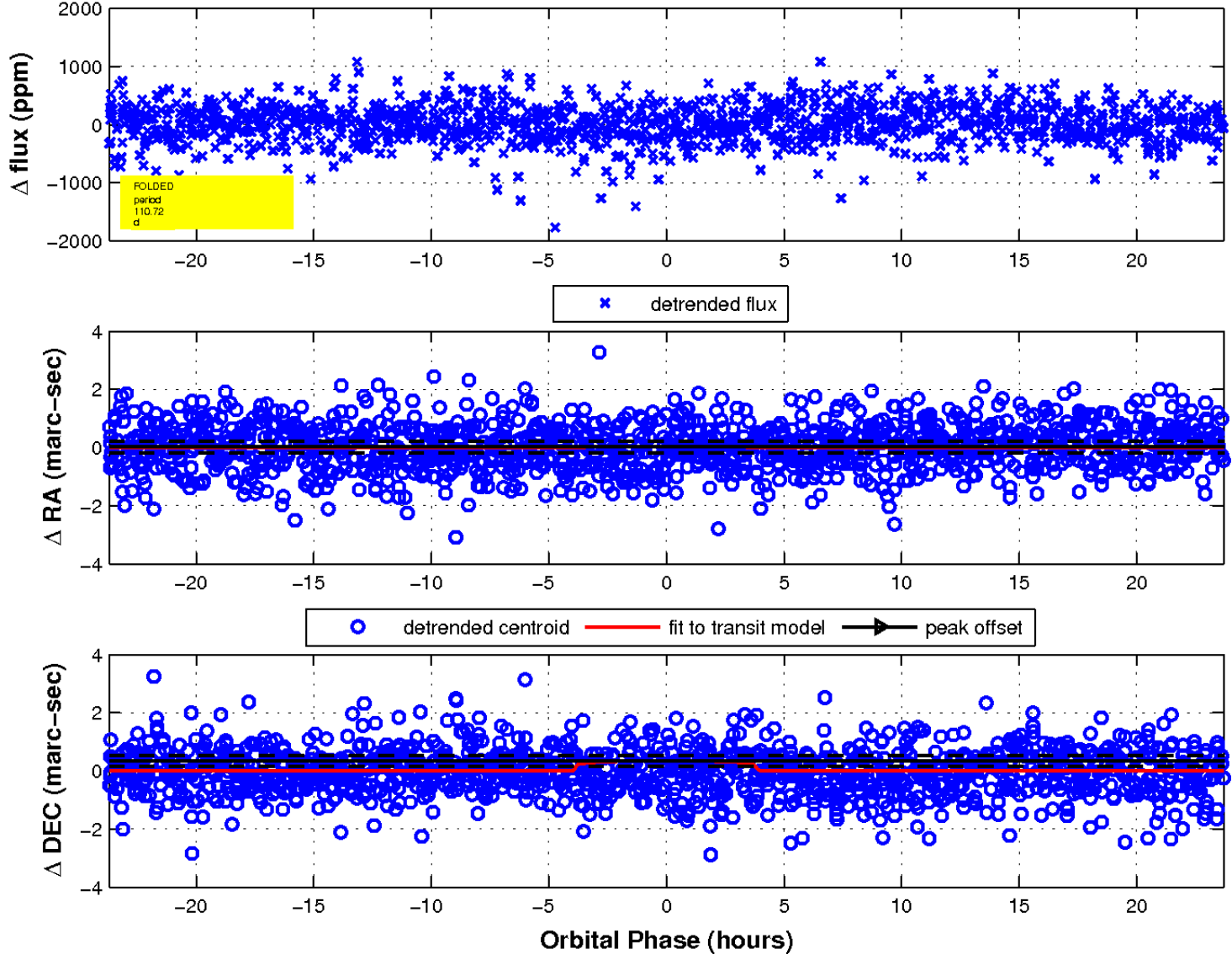
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

