

KIC 011497958

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})
011497958-01	OBS	1422.01	5.841631	135.923827	1374.3	1.939	33.2	37.5	0.38	3526	1.57	9.39
011497958-02	OBS	1422.02	19.850267	133.650668	1585.3	2.898	25.1	28.6	0.38	3526	1.60	1.84
011497958-03	OBS	1422.03	10.864423	141.991915	761.2	2.465	12.4	15.2	0.38	3526	1.40	4.11
011497958-04	OBS	1422.05	34.141984	136.034454	861.4	3.452	10.5	11.8	0.38	3526	1.35	0.89
011497958-05	OBS	1422.04	63.334992	162.621072	879.5	3.790	9.1	9.6	0.38	3526	1.24	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011497958-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011497958-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011497958-03	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011497958-04	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011497958-05	OBS	PC	0.93	0	0	0	0	NO_COMMENT

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.

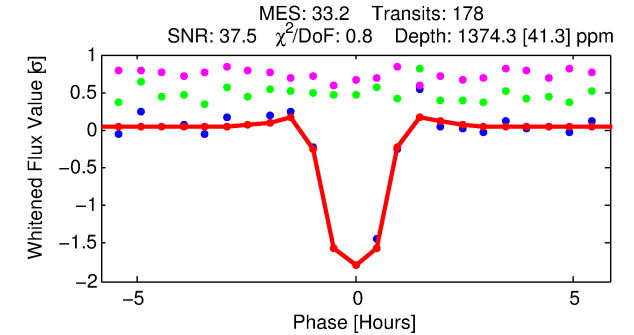
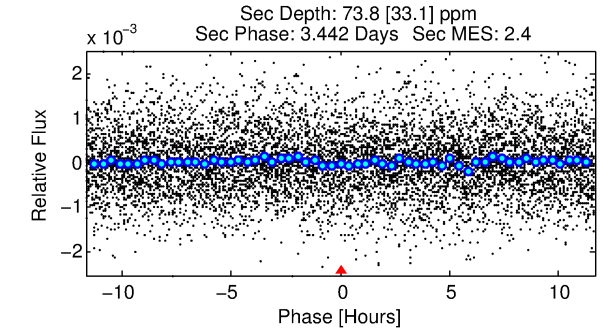
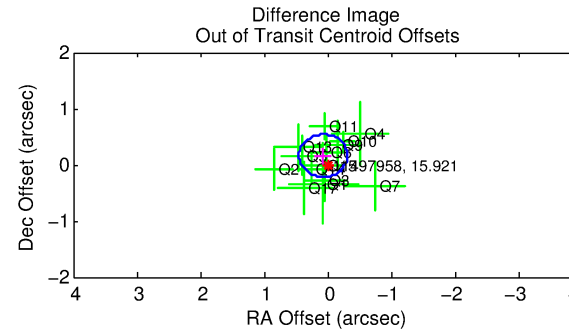
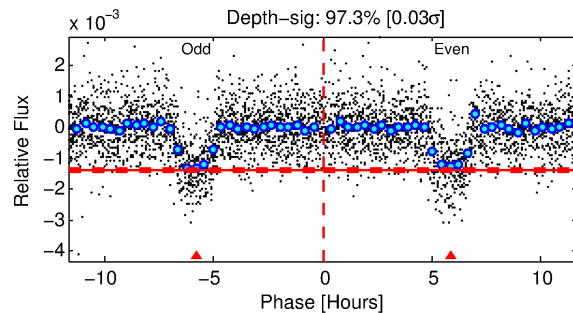
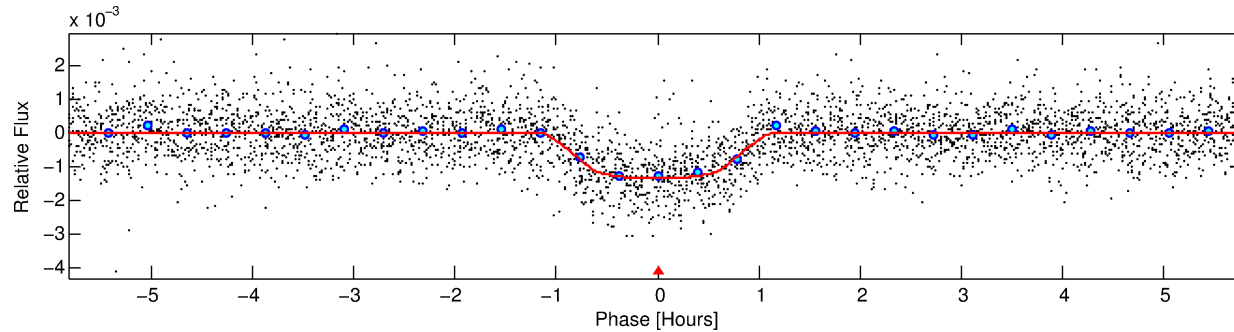
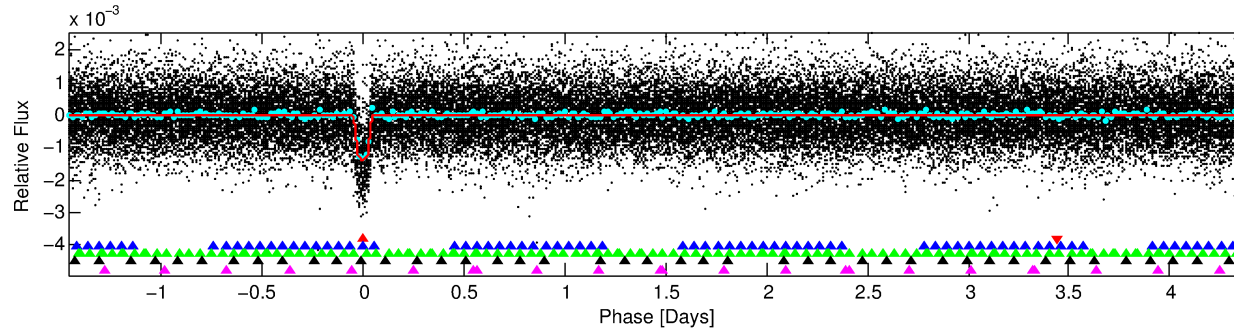
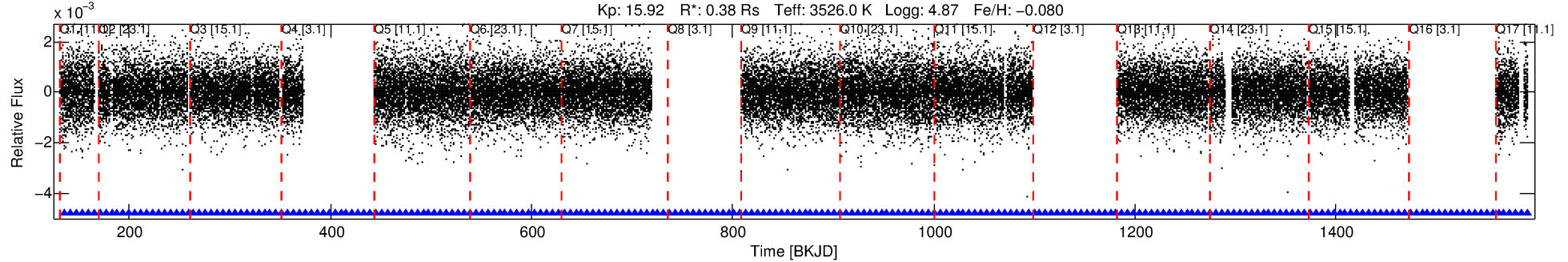
Ephemeris Match Information For 011497958-01

No Significant Match Found

DV One-Page Summary

KIC: 11497958 Candidate: 1 of 5 Period: 5.842 d
KOI: K01422.01 Name: Kepler-296c Corr: 0.990

Kp: 15.92 R*: 0.38 Rs Teff: 3526.0 K Logg: 4.87 Fe/H: -0.080



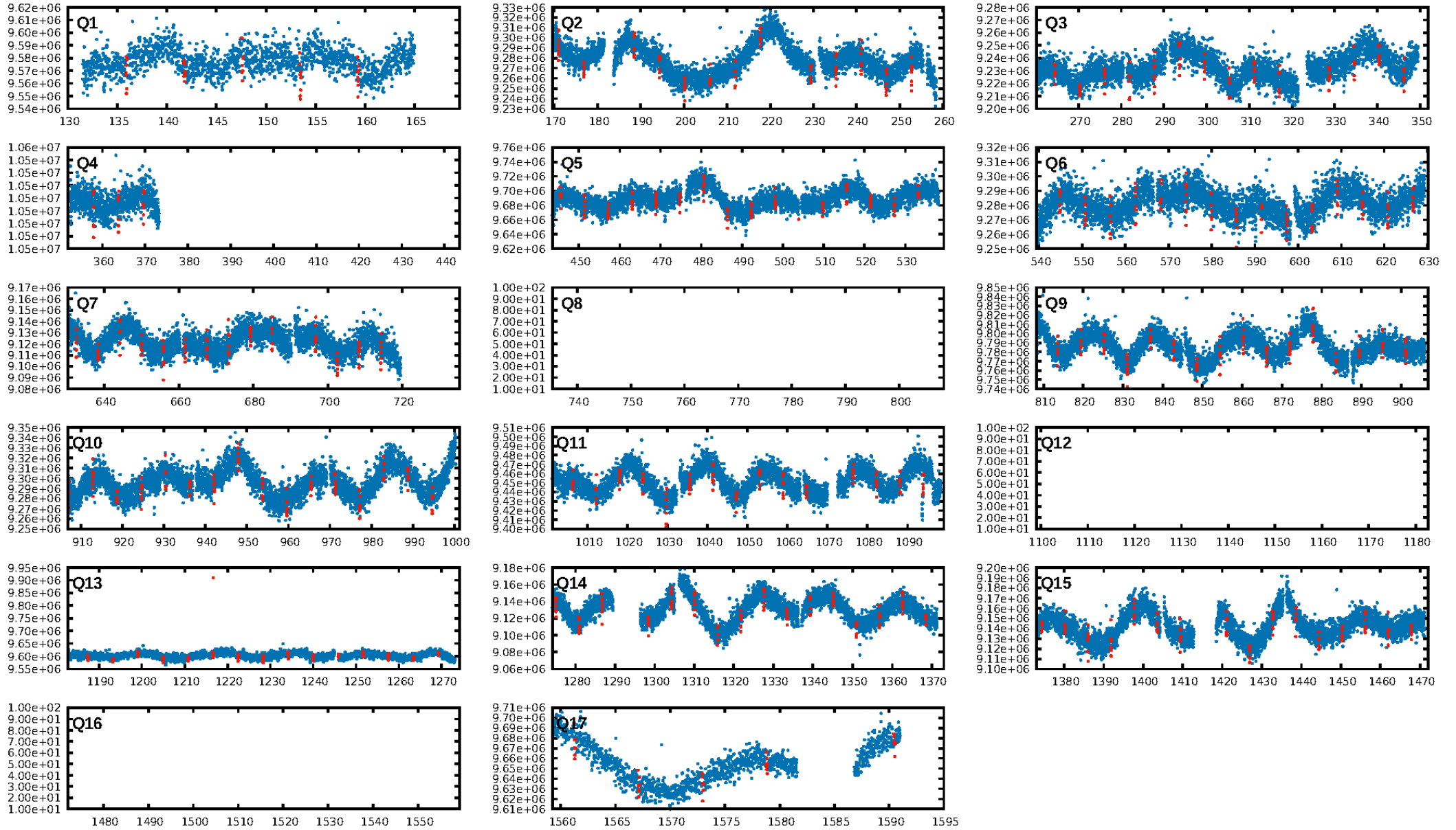
DV Fit Results:

Period = 5.84163 [0.00001] d
Epoch = 135.9238 [0.0010] BKJD
Rp/R* = 0.0375 [0.0070]
a/R* = 15.58 [12.20]
b = 0.79 [0.38]
Seff = 9.39 [1.58]
Teq = 446 [19] K
Rp = 1.57 [0.38] Re
a = 0.0465 [0.0053] AU
Ag = 35.72 [21.42] [1.62σ]
Teffp = 1687 [248] K [4.98σ]

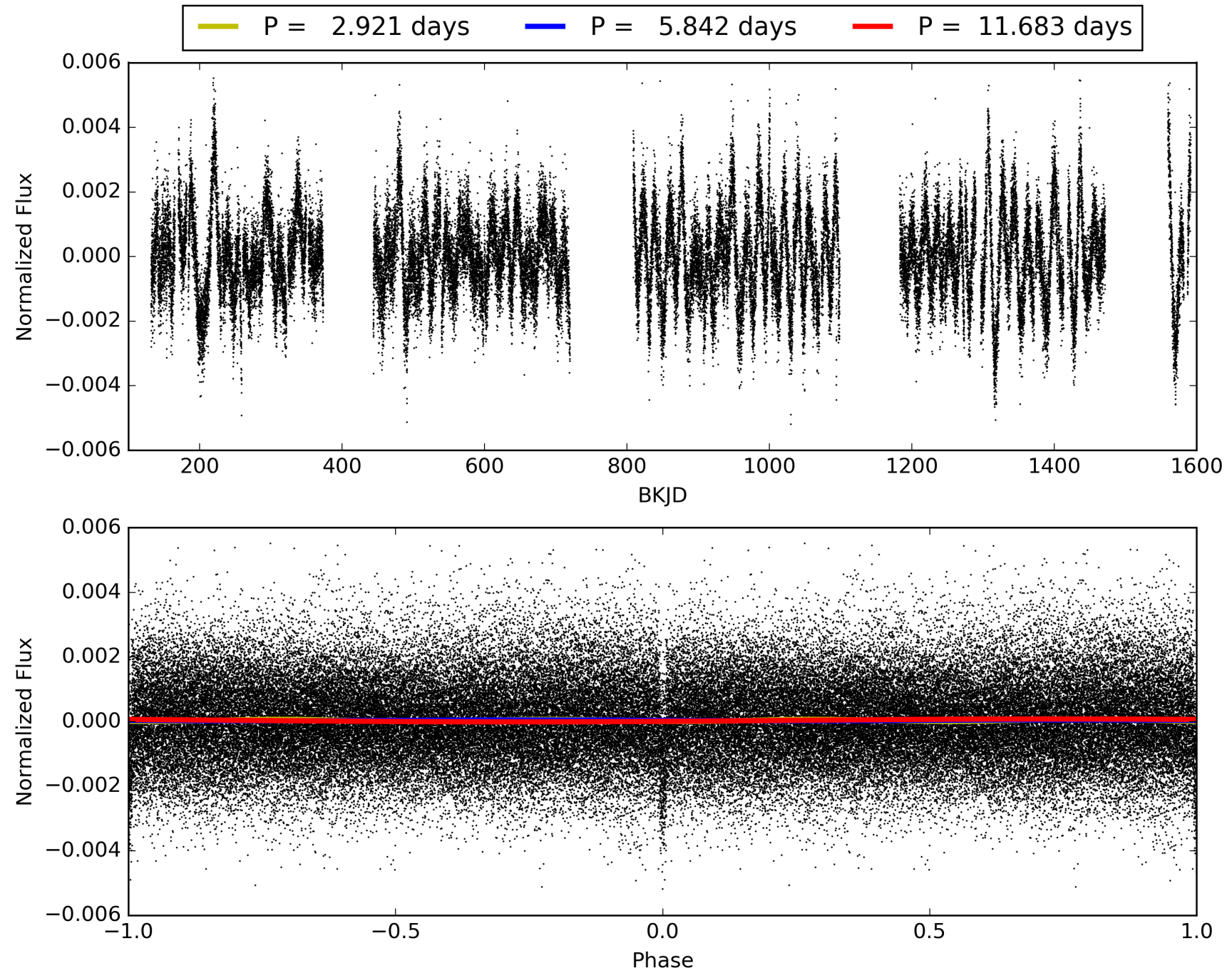
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [38.44σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.60e-231
RollingBand-fgt: 1.00 [165/165]
GhostDiagnostic-chr: 2.231
Centroid-sig: 78.9%
Centroid-so: 0.287 arcsec [0.89σ]
OotOffset-rm: 0.173 arcsec [1.37σ]
KicOffset-rm: 0.084 arcsec [0.61σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 011497958-01, PDC Light Curves

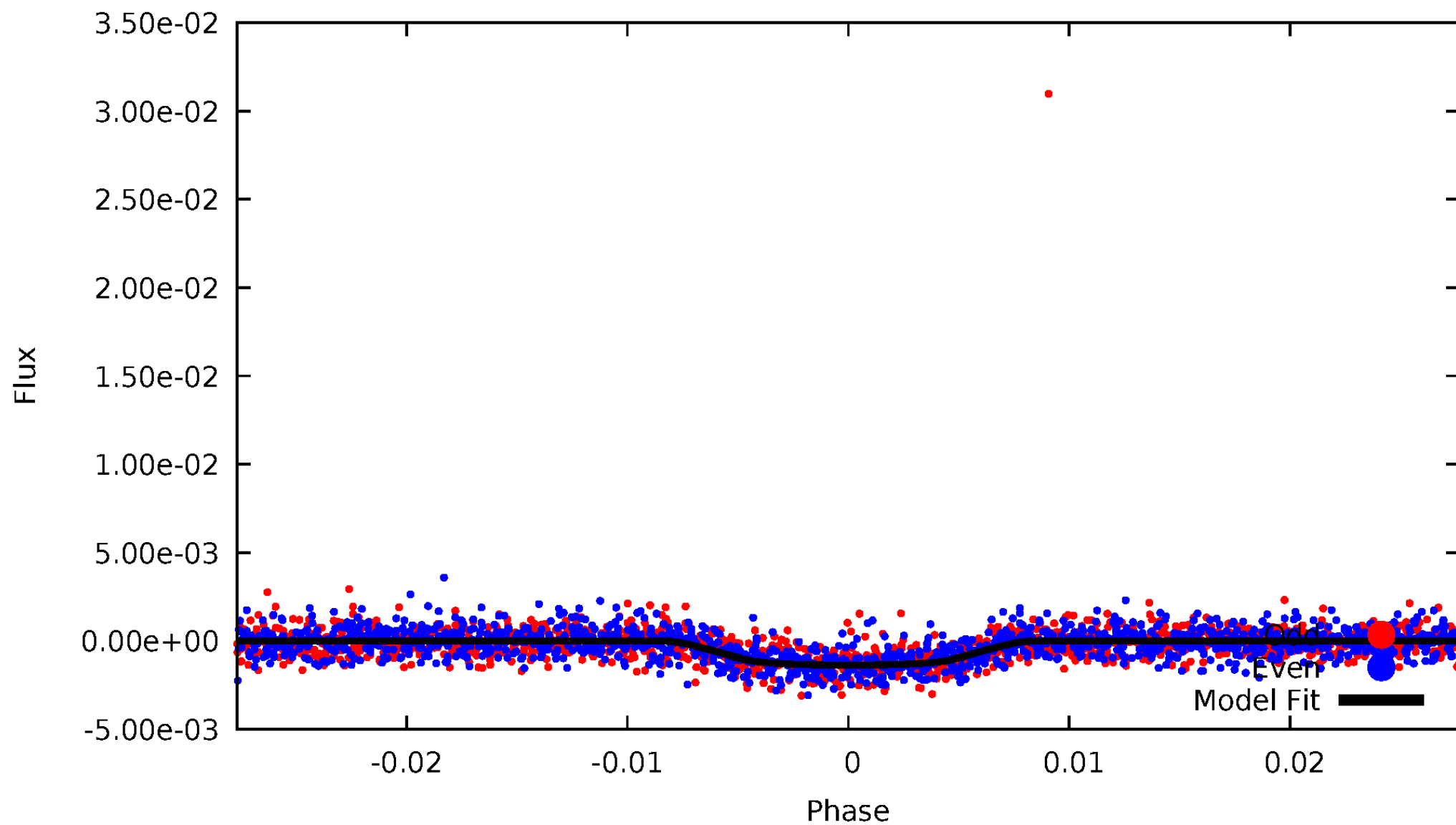


TCE 011497958-01



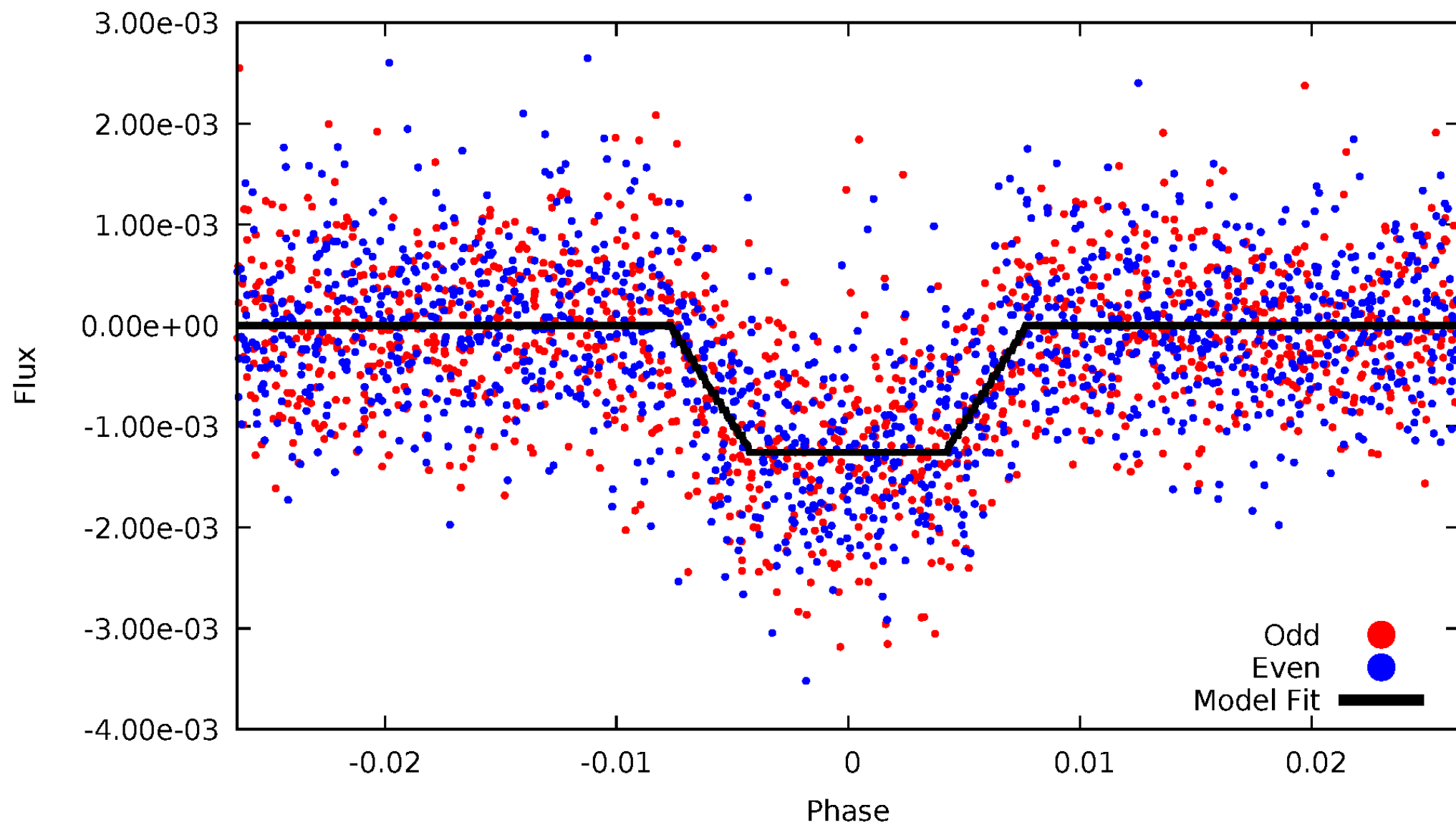
DV Odd/Even

TCE 011497958-01



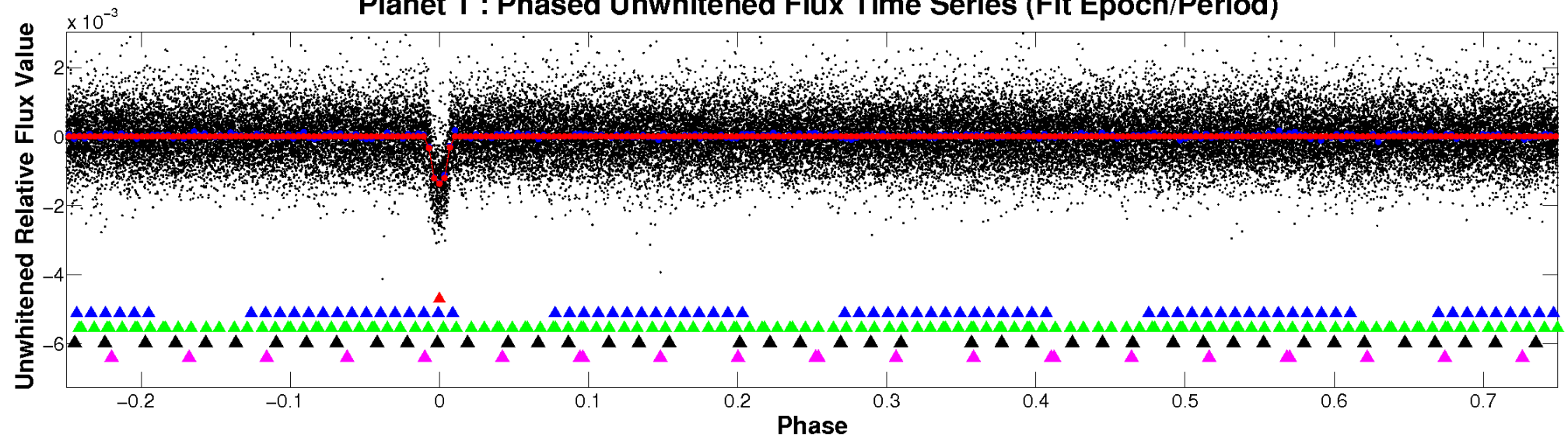
ALT Odd/Even

TCE 011497958-01

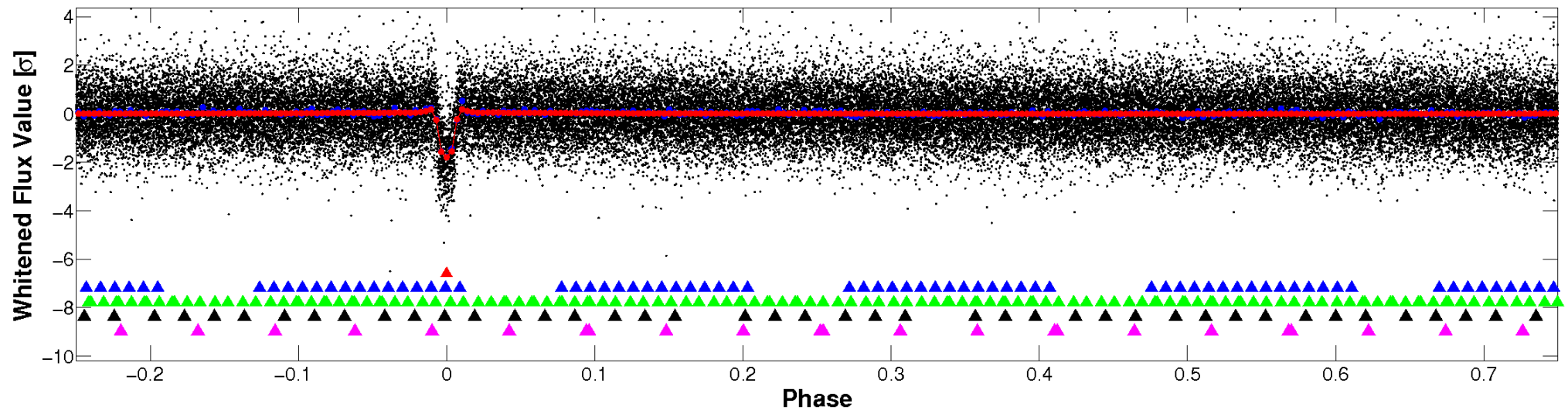


Non-Whitened Vs. Whitened Light Curve

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

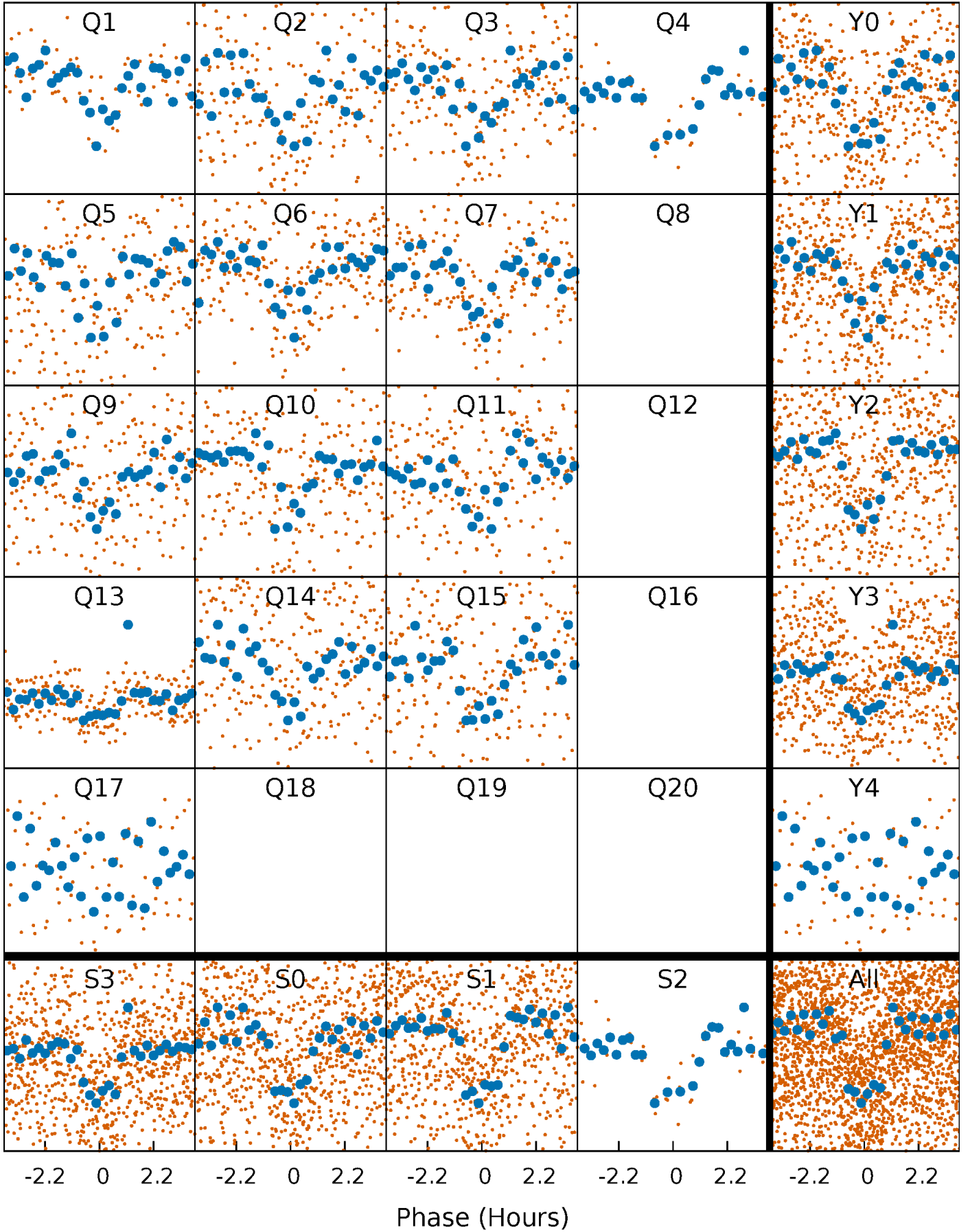


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



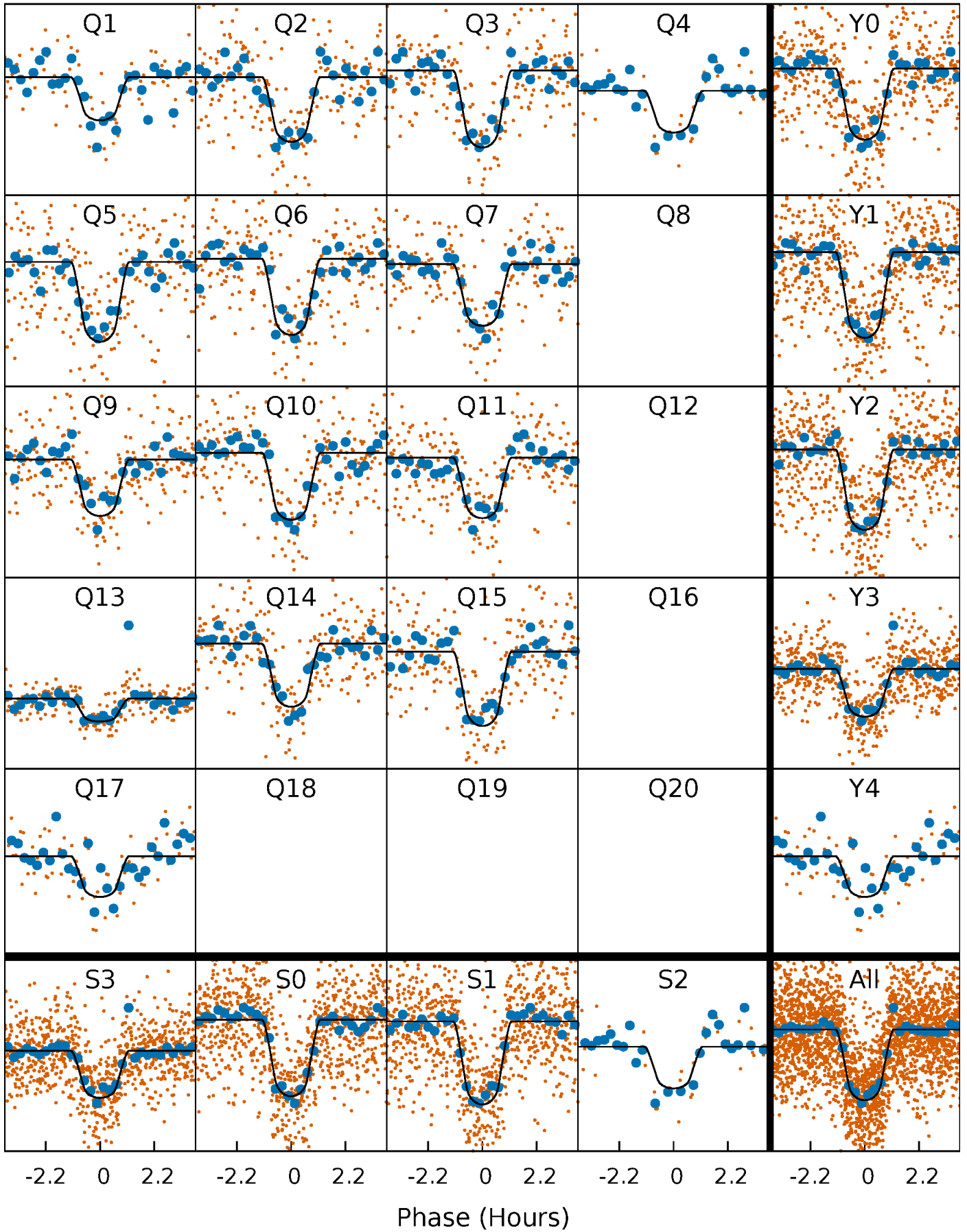
PDC Quarter-Phased Transit Curves

TCE 011497958-01 P= 5.841631 Days $T_0=135.923827$ (BKJD)



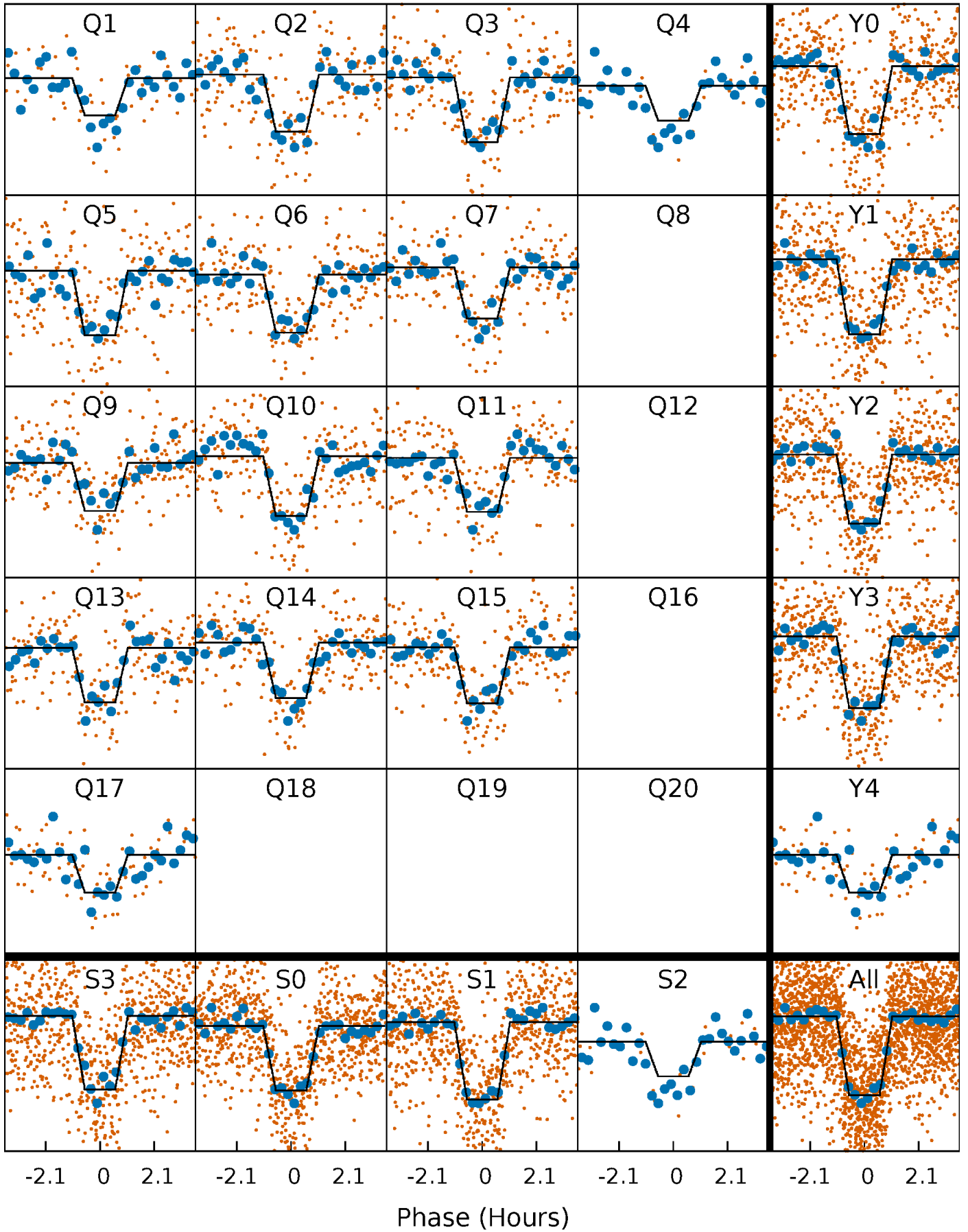
DV Quarter-Phased Transit Curves

TCE 011497958-01 P= 5.841631 Days $T_0=135.923827$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

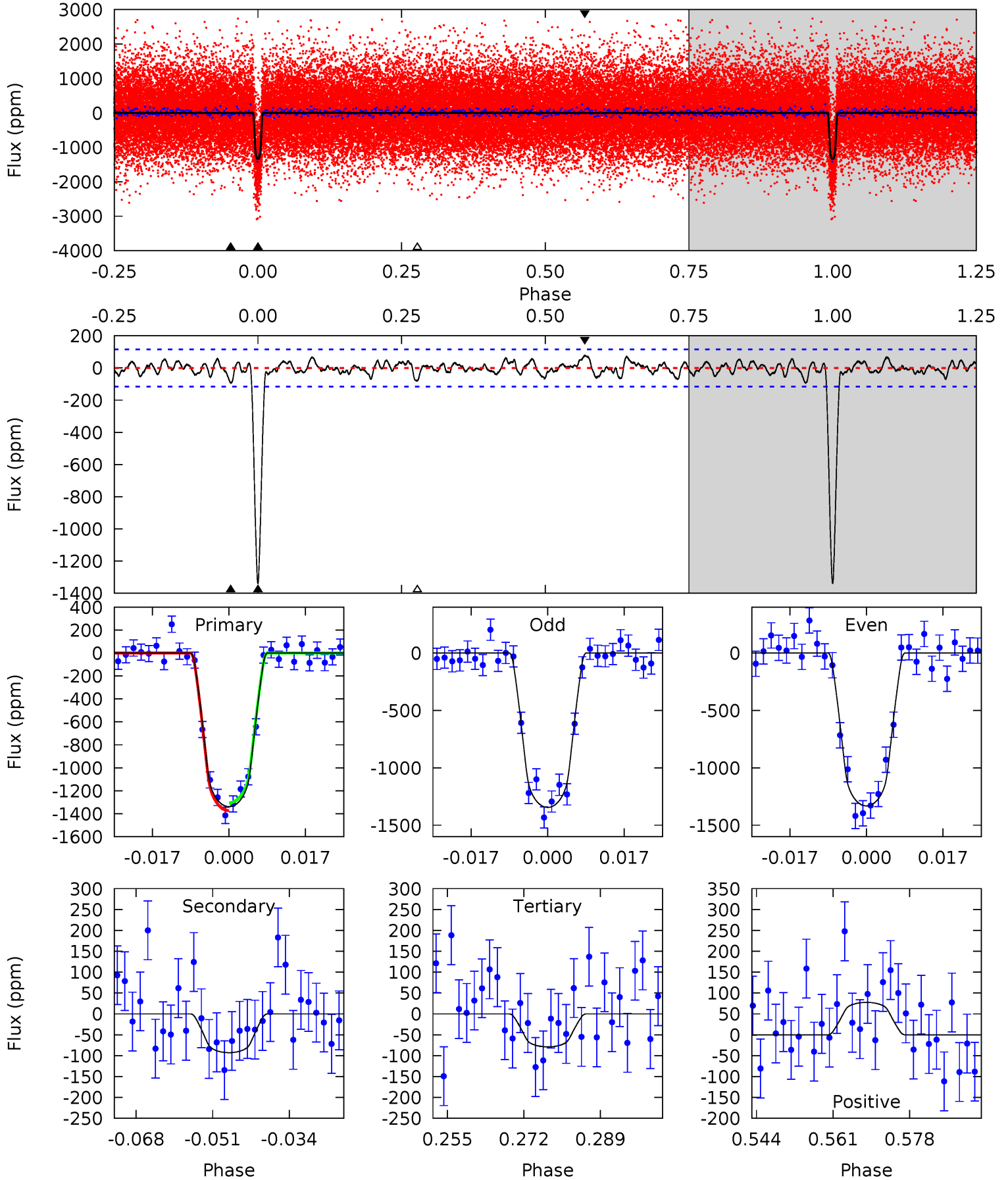
TCE 011497958-01 P= 5.841633 Days $T_0=135.923783$ (BKJD)



DV Model-Shift Uniqueness Test

011497958-01, P = 5.841631 Days, E = 130.082196 Days

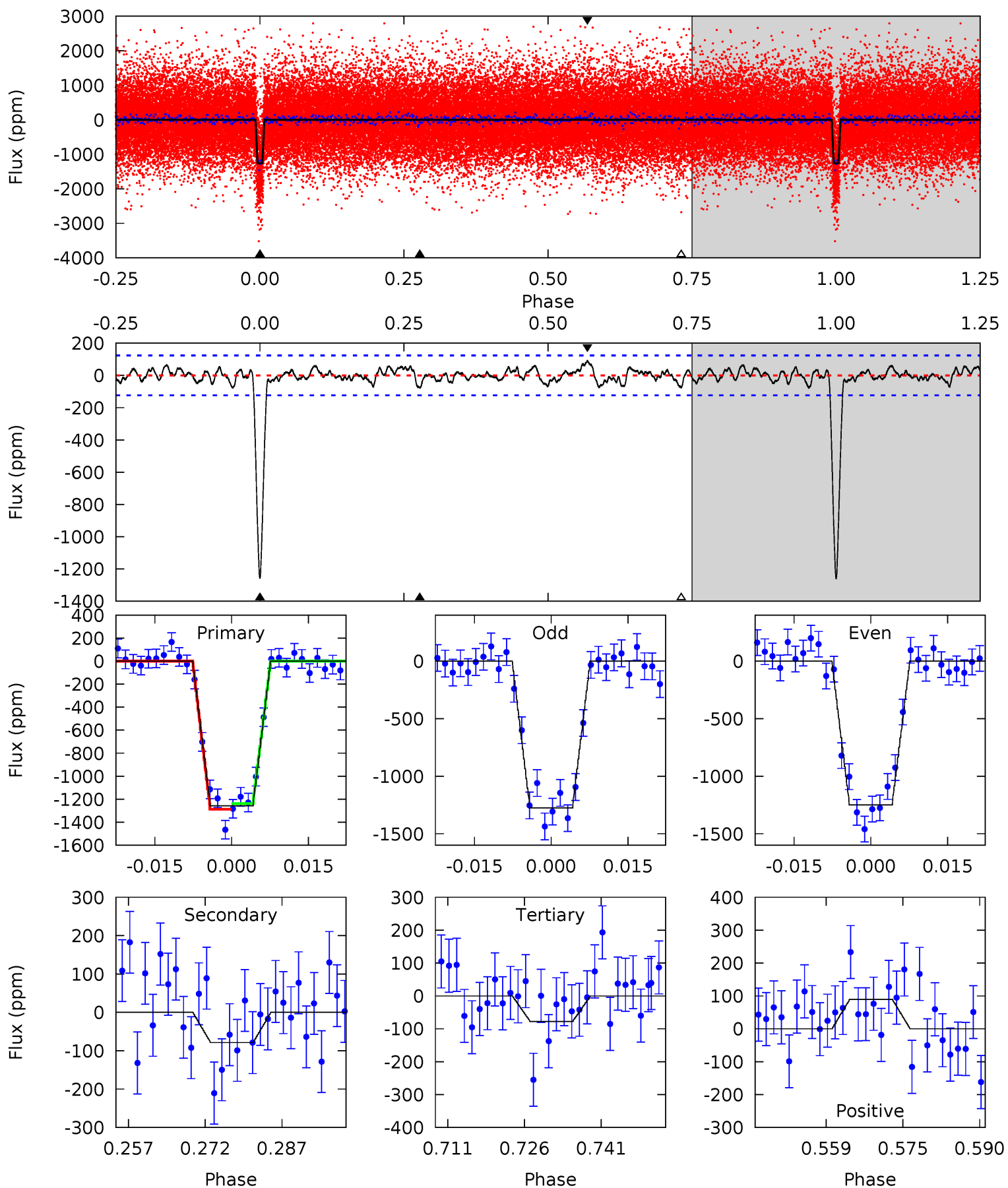
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.9	3.94	3.36	3.29	4.92	2.39	1.27	53.5	53.6	0.59	0.65	0.28	1.01	0.05	1.47



Alt Model-Shift Uniqueness Test

011497958-01, P = 5.841633 Days, E = 130.082150 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.4	3.15	3.11	3.59	4.95	2.43	1.24	47.3	46.8	0.05	-0.44	0.50	1.02	0.07	0.97



Stellar Parameters For KIC 011497958

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3526^{+71}_{-78}	$4.866^{+0.066}_{-0.044}$	$-0.080^{+0.150}_{-0.150}$	$0.383^{+0.048}_{-0.058}$	$0.394^{+0.055}_{-0.067}$	$9.856^{+3.710}_{-2.103}$
	+2%/-2%	+1%/-1%	+188%/-188%	+13%/-15%	+14%/-17%	+38%/-21%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 011497958-01 / KOI 1422.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-93 ± 24	$1.56^{+0.32}_{-0.31}$	621^{+21}_{-23}	2417^{+155}_{-117}	46^{+28}_{-16}
Alt.	-79 ± 25	$1.47^{+0.32}_{-0.31}$	622^{+19}_{-20}	2410^{+160}_{-159}	44^{+30}_{-19}

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

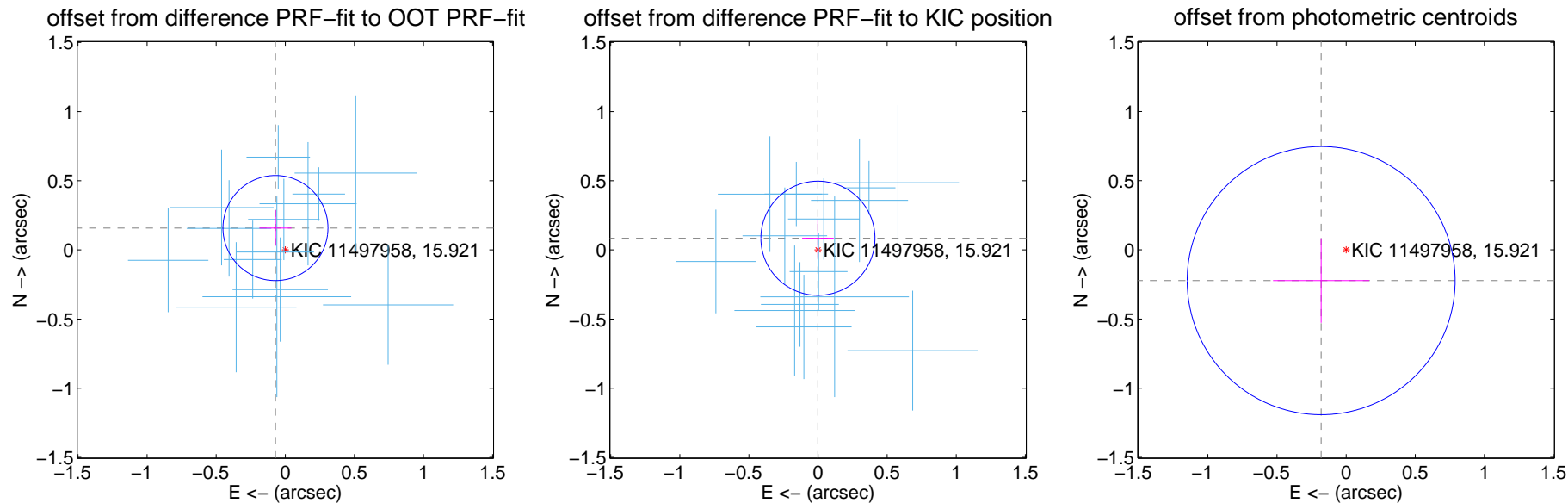
DV Centroid Data

Supplemental centroid analysis for 011497958-01. Kepler magnitude: 15.92. Transit SNR 37.47

There are 14 quarters with good PRF difference image offsets

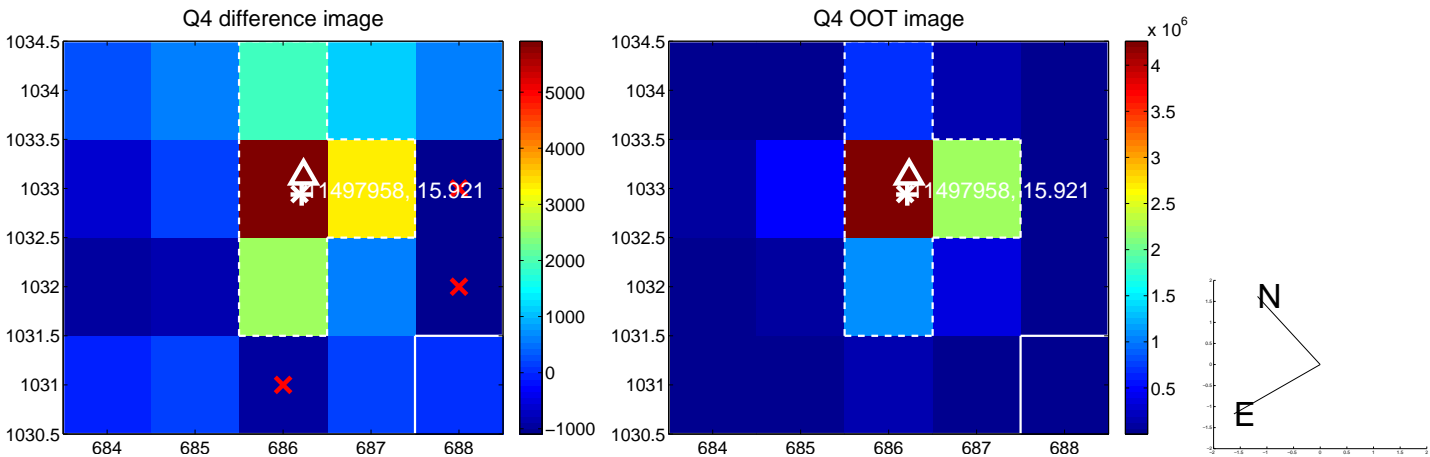
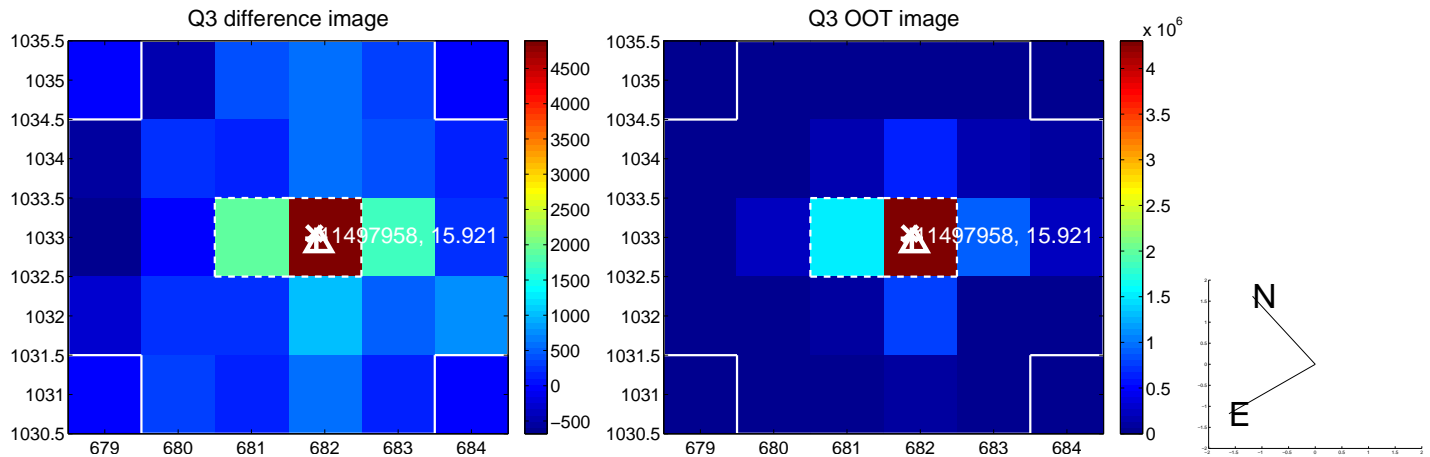
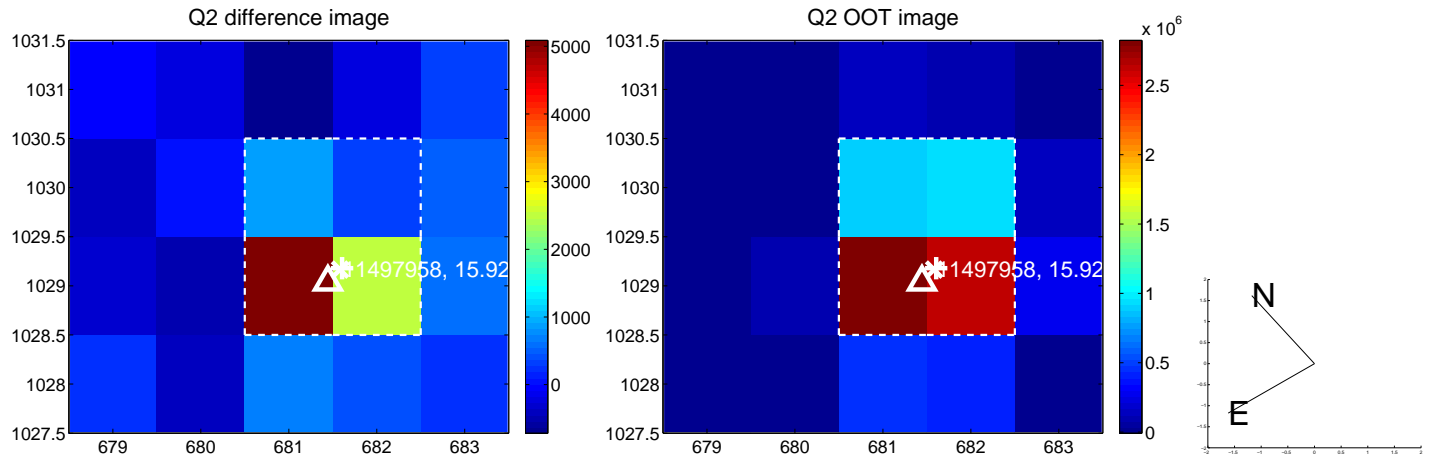
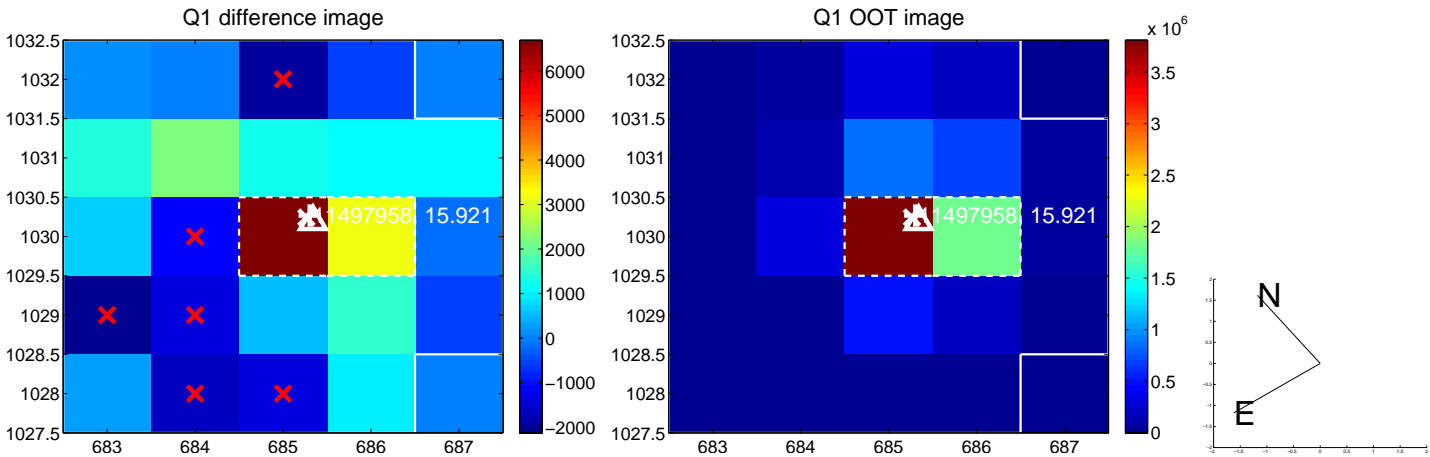
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.173 ± 0.127	1.37	0.071 ± 0.115	0.158 ± 0.129
PRF-fit source offset from KIC position	0.084 ± 0.138	0.61	0.001 ± 0.114	0.084 ± 0.138
photometric centroid source offset	0.29 ± 0.32	0.89	0.18 ± 0.35	-0.22 ± 0.31

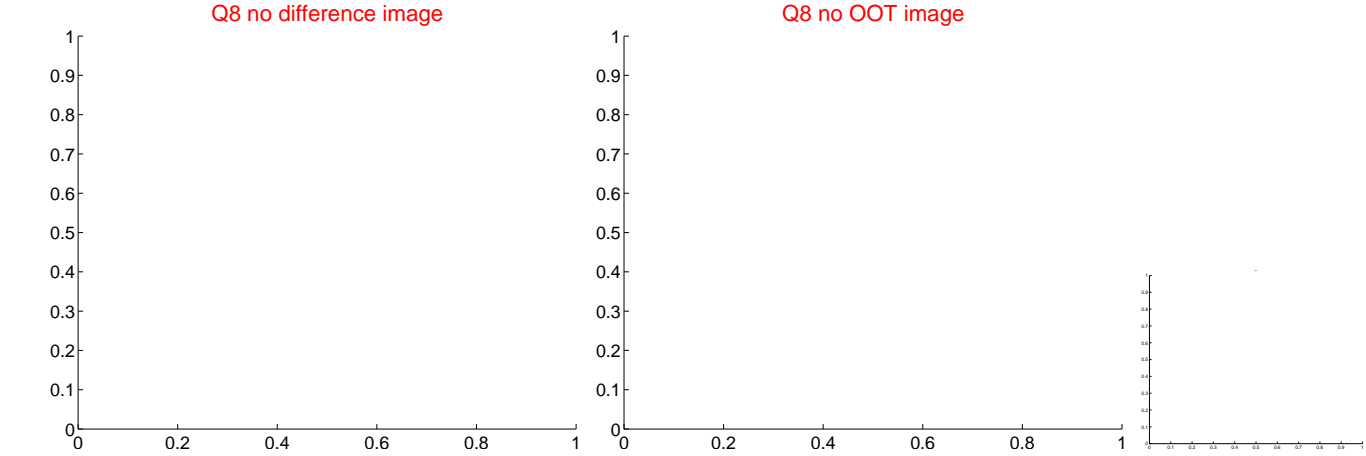
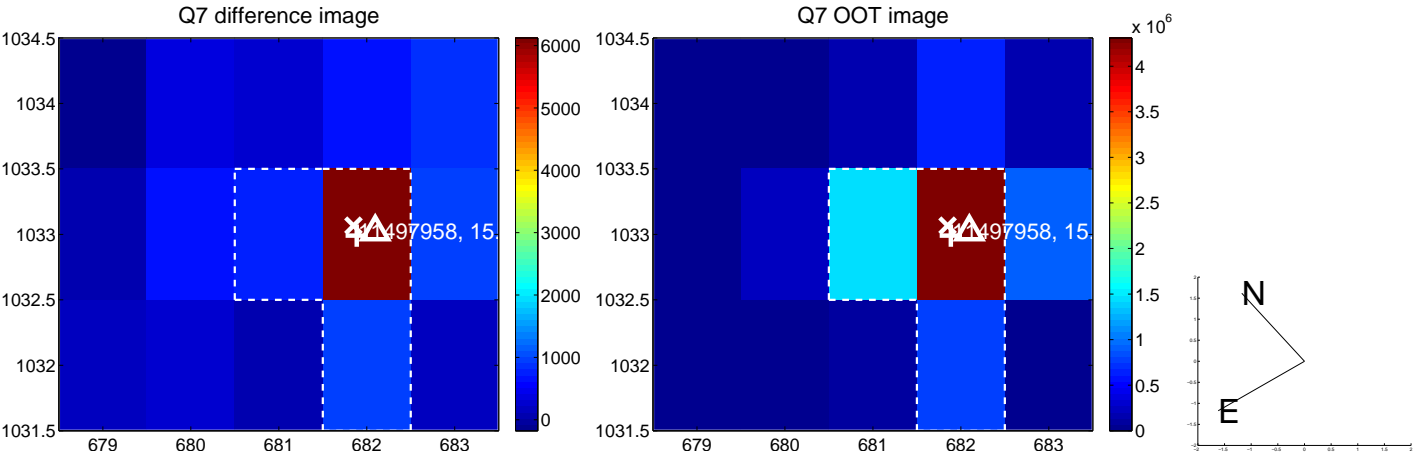
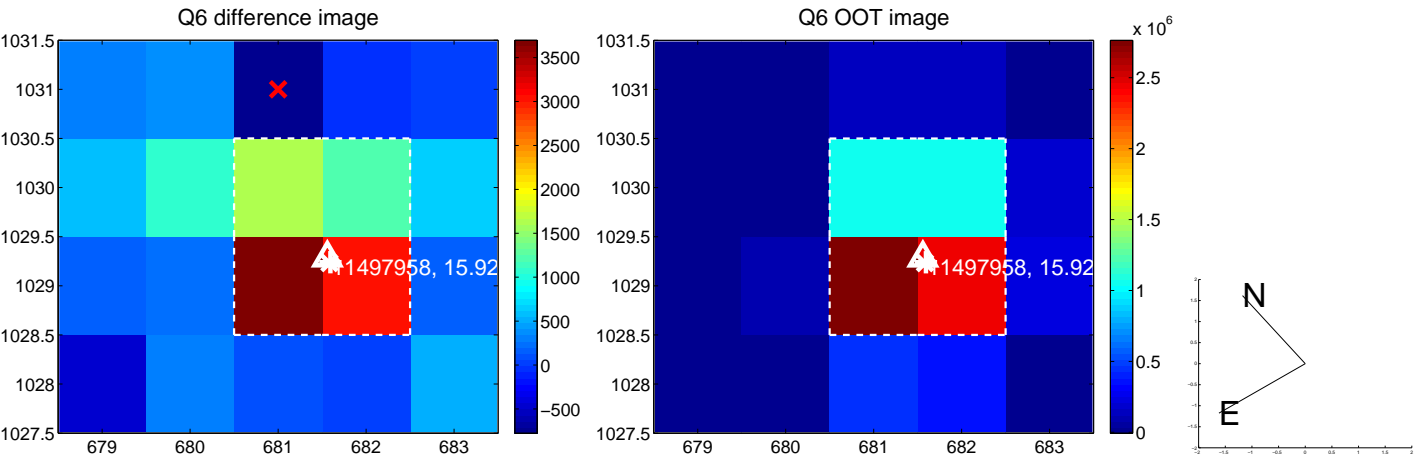
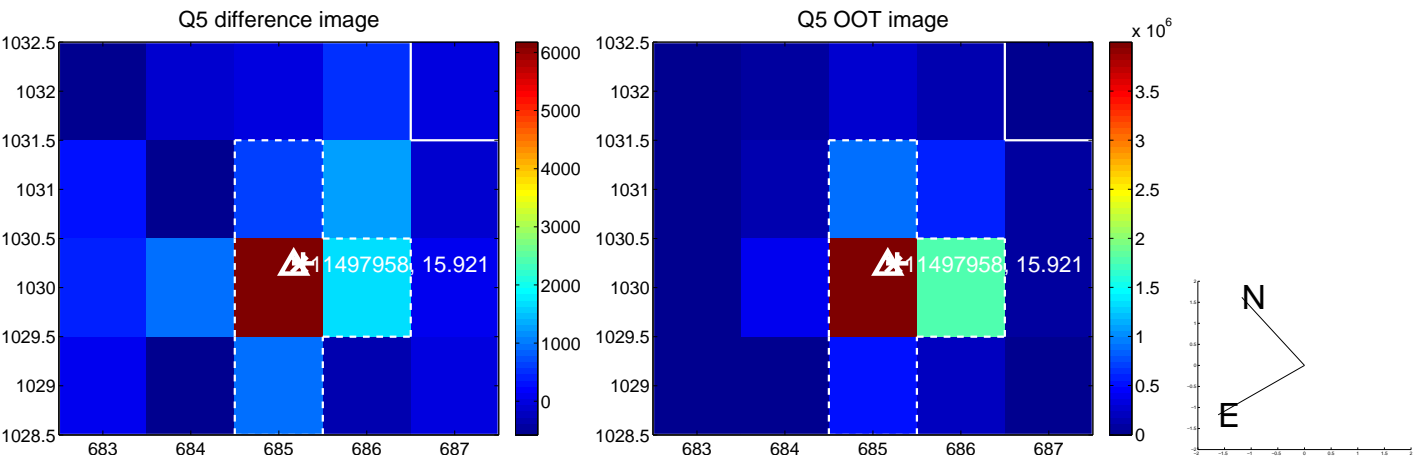


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

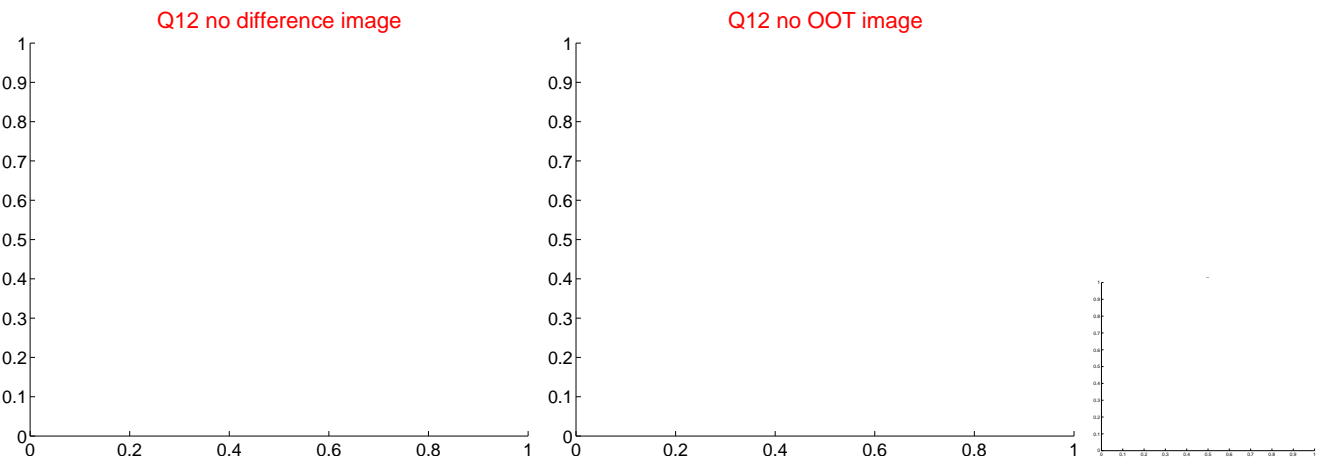
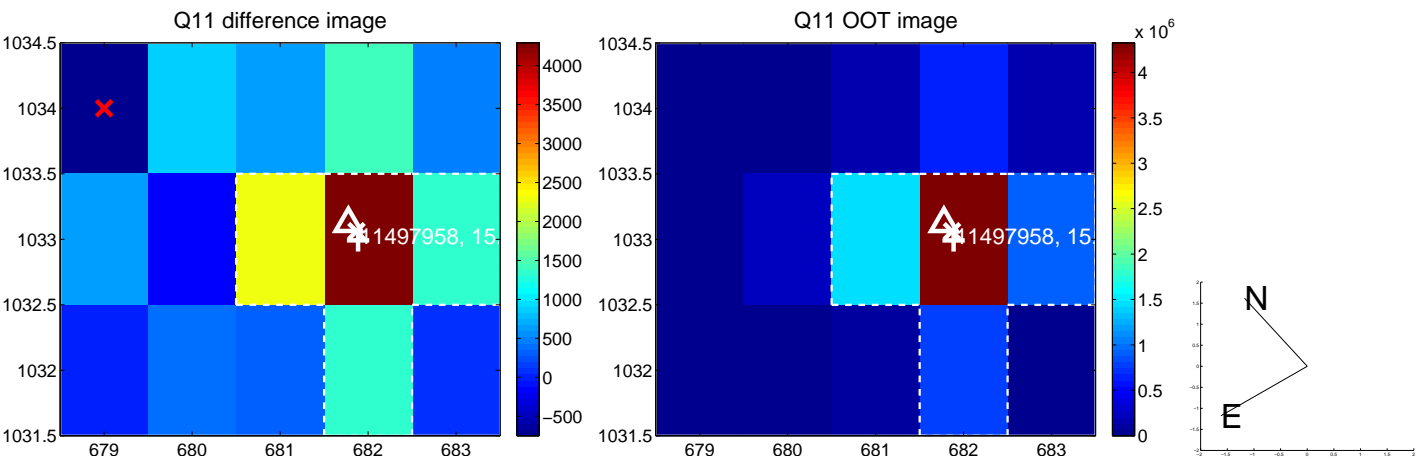
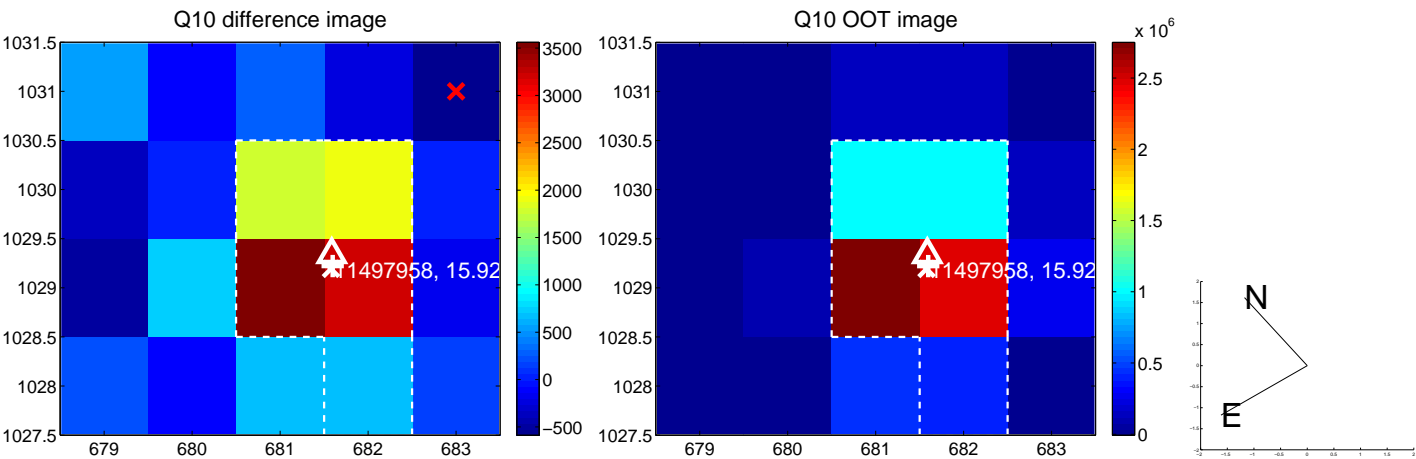
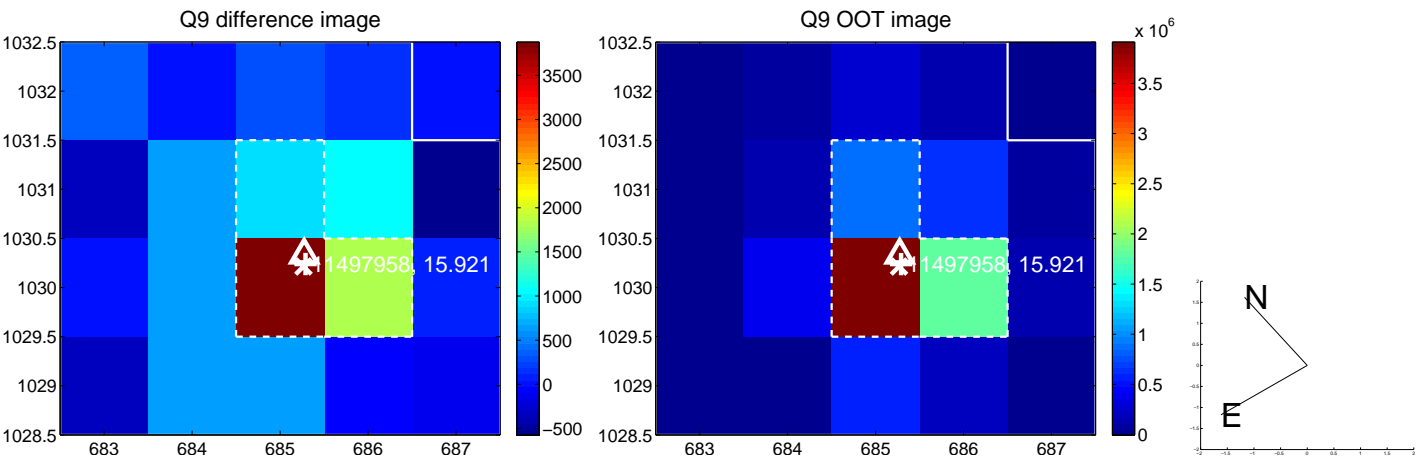
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



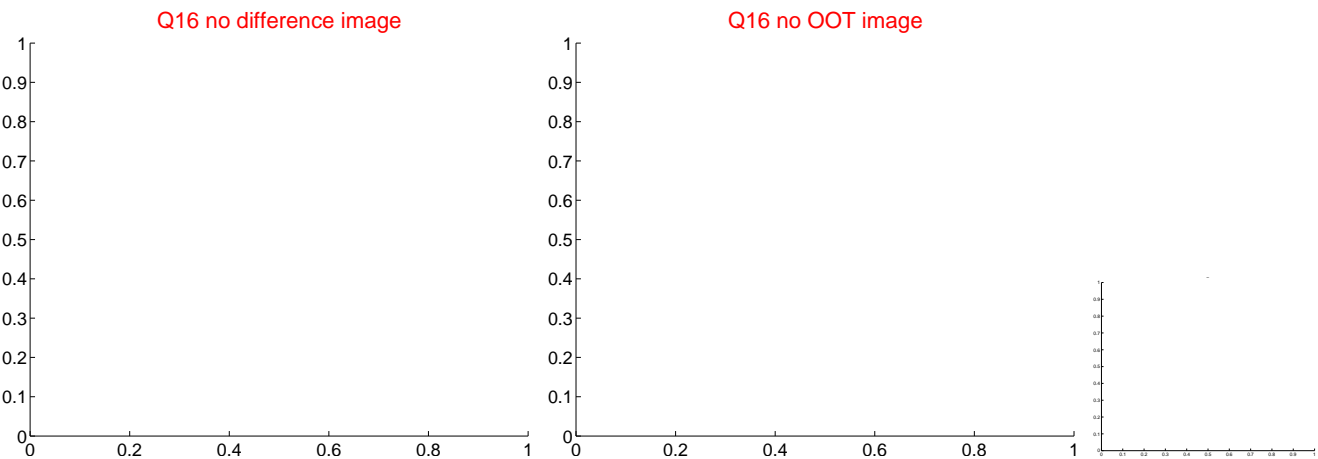
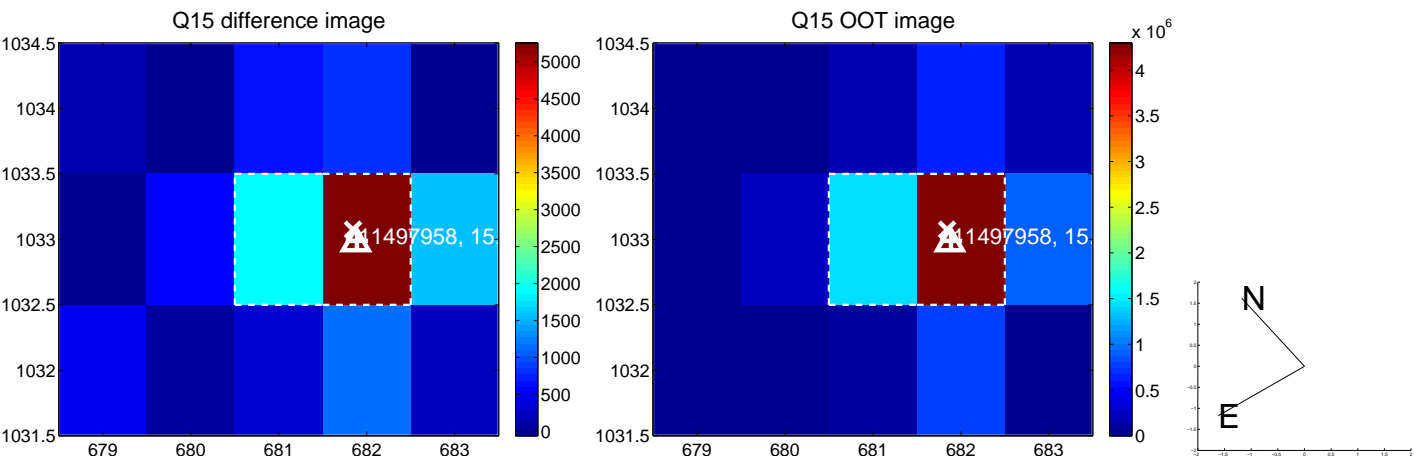
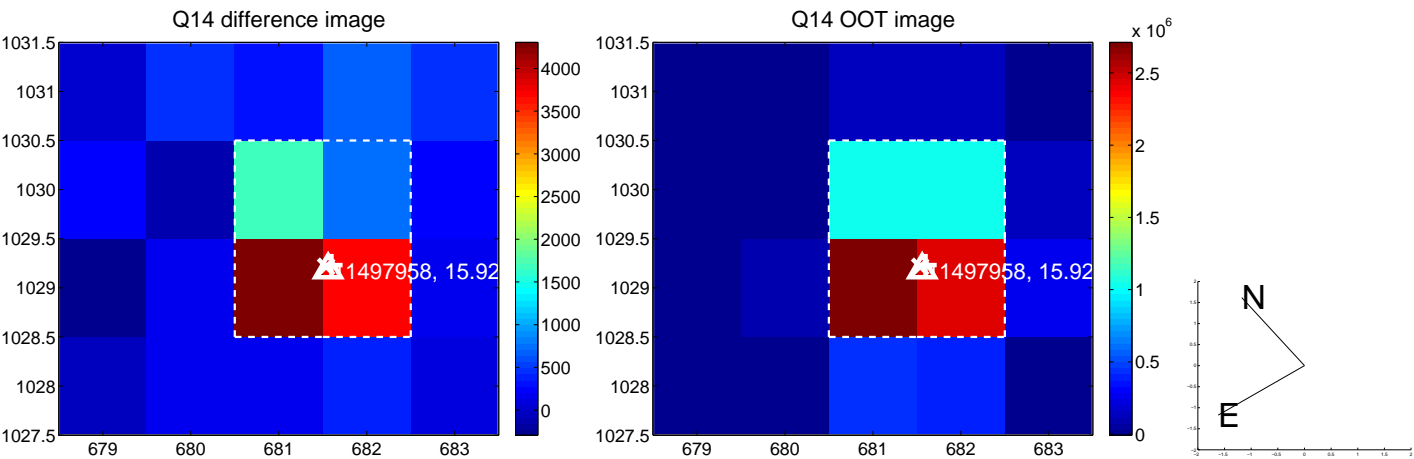
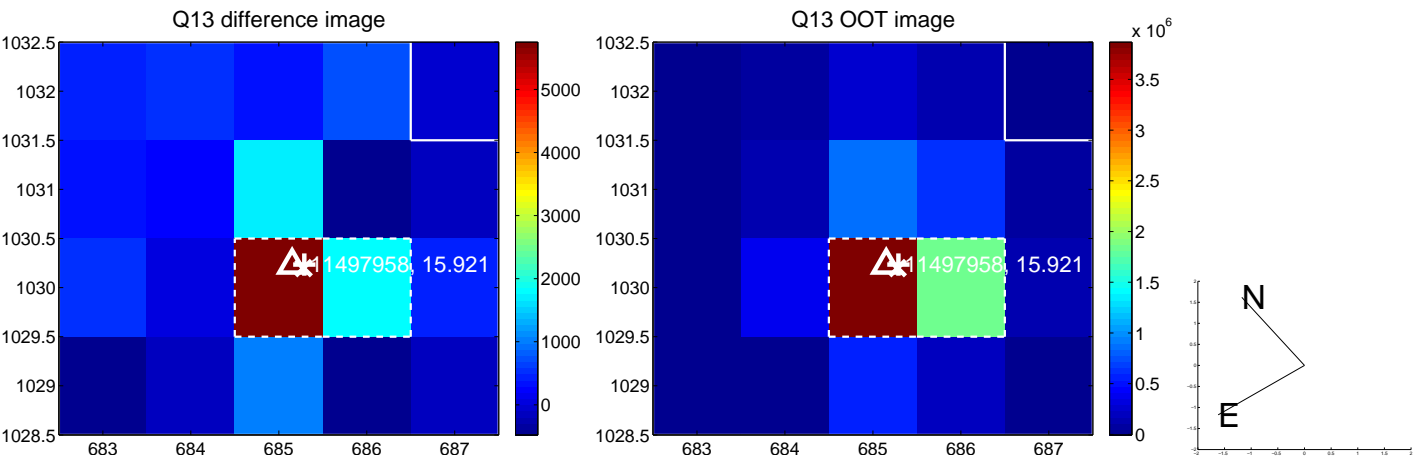
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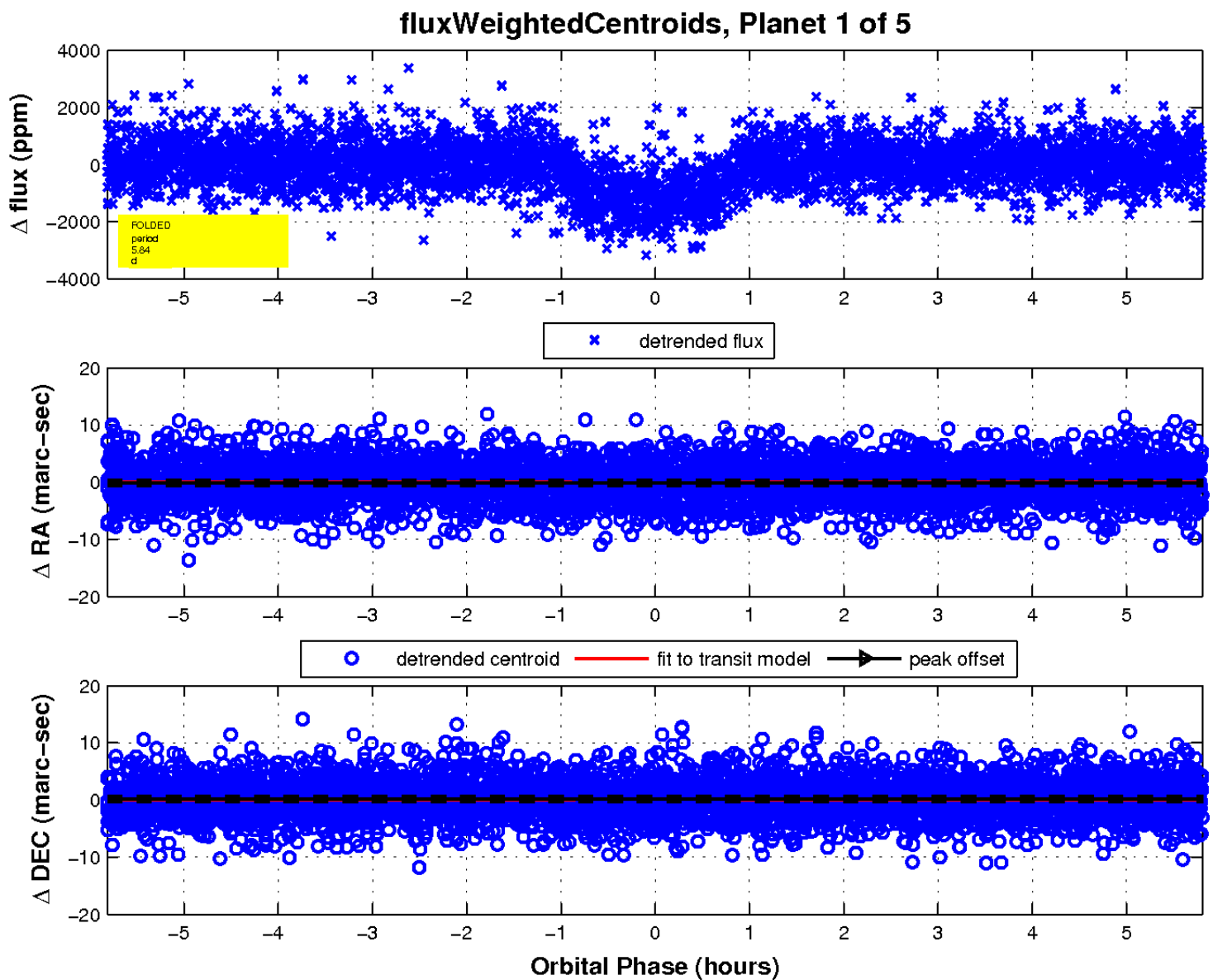
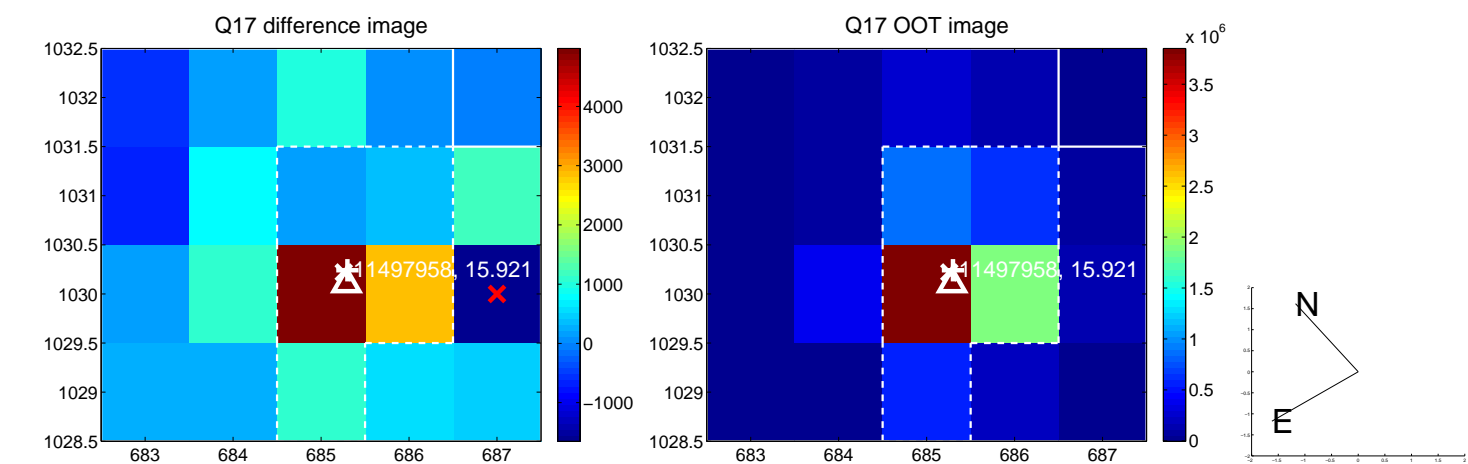
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

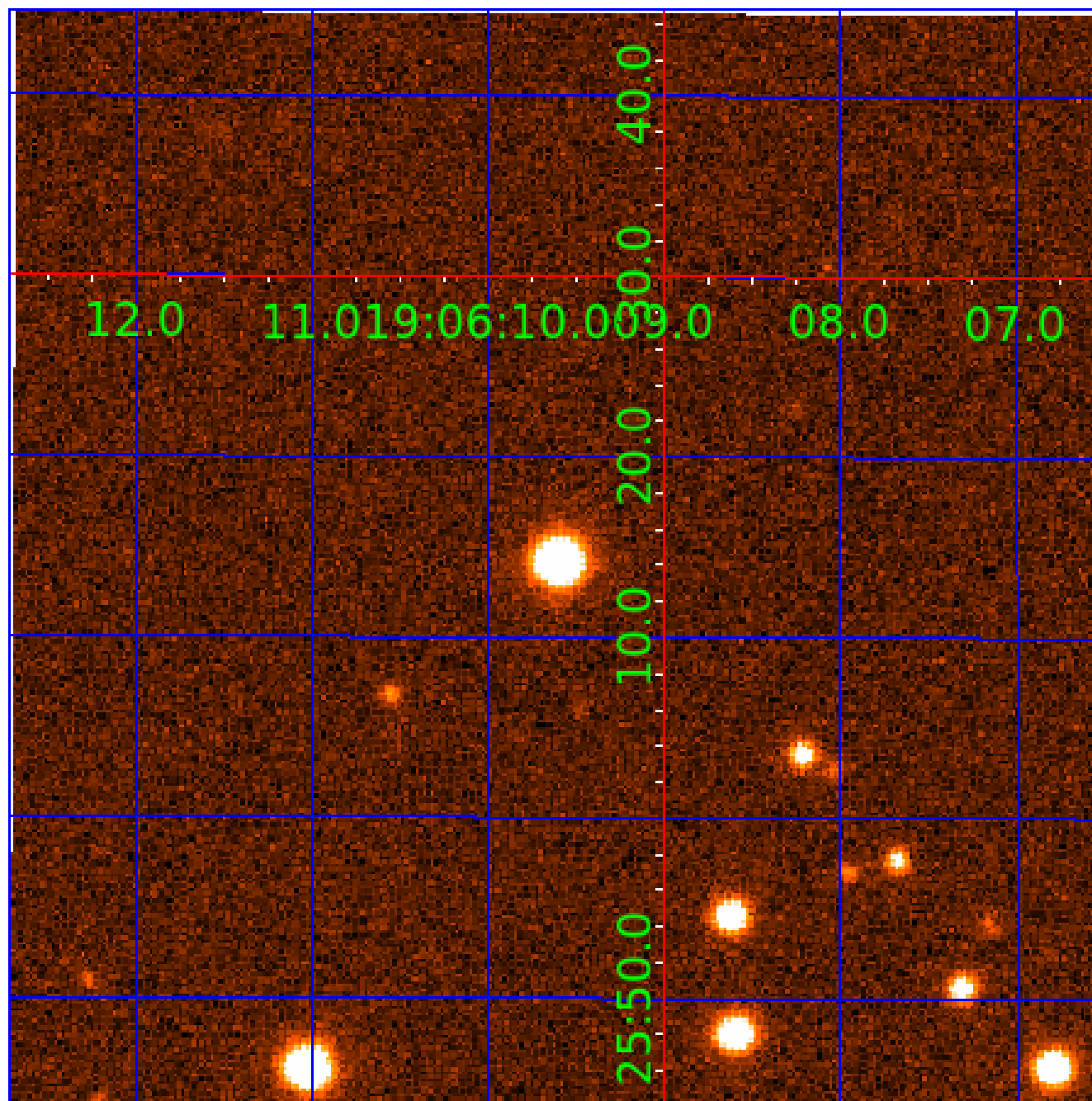


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011497958

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})
011497958-01	OBS	1422.01	5.841631	135.923827	1374.3	1.939	33.2	37.5	0.38	3526	1.57	9.39
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011497958-03	OBS	1422.03	10.864423	141.991915	761.2	2.465	12.4	15.2	0.38	3526	1.40	4.11
011497958-04	OBS	1422.05	34.141984	136.034454	861.4	3.452	10.5	11.8	0.38	3526	1.35	0.89
011497958-05	OBS	1422.04	63.334992	162.621072	879.5	3.790	9.1	9.6	0.38	3526	1.24	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011497958-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011497958-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011497958-03	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011497958-04	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011497958-05	OBS	PC	0.93	0	0	0	0	NO_COMMENT

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.

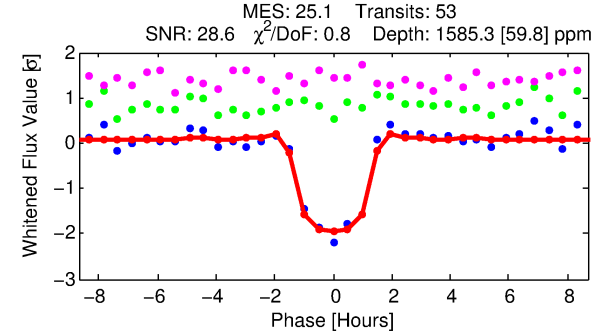
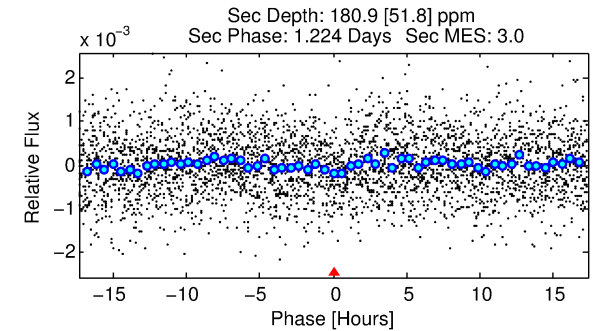
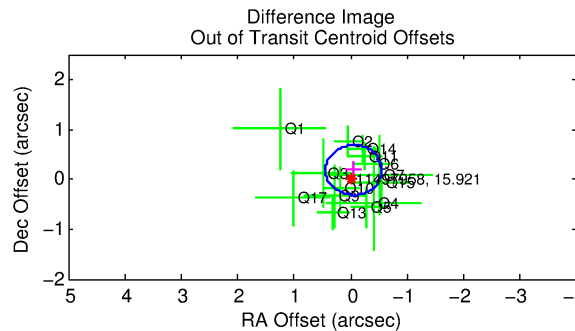
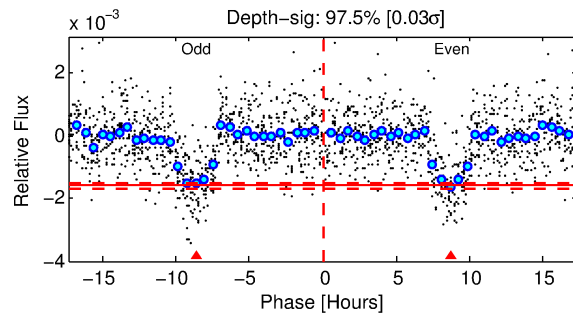
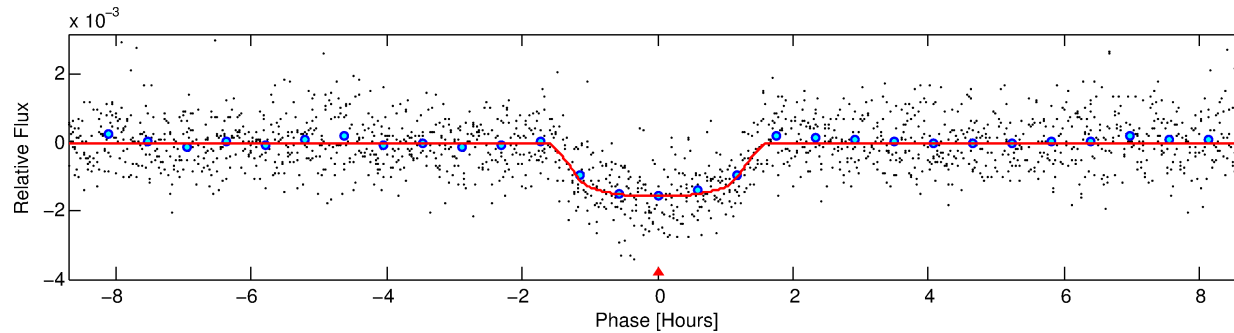
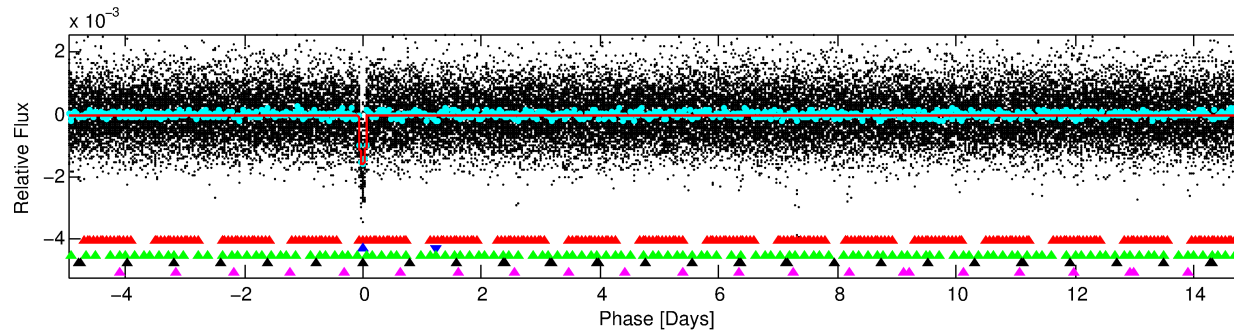
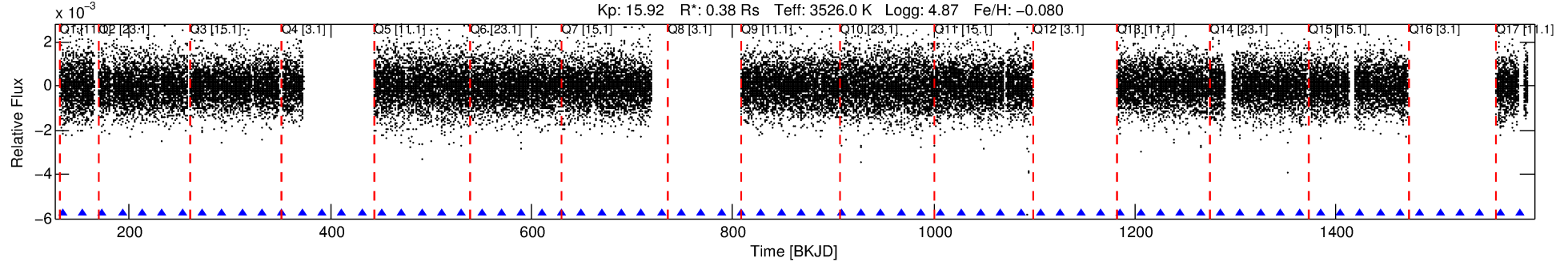
Ephemeris Match Information For 011497958-02

No Significant Match Found

DV One-Page Summary

KIC: 11497958 Candidate: 2 of 5 Period: 19.850 d
KOI: K01422.02 Name: Kepler-296d Corr: 0.996

Kp: 15.92 R*: 0.38 Rs Teff: 3526.0 K Logg: 4.87 Fe/H: -0.080



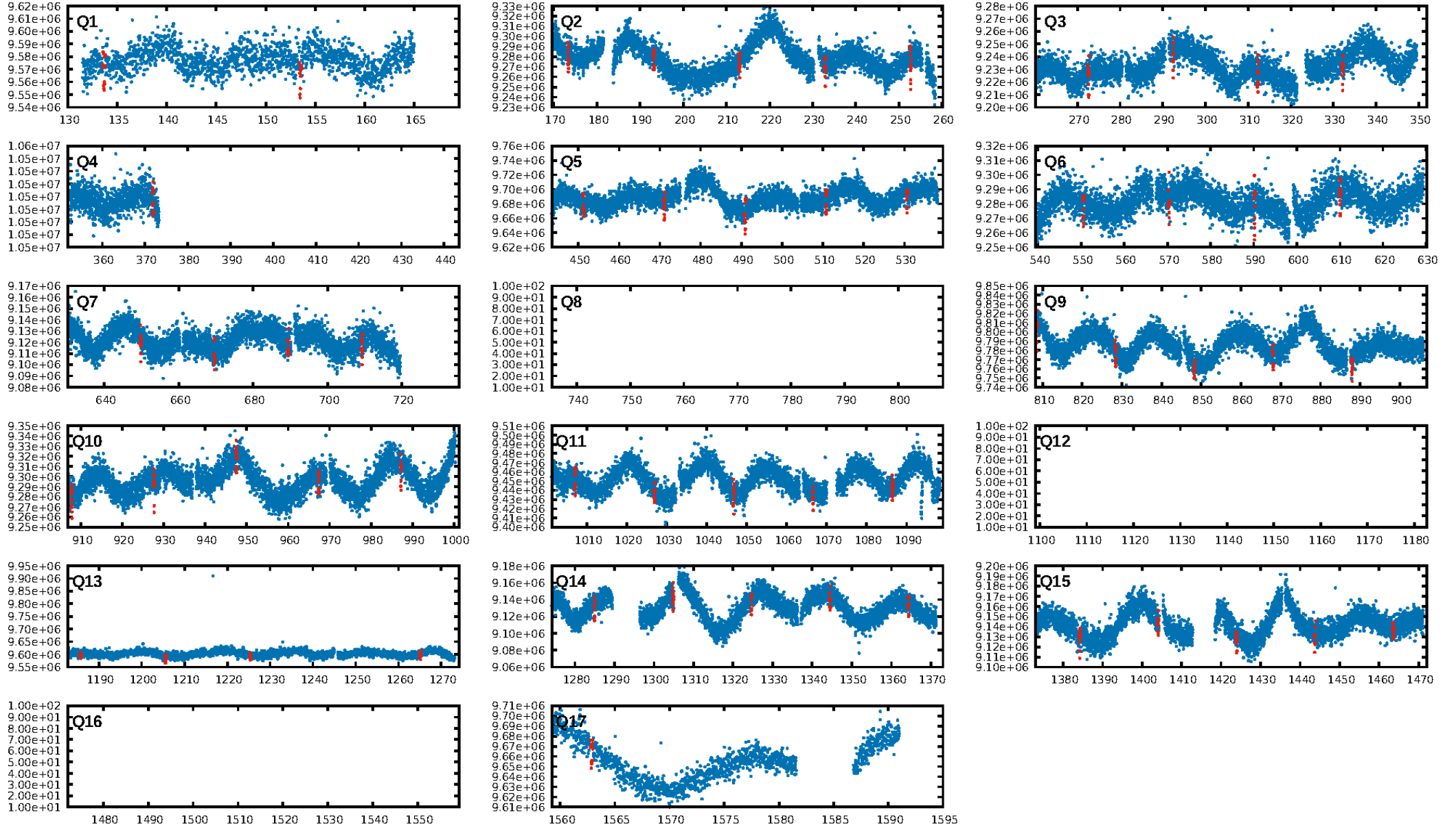
DV Fit Results:

Period = 19.85027 [0.00005] d
Epoch = 133.6507 [0.0023] BKJD
Rp/R* = 0.0382 [0.0127]
a/R* = 42.83 [60.85]
b = 0.64 [1.32]
Seff = 1.84 [0.31]
Teq = 297 [12] K
Rp = 1.60 [0.58] Re
a = 0.1051 [0.0119] AU
Ag = 430.40 [317.66] [1.35σ]
Teffp = 2091 [381] K [4.70σ]

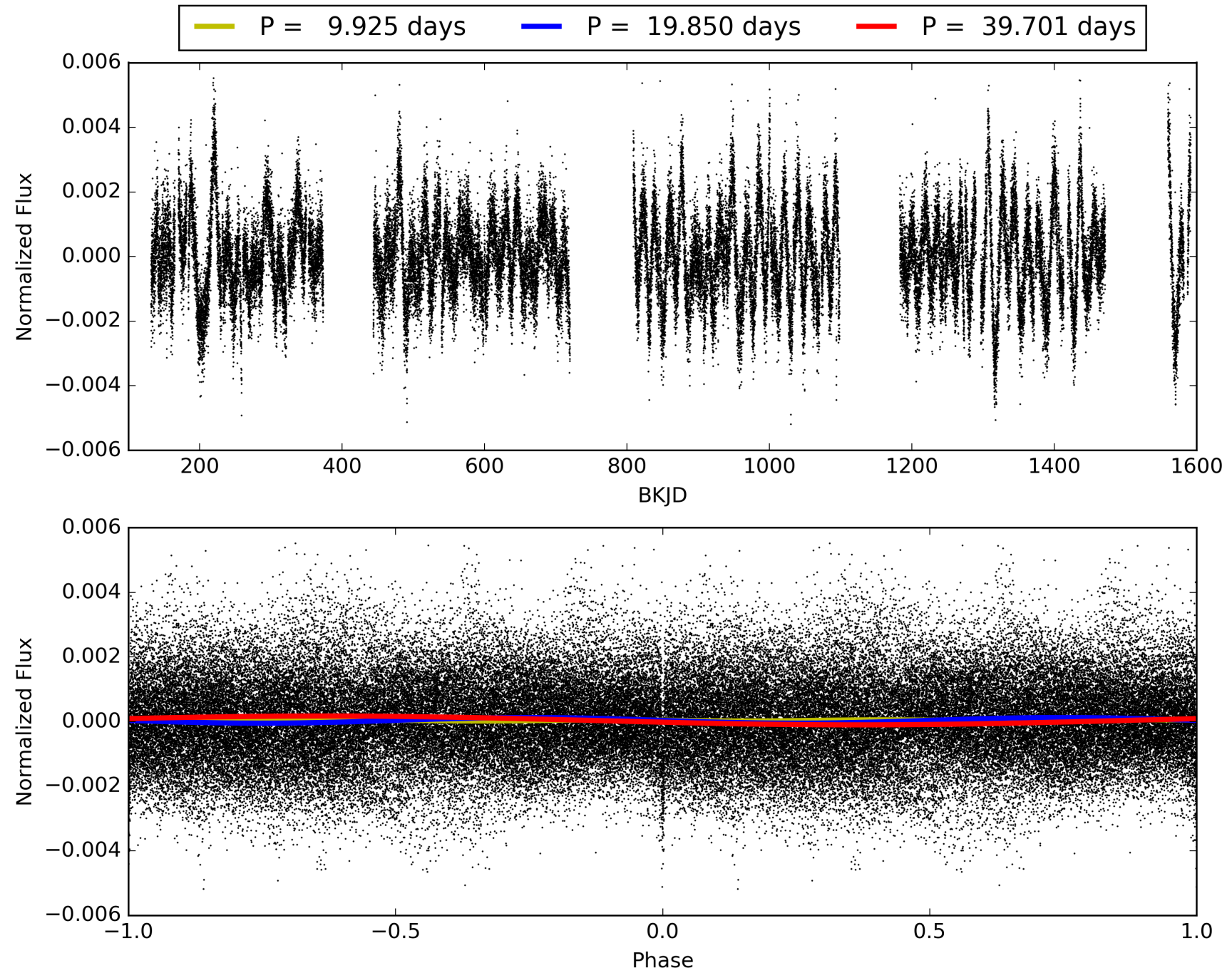
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [56.69σ]
LongPeriod-sig: 100.0% [76.10σ]
ModelChiSquare2-sig: 84.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.19e-132
RollingBand-fgt: 1.00 [50/50]
GhostDiagnostic-chr: 3.663
Centroid-sig: 1.8%
Centroid-so: 0.933 arcsec [2.24σ]
OotOffset-rm: 0.186 arcsec [1.12σ]
KicOffset-rm: 0.145 arcsec [0.92σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 011497958-02, PDC Light Curves

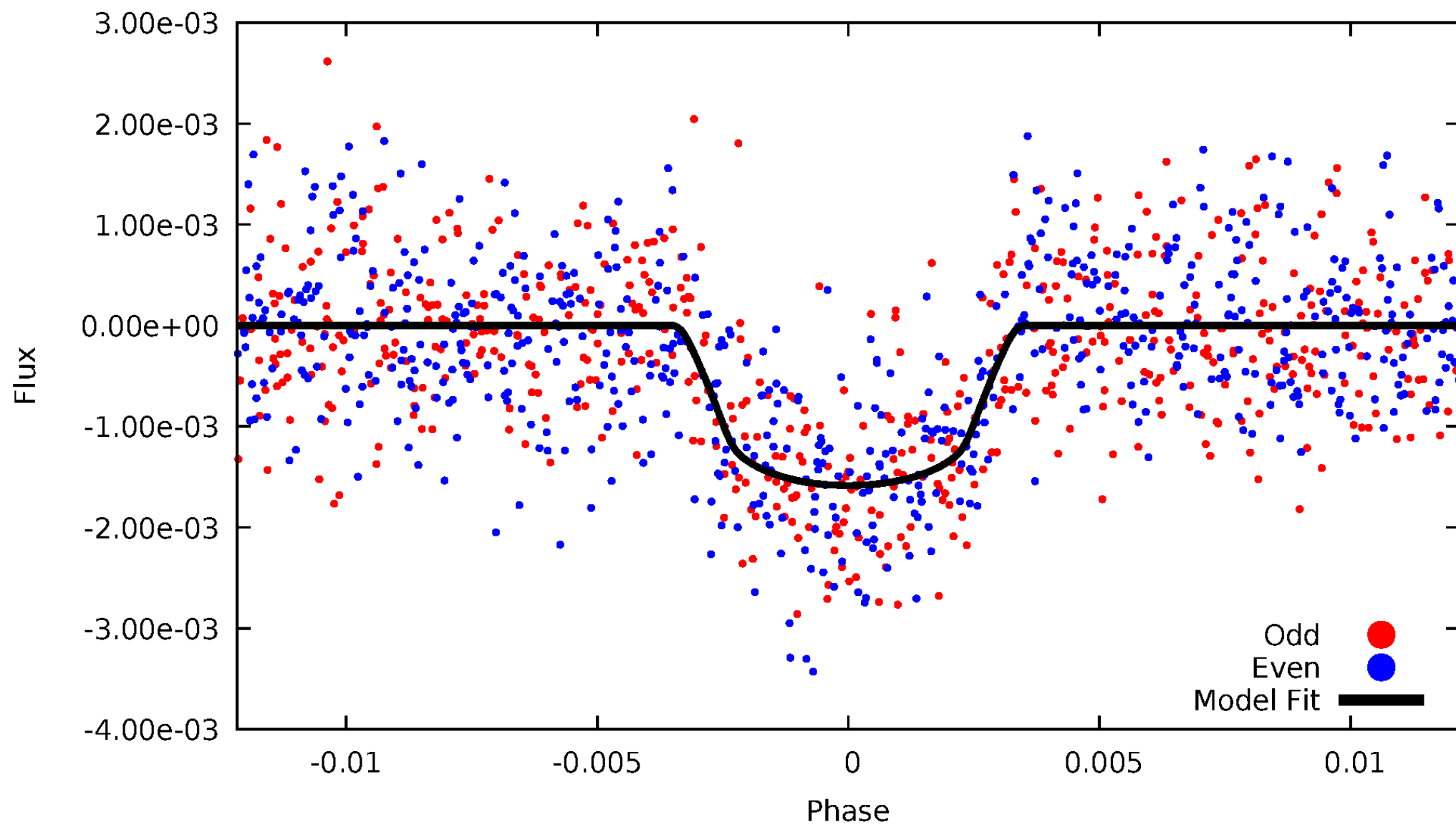


TCE 011497958-02



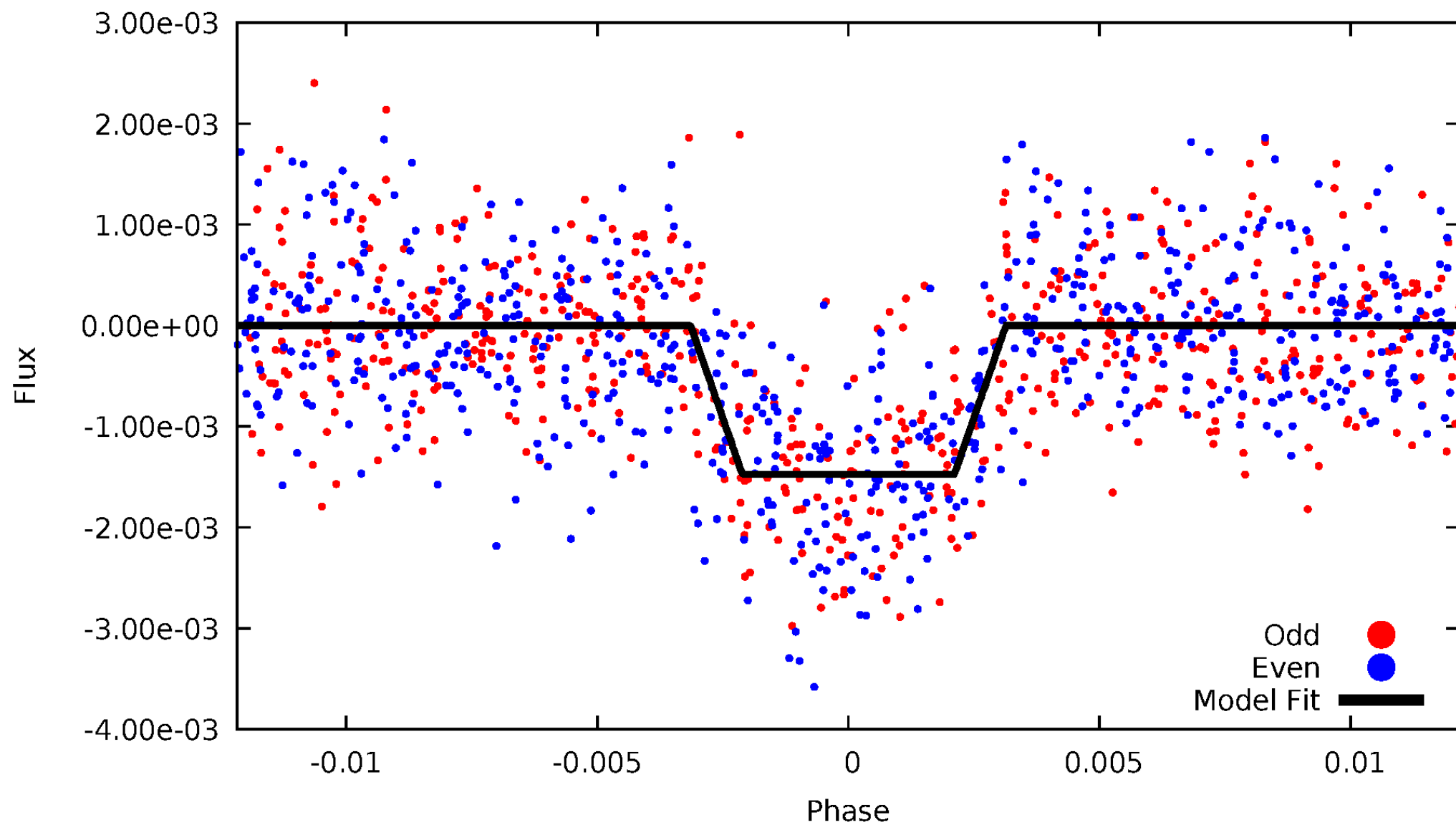
DV Odd/Even

TCE 011497958-02



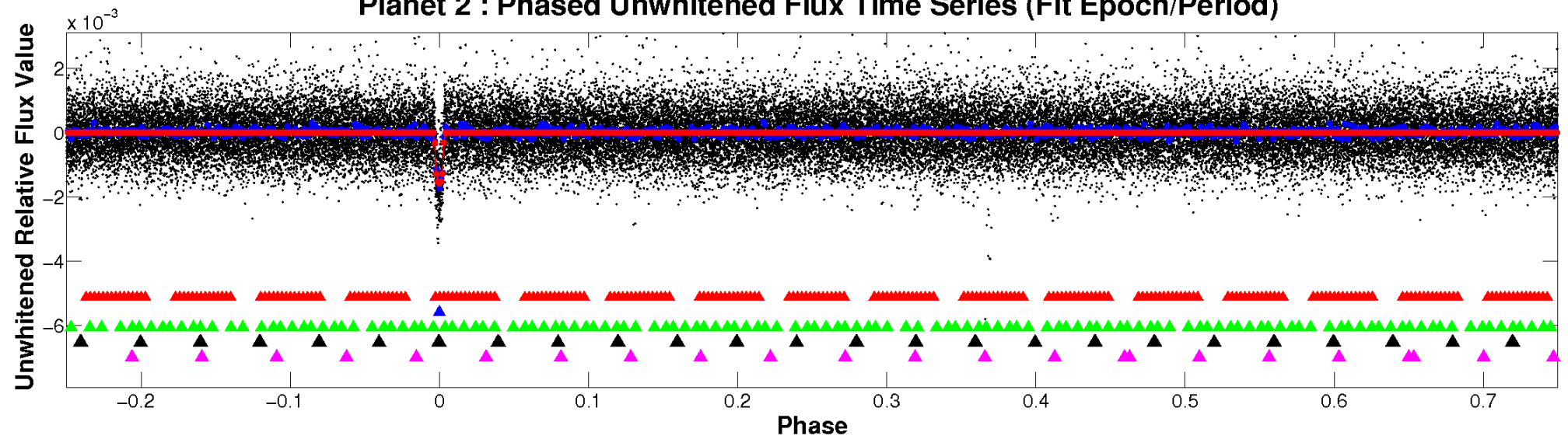
ALT Odd/Even

TCE 011497958-02

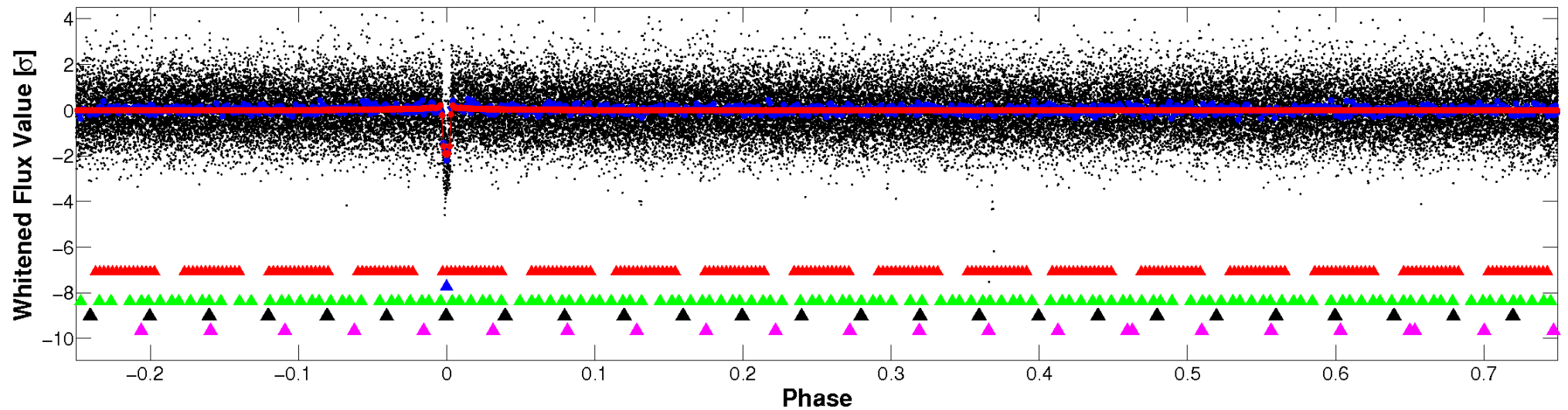


Non-Whitened Vs. Whitened Light Curve

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

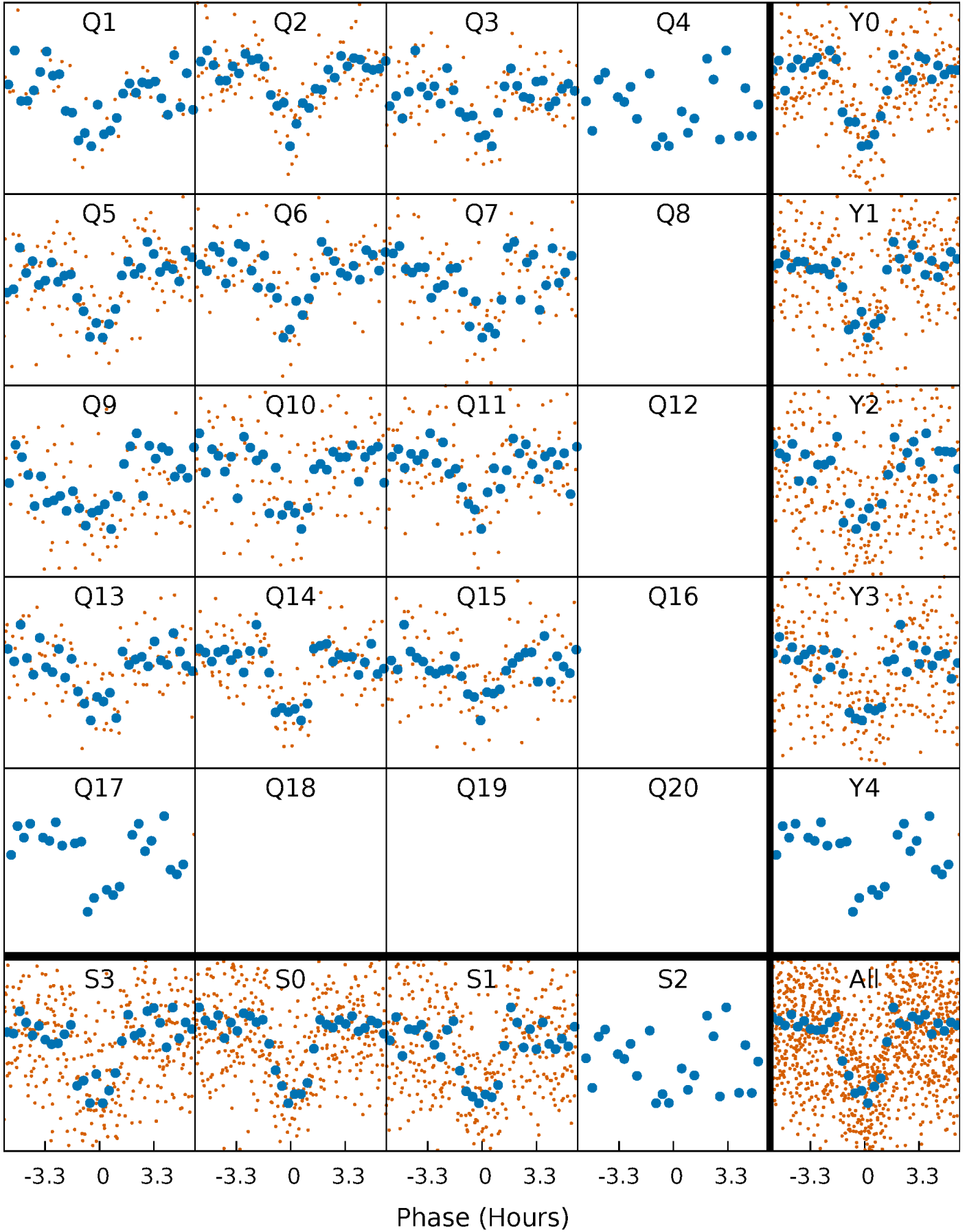


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



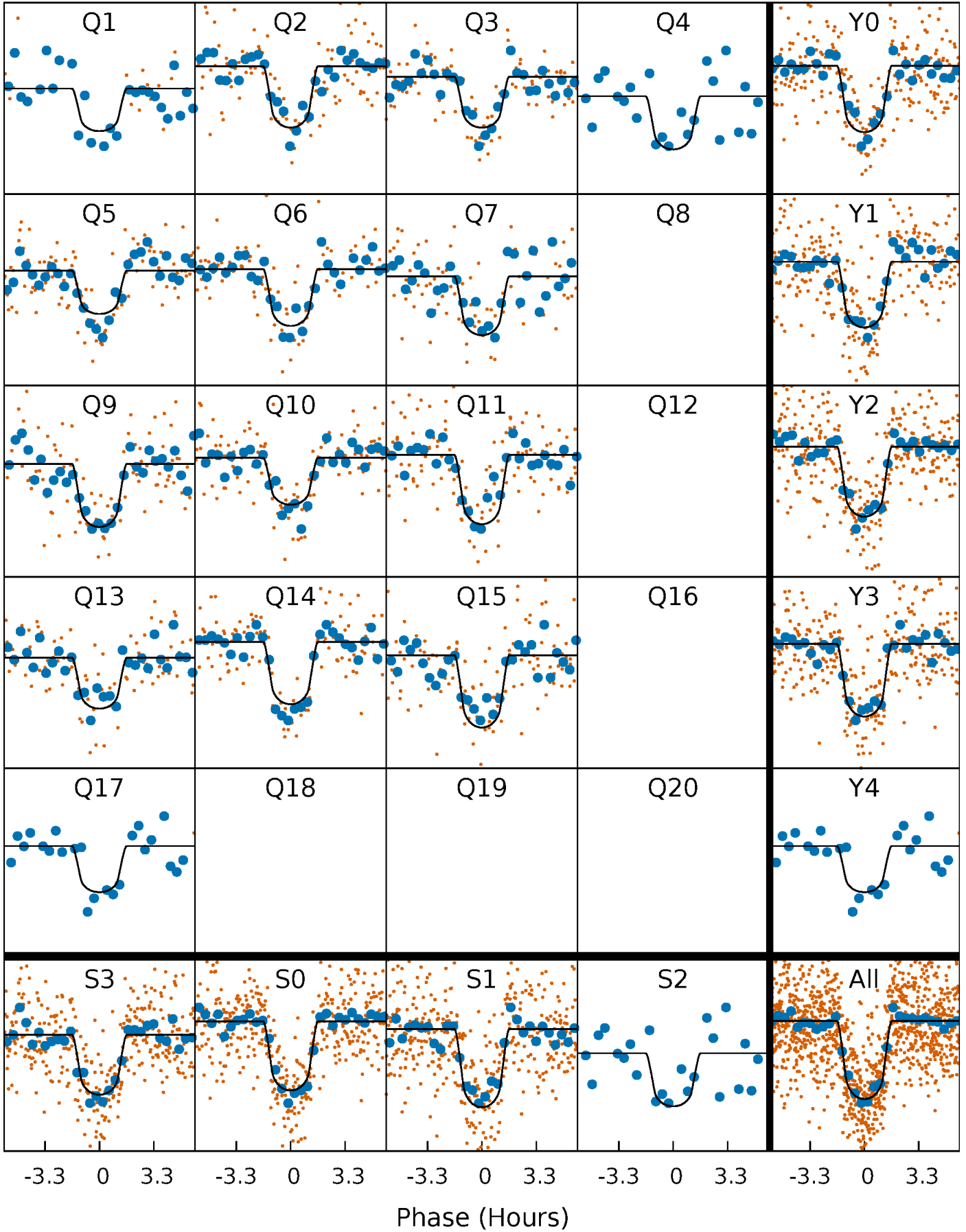
PDC Quarter-Phased Transit Curves

TCE 011497958-02 P= 19.850267 Days $T_0=133.650668$ (BKJD)



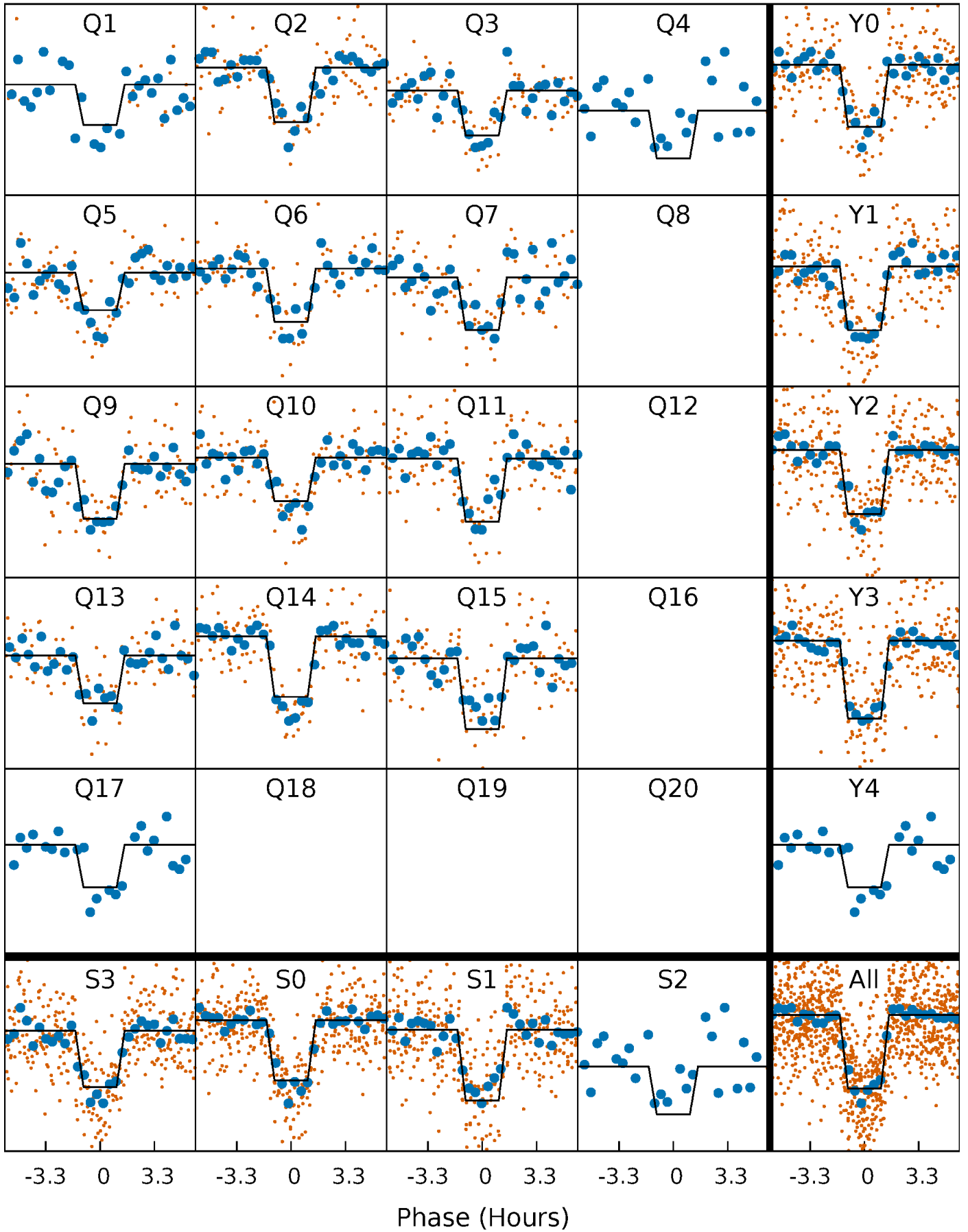
DV Quarter-Phased Transit Curves

TCE 011497958-02 P= 19.850267 Days $T_0=133.650668$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

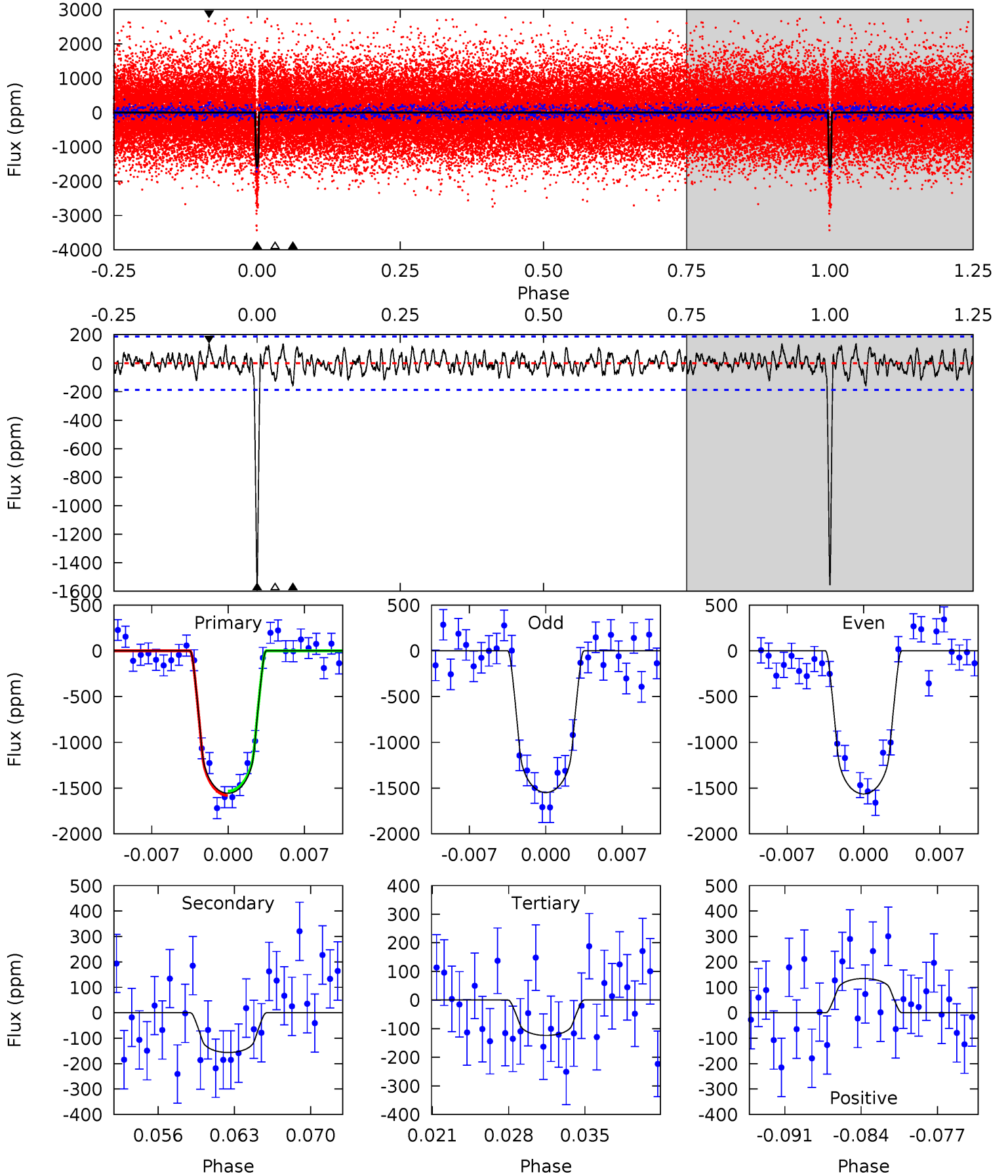
TCE 011497958-02 P= 19.850121 Days $T_0=133.656053$ (BKJD)



DV Model-Shift Uniqueness Test

011497958-02, $P = 19.850267$ Days, $E = 113.800401$ Days

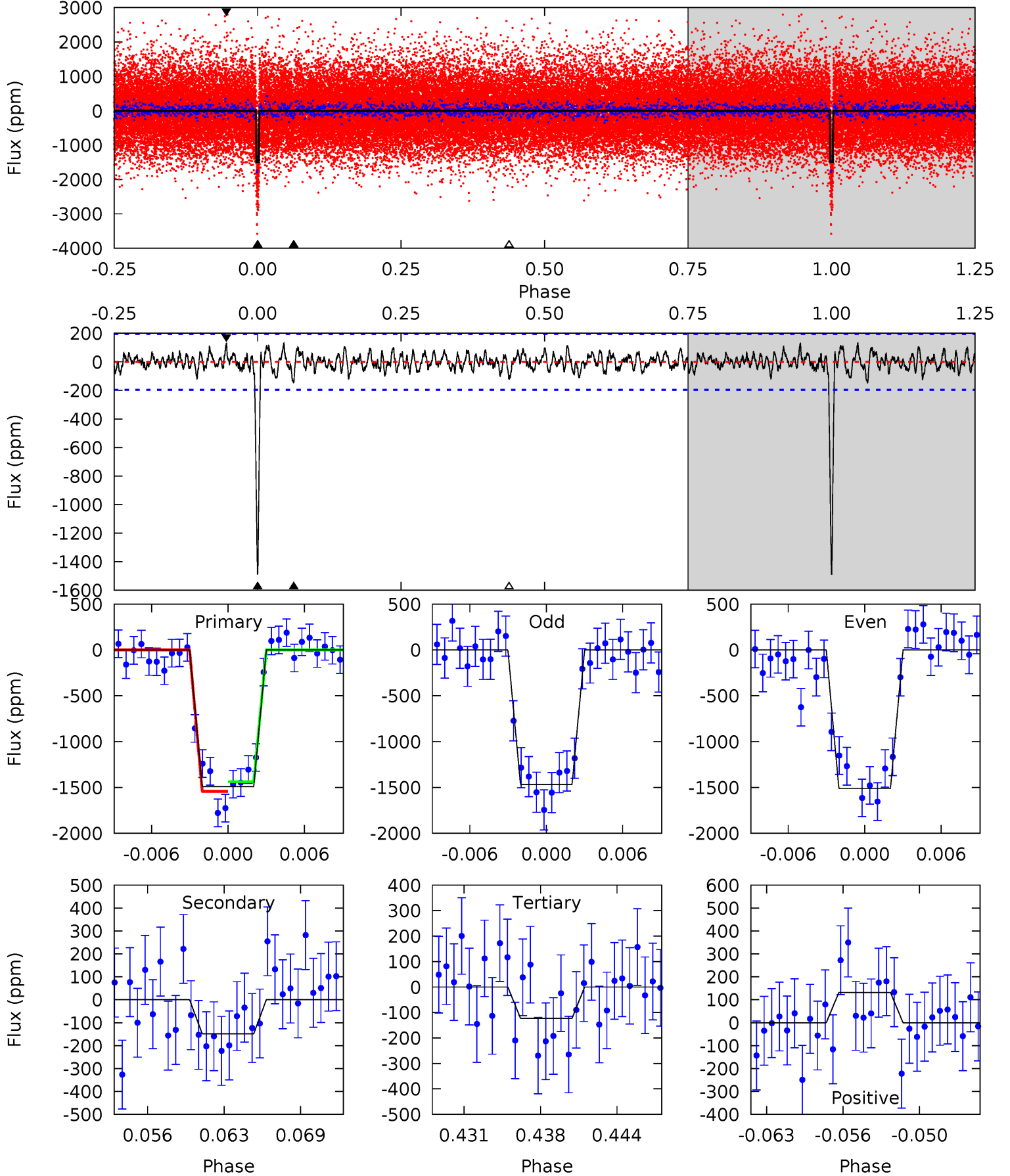
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.4	4.26	3.37	3.67	5.09	2.70	1.32	39.0	38.7	0.89	0.59	0.21	0.98	0.08	0.65



Alt Model-Shift Uniqueness Test

011497958-02, $P = 19.850121$ Days, $E = 113.805932$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.0	3.88	3.22	3.46	5.12	2.73	1.17	35.8	35.6	0.67	0.43	0.58	0.99	0.08	1.37



Stellar Parameters For KIC 011497958

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3526^{+71}_{-78}	$4.866^{+0.066}_{-0.044}$	$-0.080^{+0.150}_{-0.150}$	$0.383^{+0.048}_{-0.058}$	$0.394^{+0.055}_{-0.067}$	$9.856^{+3.710}_{-2.103}$
	+2%/-2%	+1%/-1%	+188%/-188%	+13%/-15%	+14%/-17%	+38%/-21%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 011497958-02 / KOI 1422.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-156 ± 37	$1.56^{+0.57}_{-0.50}$	412^{+12}_{-13}	2577^{+273}_{-200}	386^{+451}_{-192}
Alt.	-148 ± 38	$1.58^{+0.57}_{-0.53}$	414^{+12}_{-14}	2553^{+284}_{-192}	356^{+444}_{-170}

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 $A_{obs} \gg 1.0$

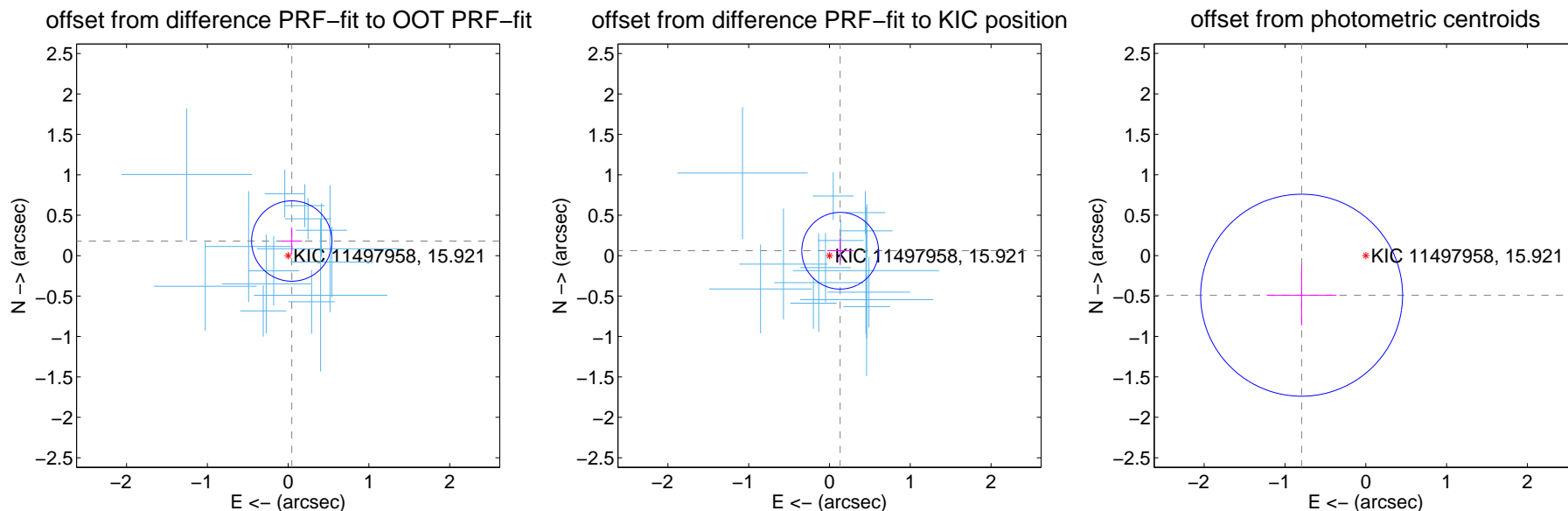
DV Centroid Data

Supplemental centroid analysis for 011497958-02. Kepler magnitude: 15.92. Transit SNR 28.61

There are 14 quarters with good PRF difference image offsets

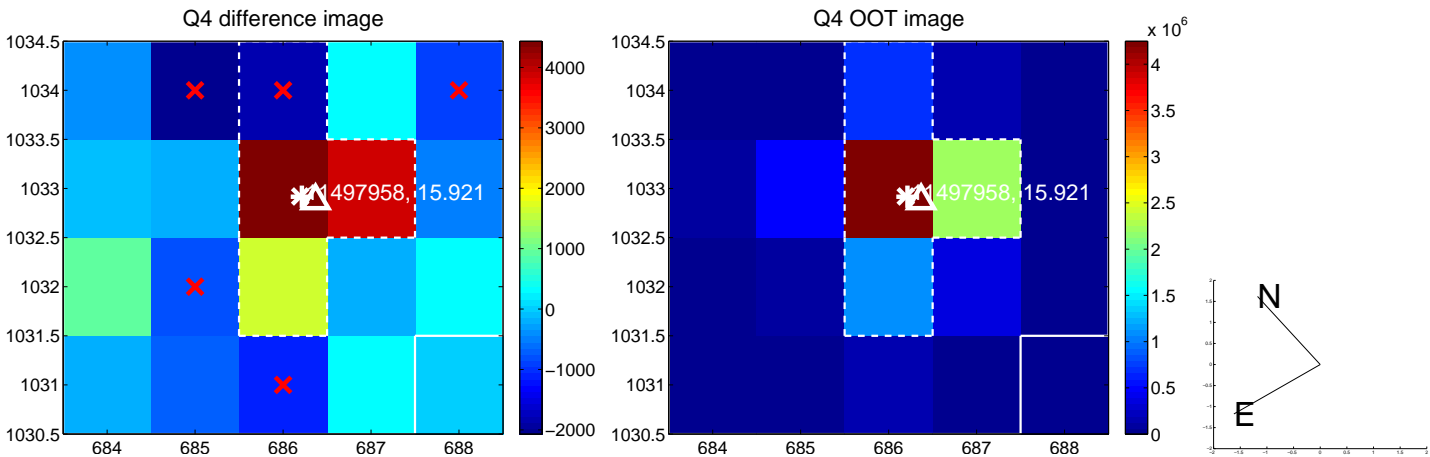
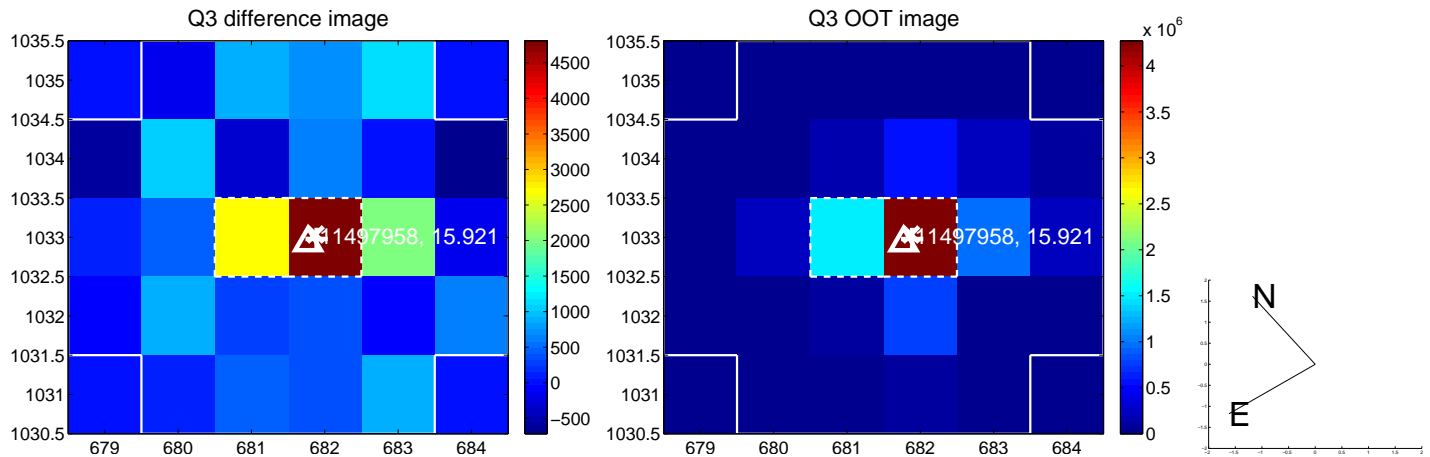
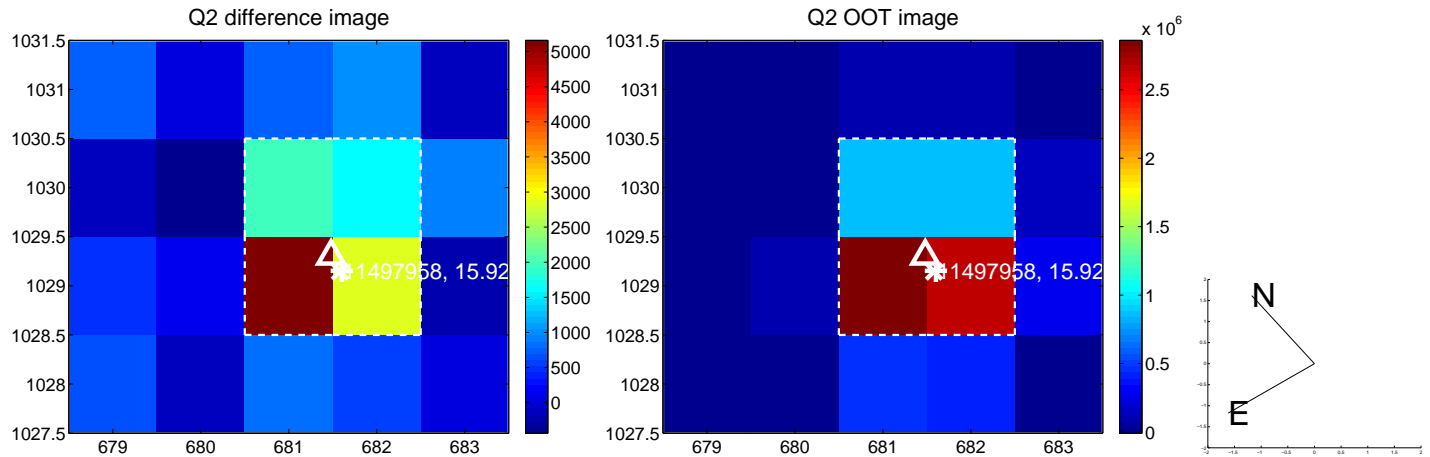
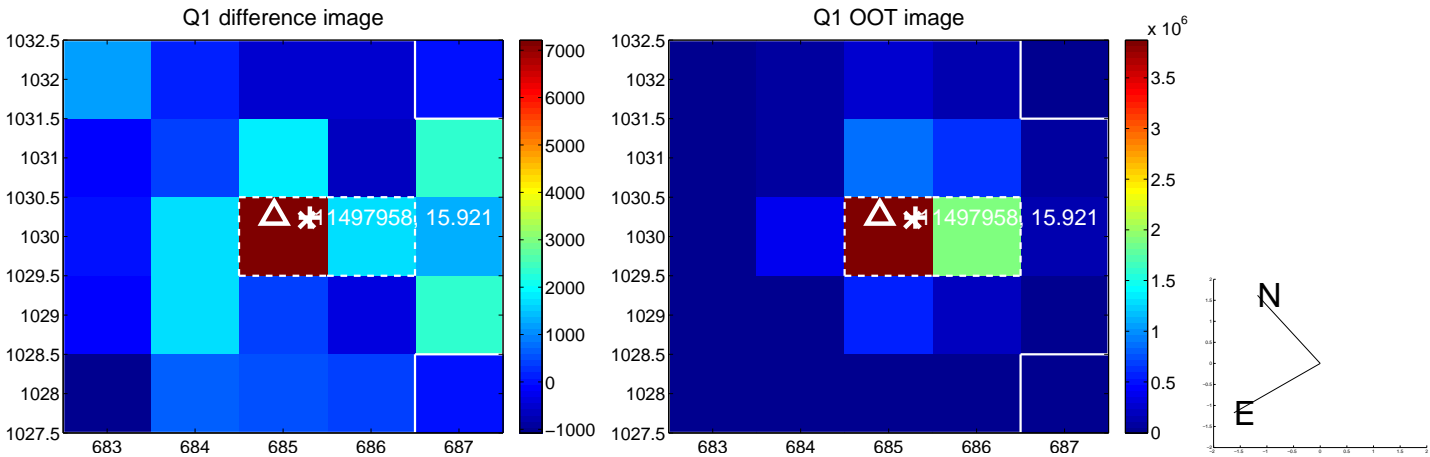
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.186 ± 0.166	1.12	-0.045 ± 0.127	0.181 ± 0.168
PRF-fit source offset from KIC position	0.145 ± 0.158	0.92	-0.132 ± 0.157	0.061 ± 0.162
photometric centroid source offset	0.93 ± 0.42	2.24	0.79 ± 0.43	-0.49 ± 0.37

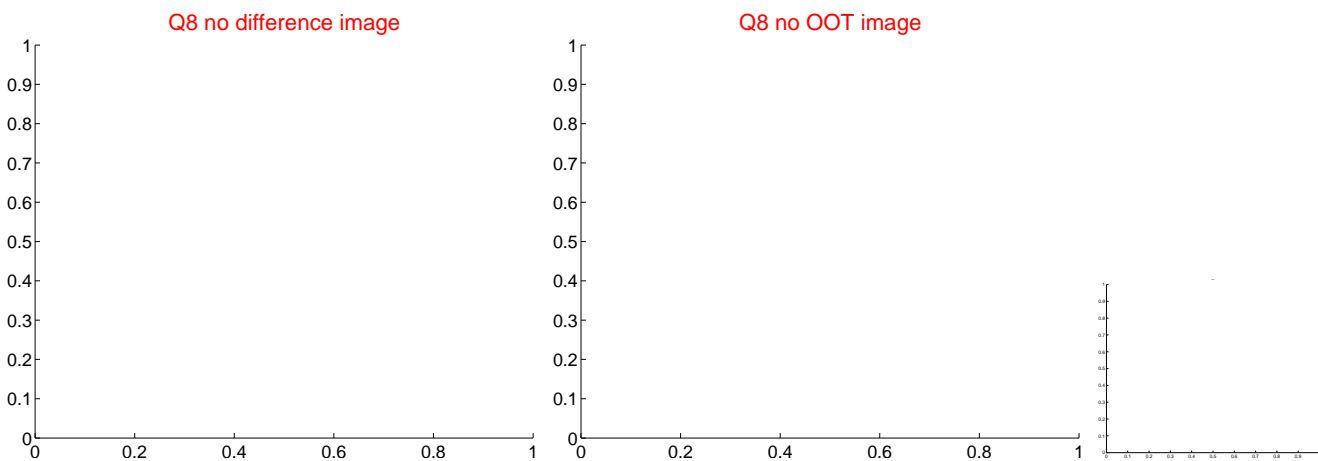
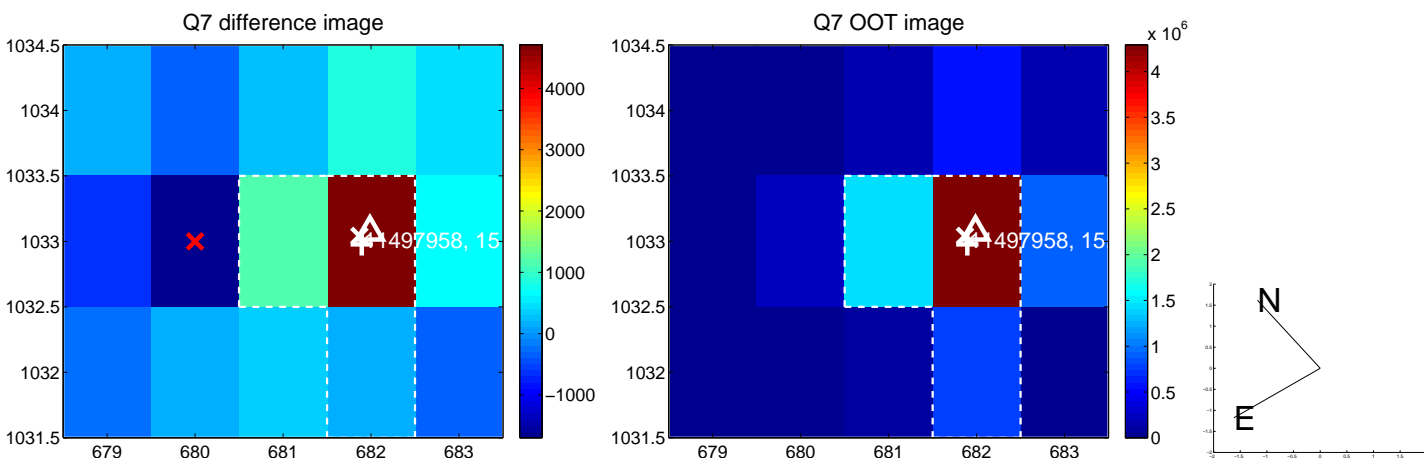
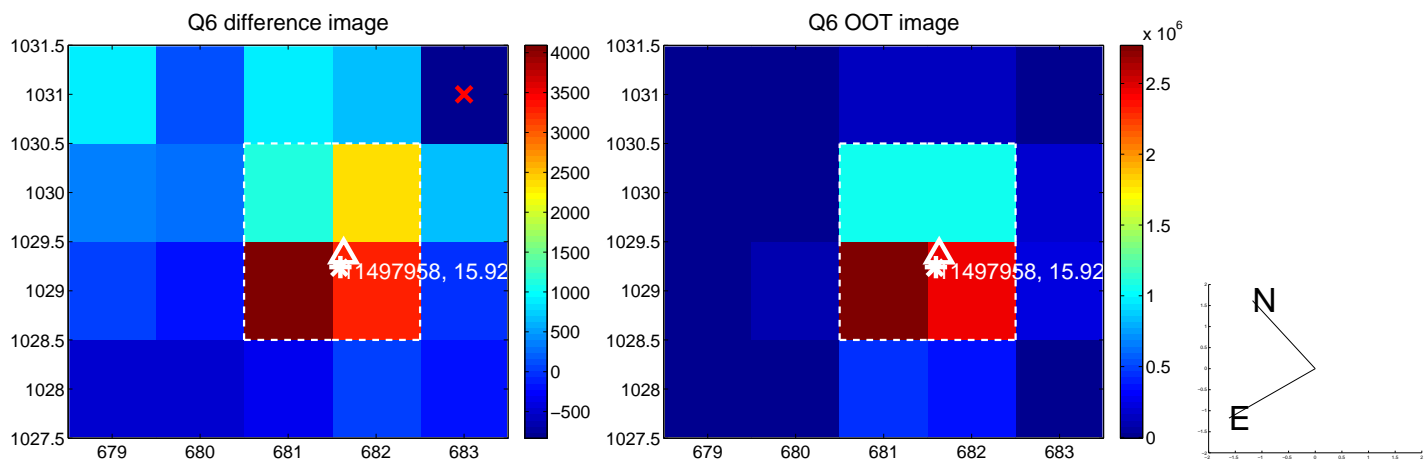
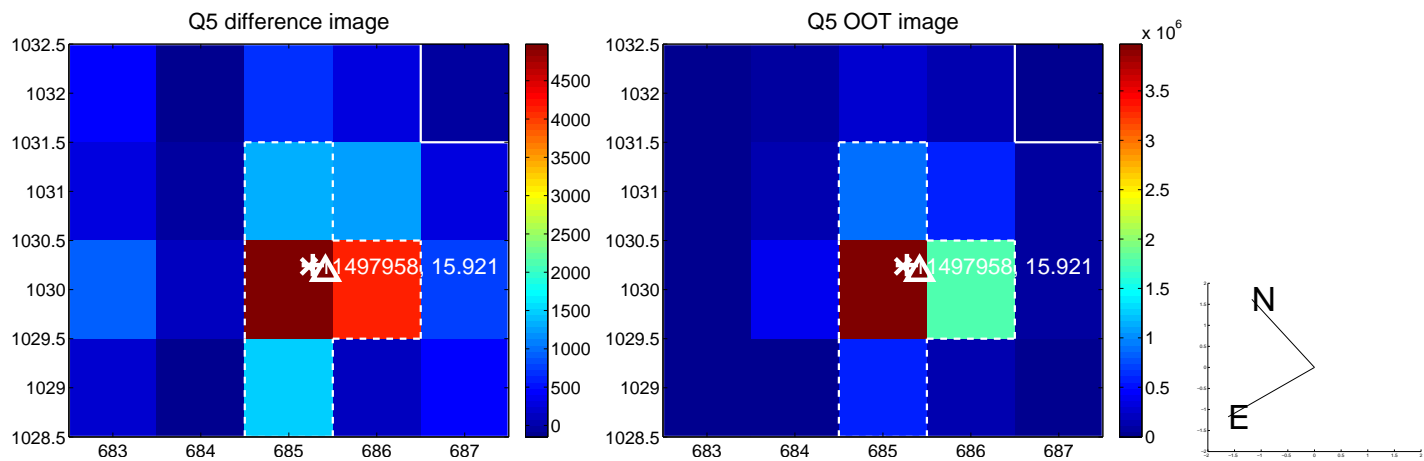


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

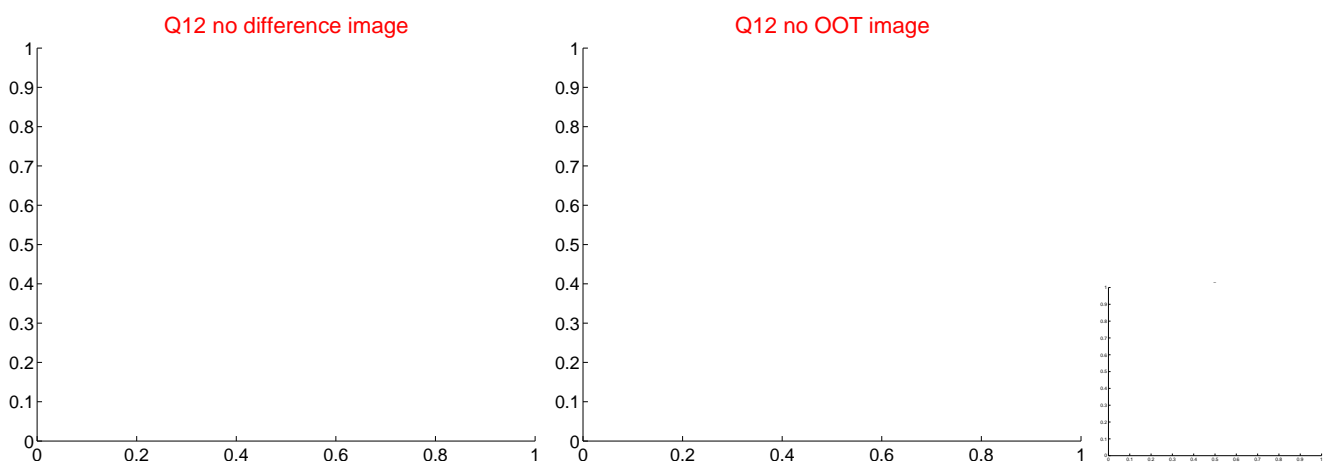
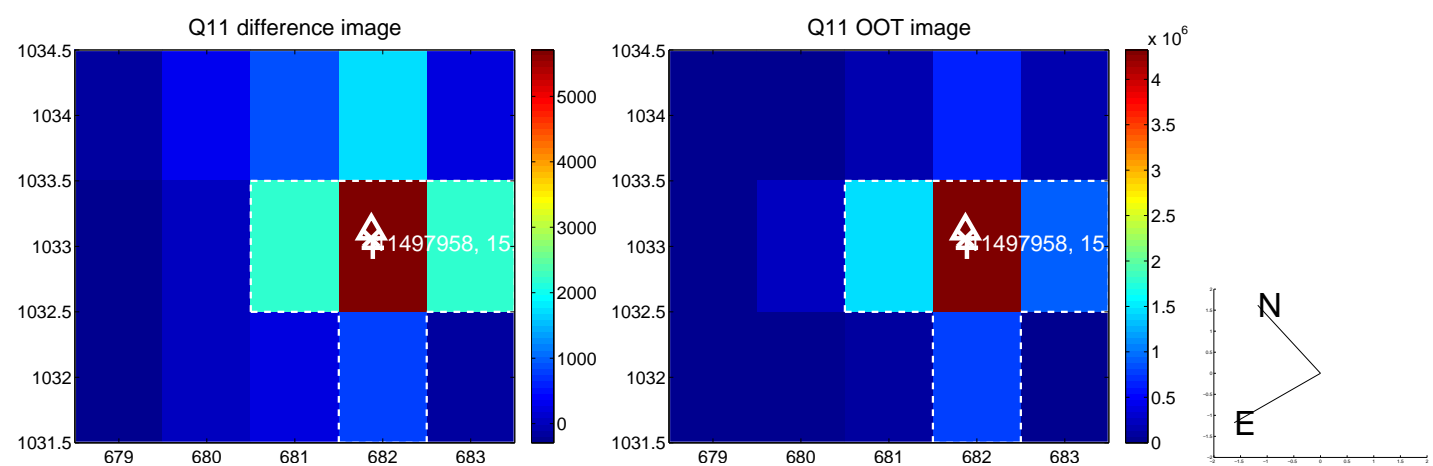
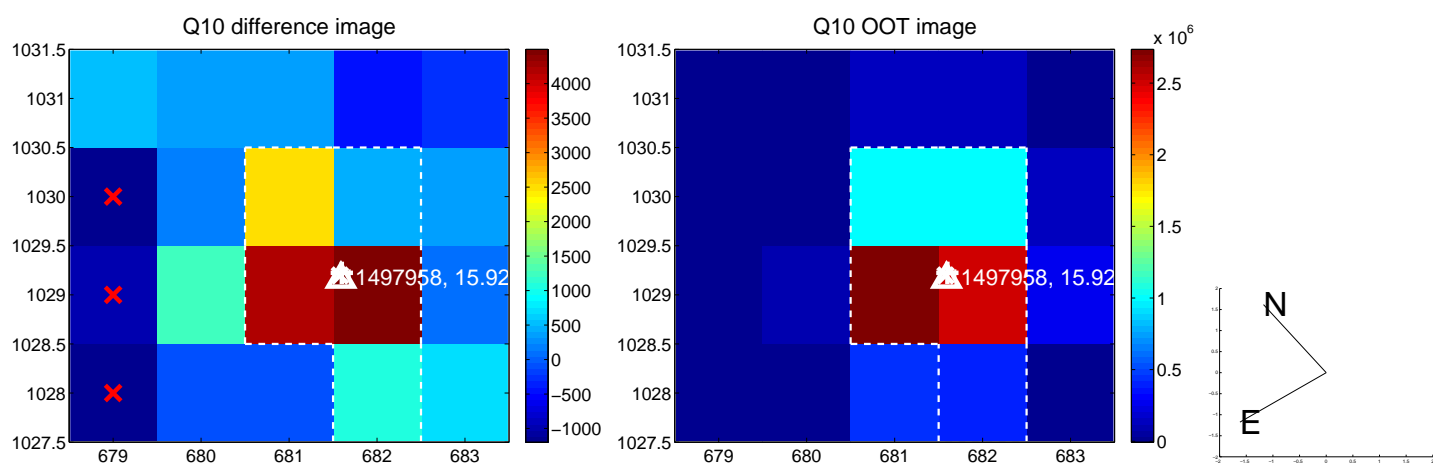
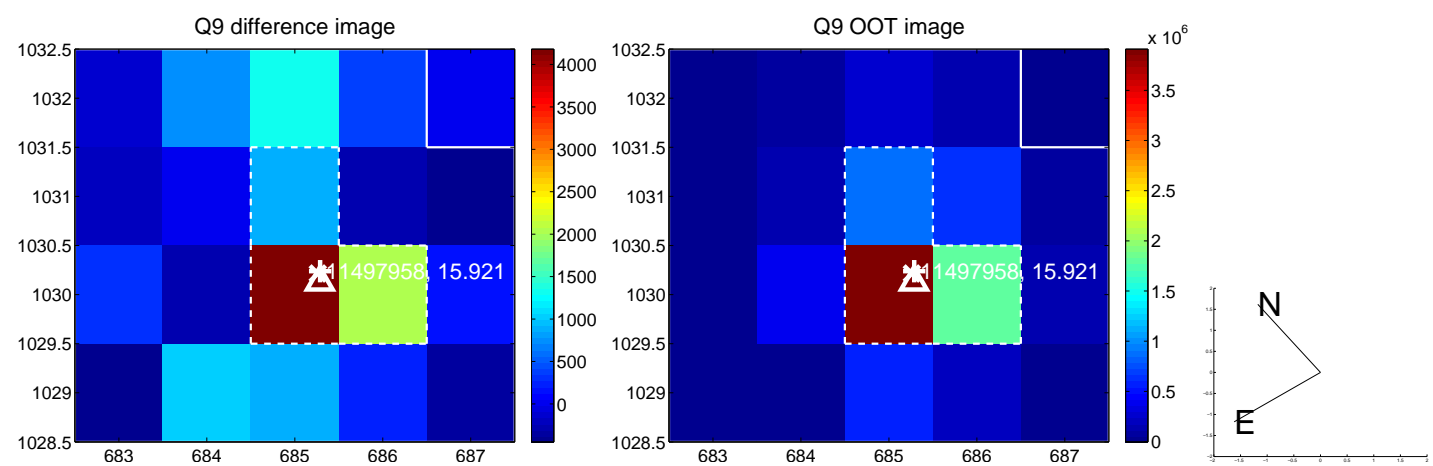
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



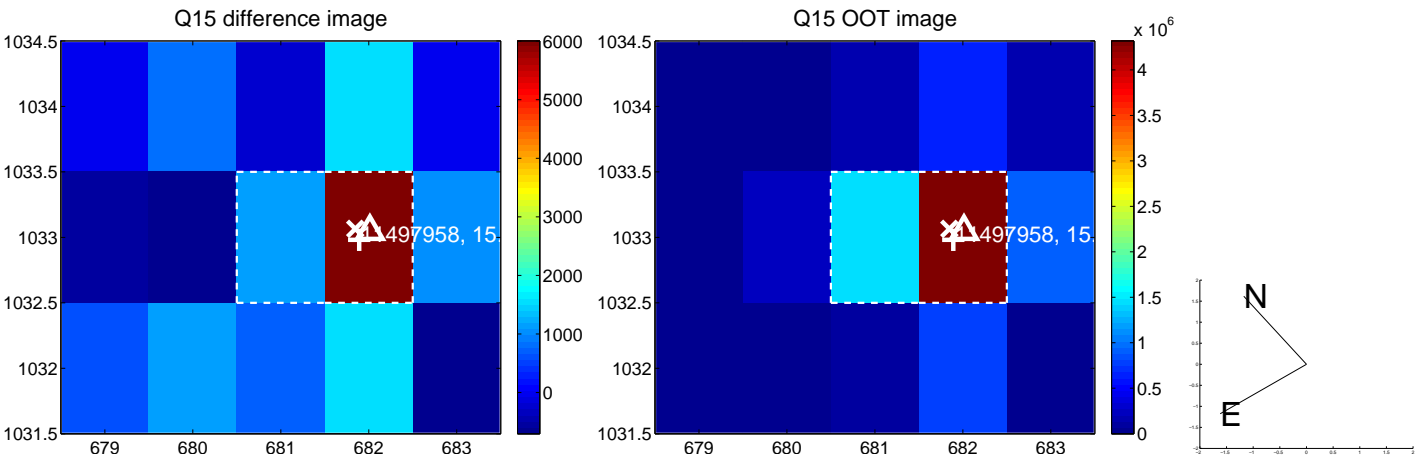
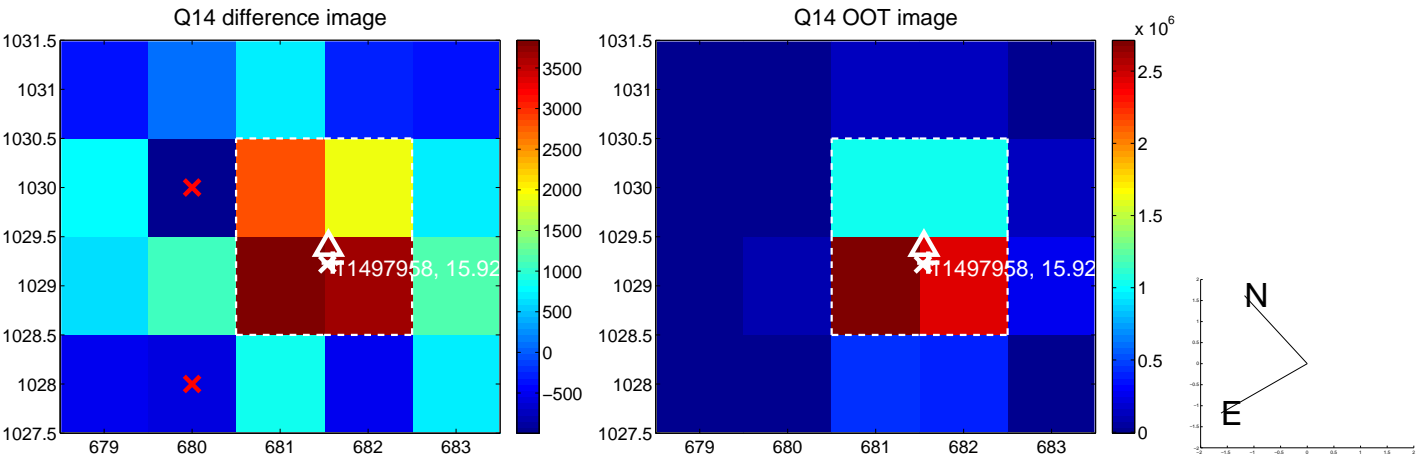
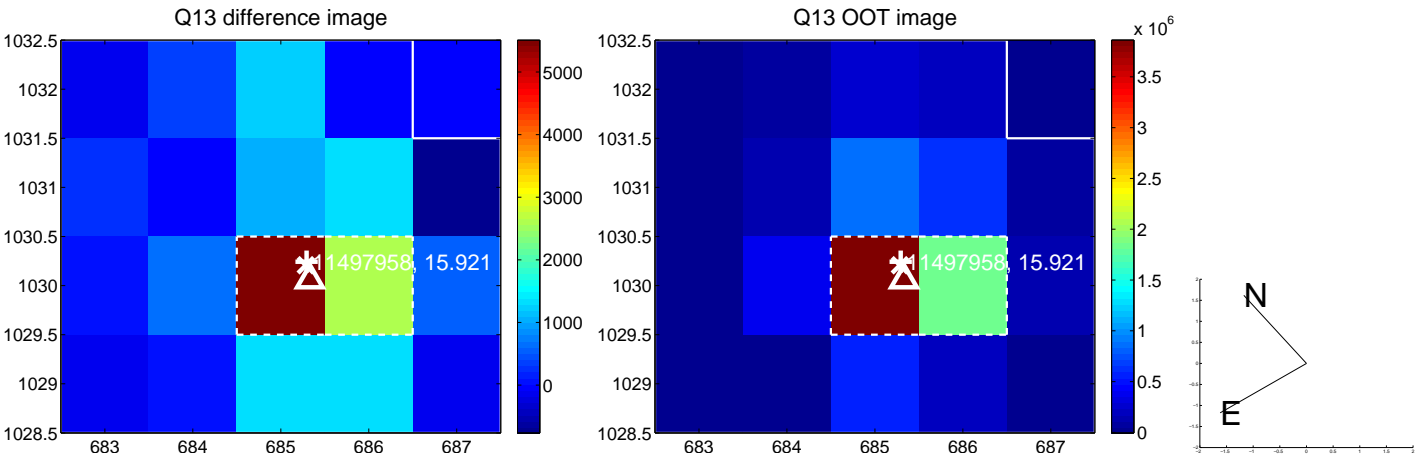
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



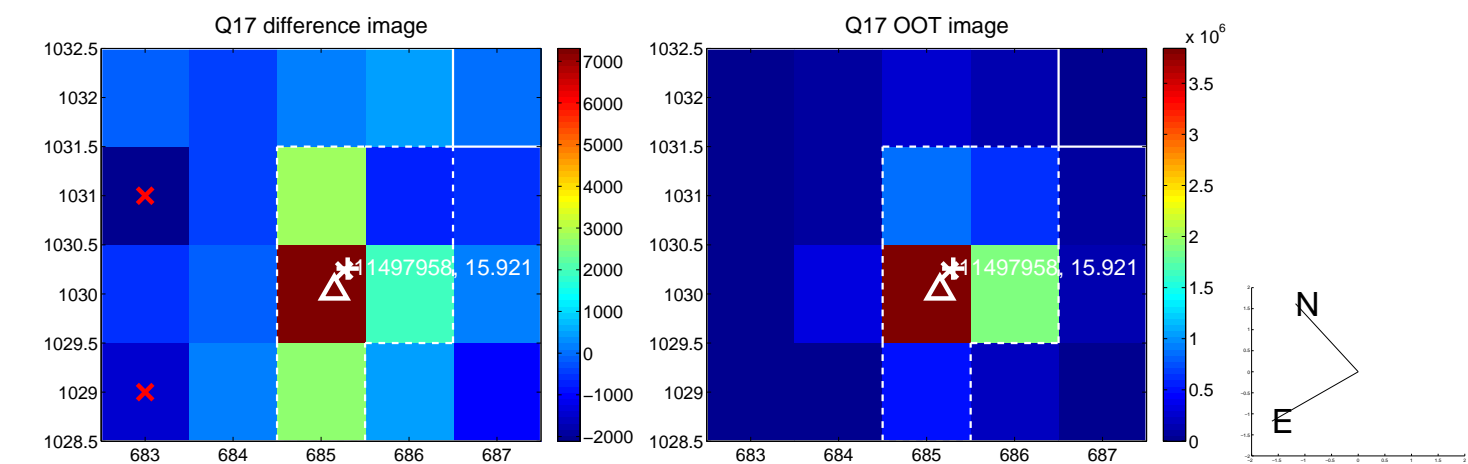
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



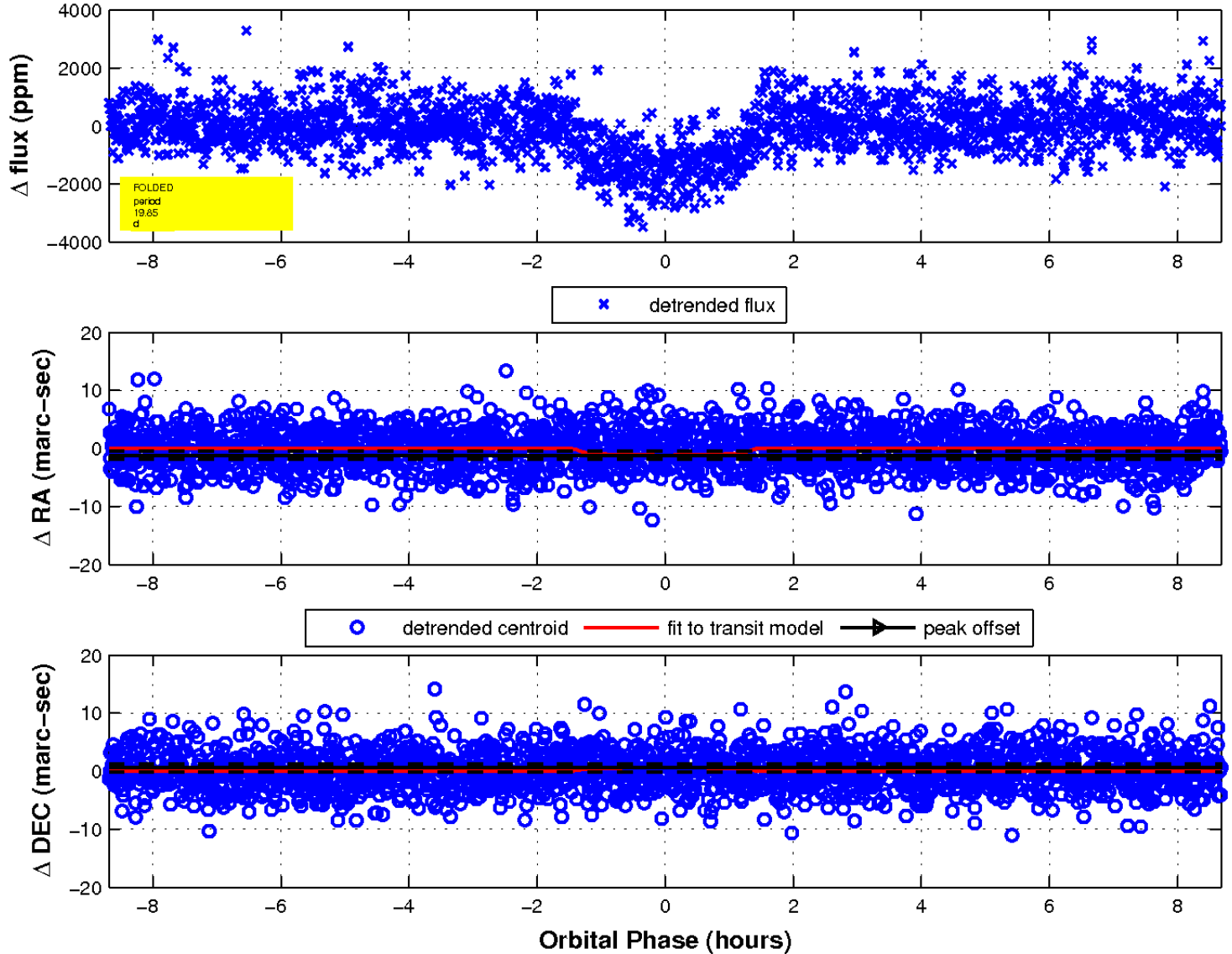
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

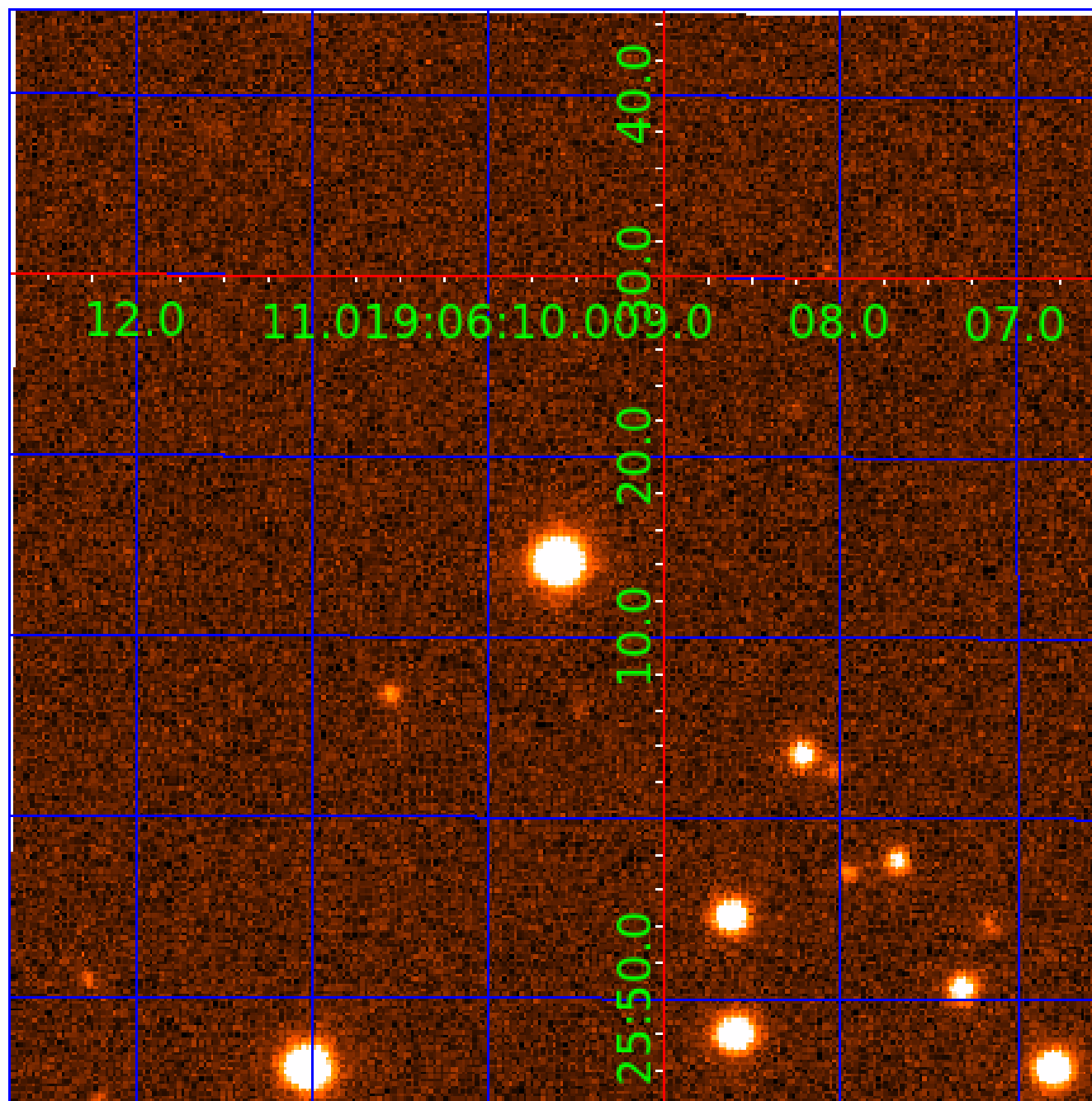


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 011497958

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})
011497958-01	OBS	1422.01	5.841631	135.923827	1374.3	1.939	33.2	37.5	0.38	3526	1.57	9.39
011497958-02	OBS	1422.02	19.850267	133.650668	1585.3	2.898	25.1	28.6	0.38	3526	1.60	1.84
011497958-03	OBS	1422.03	10.864423	141.991915	761.2	2.465	12.4	15.2	0.38	3526	1.40	4.11
011497958-04	OBS	1422.05	34.141984	136.034454	861.4	3.452	10.5	11.8	0.38	3526	1.35	0.89
011497958-05	OBS	1422.04	63.334992	162.621072	879.5	3.790	9.1	9.6	0.38	3526	1.24	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011497958-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011497958-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011497958-03	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011497958-04	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011497958-05	OBS	PC	0.93	0	0	0	0	NO_COMMENT

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.

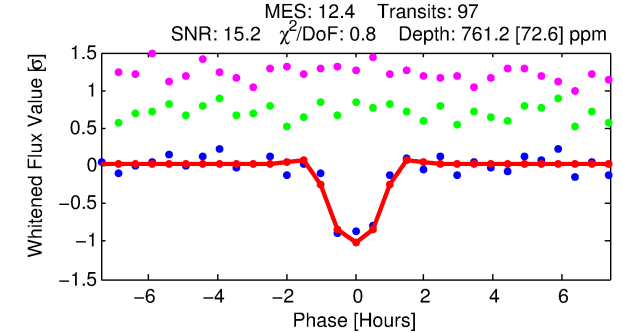
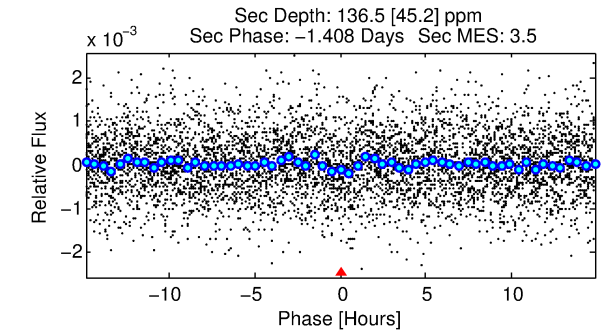
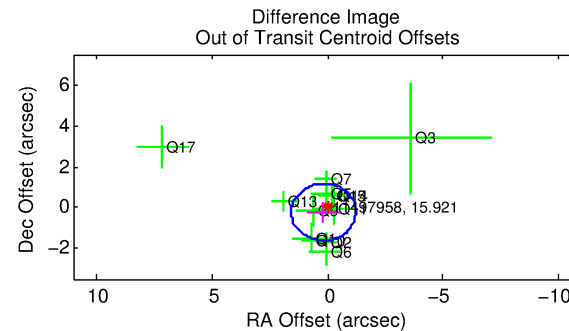
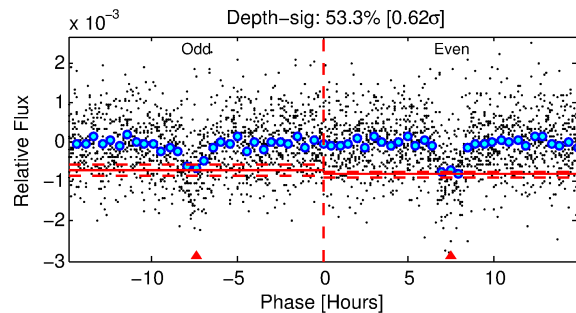
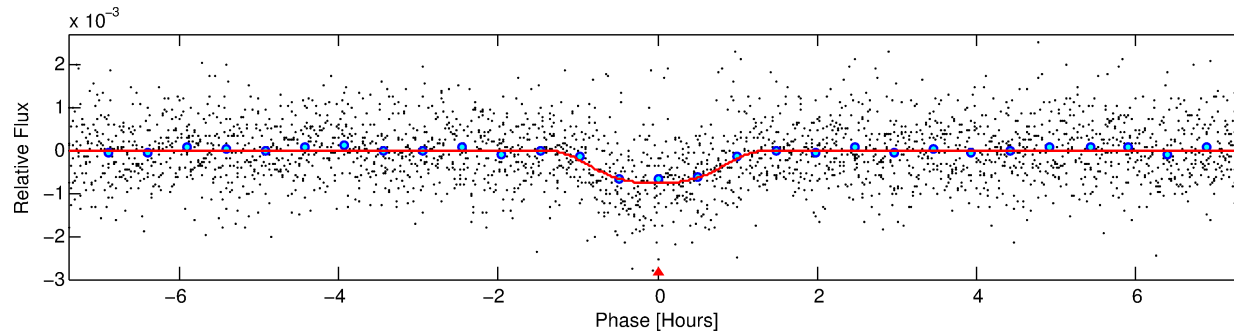
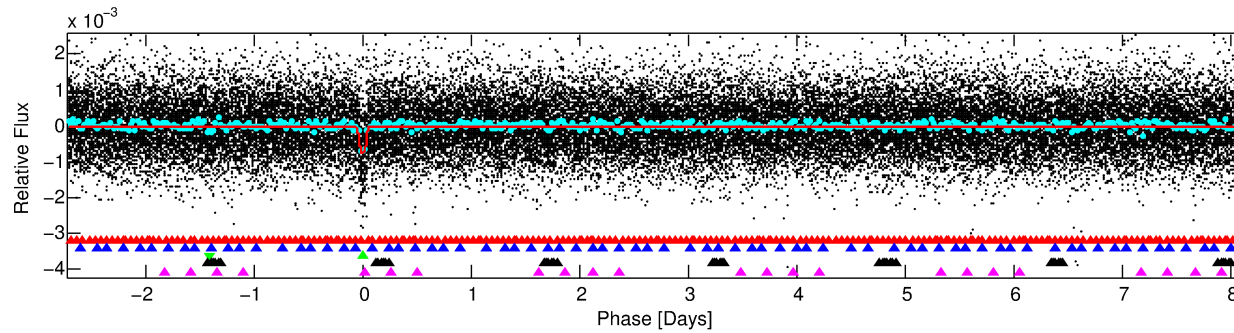
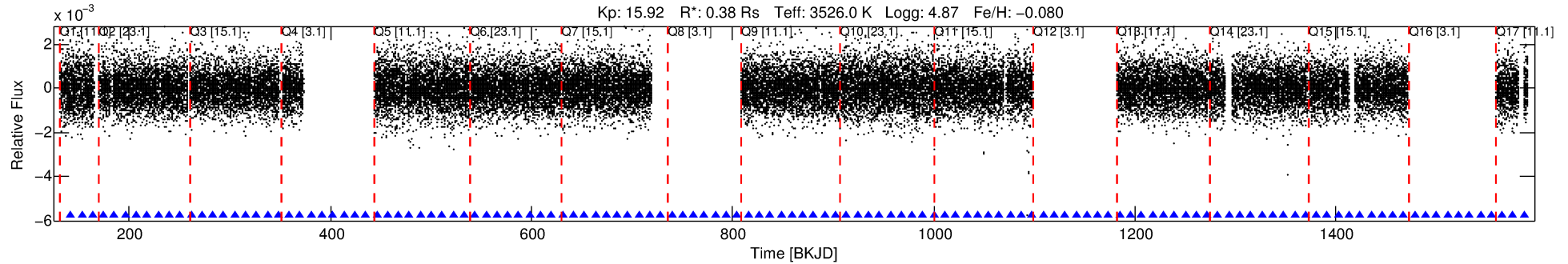
Ephemeris Match Information For 011497958-03

No Significant Match Found

DV One-Page Summary

KIC: 11497958 Candidate: 3 of 5 Period: 10.864 d
KOI: K01422.03 Name: Kepler-296b Corr: 0.957

Kp: 15.92 R*: 0.38 Rs Teff: 3526.0 K Logg: 4.87 Fe/H: -0.080



DV Fit Results:

Period = 10.86442 [0.00005] d
Epoch = 141.9919 [0.0035] BKJD
Rp/R* = 0.0336 [0.0031]
a/R* = 12.86 [2.37]
b = 0.96 [0.02]
Seff = 4.11 [0.69]
Teq = 363 [15] K
Rp = 1.40 [0.25] Re
a = 0.0703 [0.0079] AU
Ag = 188.58 [76.16] [2.46σ]
Teff = 2080 [202] K [8.49σ]

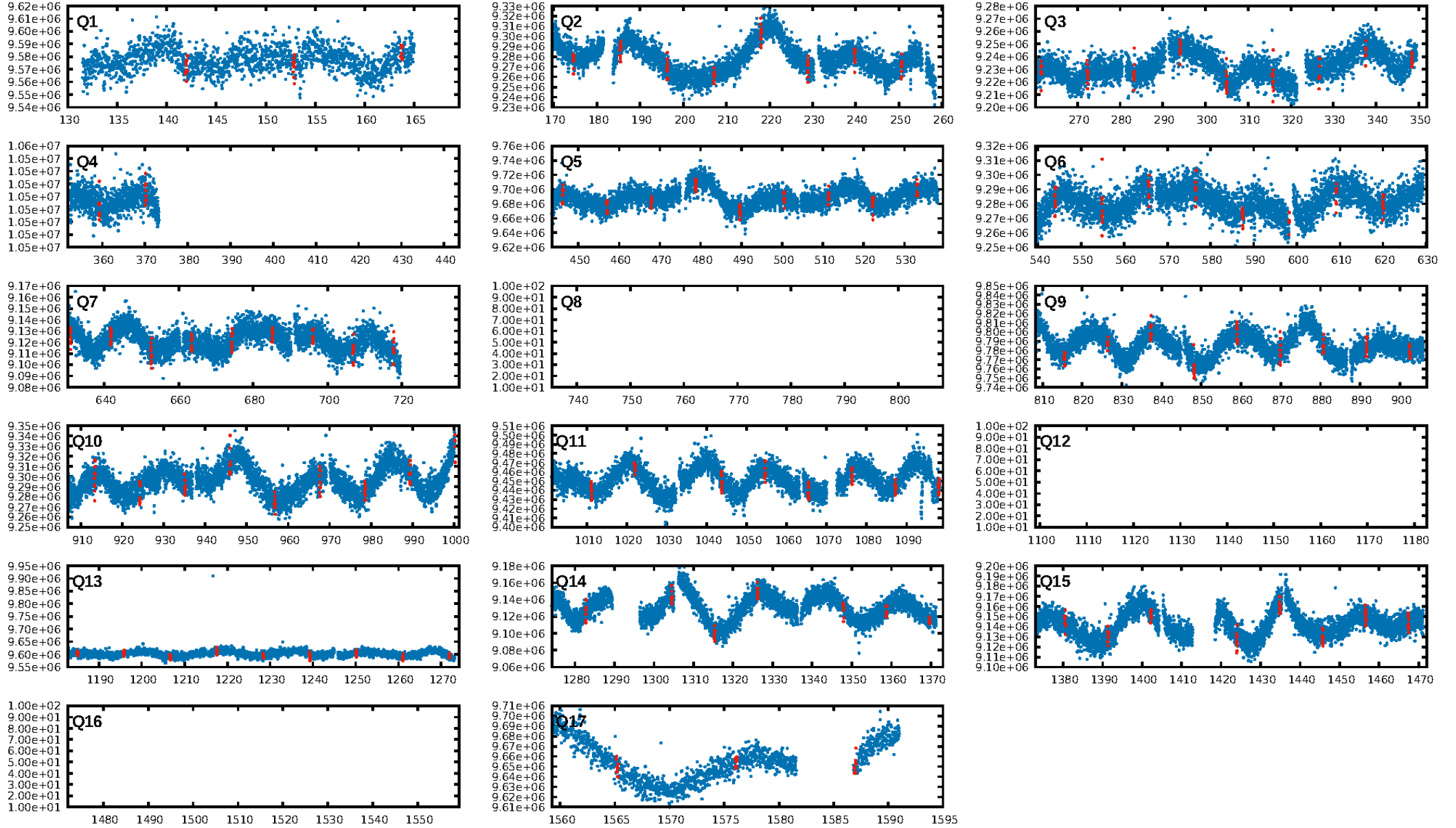
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [38.44σ]
LongPeriod-sig: 100.0% [56.69σ]
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.13e-33
RollingBand-fgt: 1.00 [89/89]
GhostDiagnostic-chr: 1.212
Centroid-sig: 6.2%
Centroid-so: 0.866 arcsec [1.16σ]
OotOffset-rm: 0.286 arcsec [0.62σ]
KicOffset-rm: 0.327 arcsec [0.70σ]
OotOffset-st: 4/4/0/5 [13]
KicOffset-st: 4/4/0/5 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 1.00 [14/14]

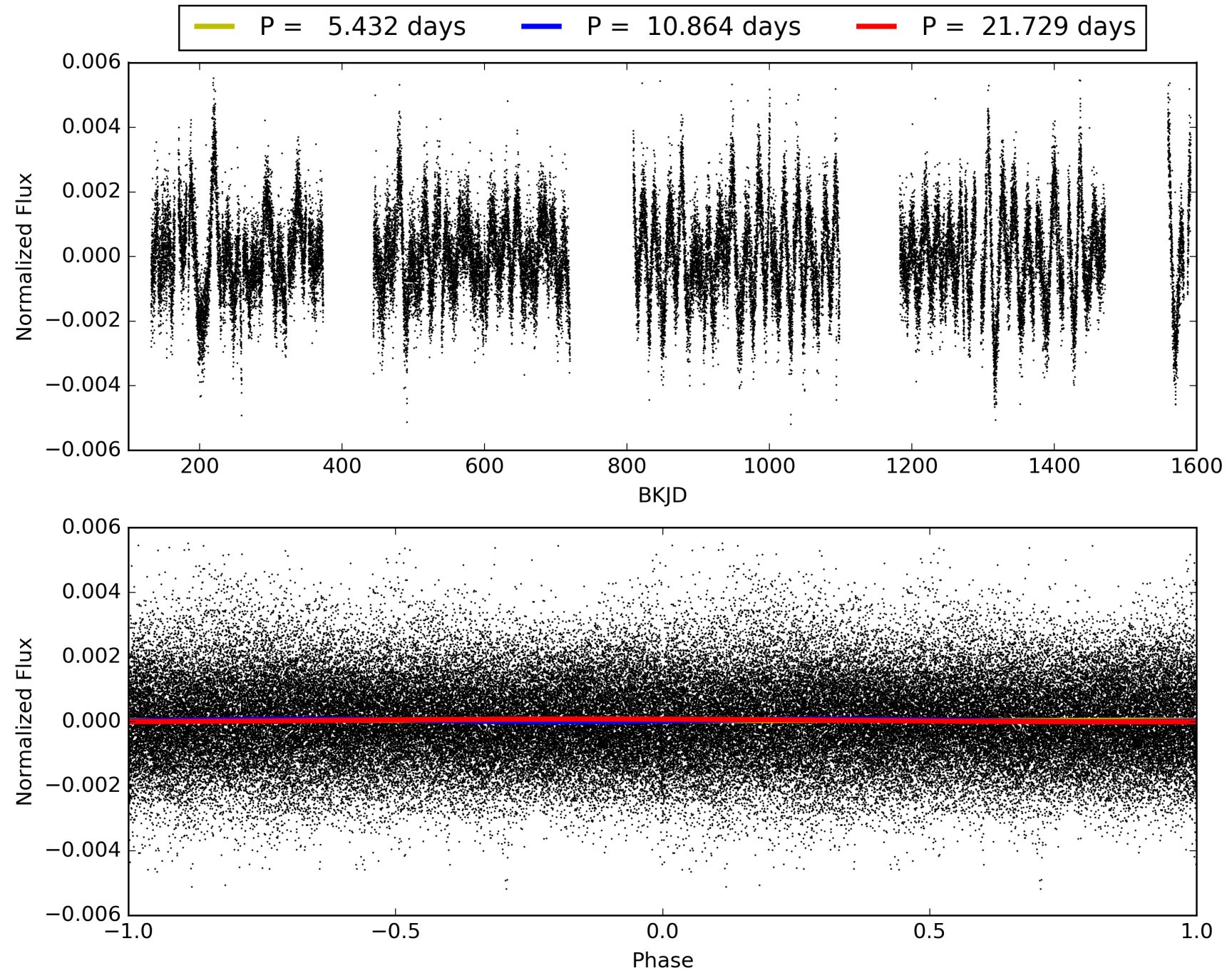
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:20:25 Z

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

TCE 011497958-03, PDC Light Curves

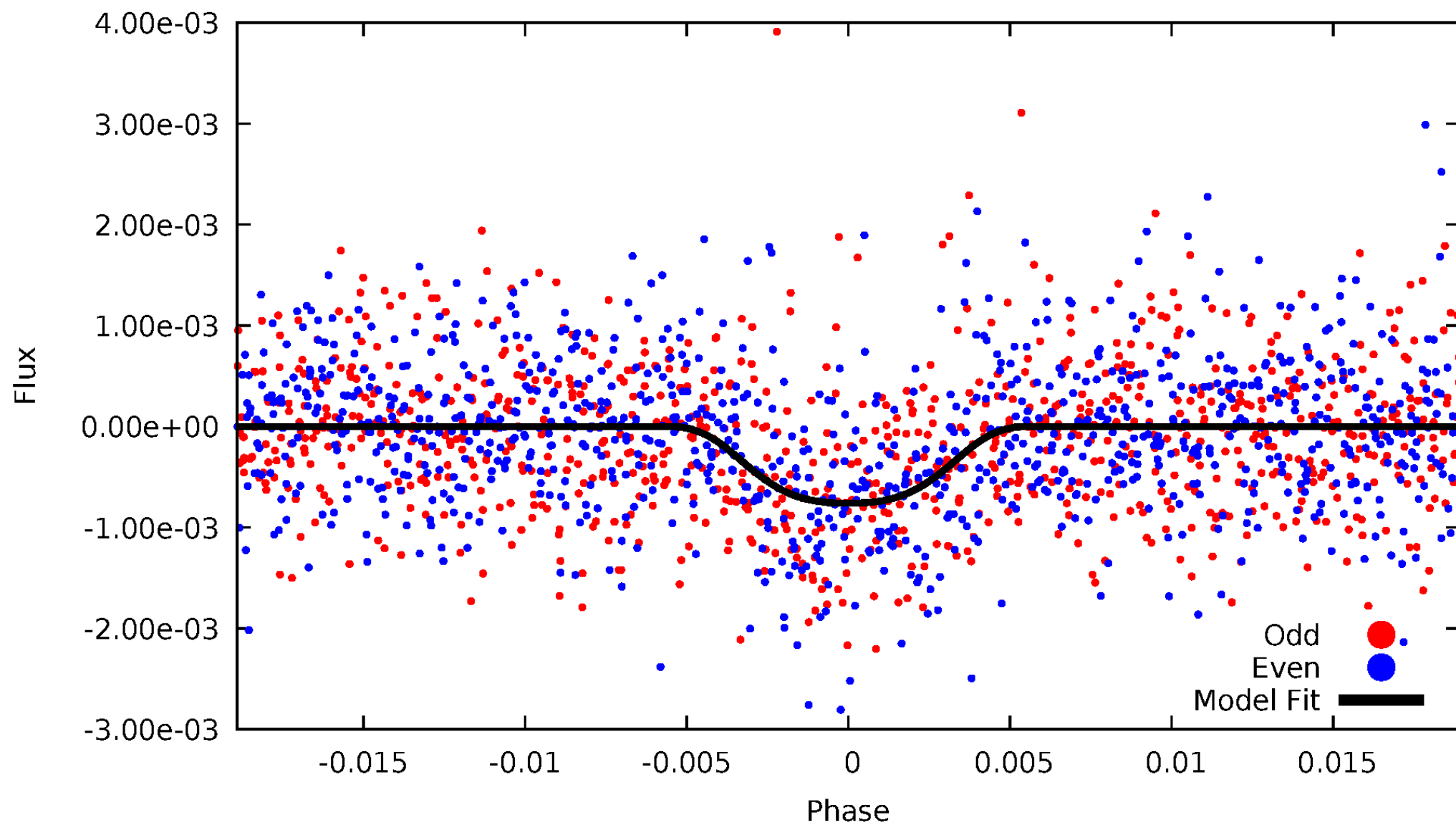


TCE 011497958-03



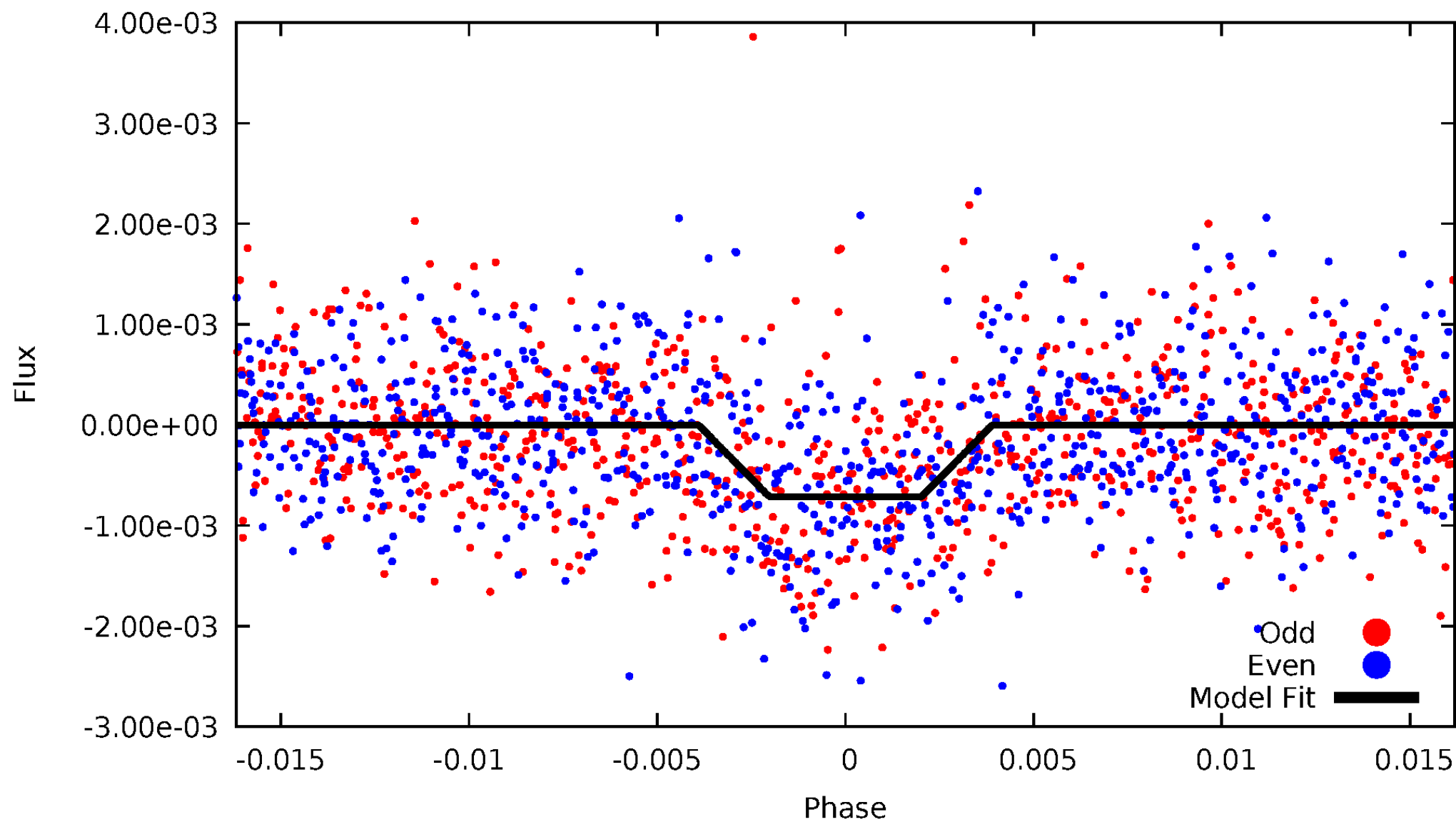
DV Odd/Even

TCE 011497958-03



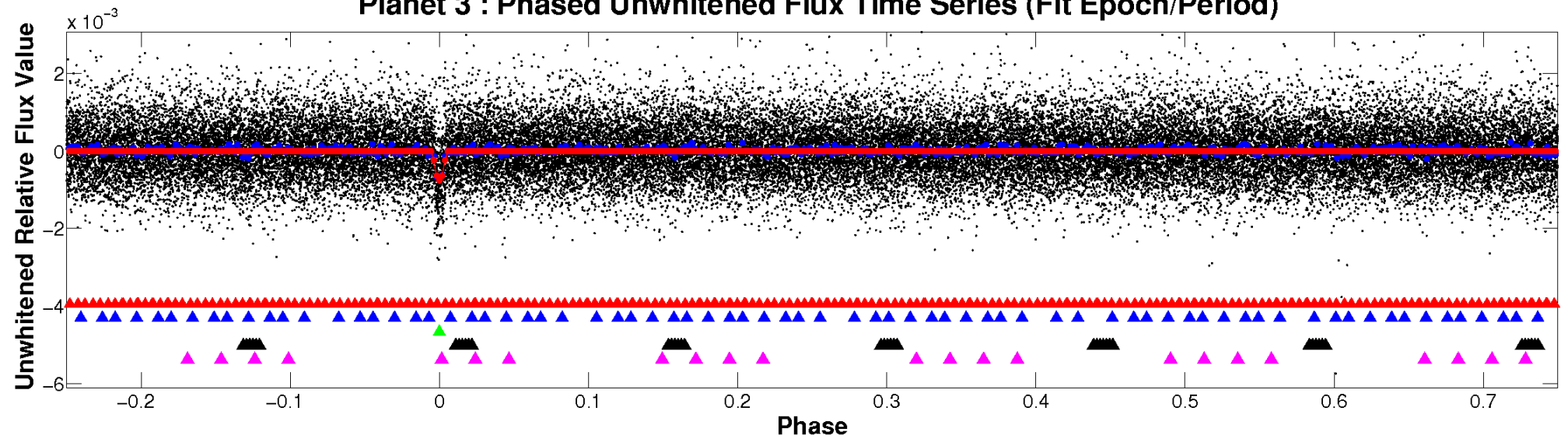
ALT Odd/Even

TCE 011497958-03

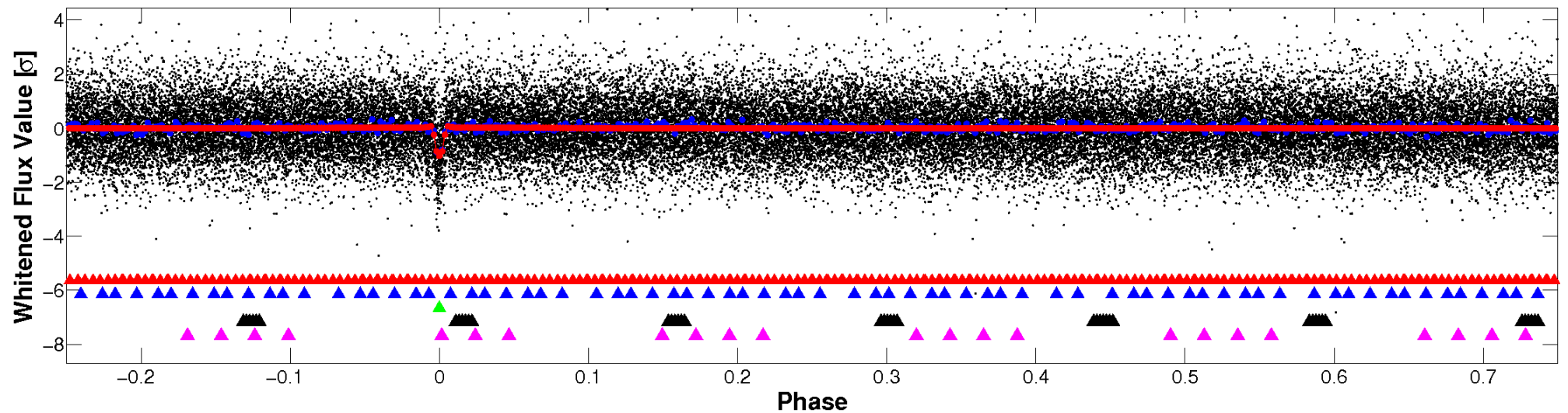


Non-Whitened Vs. Whitened Light Curve

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

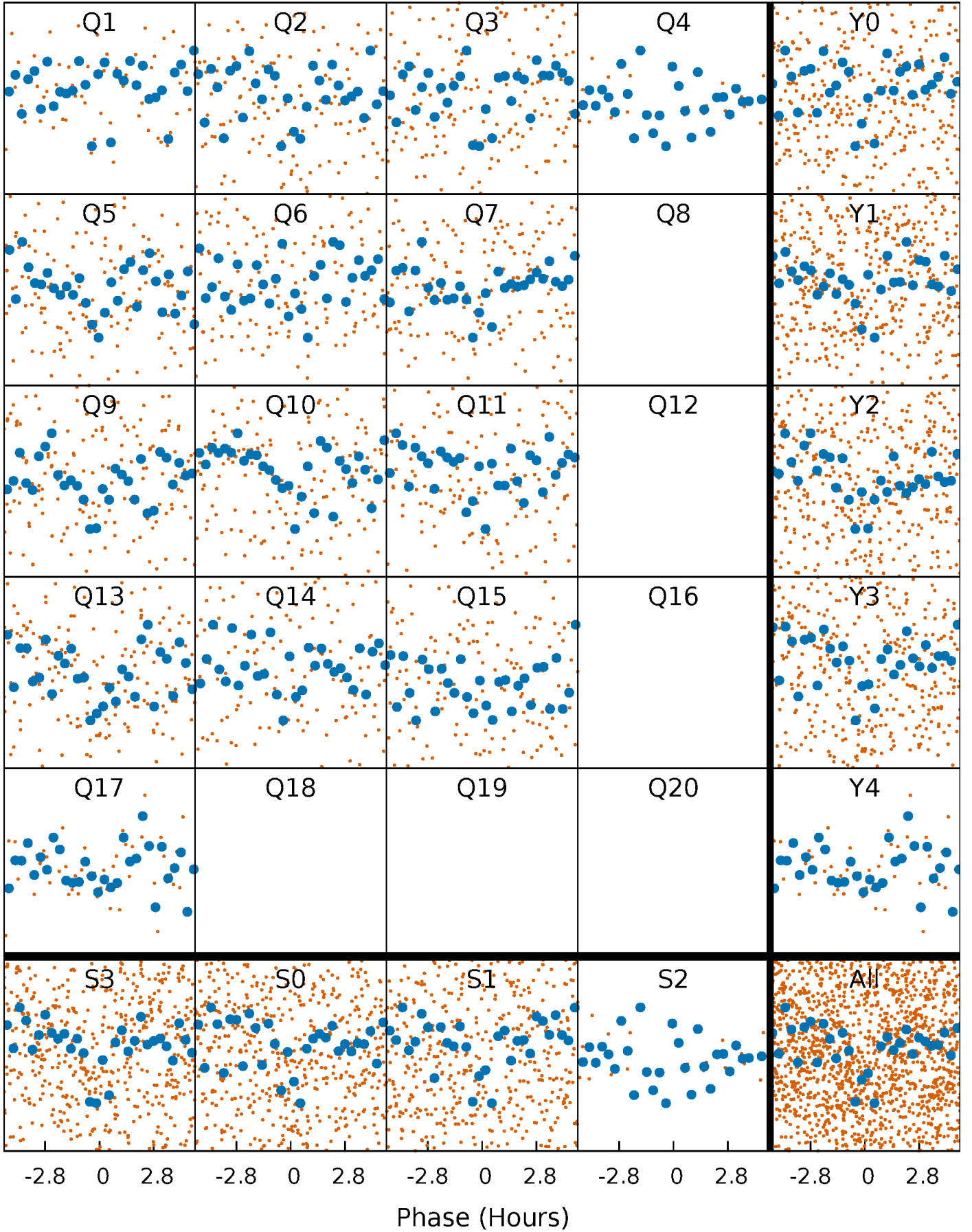


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



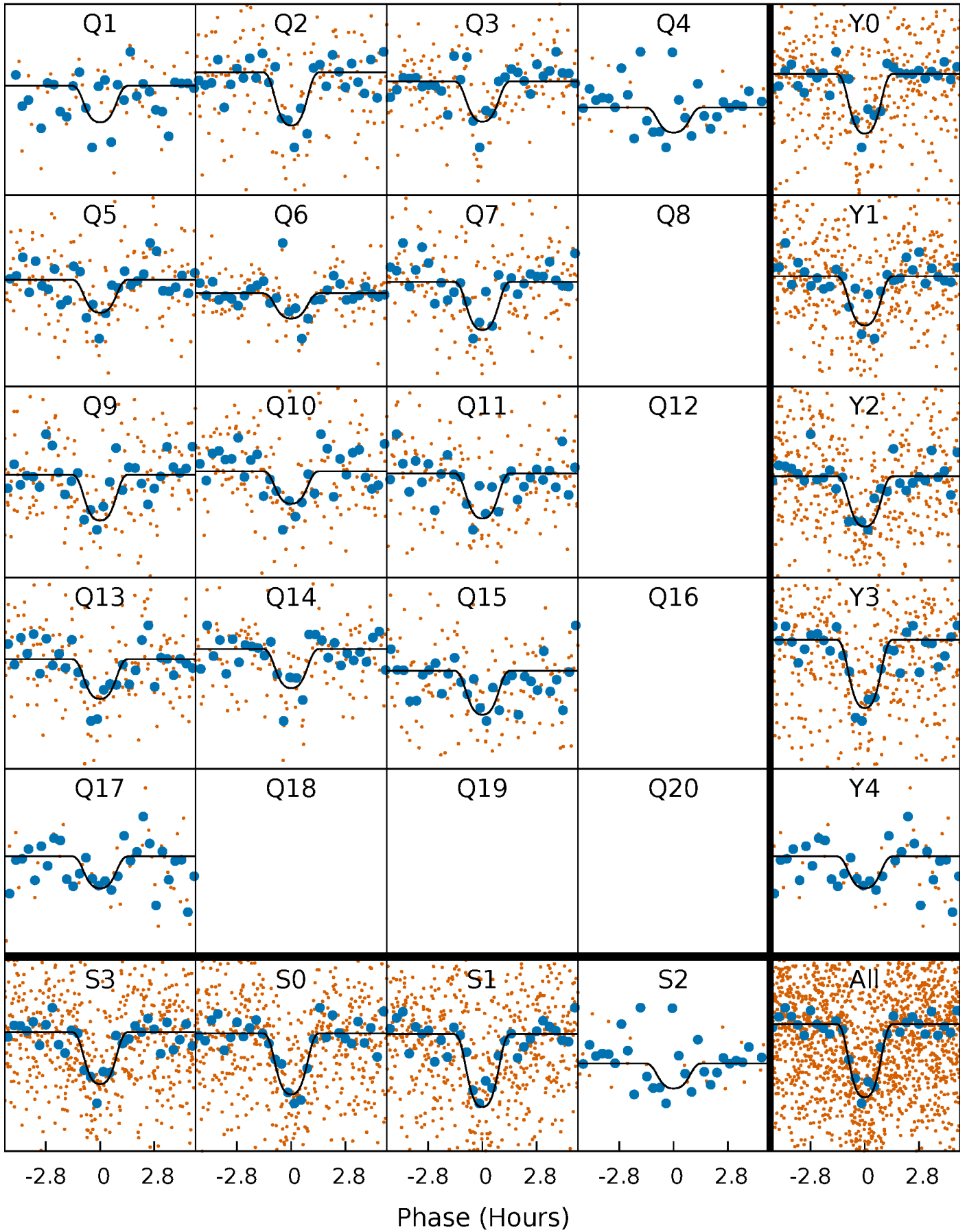
PDC Quarter-Phased Transit Curves

TCE 011497958-03 P= 10.864423 Days $T_0=141.991915$ (BKJD)



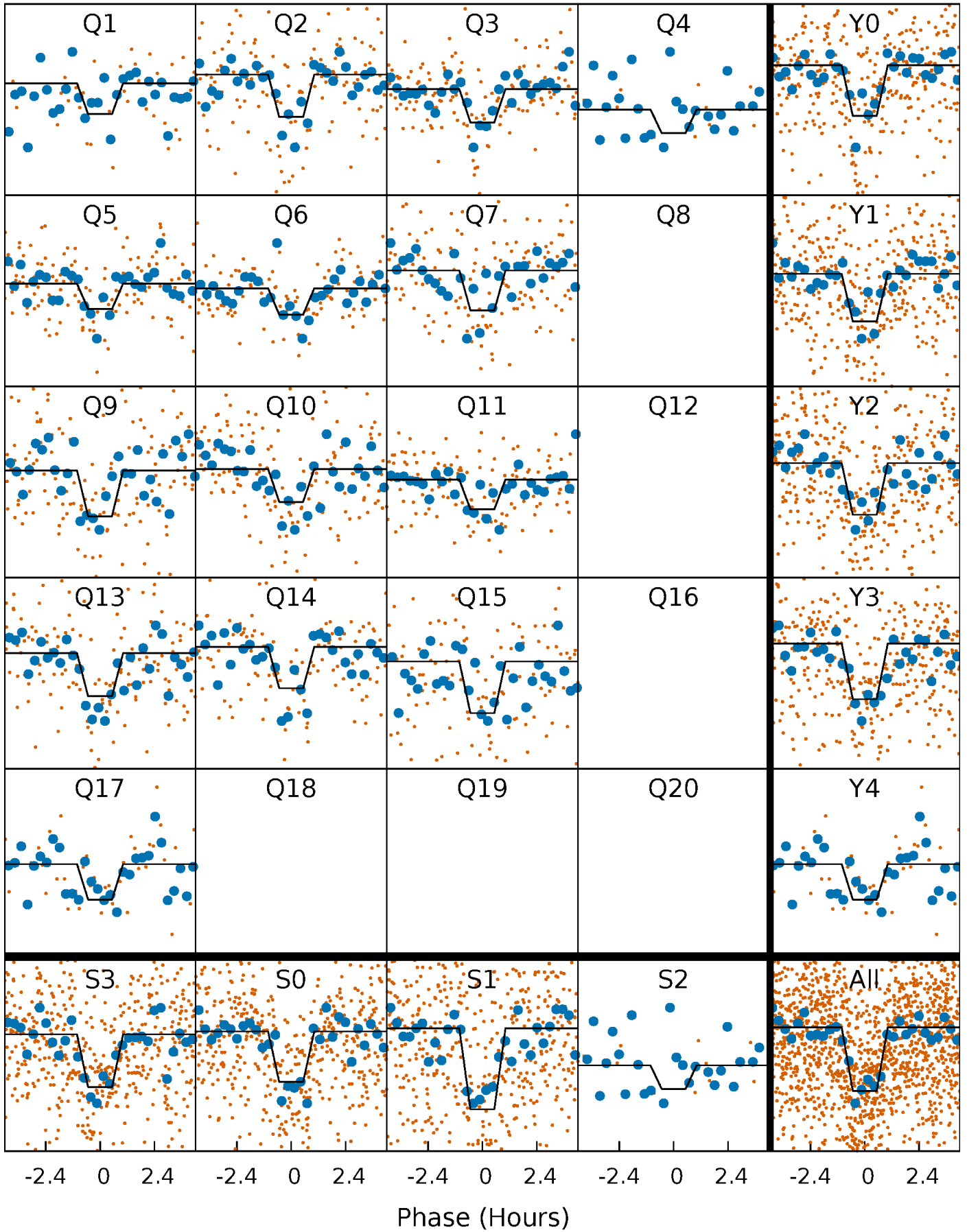
DV Quarter-Phased Transit Curves

TCE 011497958-03 P= 10.864423 Days $T_0=141.991915$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

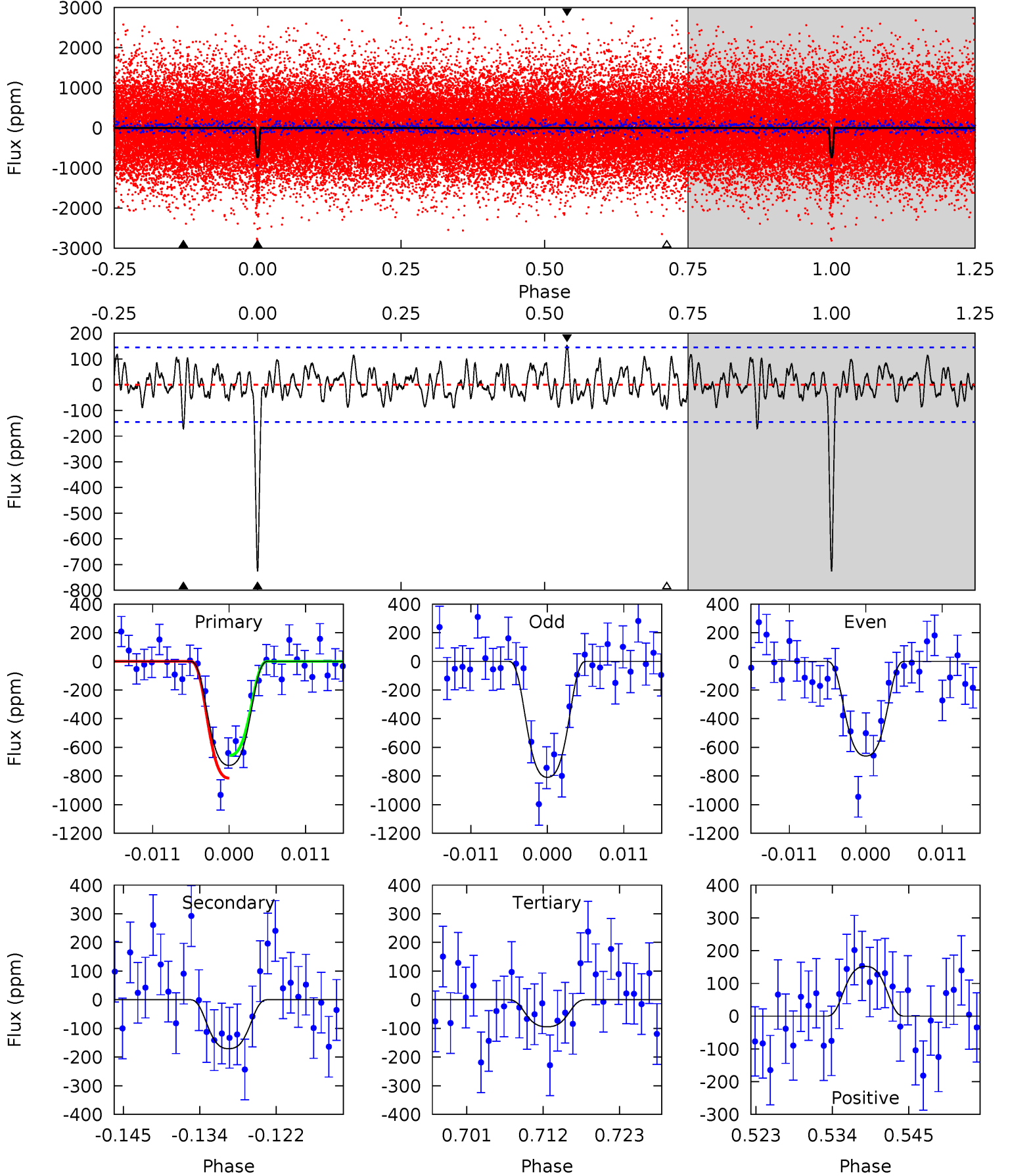
TCE 011497958-03 P= 10.864321 Days $T_0=141.998344$ (BKJD)



DV Model-Shift Uniqueness Test

011497958-03, P = 10.864423 Days, E = 131.127492 Days

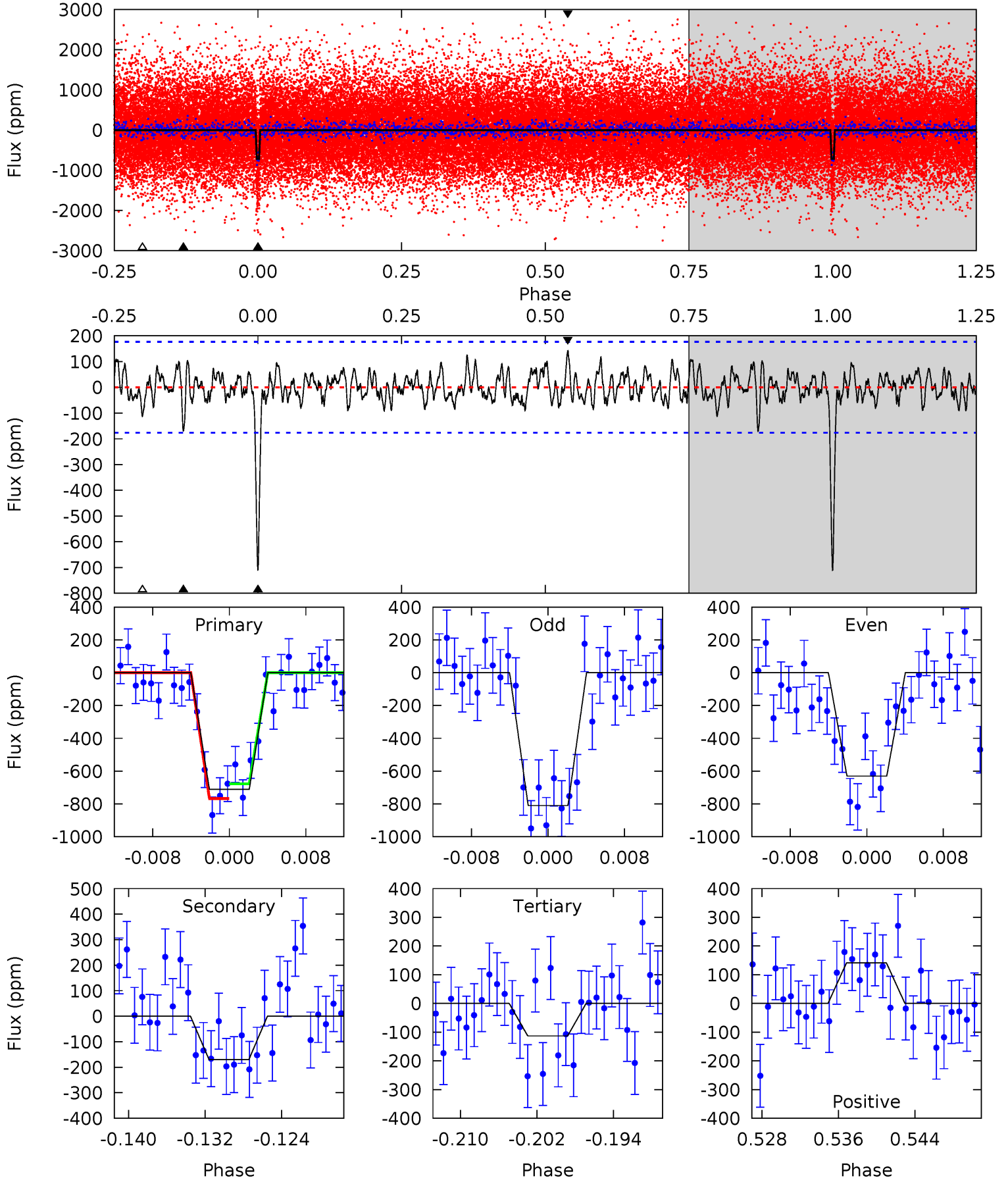
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.0	5.89	3.25	5.24	5.01	2.54	1.57	21.8	19.8	2.64	0.65	2.57	1.01	0.17	2.73



Alt Model-Shift Uniqueness Test

011497958-03, $P = 10.864321$ Days, $E = 131.134023$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	4.89	3.26	4.07	5.07	2.66	1.29	17.2	16.4	1.63	0.81	2.58	0.98	0.17	1.29



Stellar Parameters For KIC 011497958

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3526^{+71}_{-78}	$4.866^{+0.066}_{-0.044}$	$-0.080^{+0.150}_{-0.150}$	$0.383^{+0.048}_{-0.058}$	$0.394^{+0.055}_{-0.067}$	$9.856^{+3.710}_{-2.103}$
	+2%/-2%	+1%/-1%	+188%/-188%	+13%/-15%	+14%/-17%	+38%/-21%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 011497958-03 / KOI 1422.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-171 ± 29	$1.40^{+0.16}_{-0.17}$	504^{+15}_{-15}	2689^{+93}_{-108}	239^{+80}_{-61}
Alt.	-170 ± 35	$1.10^{+0.18}_{-0.14}$	505^{+15}_{-17}	2850^{+147}_{-119}	379^{+158}_{-105}

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

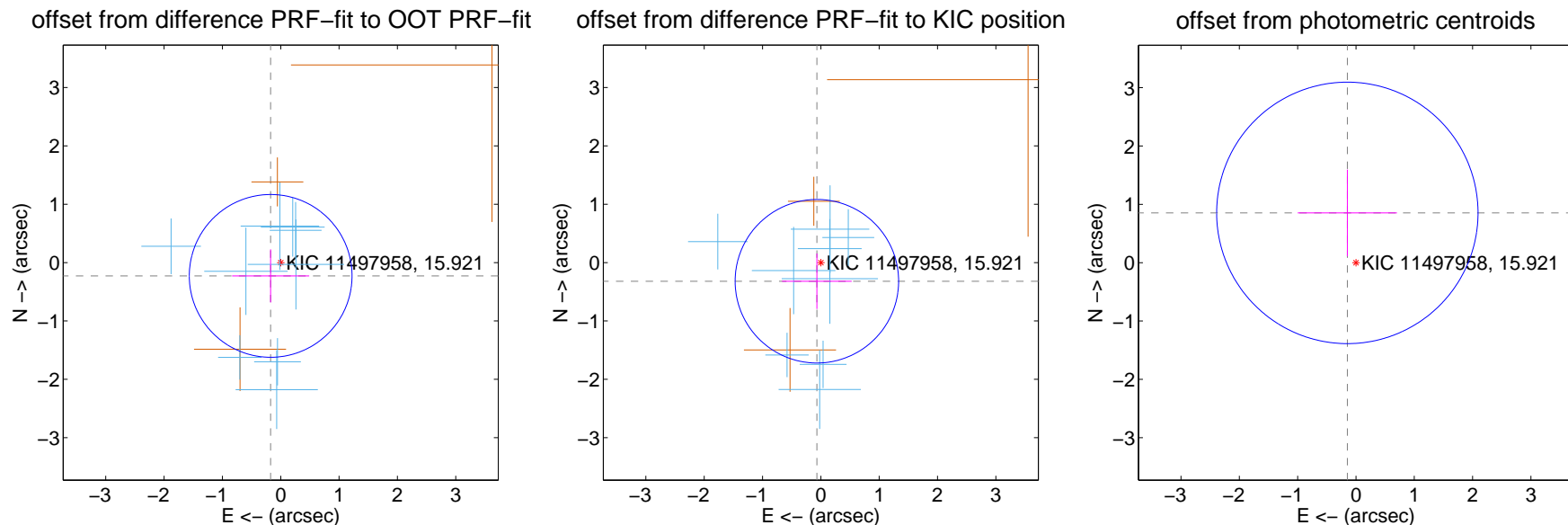
DV Centroid Data

Supplemental centroid analysis for 011497958-03. Kepler magnitude: 15.92. Transit SNR 15.24

There are 9 quarters with good PRF difference image offsets

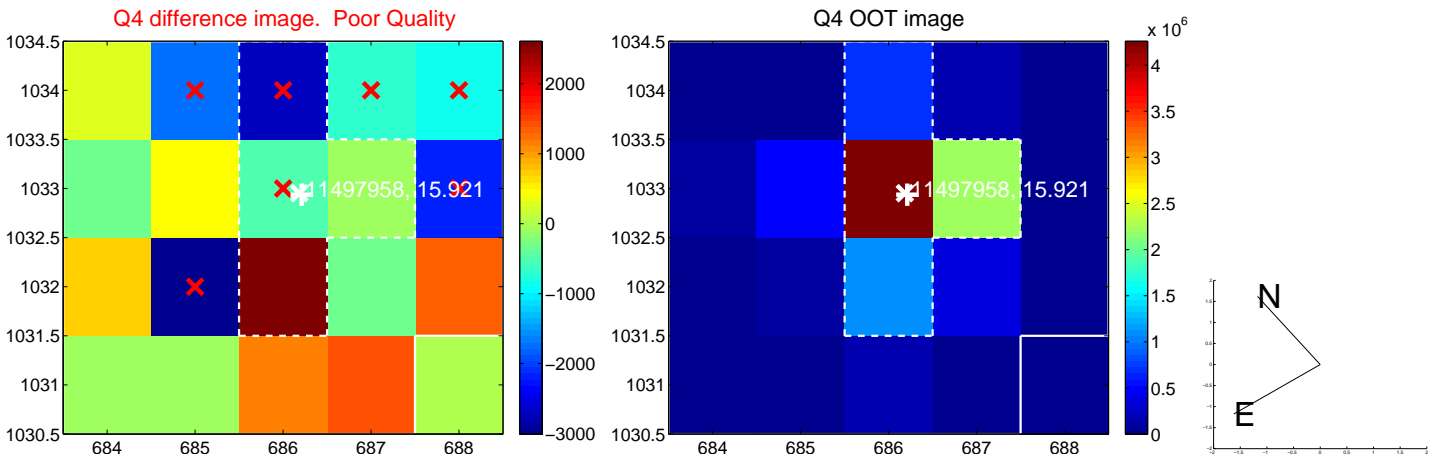
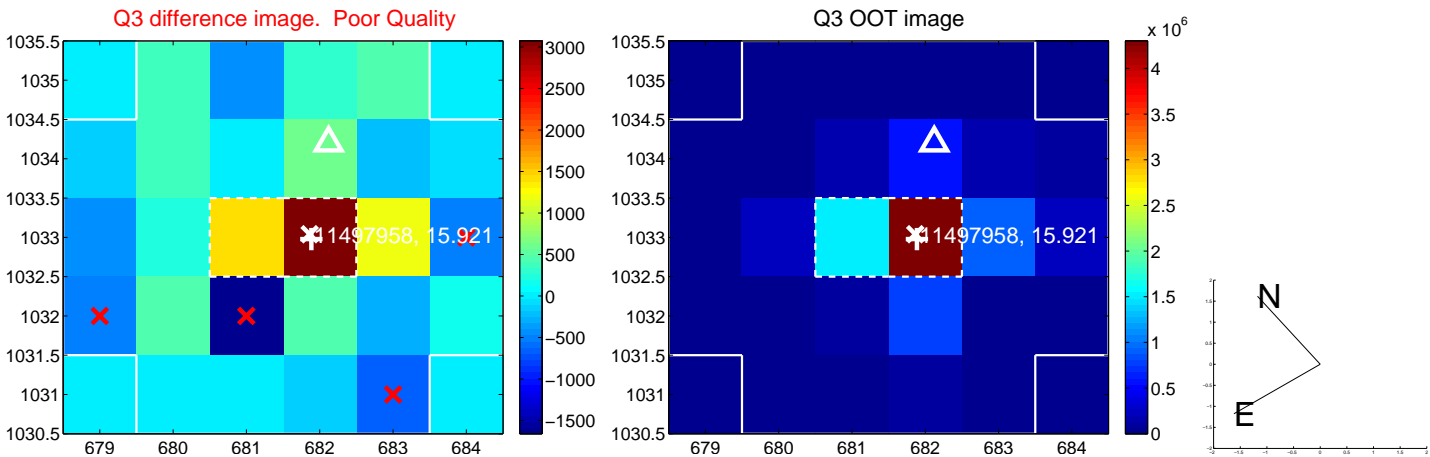
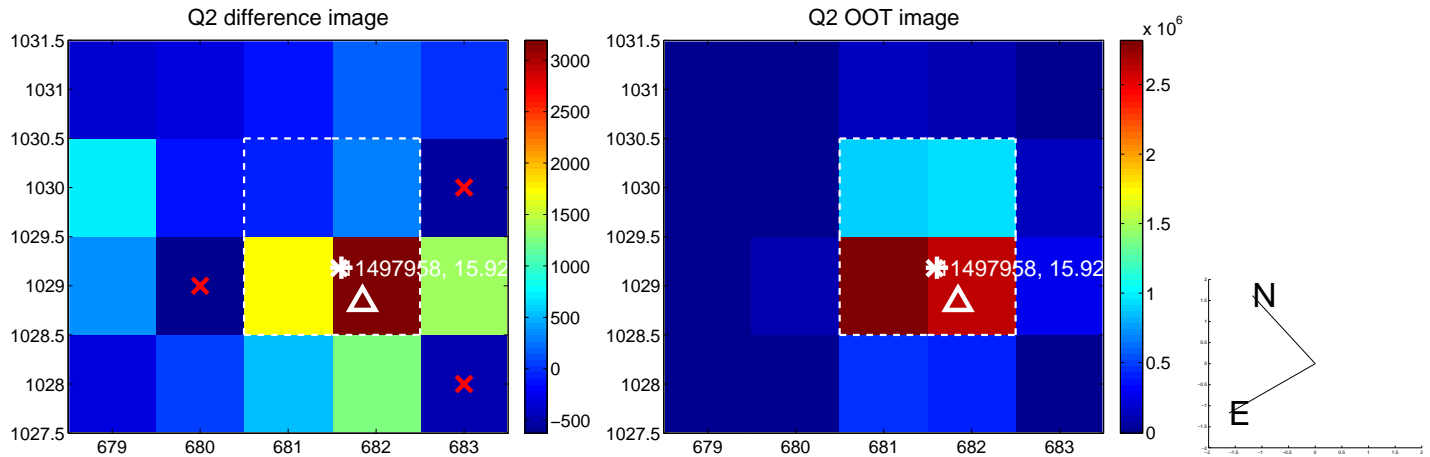
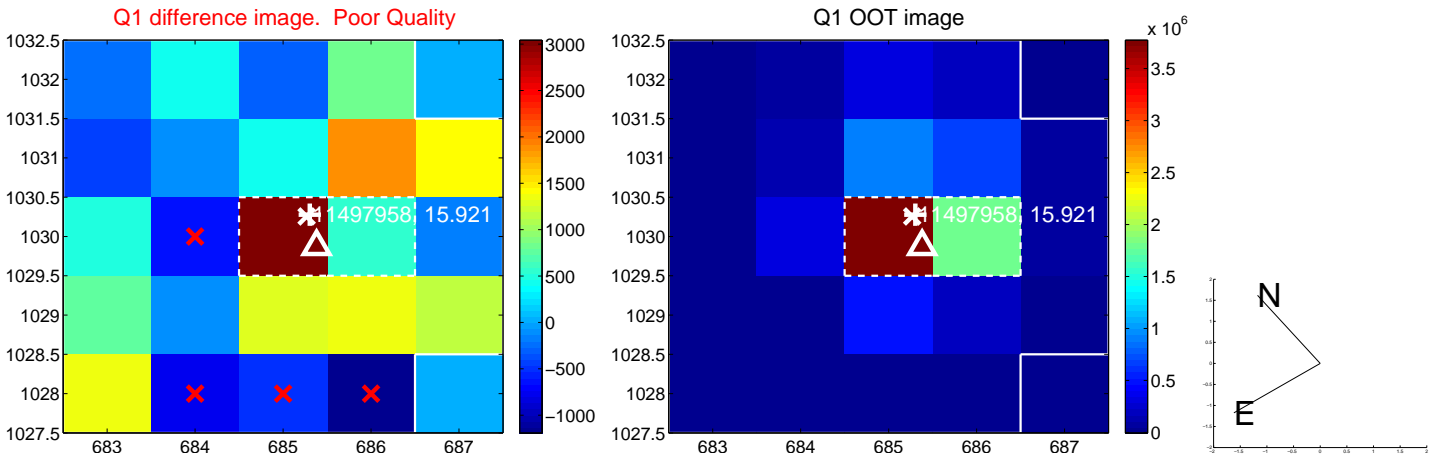
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.286 ± 0.465	0.62	0.173 ± 0.660	-0.228 ± 0.455
PRF-fit source offset from KIC position	0.327 ± 0.467	0.70	0.068 ± 0.597	-0.320 ± 0.475
photometric centroid source offset	0.87 ± 0.75	1.16	0.15 ± 0.85	0.85 ± 0.74

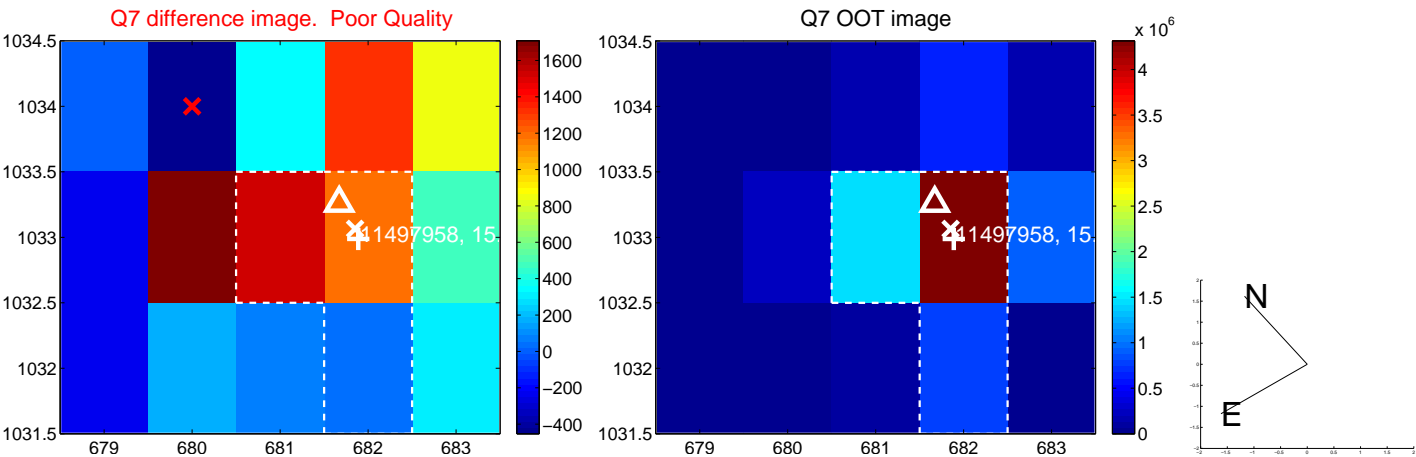
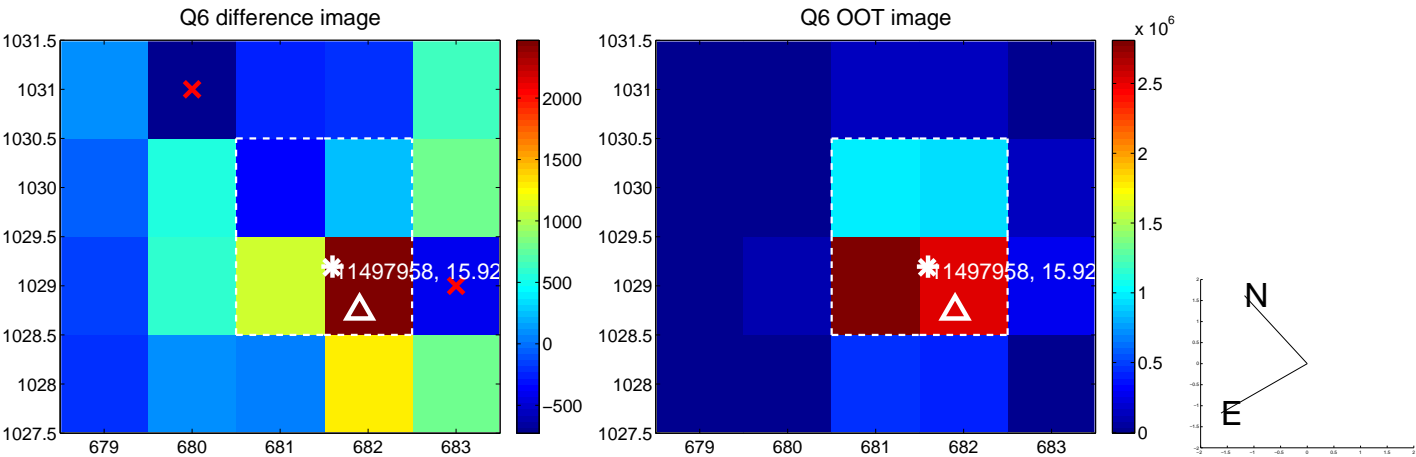
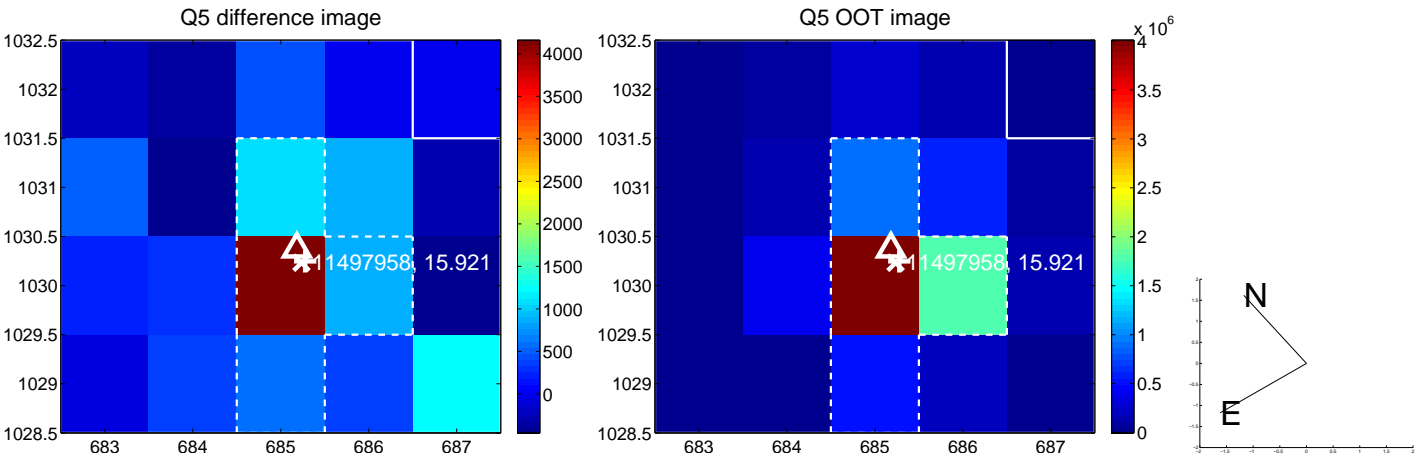


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

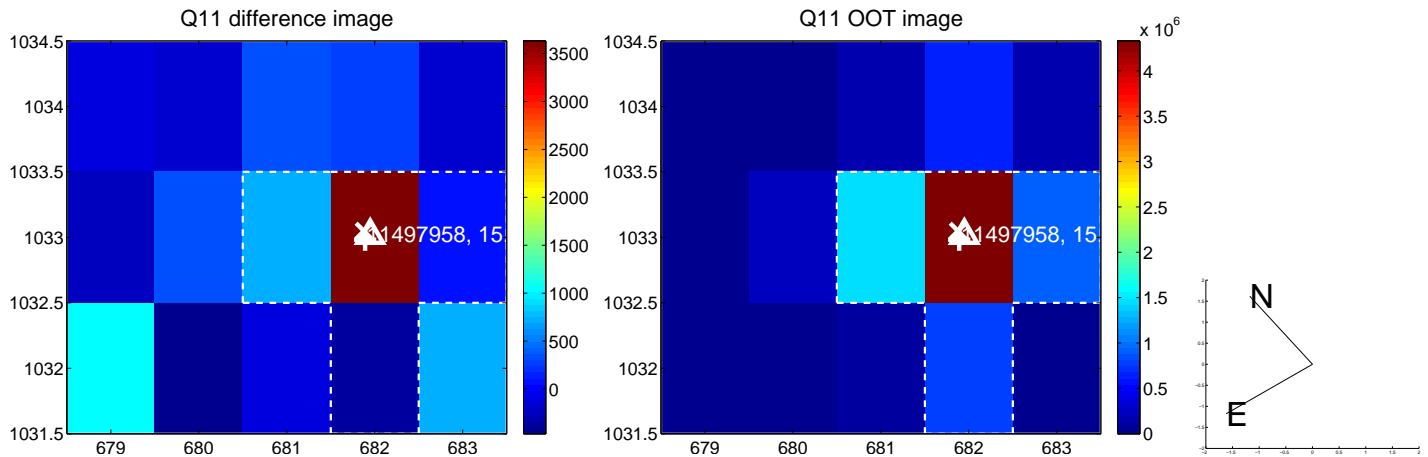
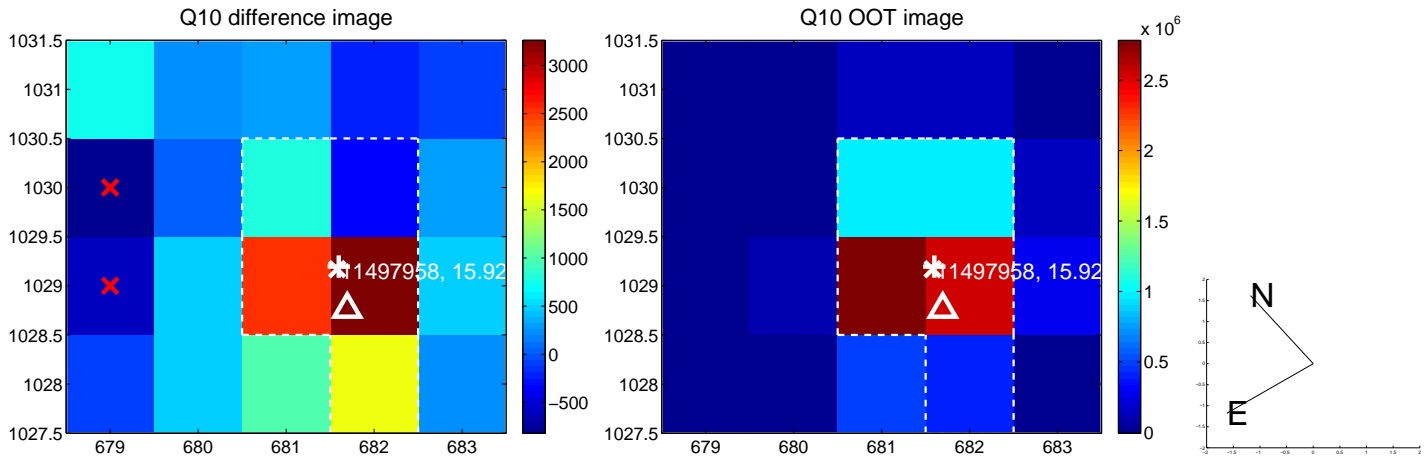
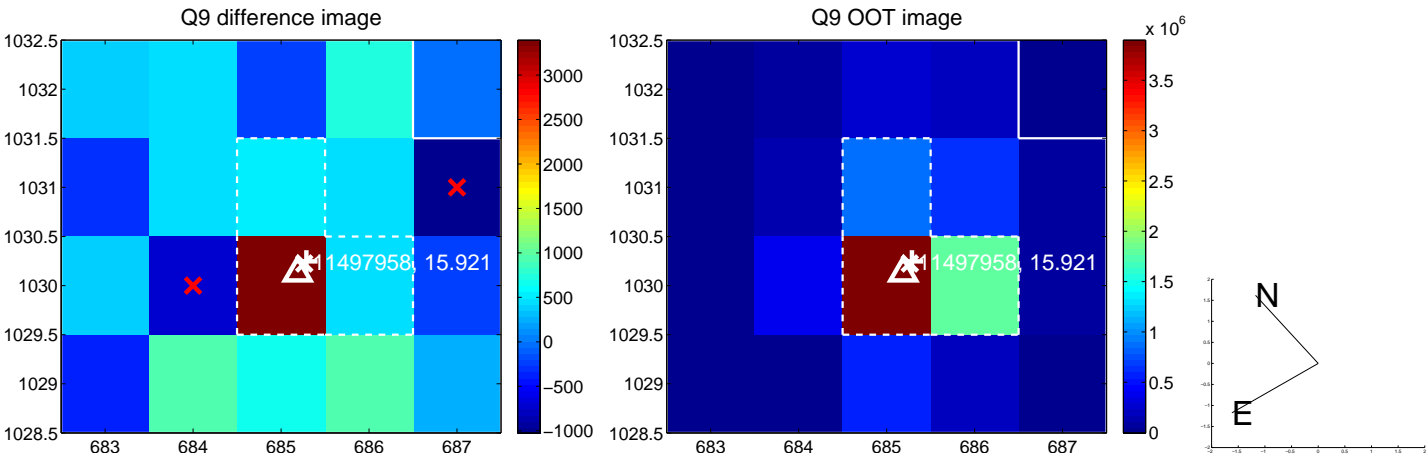
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



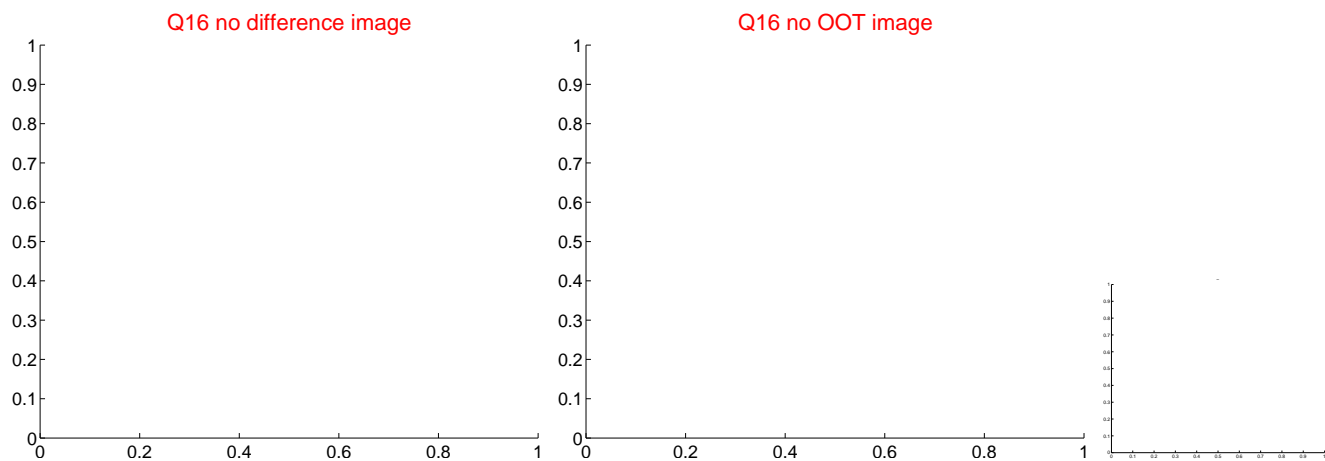
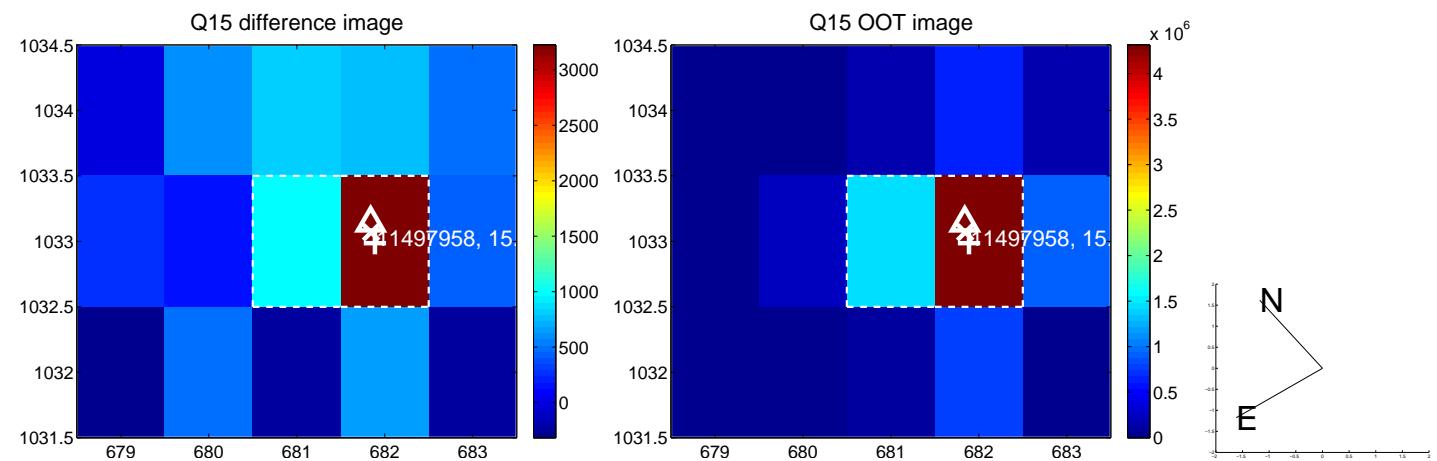
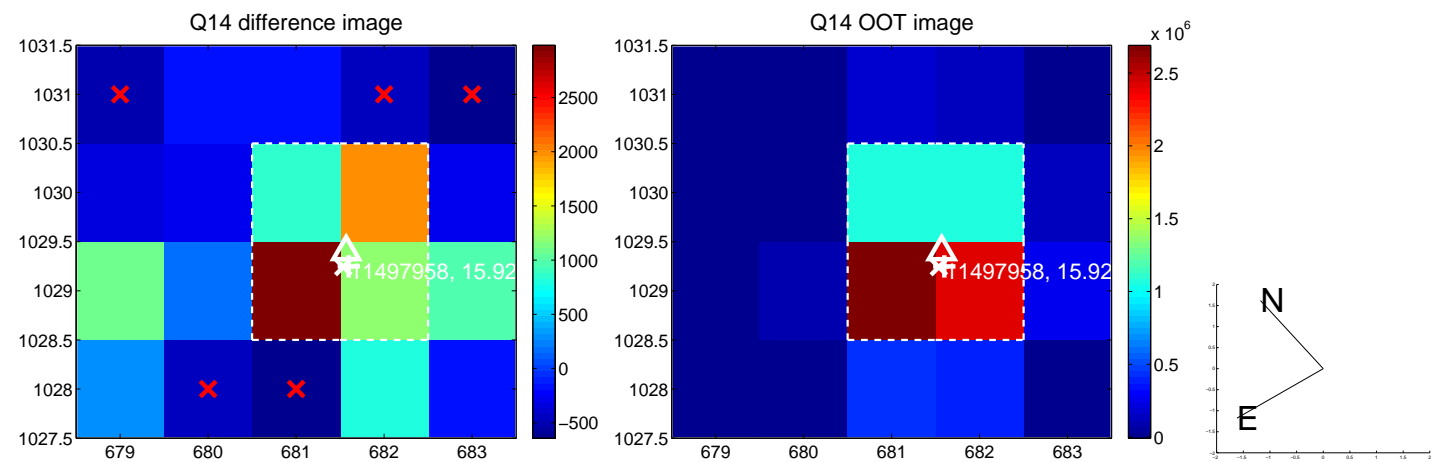
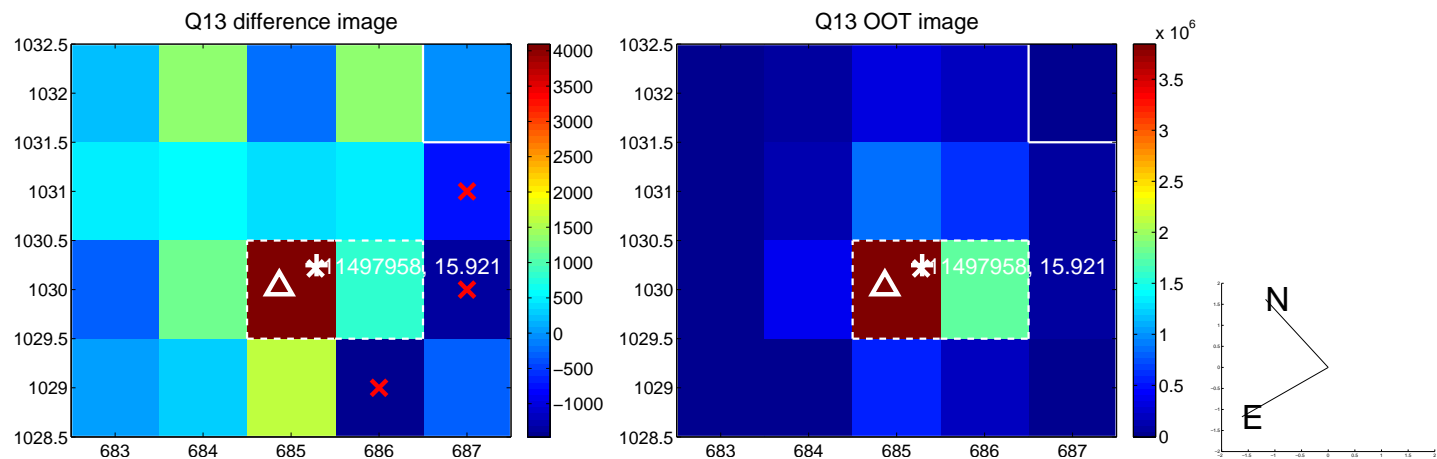
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

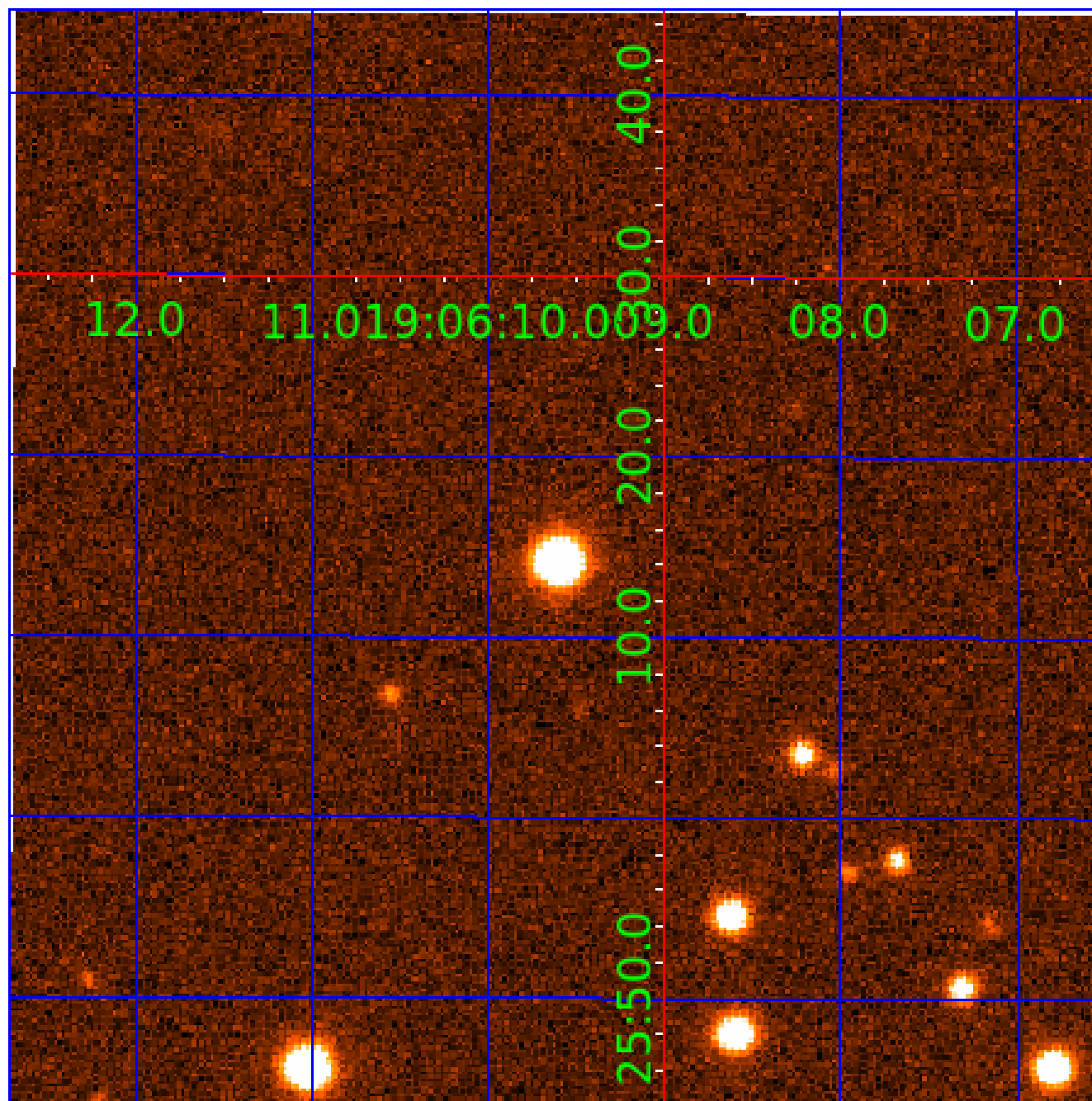


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011497958

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})
011497958-01	OBS	1422.01	5.841631	135.923827	1374.3	1.939	33.2	37.5	0.38	3526	1.57	9.39
011497958-02	OBS	1422.02	19.850267	133.650668	1585.3	2.898	25.1	28.6	0.38	3526	1.60	1.84
011497958-03	OBS	1422.03	10.864423	141.991915	761.2	2.465	12.4	15.2	0.38	3526	1.40	4.11
011497958-04	OBS	1422.05	34.141984	136.034454	861.4	3.452	10.5	11.8	0.38	3526	1.35	0.89
011497958-05	OBS	1422.04	63.334992	162.621072	879.5	3.790	9.1	9.6	0.38	3526	1.24	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011497958-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011497958-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011497958-03	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011497958-04	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011497958-05	OBS	PC	0.93	0	0	0	0	NO_COMMENT

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.

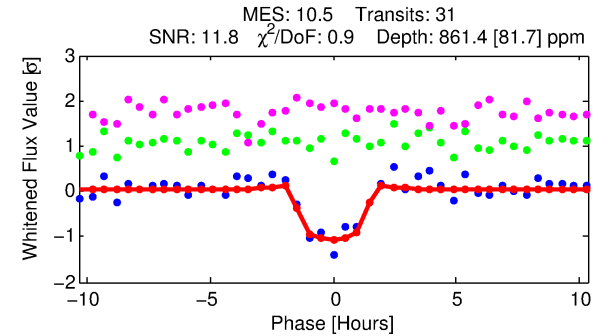
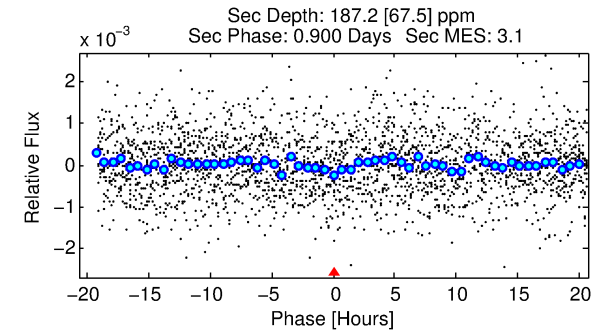
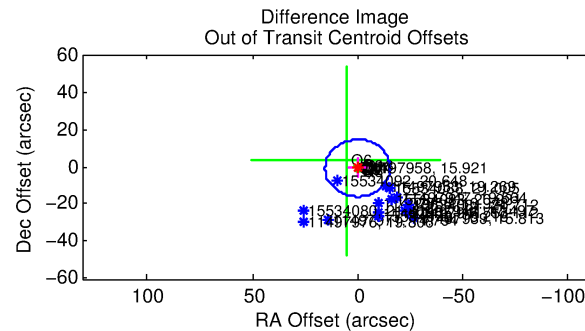
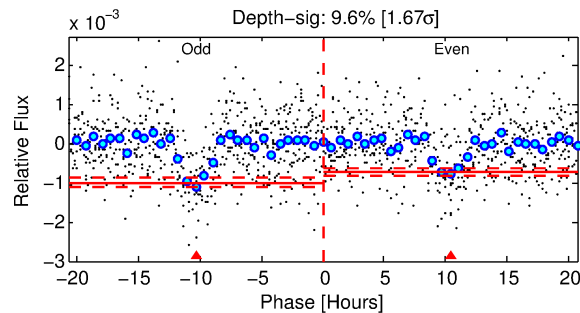
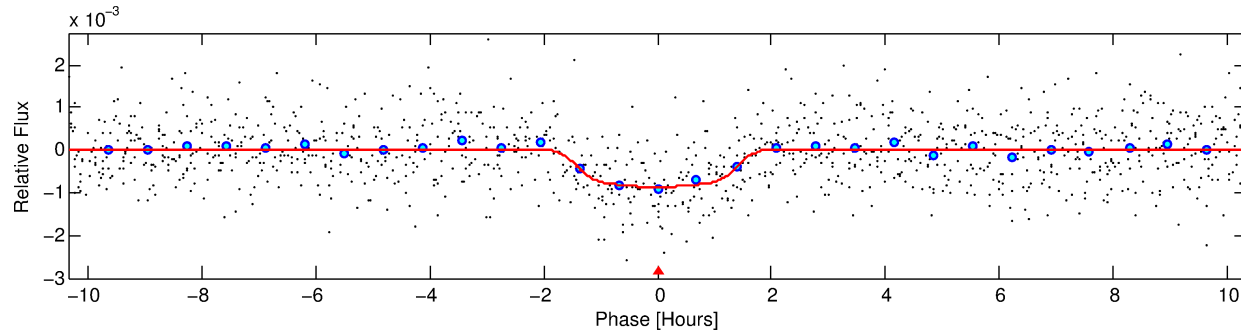
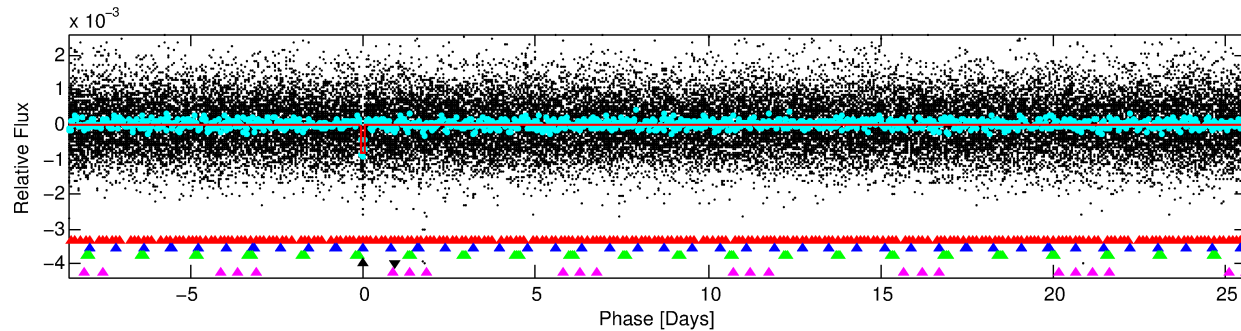
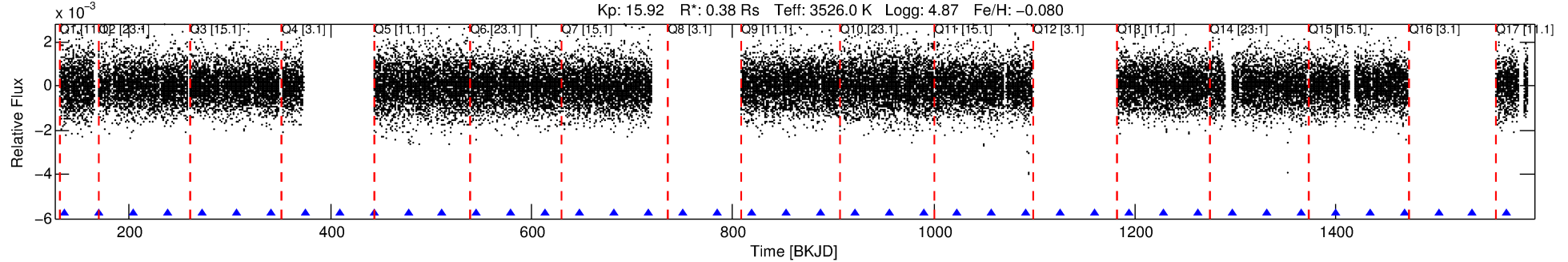
Ephemeris Match Information For 011497958-04

No Significant Match Found

DV One-Page Summary

KIC: 11497958 Candidate: 4 of 5 Period: 34.142 d
KOI: K01422.05 Name: Kepler-296e Corr: 0.933

Kp: 15.92 R*: 0.38 Rs Teff: 3526.0 K Logg: 4.87 Fe/H: -0.080



DV Fit Results:

Period = 34.14198 [0.00024] d
Epoch = 136.0345 [0.0060] BKJD
Rp/R* = 0.0323 [0.0048]
a/R* = 37.30 [20.71]
b = 0.91 [0.11]
Seff = 0.89 [0.15]
Teq = 248 [10] K
Rp = 1.35 [0.29] Re
a = 0.1509 [0.0170] AU
Ag = 1284.62 [628.20] [2.04σ]
Teff = 2294 [273] K [7.49σ]

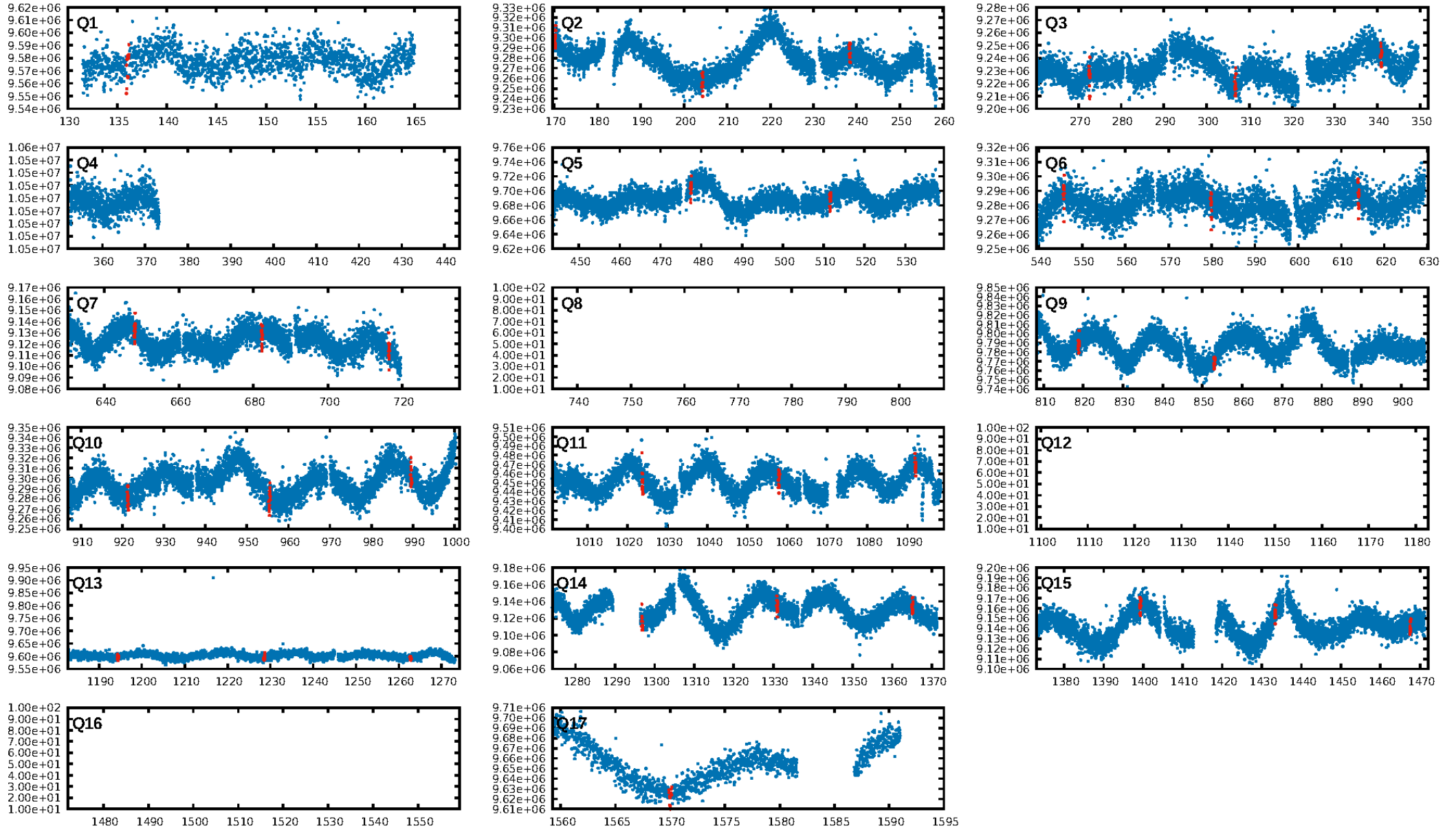
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [76.10σ]
LongPeriod-sig: 100.0% [136.67σ]
ModelChiSquare2-sig: 80.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.68e-25
RollingBand-fgt: 1.00 [29/29]
GhostDiagnostic-chr: 6.251
Centroid-sig: 53.3%
Centroid-so: 0.721 arcsec [0.73σ]
OotOffset-rm: 0.828 arcsec [0.16σ]
KicOffset-rm: 0.916 arcsec [0.18σ]
OotOffset-st: 3/3/0/4 [10]
KicOffset-st: 3/3/0/4 [10]
DiffImageQuality-fgm: 0.70 [7/10]
DiffImageOverlap-fno: 0.85 [11/13]

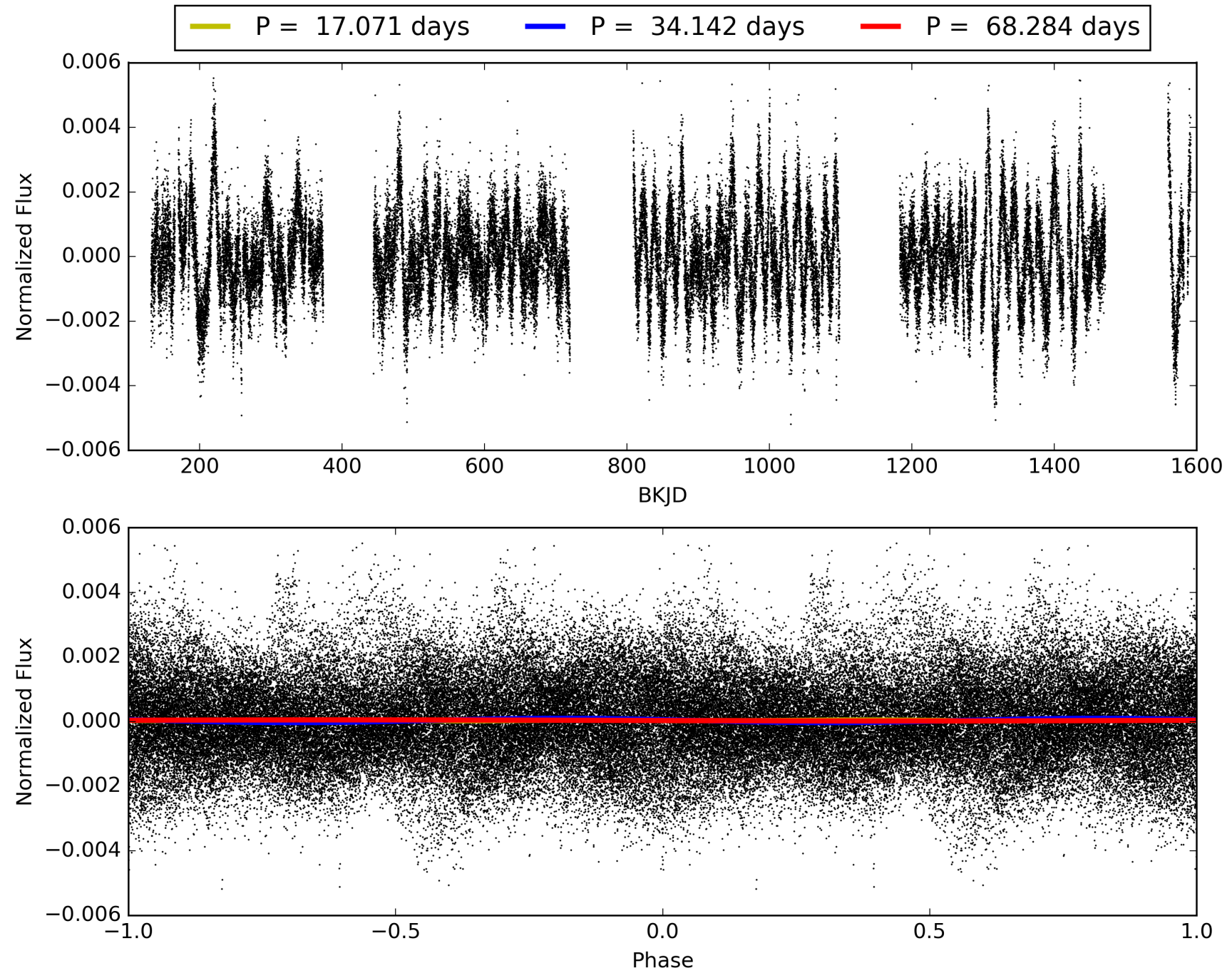
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:20:31 Z

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

TCE 011497958-04, PDC Light Curves

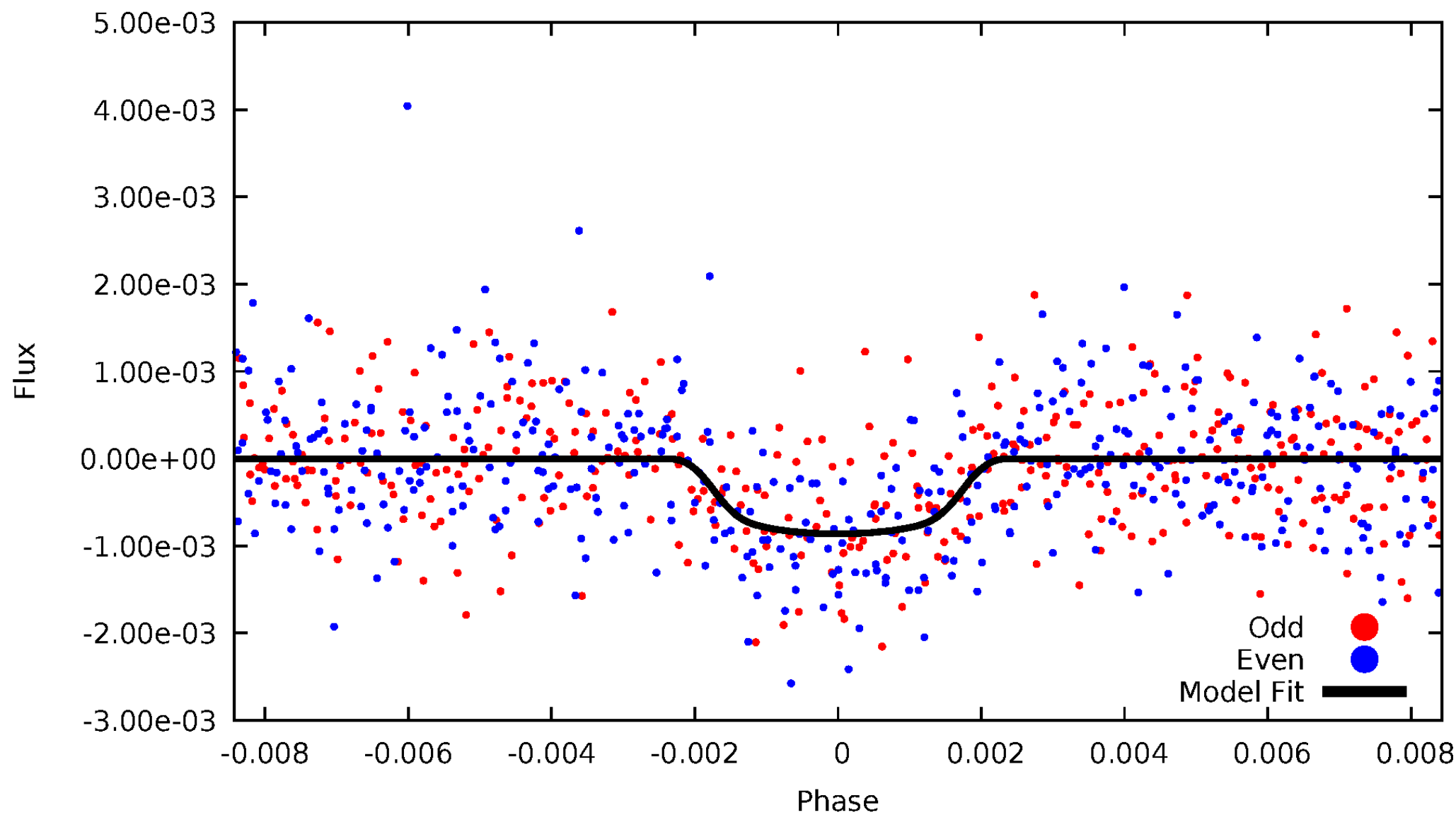


TCE 011497958-04



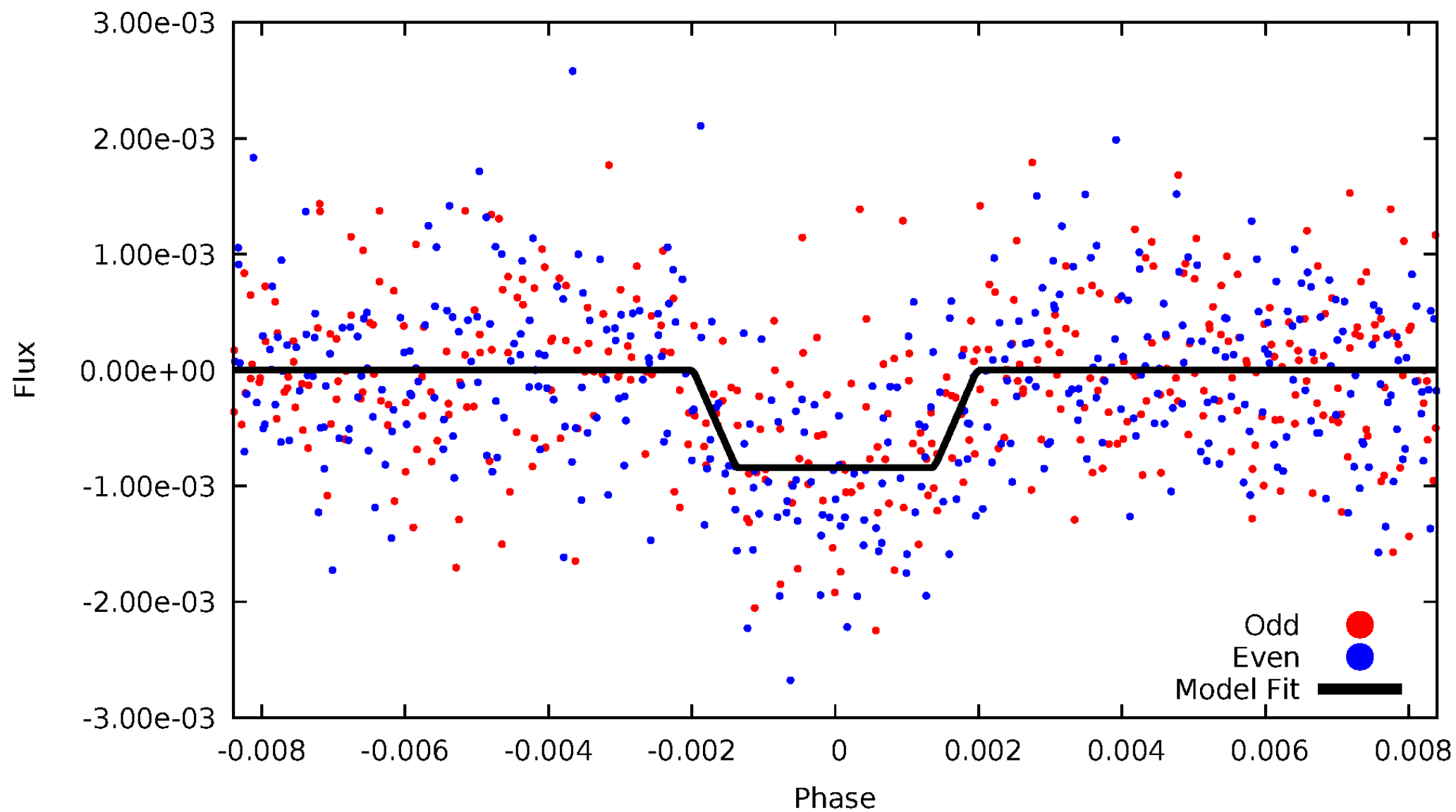
DV Odd/Even

TCE 011497958-04



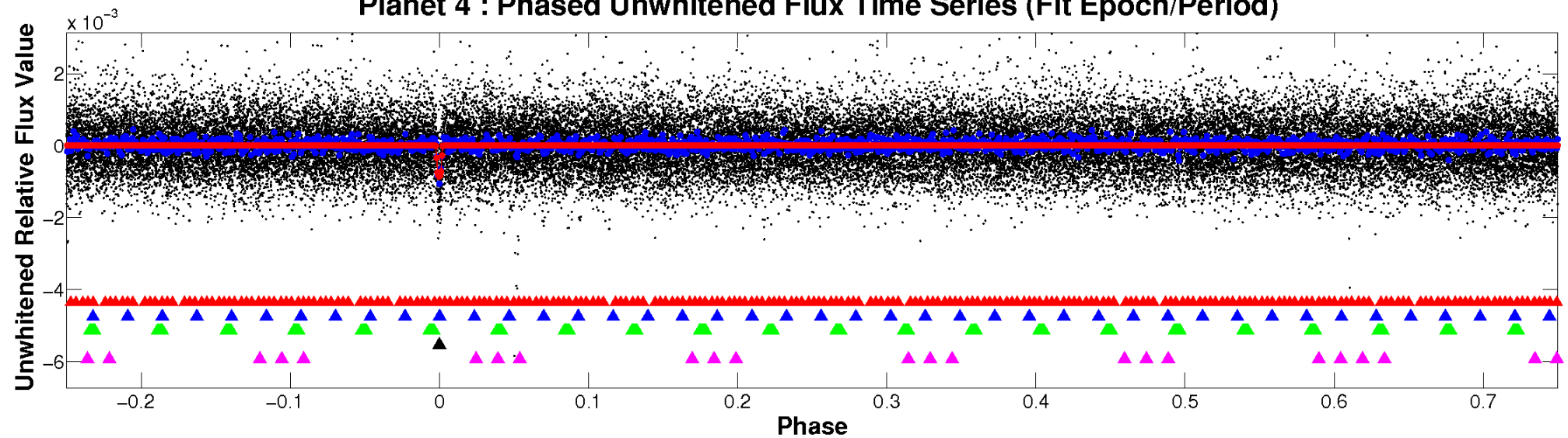
ALT Odd/Even

TCE 011497958-04

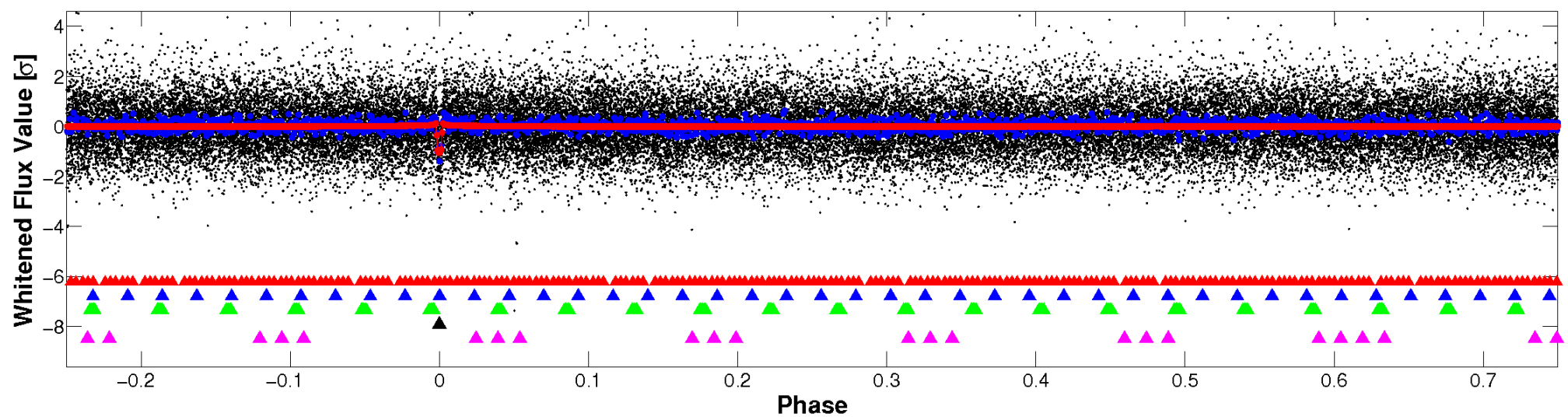


Non-Whitened Vs. Whitened Light Curve

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

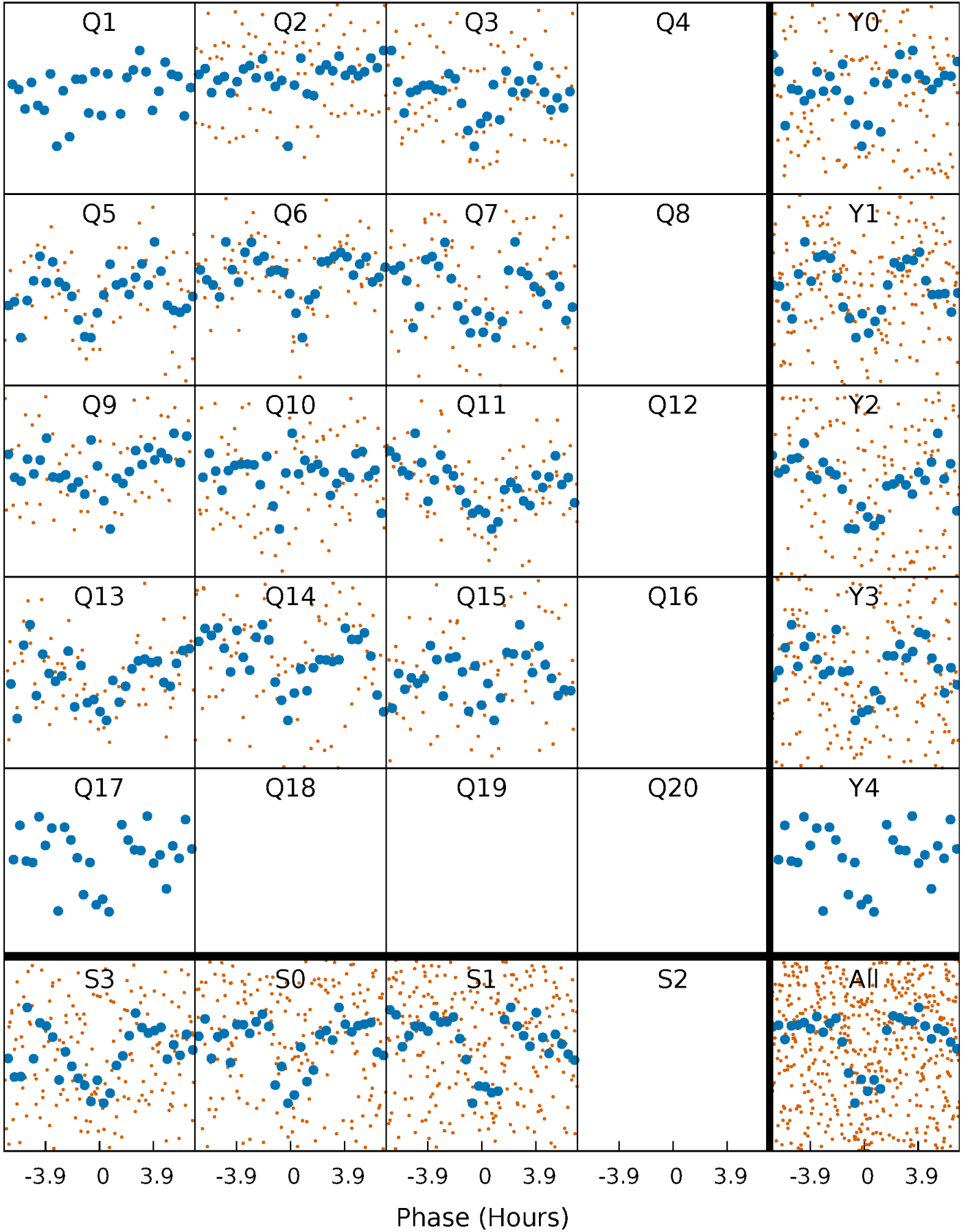


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



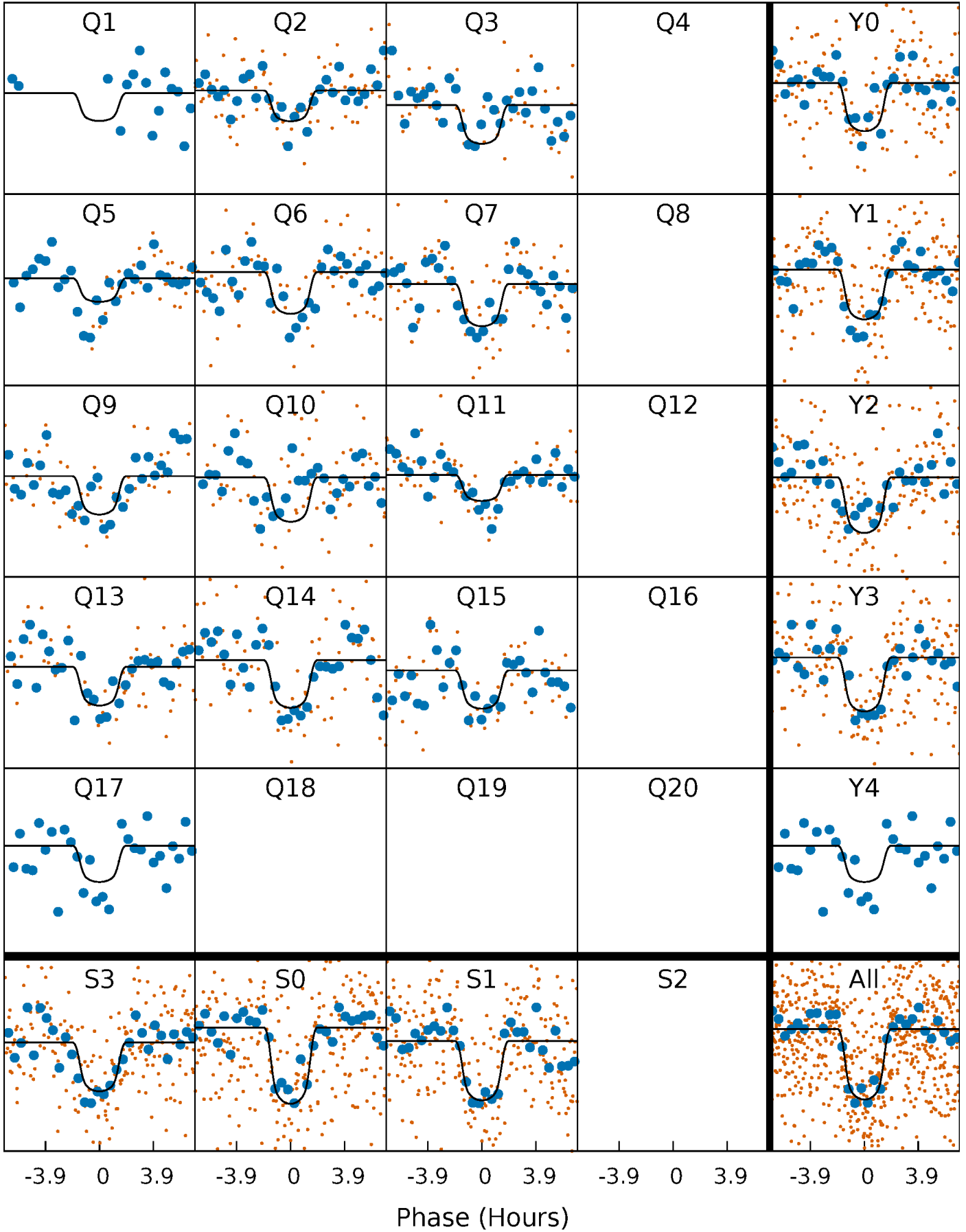
PDC Quarter-Phased Transit Curves

TCE 011497958-04 P= 34.141984 Days $T_0=136.034454$ (BKJD)



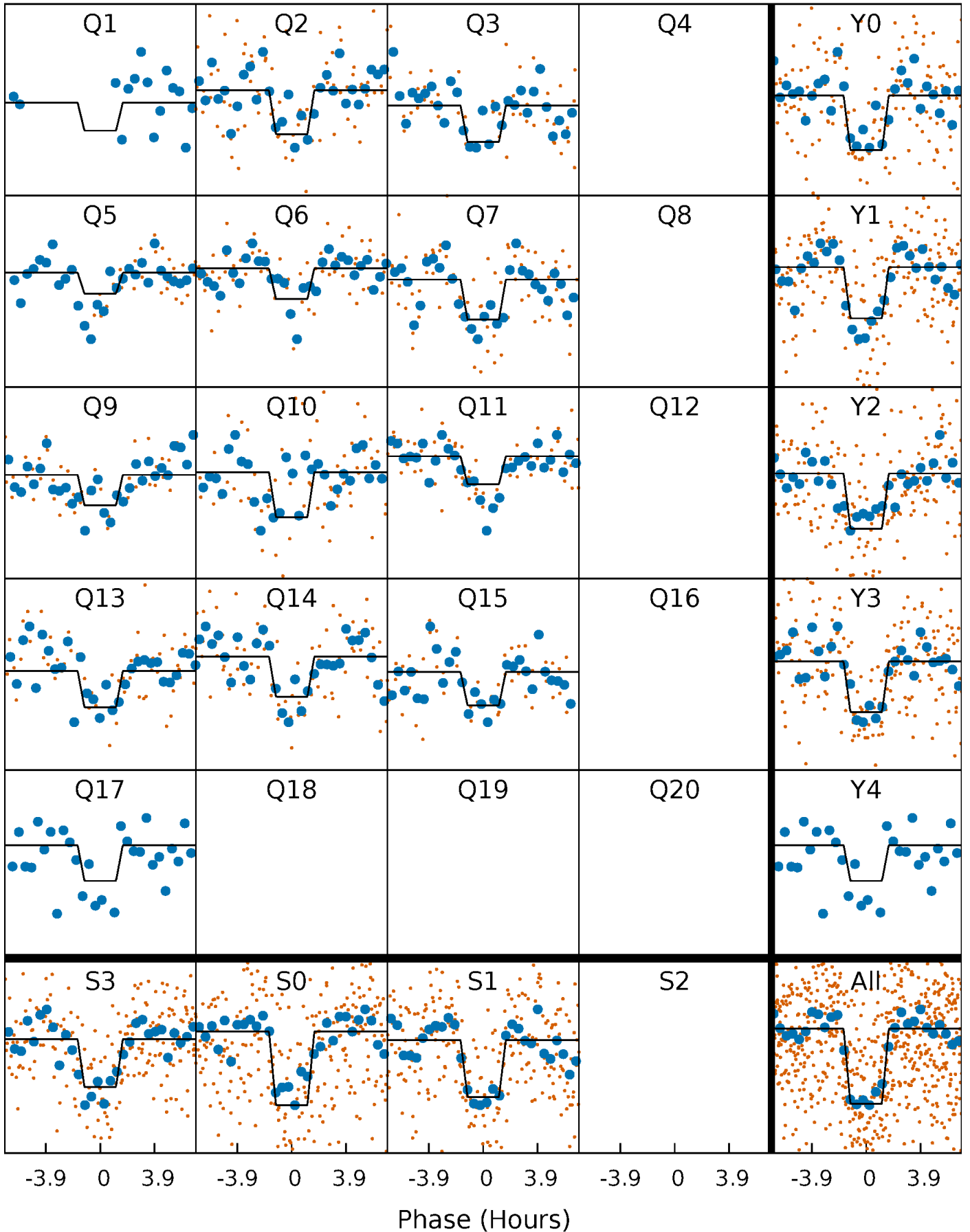
DV Quarter-Phased Transit Curves

TCE 011497958-04 P= 34.141984 Days $T_0=136.034454$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

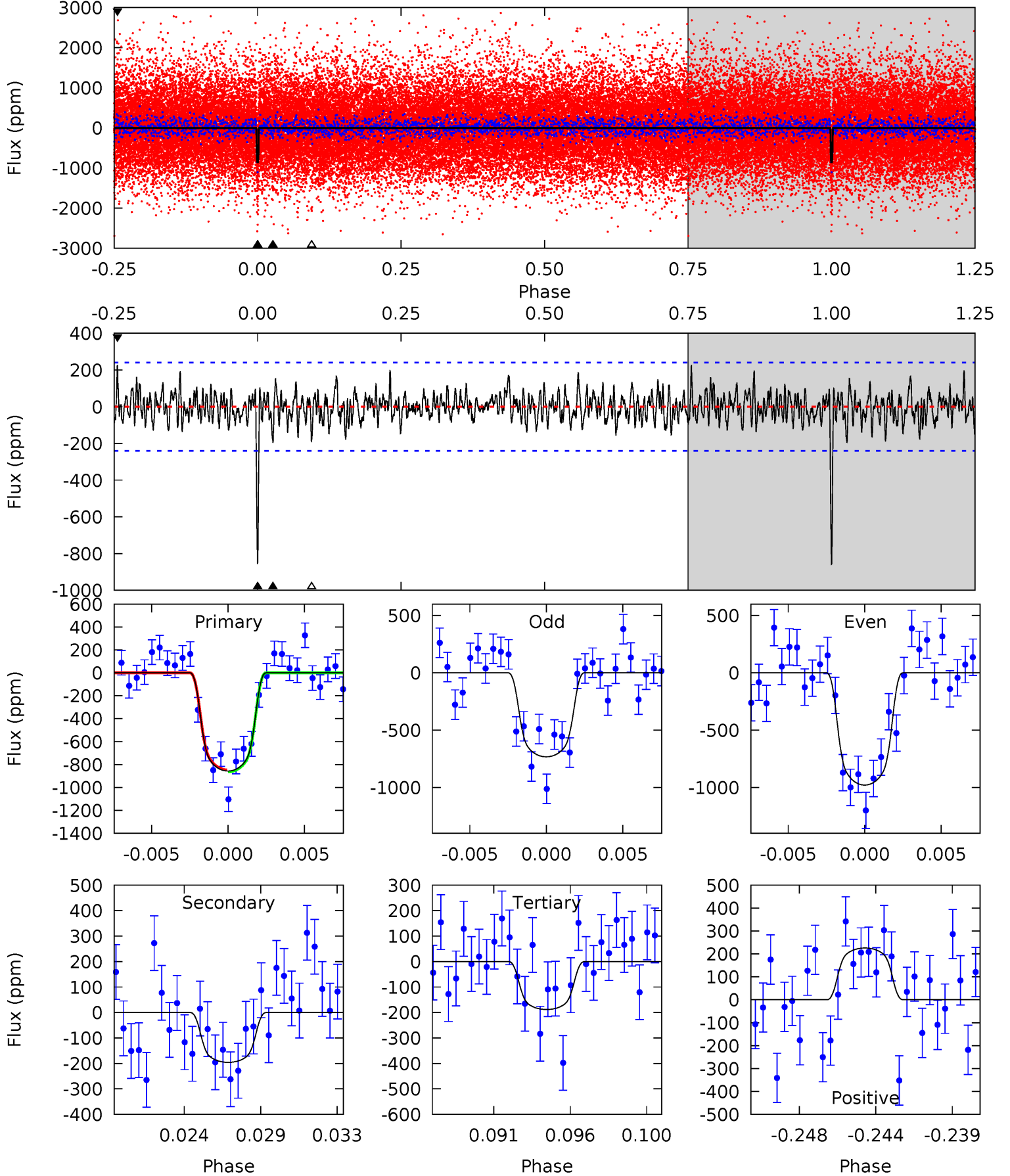
TCE 011497958-04 P= 34.142147 Days $T_0=136.031785$ (BKJD)



DV Model-Shift Uniqueness Test

011497958-04, P = 34.141984 Days, E = 101.892470 Days

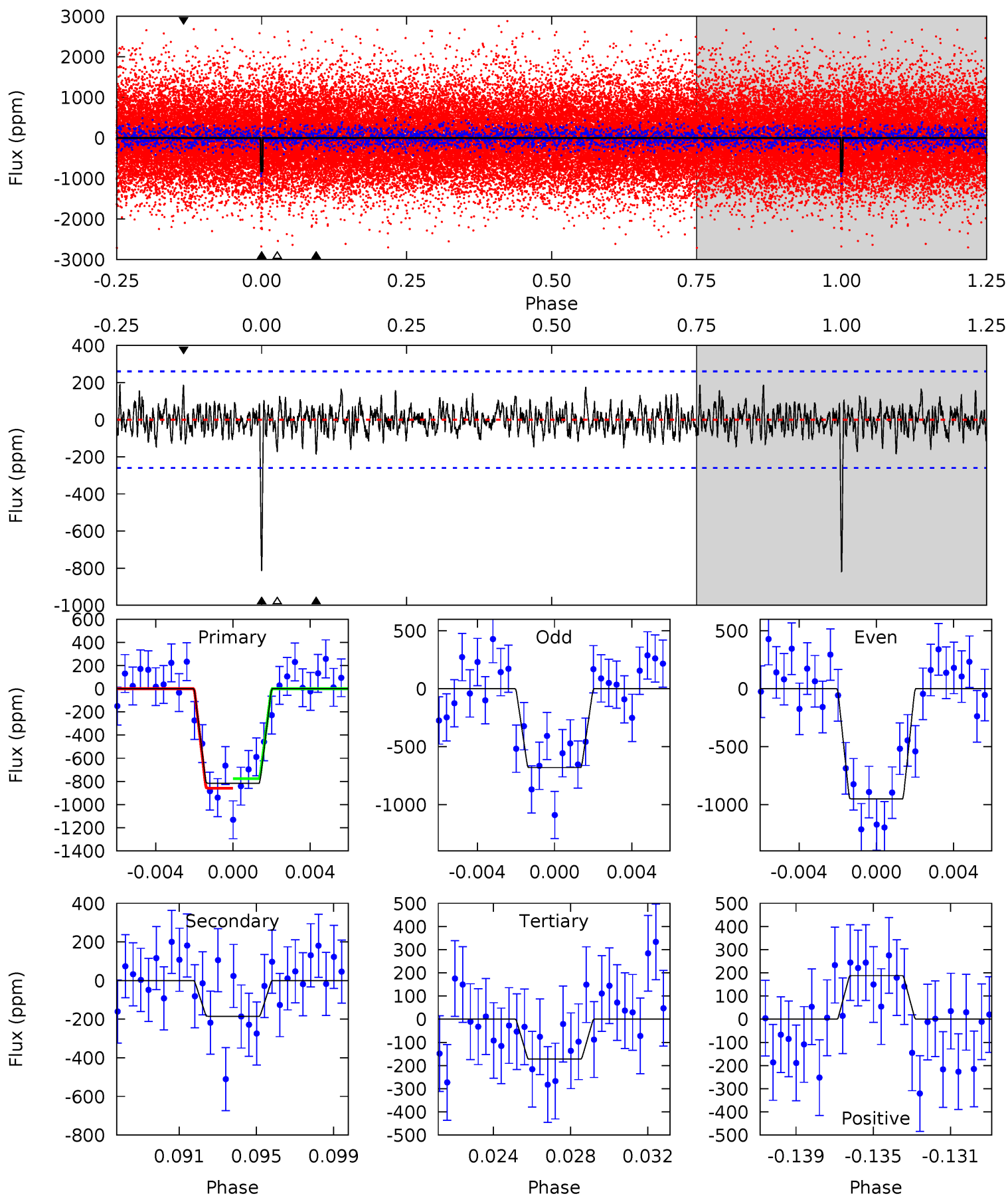
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.4	4.21	4.05	4.86	5.17	2.82	1.33	14.4	13.6	0.16	-0.64	2.66	0.99	0.21	0.18



Alt Model-Shift Uniqueness Test

011497958-04, P = 34.142147 Days, E = 101.889638 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	3.70	3.44	3.76	5.20	2.88	1.11	12.9	12.6	0.26	-0.05	2.72	0.95	0.19	0.84



Stellar Parameters For KIC 011497958

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3526^{+71}_{-78}	$4.866^{+0.066}_{-0.044}$	$-0.080^{+0.150}_{-0.150}$	$0.383^{+0.048}_{-0.058}$	$0.394^{+0.055}_{-0.067}$	$9.856^{+3.710}_{-2.103}$
	+2%/-2%	+1%/-1%	+188%/-188%	+13%/-15%	+14%/-17%	+38%/-21%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 011497958-04 / KOI 1422.05

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-196 ± 46	$1.33^{+0.23}_{-0.20}$	345^{+11}_{-12}	2765^{+168}_{-145}	1410^{+658}_{-490}
Alt.	-185 ± 50	$1.20^{+0.23}_{-0.23}$	345^{+11}_{-11}	2826^{+183}_{-165}	1630^{+942}_{-625}

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 $A_{obs} \gg 1.0$

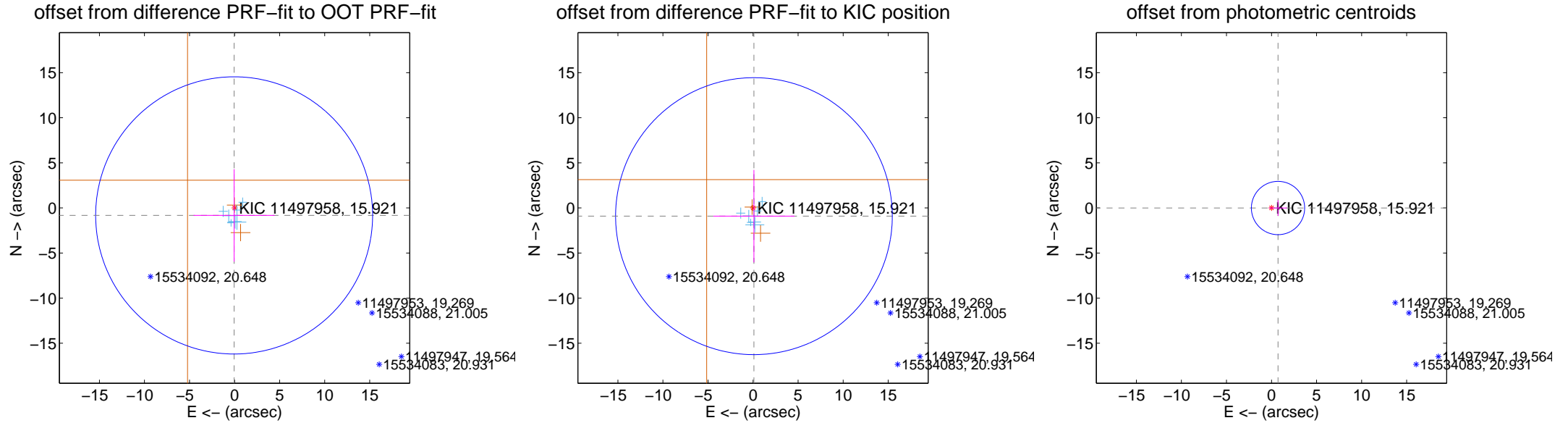
DV Centroid Data

Supplemental centroid analysis for 011497958-04. Kepler magnitude: 15.92. Transit SNR 11.83

There are 7 quarters with good PRF difference image offsets

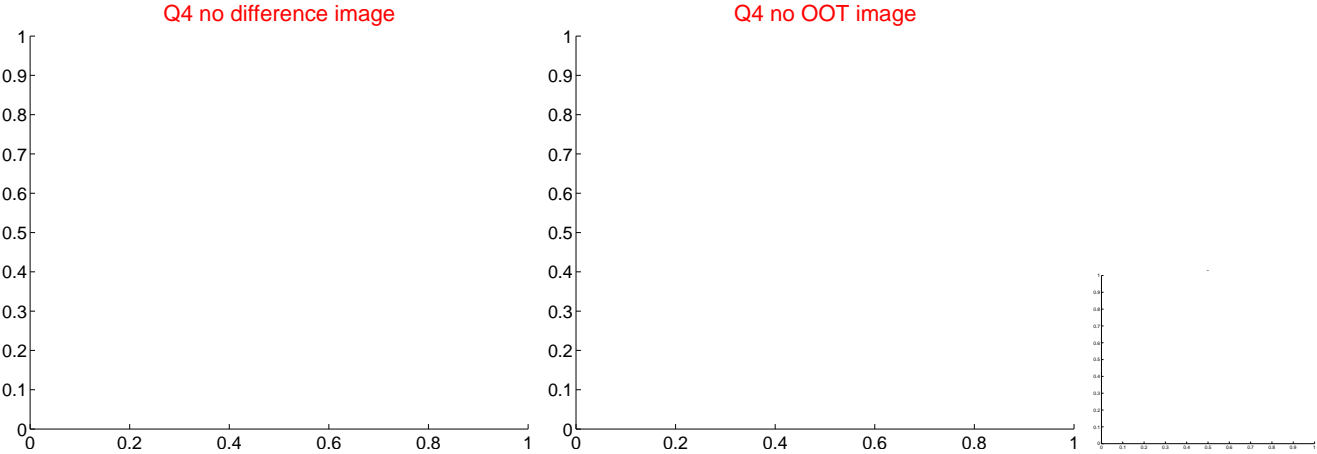
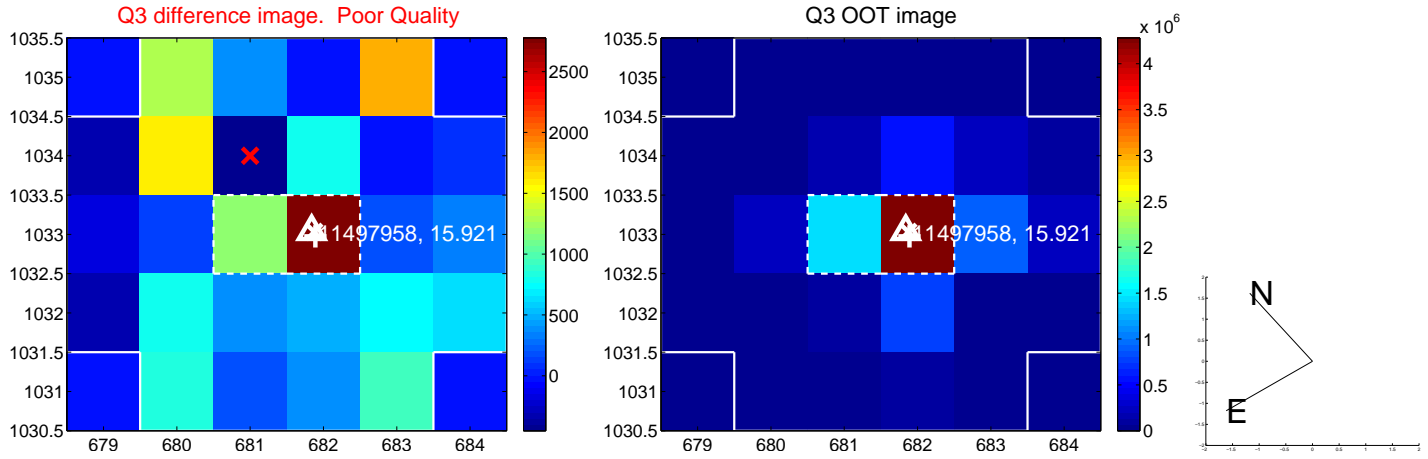
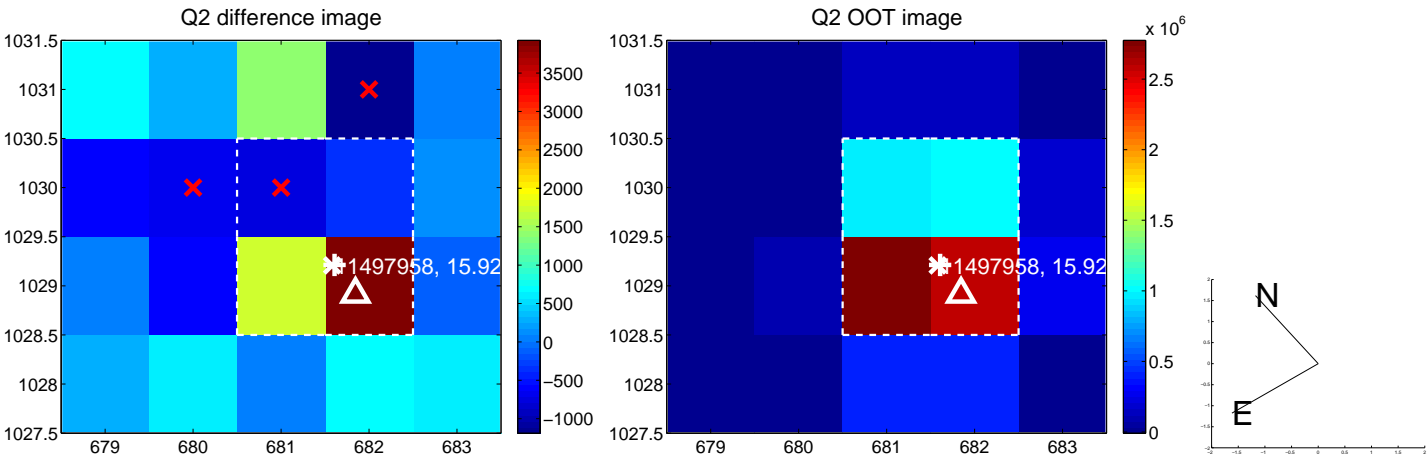
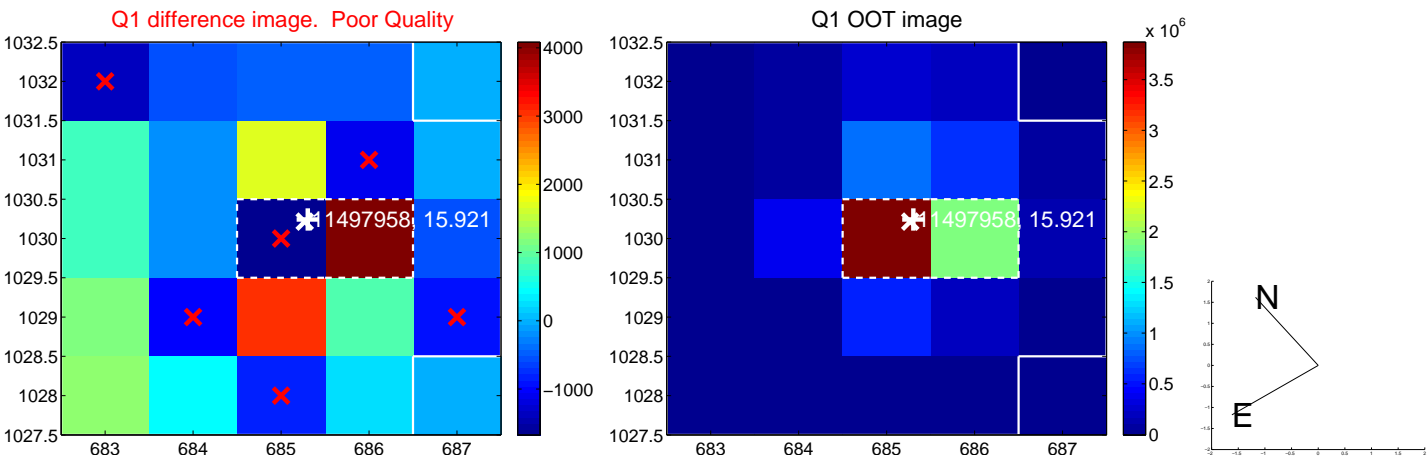
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.828 ± 5.123	0.16	0.050 ± 4.496	-0.826 ± 5.125
PRF-fit source offset from KIC position	0.916 ± 5.118	0.18	-0.099 ± 4.496	-0.910 ± 5.125
photometric centroid source offset	0.72 ± 0.99	0.73	-0.72 ± 0.99	-0.01 ± 0.86

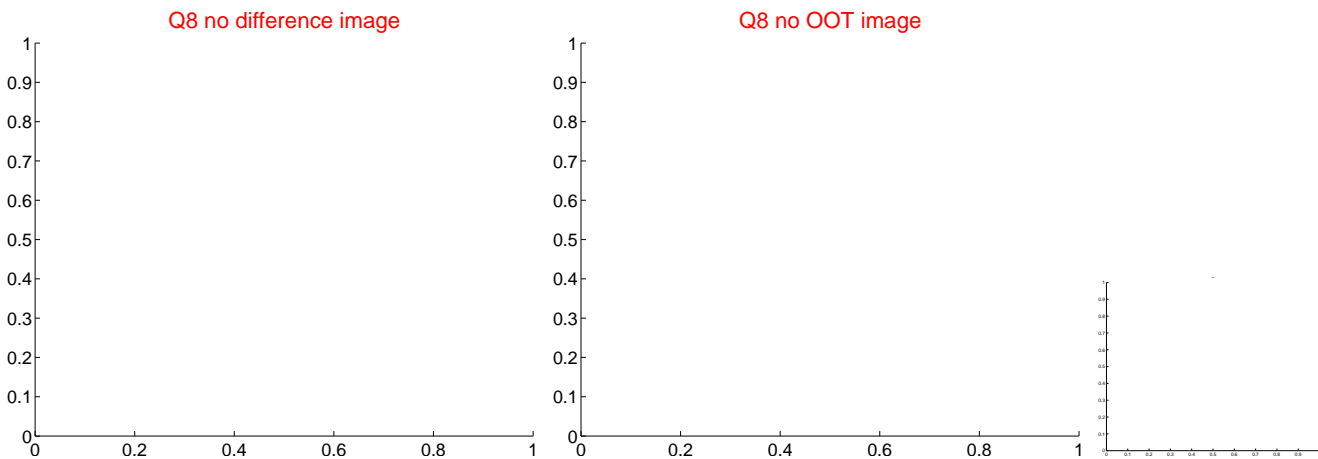
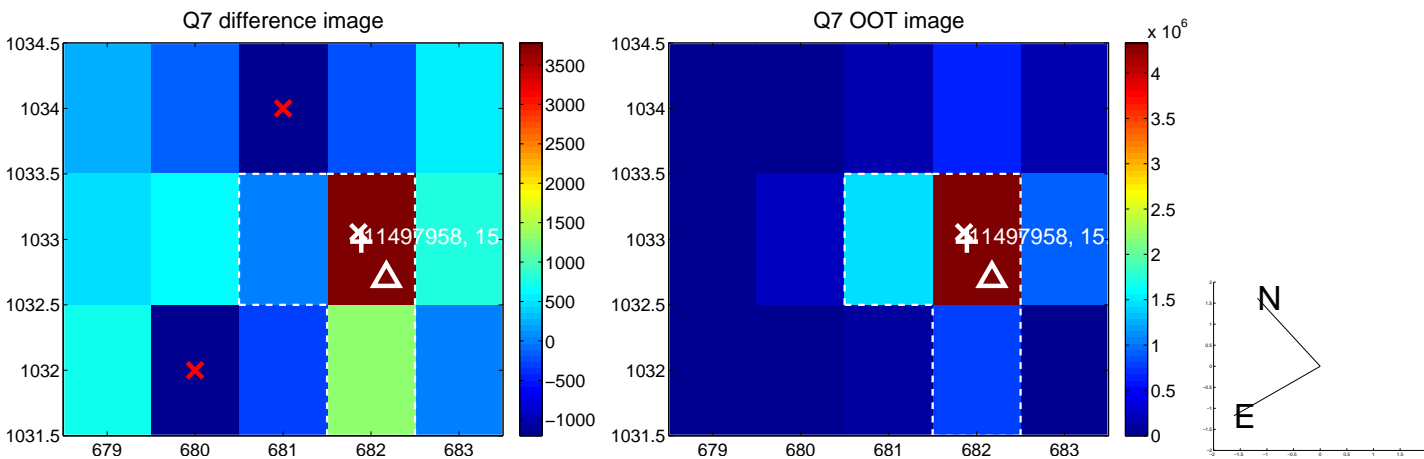
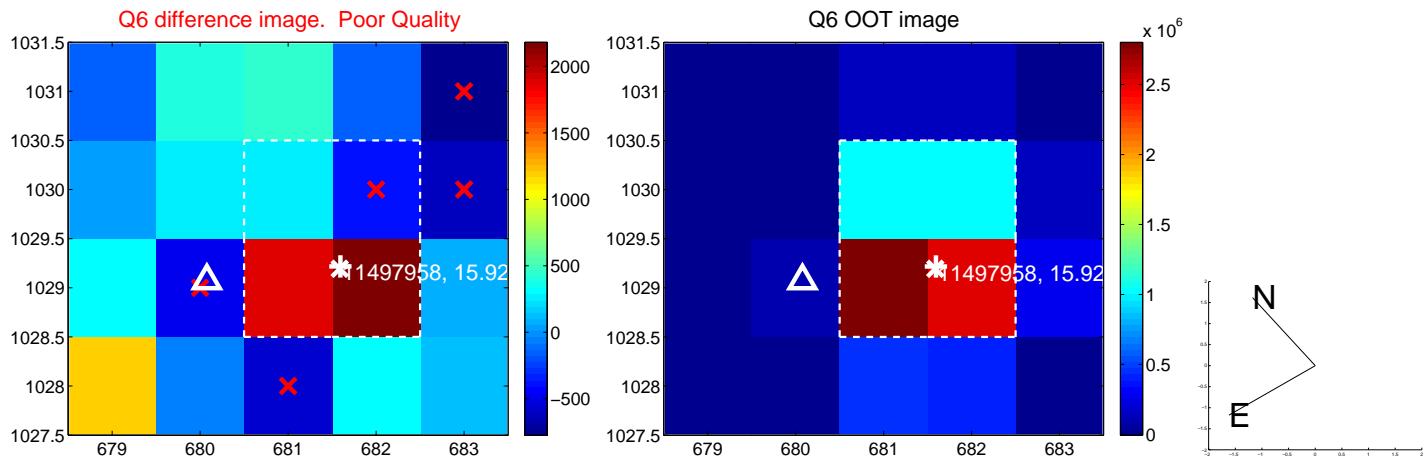
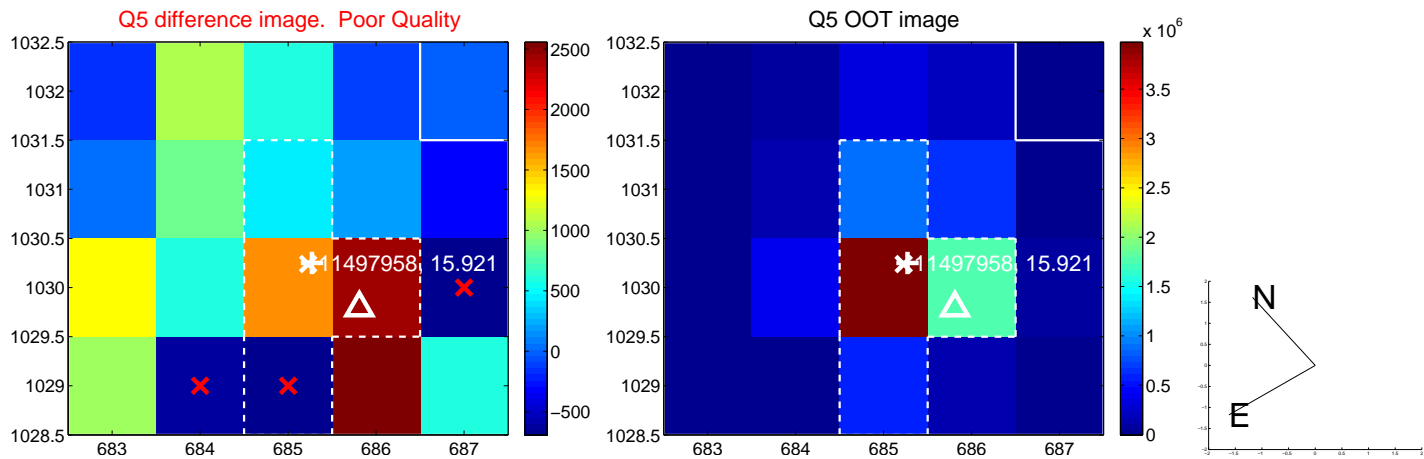


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

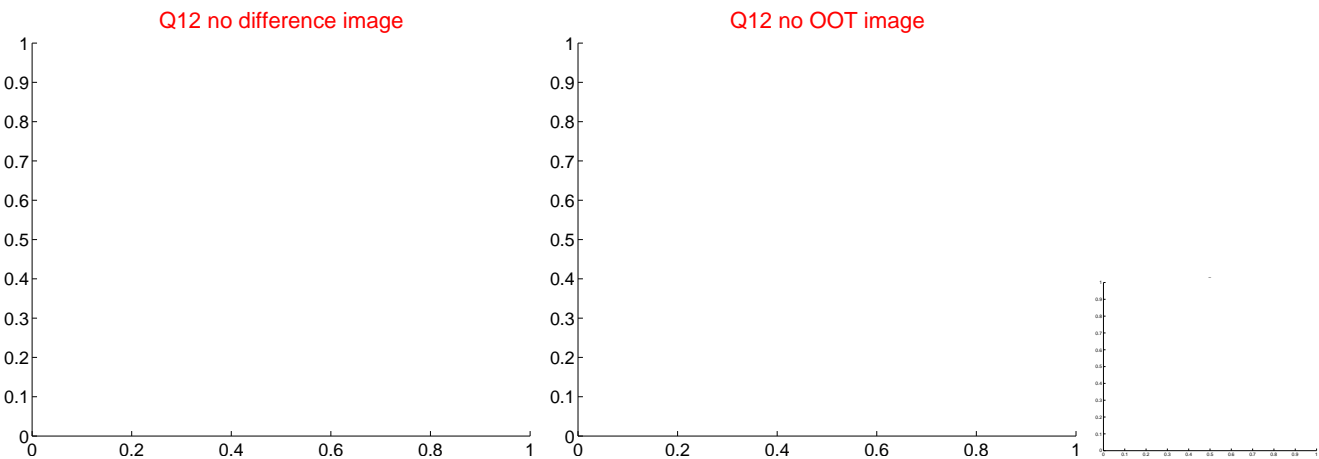
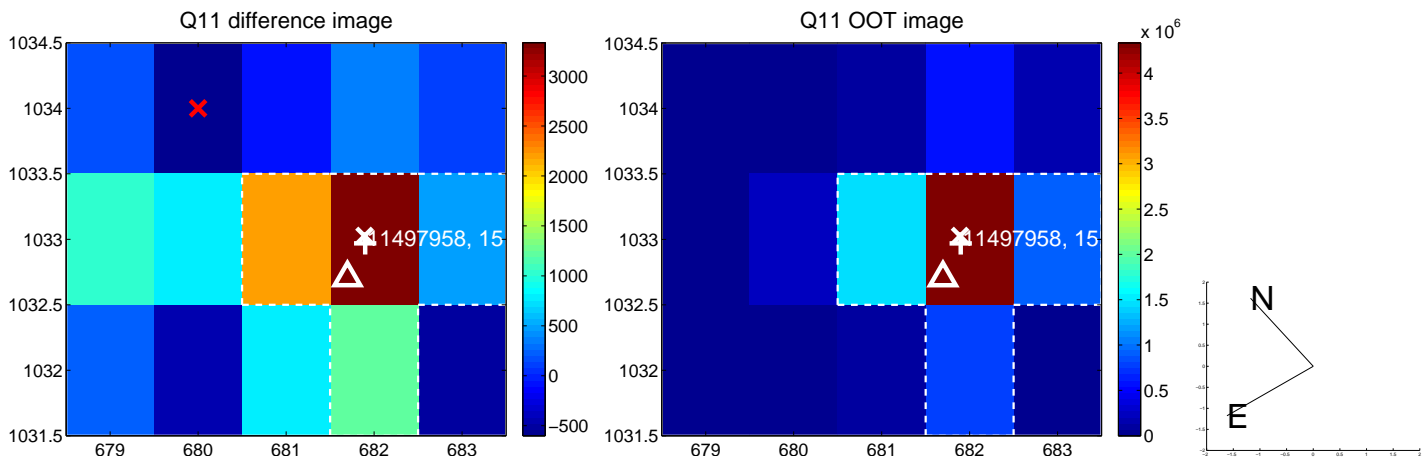
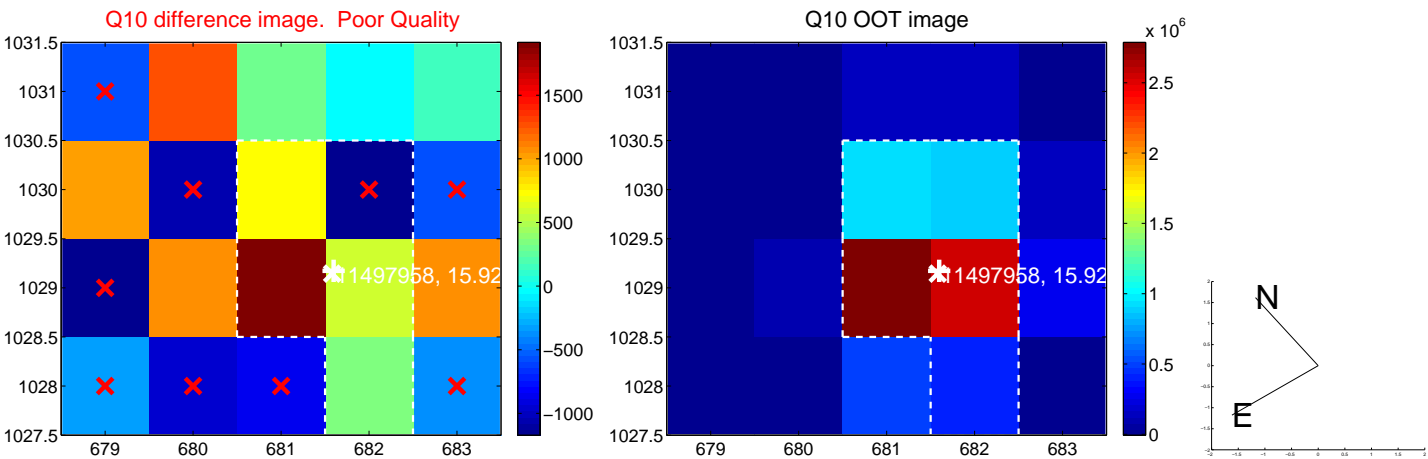
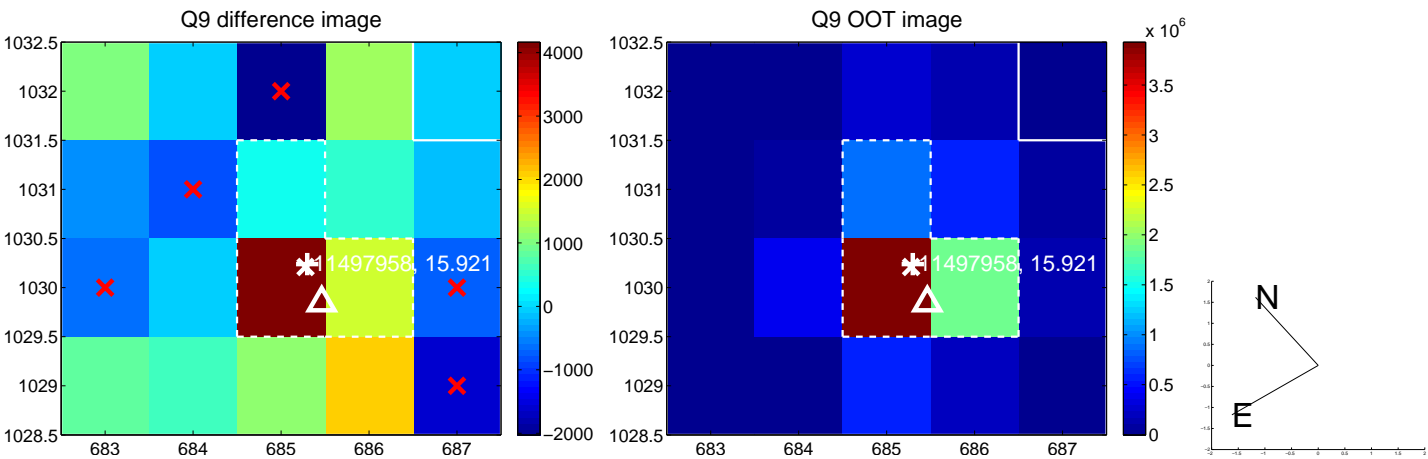
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



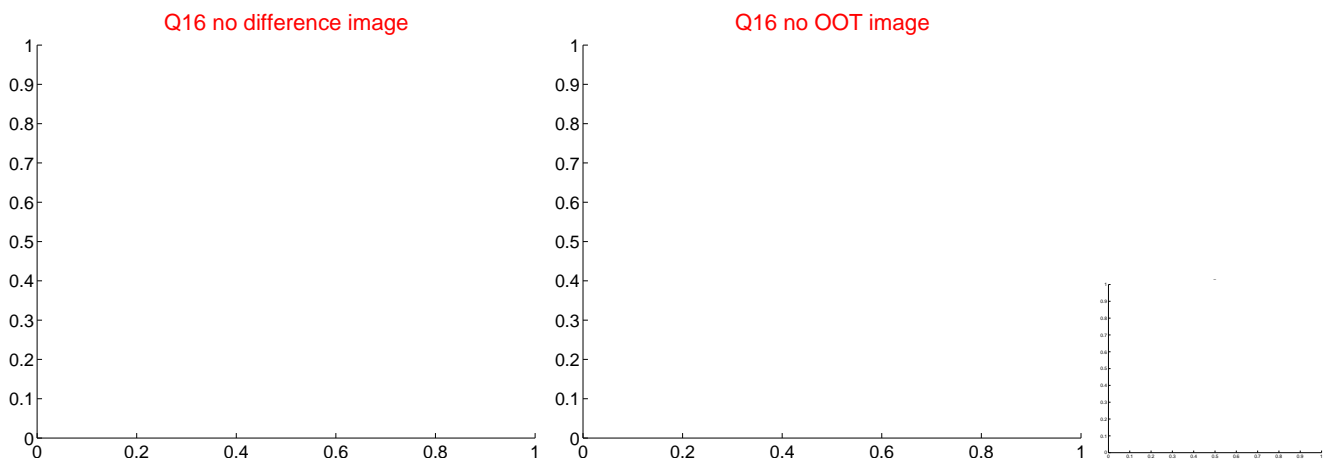
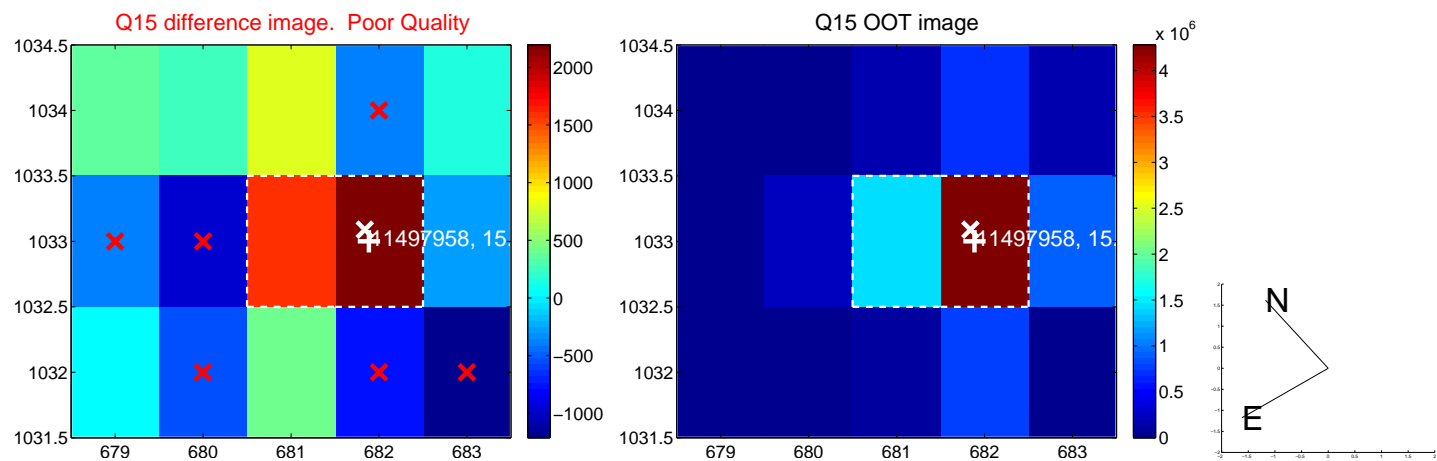
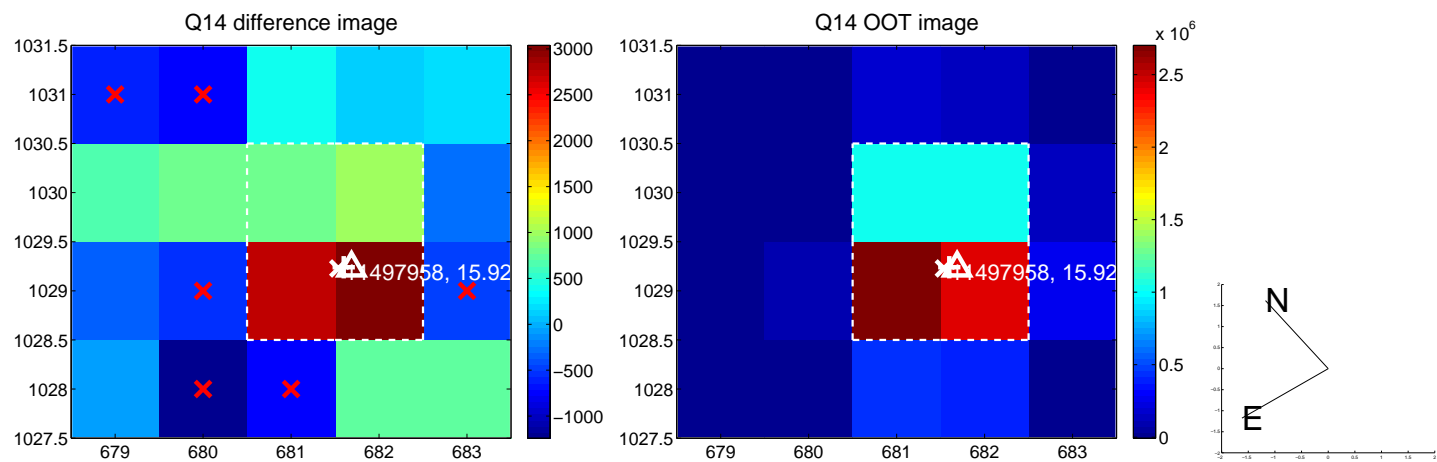
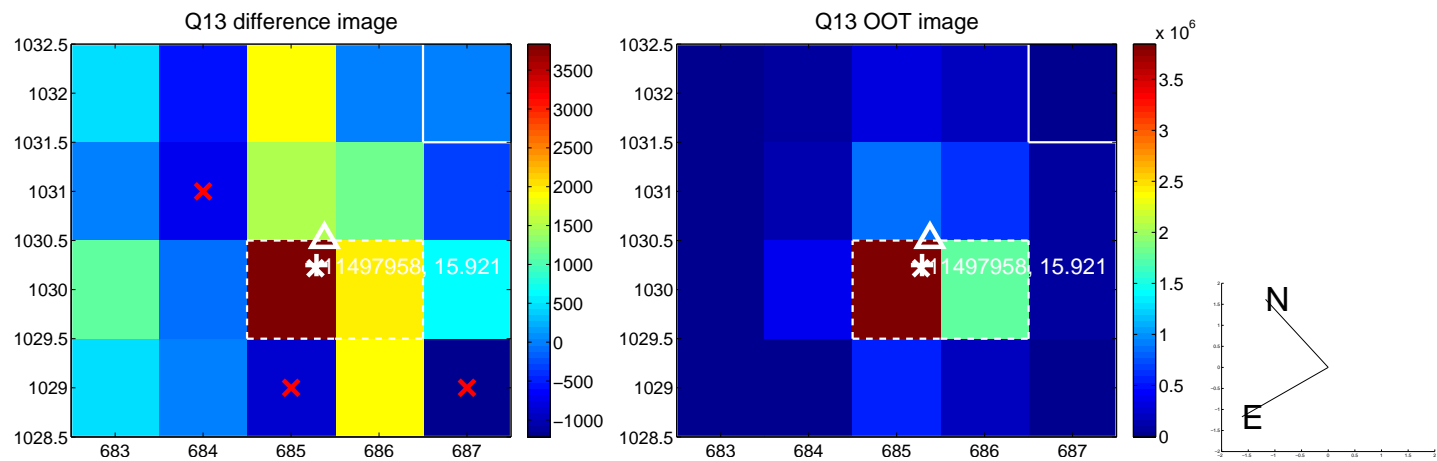
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



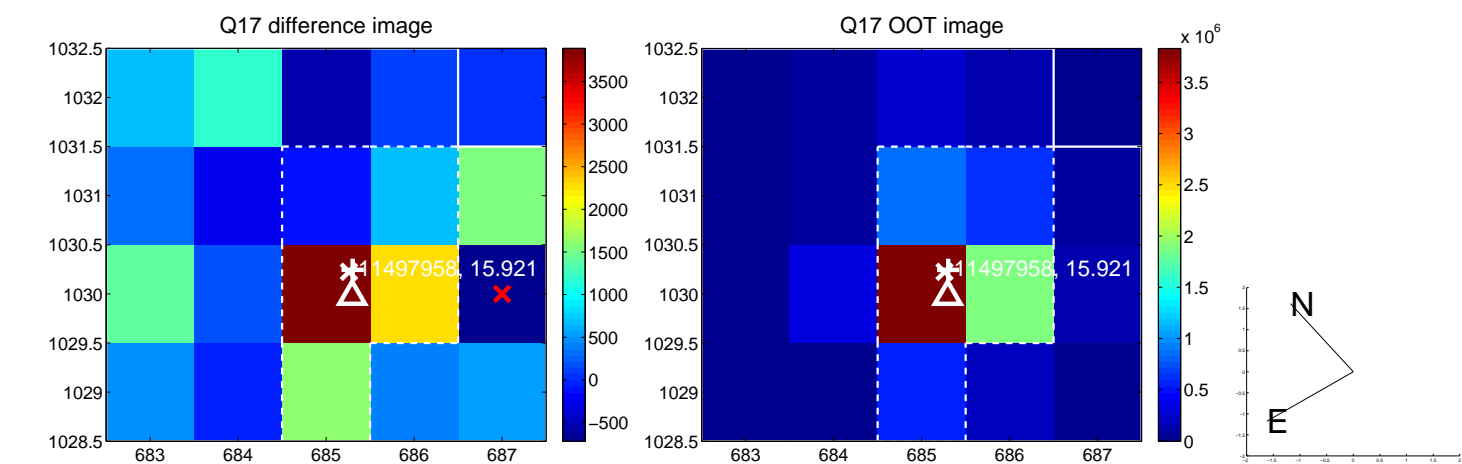
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



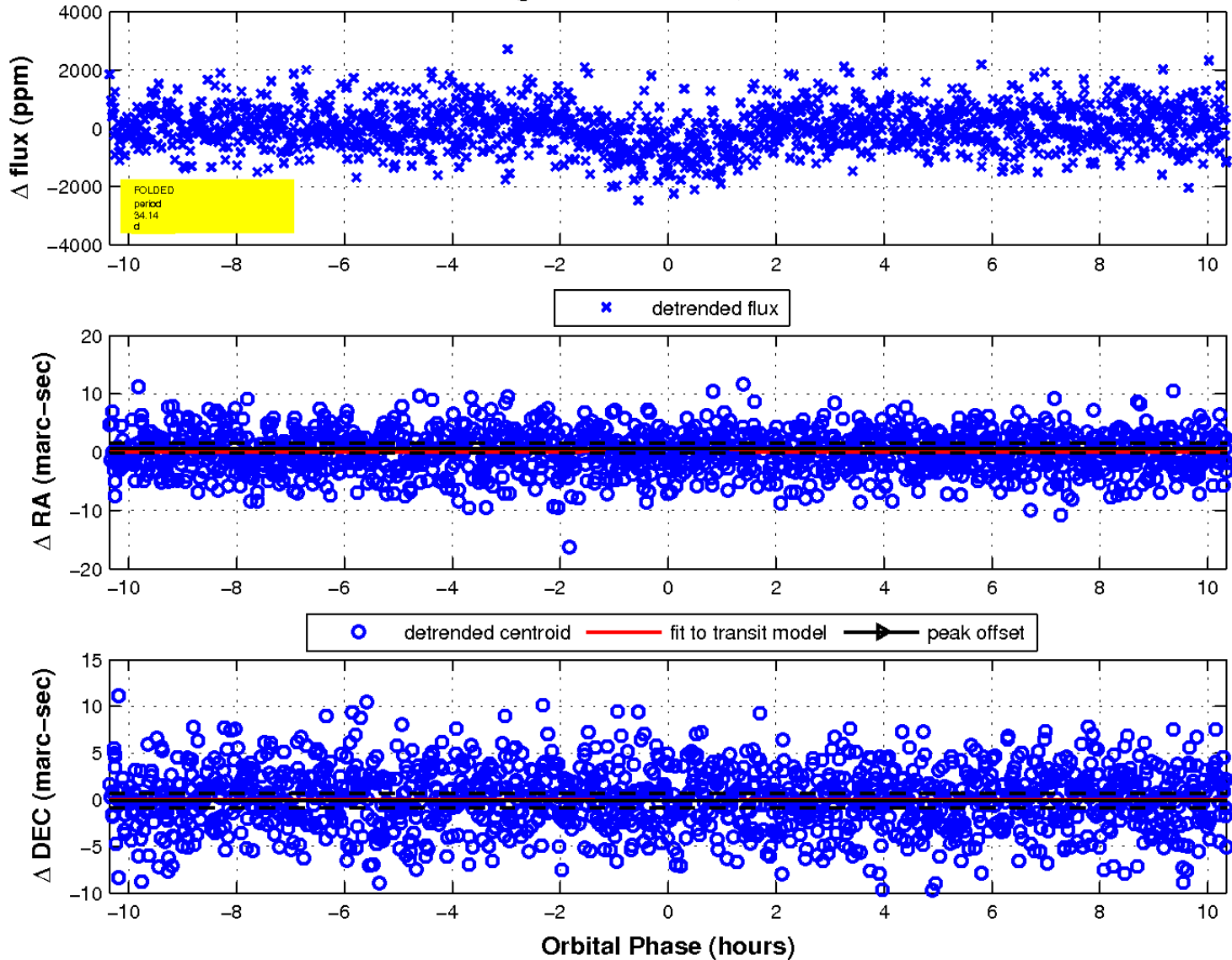
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

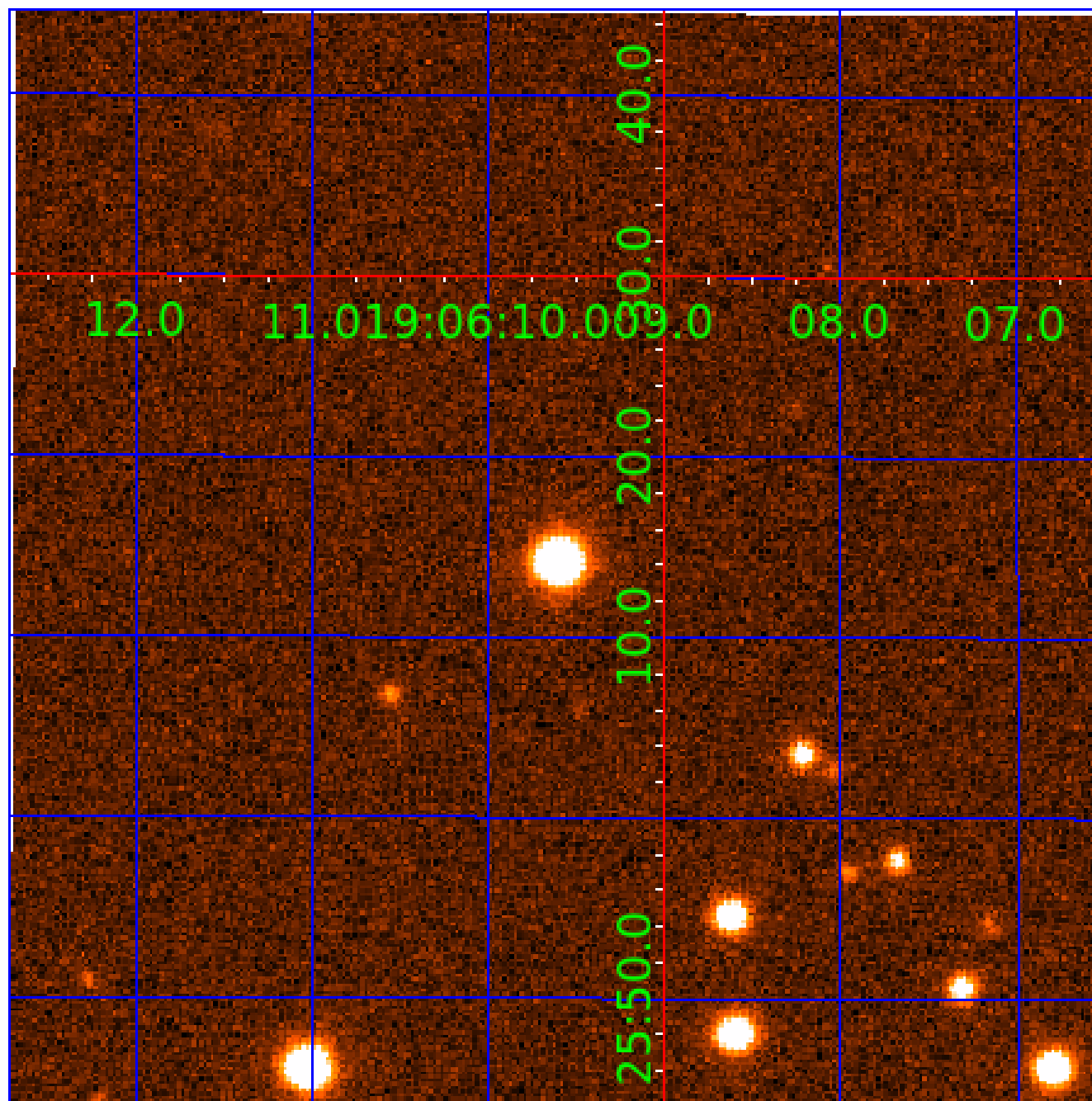


fluxWeightedCentroids, Planet 4 of 5



UKIRT Image

Declination



KIC 011497958

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})
011497958-01	OBS	1422.01	5.841631	135.923827	1374.3	1.939	33.2	37.5	0.38	3526	1.57	9.39
011497958-02	OBS	1422.02	19.850267	133.650668	1585.3	2.898	25.1	28.6	0.38	3526	1.60	1.84
011497958-03	OBS	1422.03	10.864423	141.991915	761.2	2.465	12.4	15.2	0.38	3526	1.40	4.11
011497958-04	OBS	1422.05	34.141984	136.034454	861.4	3.452	10.5	11.8	0.38	3526	1.35	0.89
011497958-05	OBS	1422.04	63.334992	162.621072	879.5	3.790	9.1	9.6	0.38	3526	1.24	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011497958-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011497958-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011497958-03	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011497958-04	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011497958-05	OBS	PC	0.93	0	0	0	0	NO_COMMENT

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.

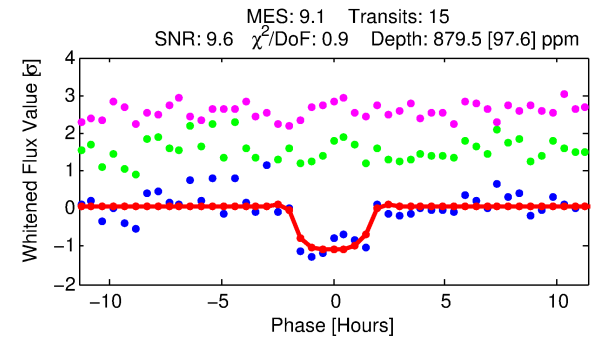
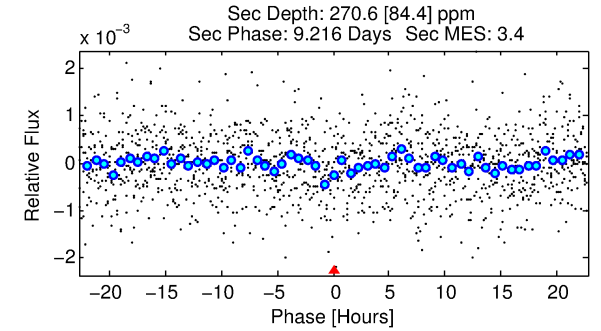
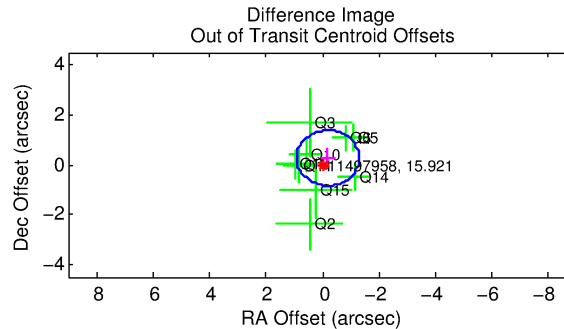
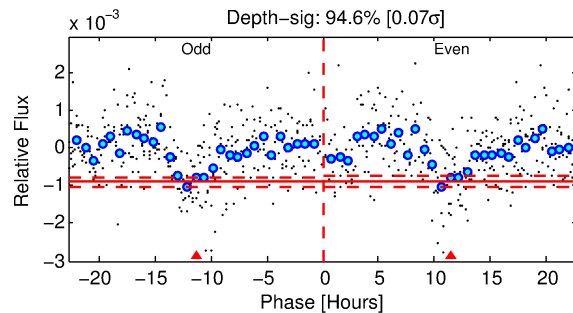
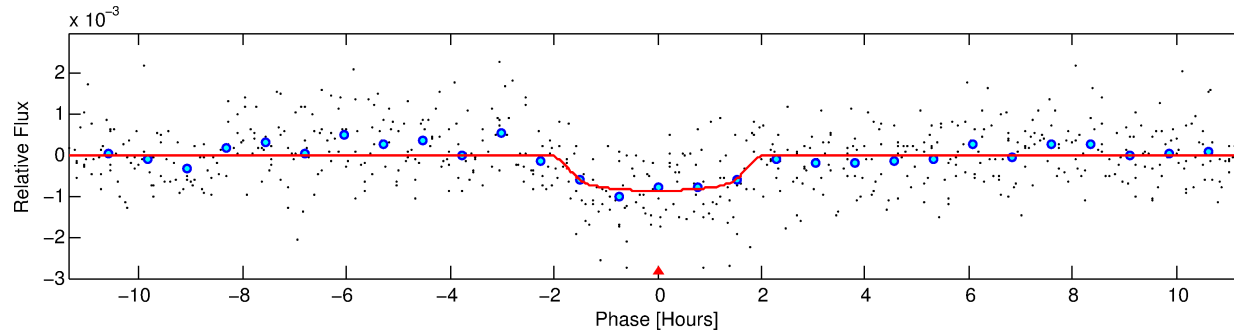
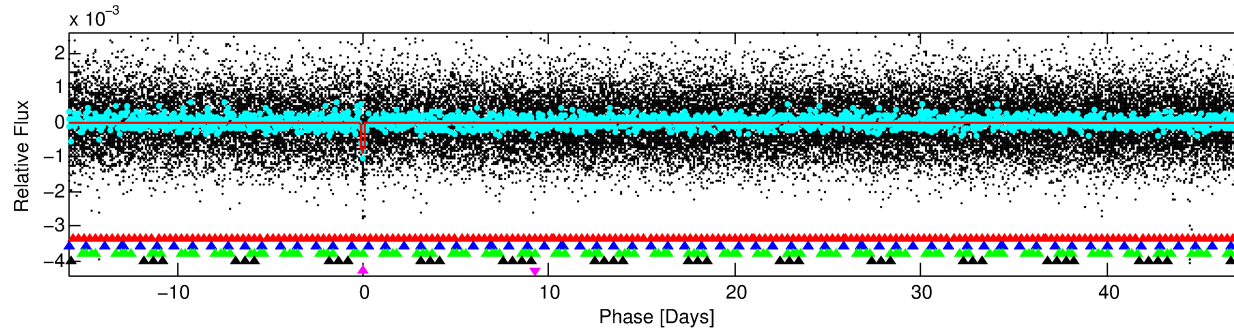
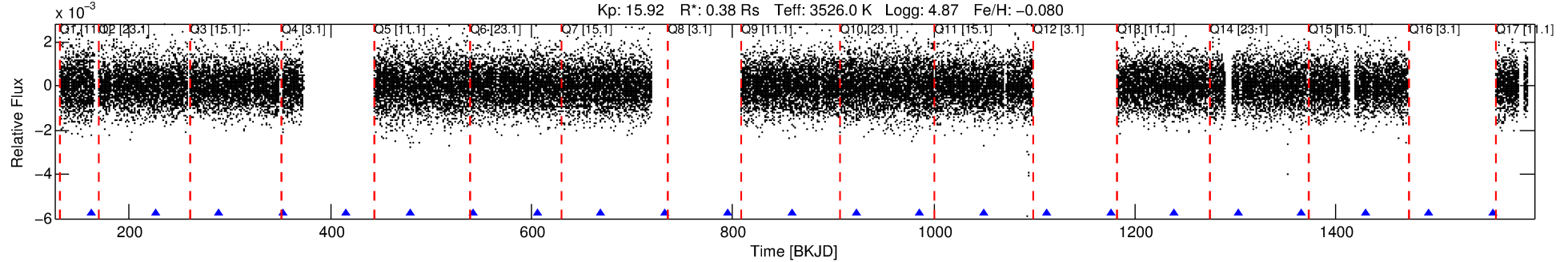
Ephemeris Match Information For 011497958-05

No Significant Match Found

DV One-Page Summary

KIC: 11497958 Candidate: 5 of 5 Period: 63.335 d
KOI: K01422.04 Name: Kepler-296f Corr: 0.924

Kp: 15.92 R*: 0.38 Rs Teff: 3526.0 K Logg: 4.87 Fe/H: -0.080



DV Fit Results:

Period = 63.33499 [0.00063] d
Epoch = 162.6211 [0.0073] BKJD
Rp/R* = 0.0297 [0.0195]
a/R* = 87.05 [242.73]
b = 0.77 [1.47]
Seff = 0.39 [0.07]
Teq = 202 [8] K
Rp = 1.24 [0.84] Re
a = 0.2278 [0.0257] AU
Ag = 5002.31 [6773.49] [0.74σ]
Teffp = 2623 [885] K [2.74σ]

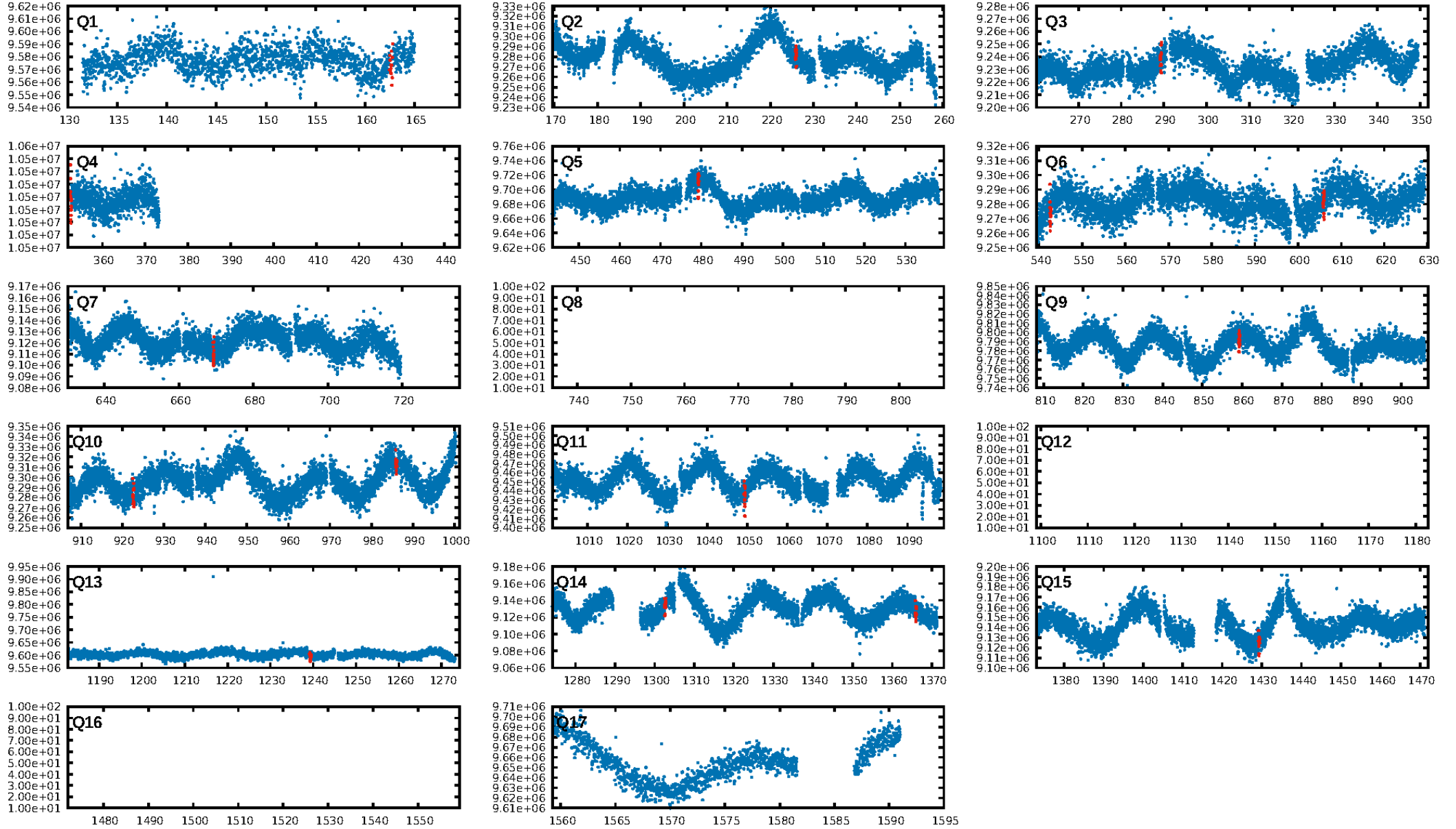
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [136.67σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 24.5%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 2.44e-19
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: 1.549
Centroid-sig: 60.8%
Centroid-so: 0.500 arcsec [0.43σ]
OotOffset-rm: 0.325 arcsec [0.88σ]
KicOffset-rm: 0.349 arcsec [0.94σ]
OotOffset-st: 4/3/0/2 [9]
KicOffset-st: 4/3/0/2 [9]
DiffImageQuality-fgm: 0.67 [6/9]
DiffImageOverlap-fno: 0.75 [9/12]

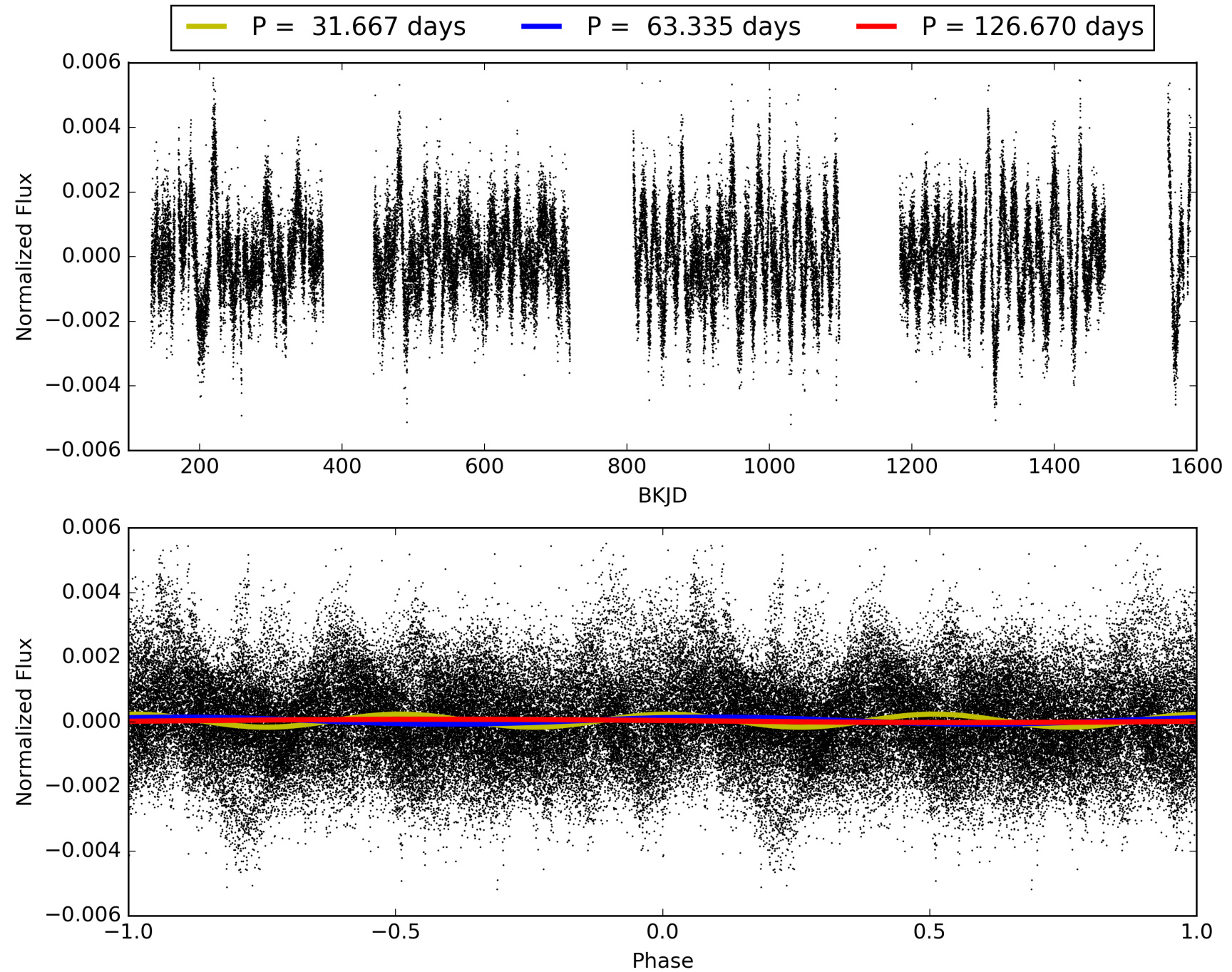
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:20:37 Z

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

TCE 011497958-05, PDC Light Curves

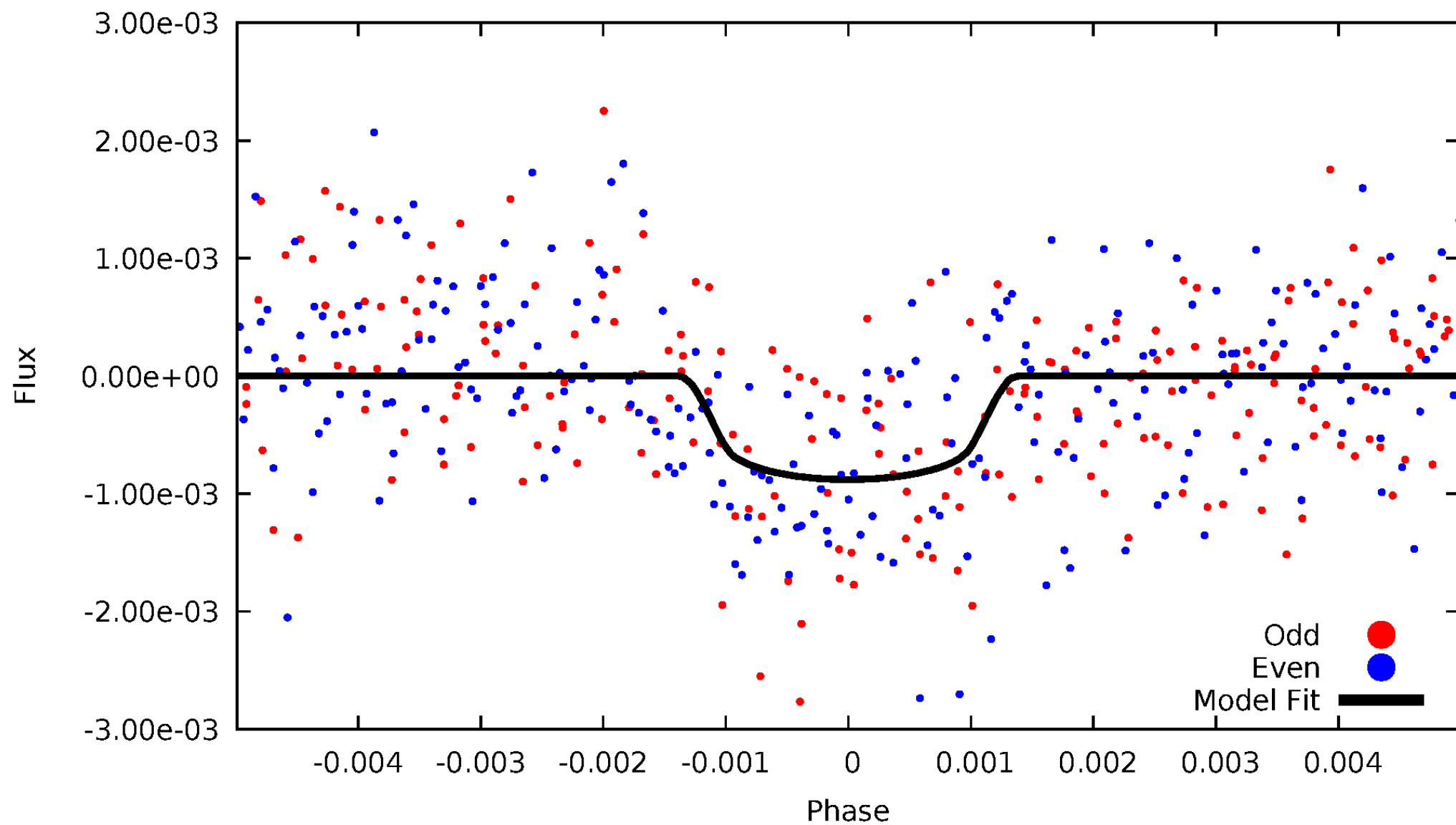


TCE 011497958-05



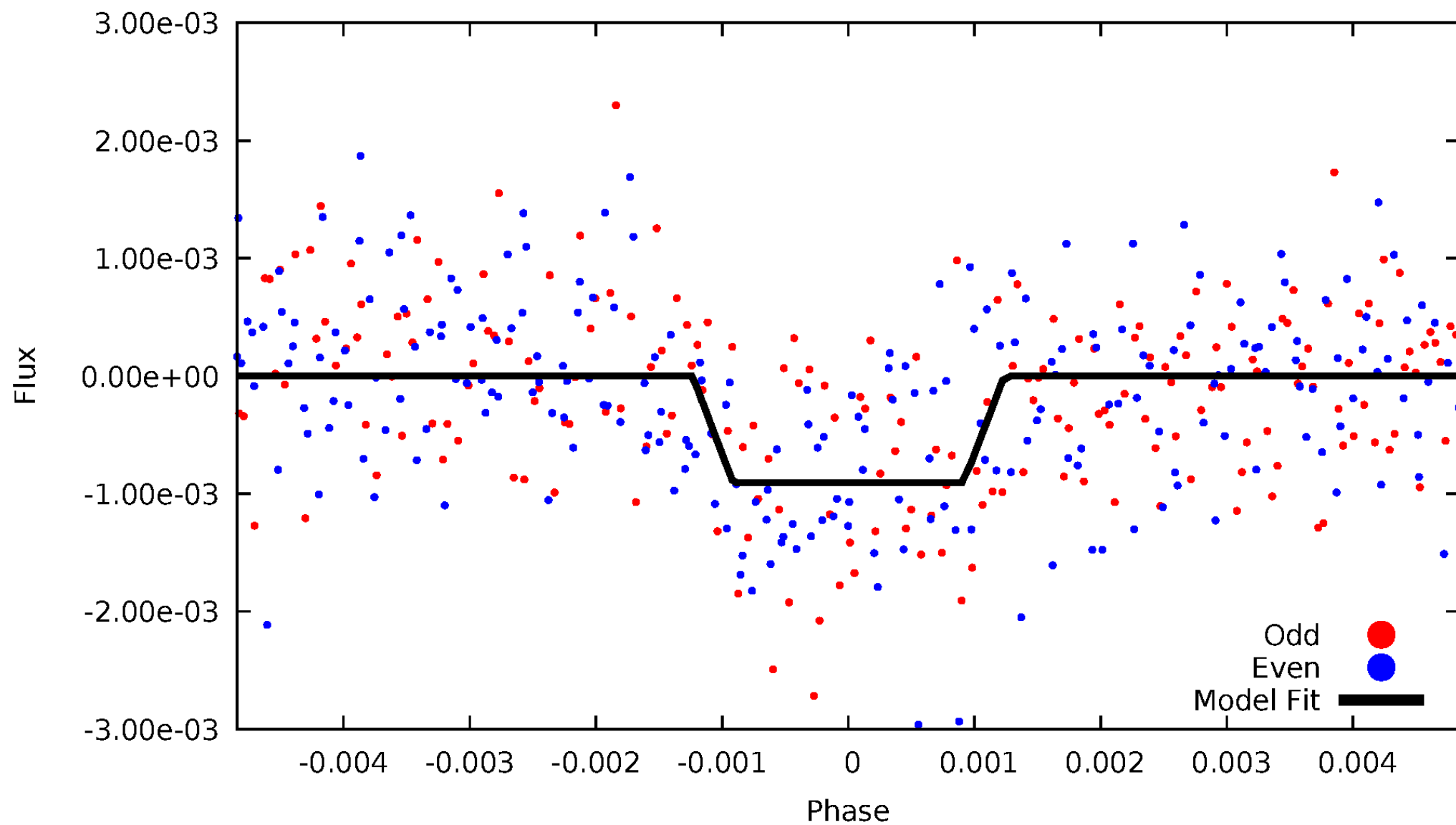
DV Odd/Even

TCE 011497958-05



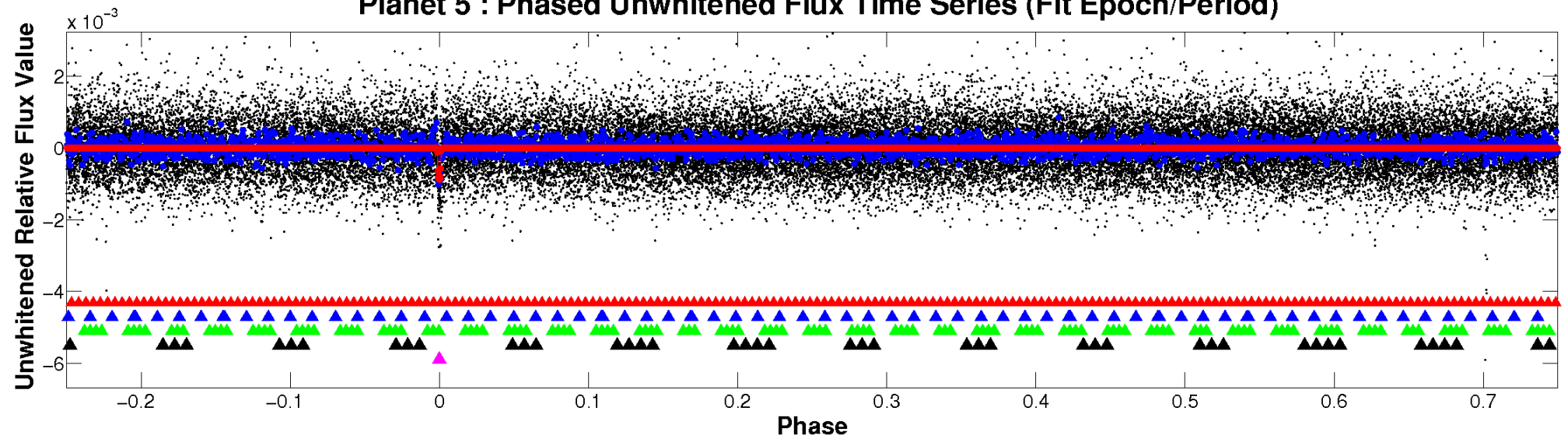
ALT Odd/Even

TCE 011497958-05

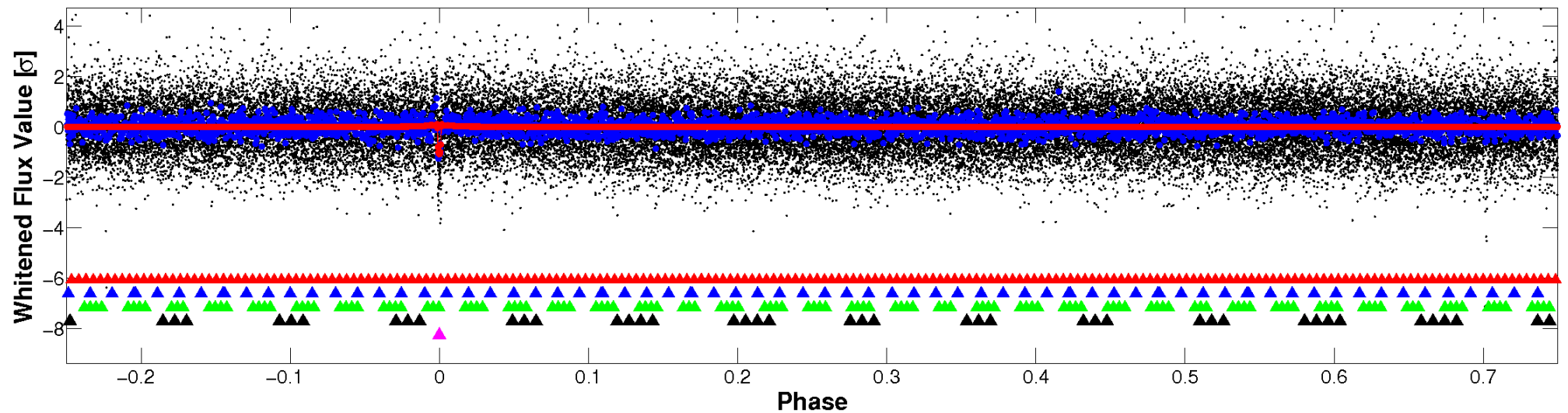


Non-Whitened Vs. Whitened Light Curve

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

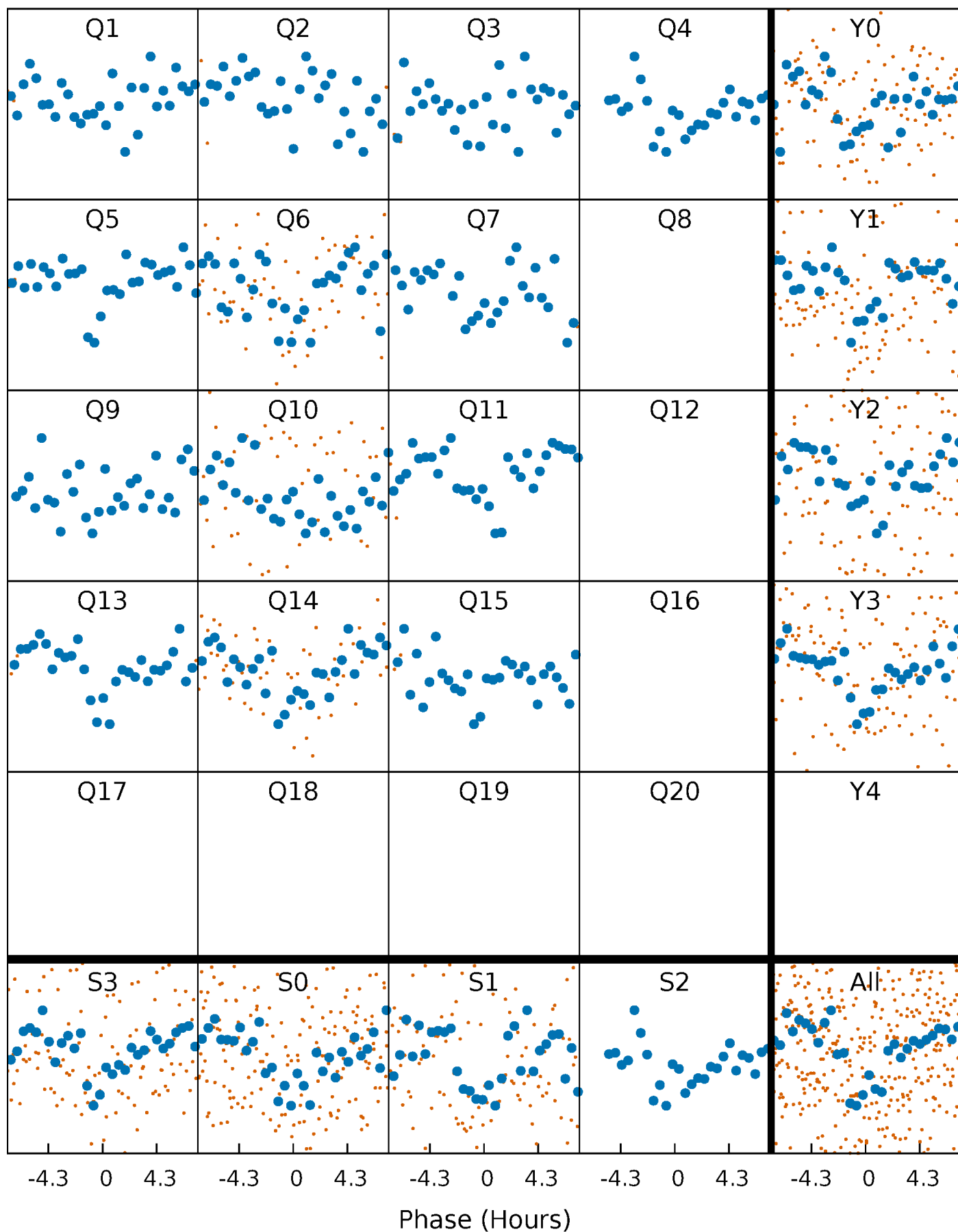


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



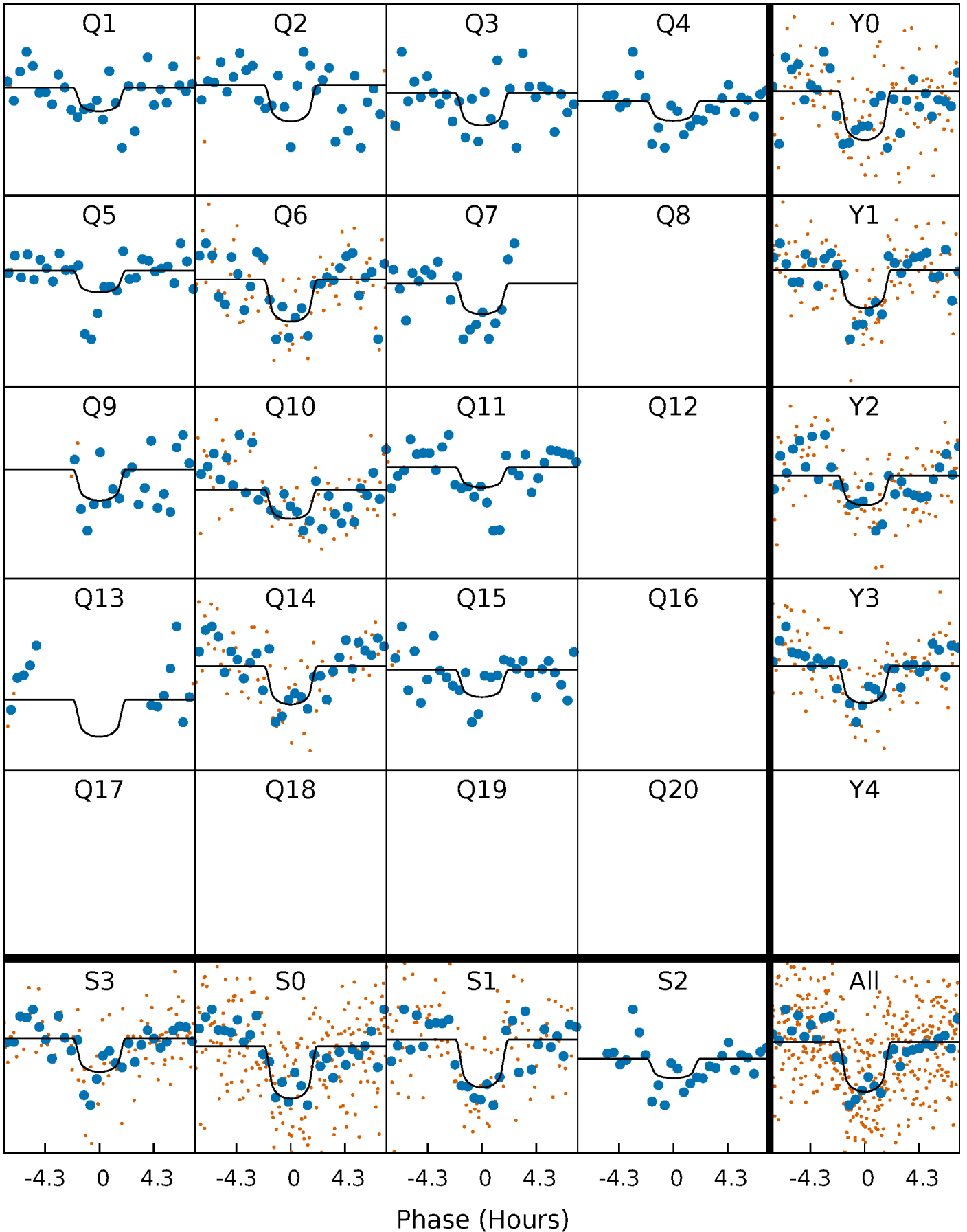
PDC Quarter-Phased Transit Curves

TCE 011497958-05 P= 63.334992 Days $T_0=162.621072$ (BKJD)



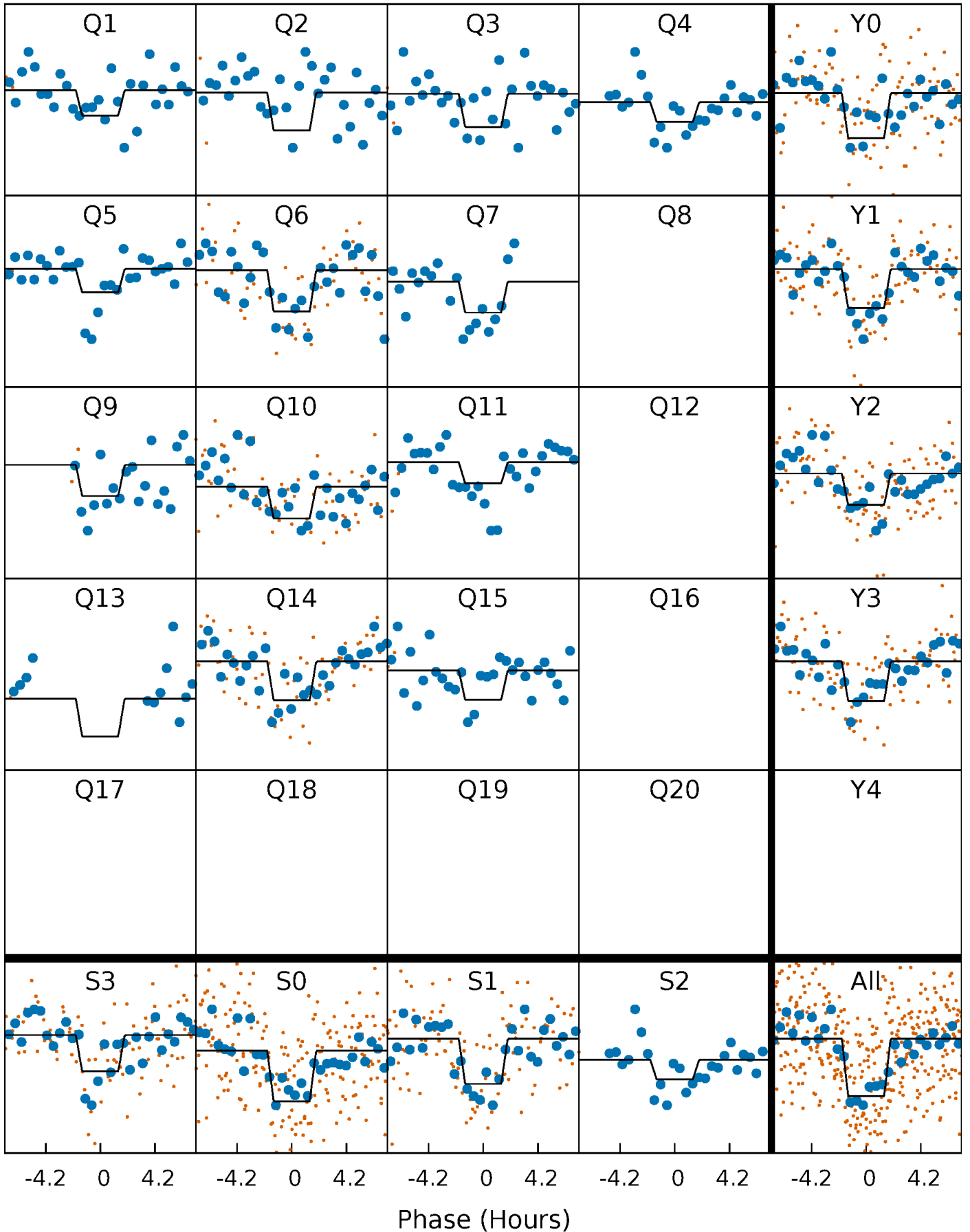
DV Quarter-Phased Transit Curves

TCE 011497958-05 P= 63.334992 Days $T_0=162.621072$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

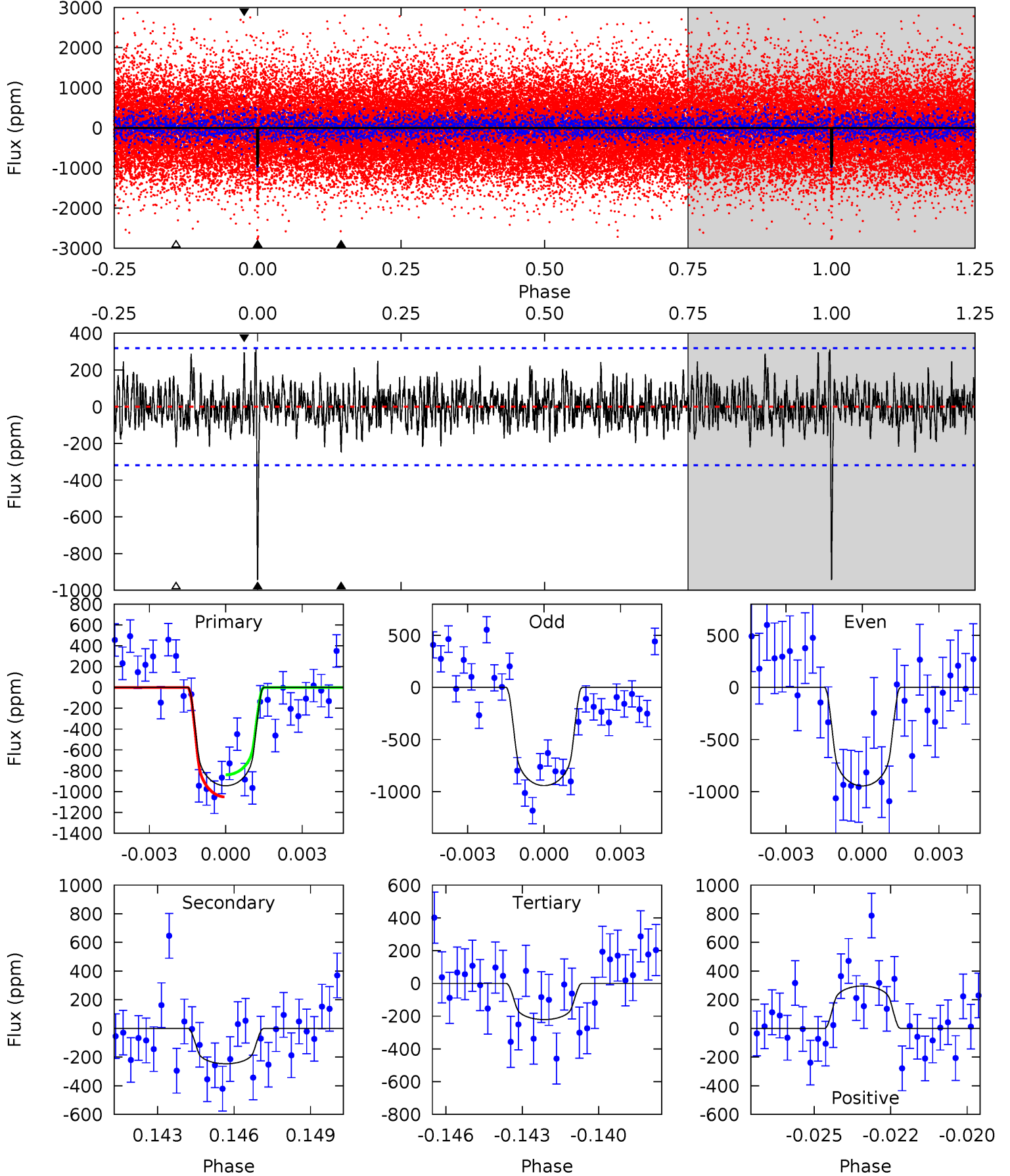
TCE 011497958-05 $P = 63.336056$ Days $T_0 = 162.608062$ (BKJD)



DV Model-Shift Uniqueness Test

011497958-05, P = 63.334992 Days, E = 99.286080 Days

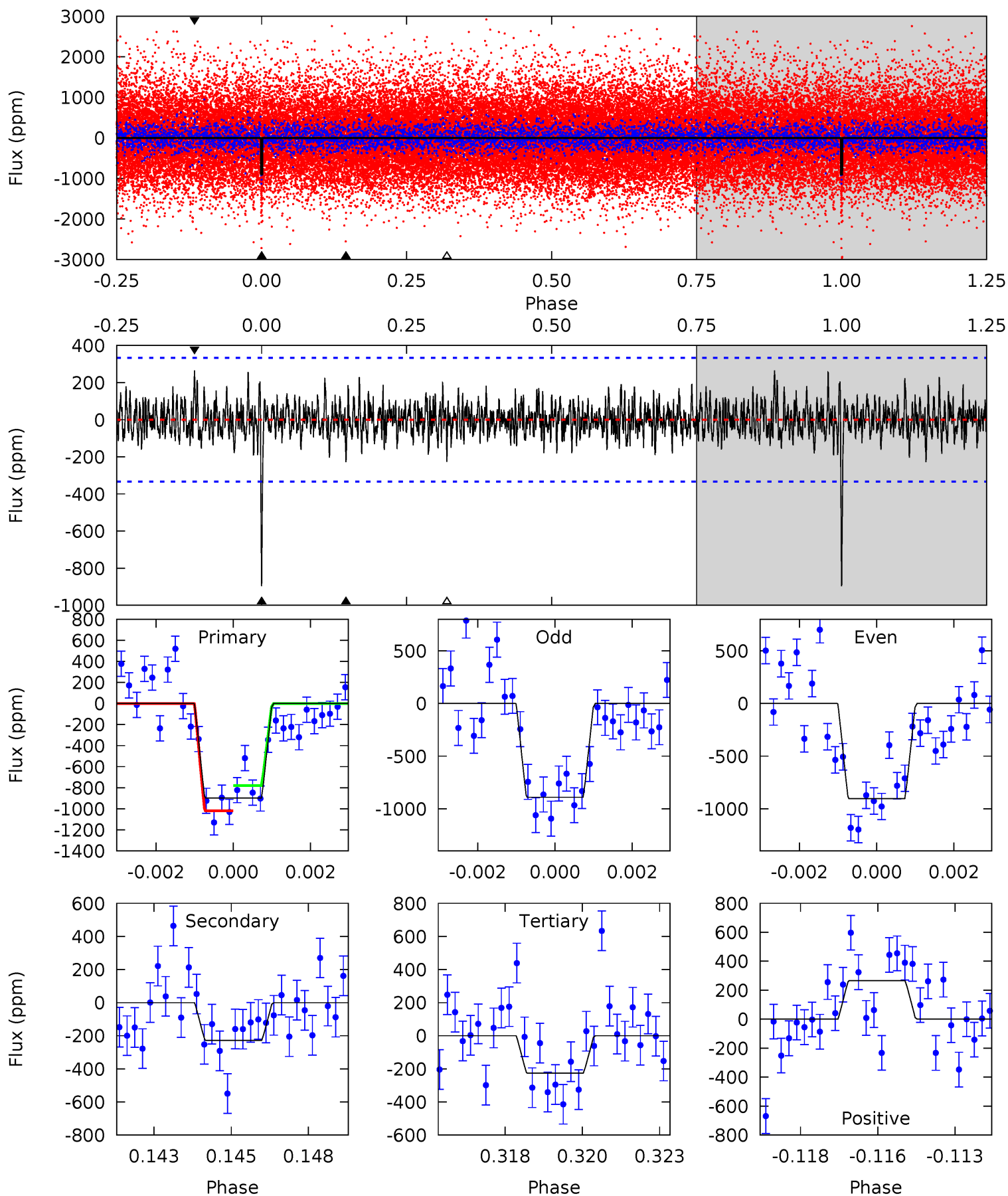
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	4.08	3.65	4.89	5.27	2.99	1.32	12.0	10.7	0.43	-0.81	0.03	1.02	0.25	1.76



Alt Model-Shift Uniqueness Test

011497958-05, P = 63.336056 Days, E = 99.272006 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	3.61	3.58	4.21	5.29	3.03	1.11	10.6	10.0	0.03	-0.60	0.10	1.02	0.23	1.91



Stellar Parameters For KIC 011497958

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3526^{+71}_{-78}	$4.866^{+0.066}_{-0.044}$	$-0.080^{+0.150}_{-0.150}$	$0.383^{+0.048}_{-0.058}$	$0.394^{+0.055}_{-0.067}$	$9.856^{+3.710}_{-2.103}$
	+2%/-2%	+1%/-1%	+188%/-188%	+13%/-15%	+14%/-17%	+38%/-21%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 011497958-05 / KOI 1422.04

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-247 ± 60	$1.33^{+0.71}_{-0.73}$	281^{+9}_{-9}	2862^{+718}_{-320}	4054^{+14428}_{-2417}
Alt.	-228 ± 63	$1.33^{+0.74}_{-0.77}$	281^{+9}_{-10}	2823^{+779}_{-318}	3726^{+14930}_{-2287}

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

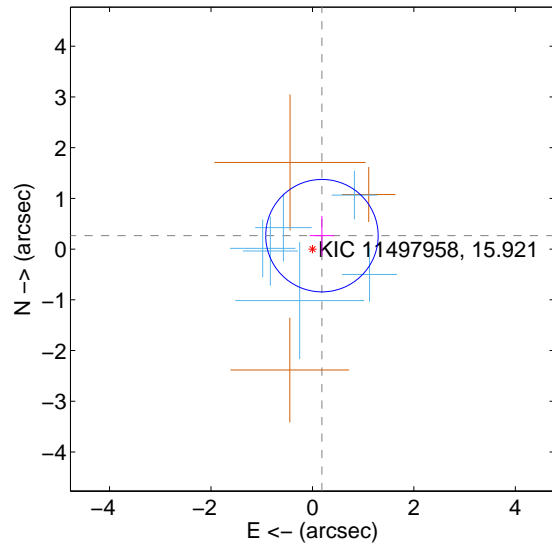
Supplemental centroid analysis for 011497958-05. Kepler magnitude: 15.92. Transit SNR 9.63

There are 6 quarters with good PRF difference image offsets

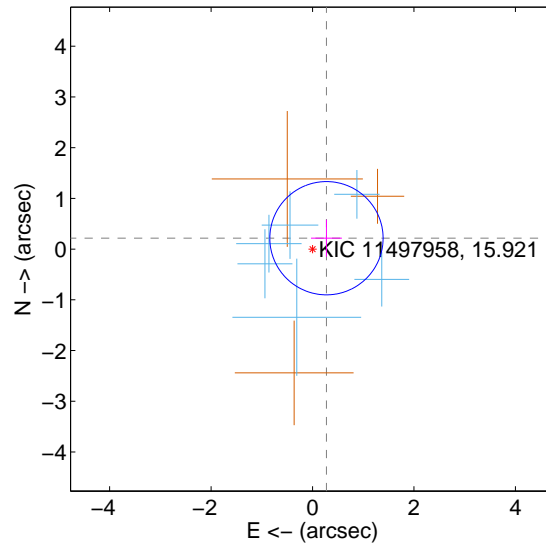
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.325 ± 0.369	0.88	-0.187 ± 0.241	0.265 ± 0.388
PRF-fit source offset from KIC position	0.349 ± 0.372	0.94	-0.275 ± 0.305	0.215 ± 0.365
photometric centroid source offset	0.50 ± 1.16	0.43	0.24 ± 1.30	0.44 ± 1.11

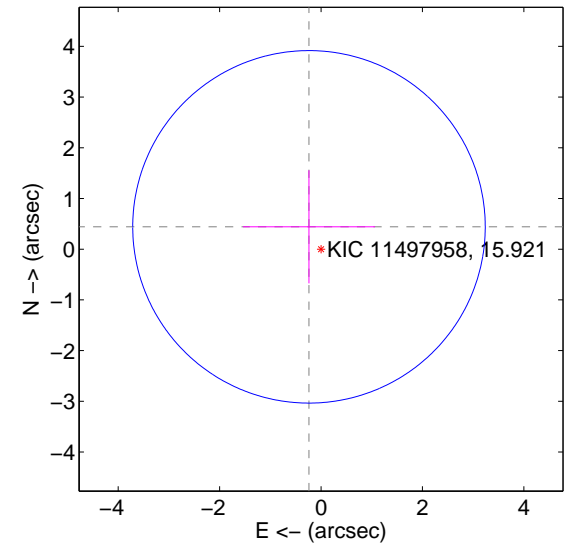
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

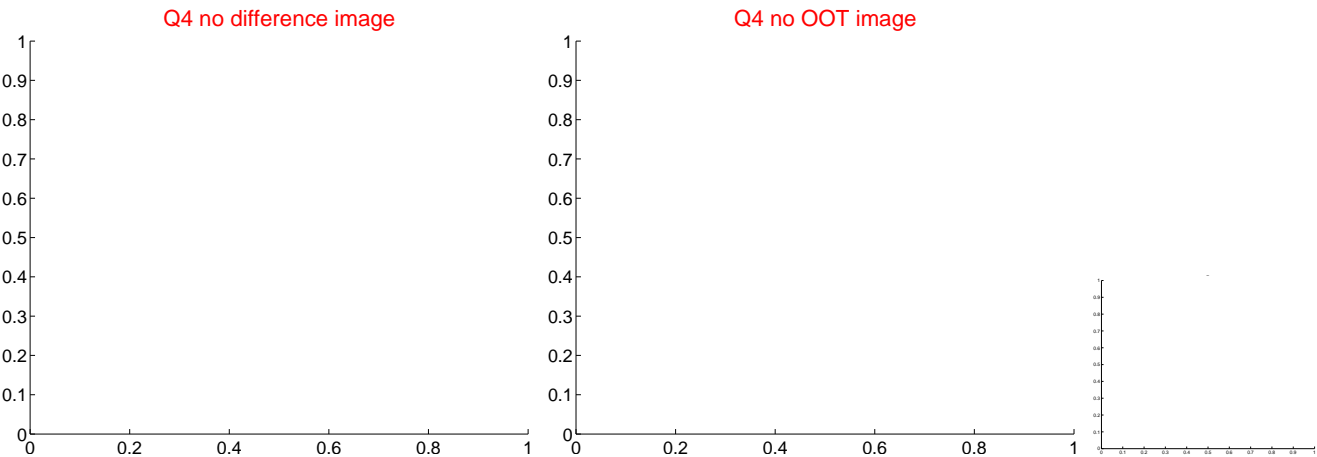
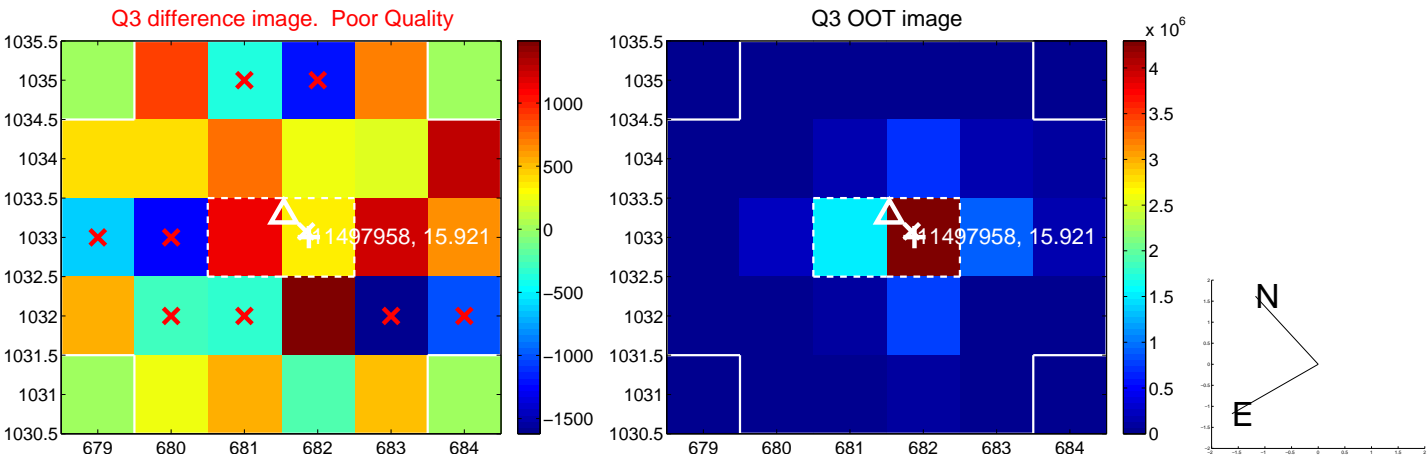
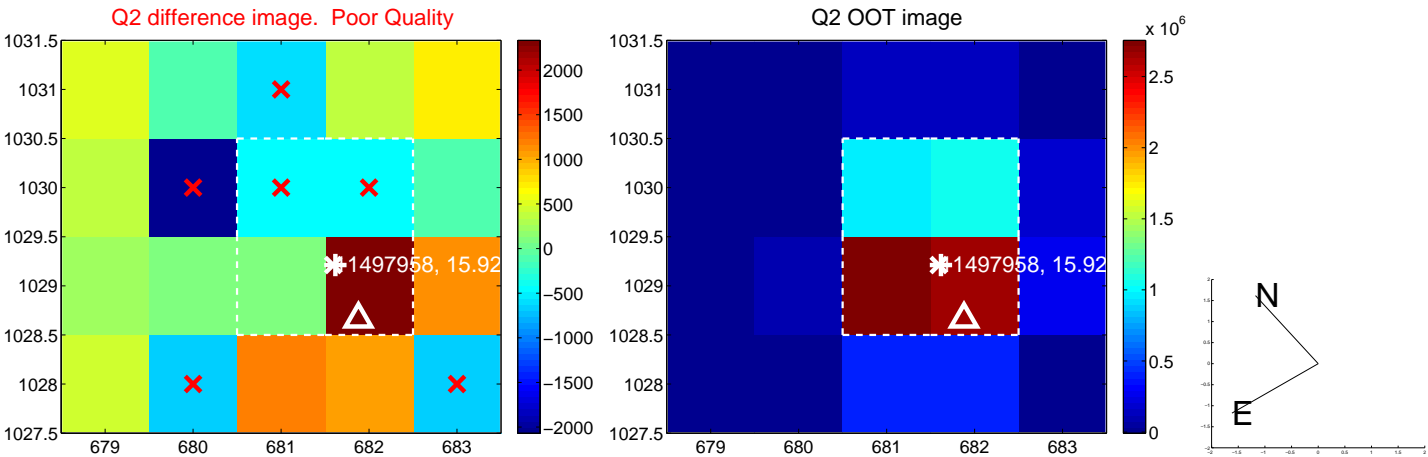
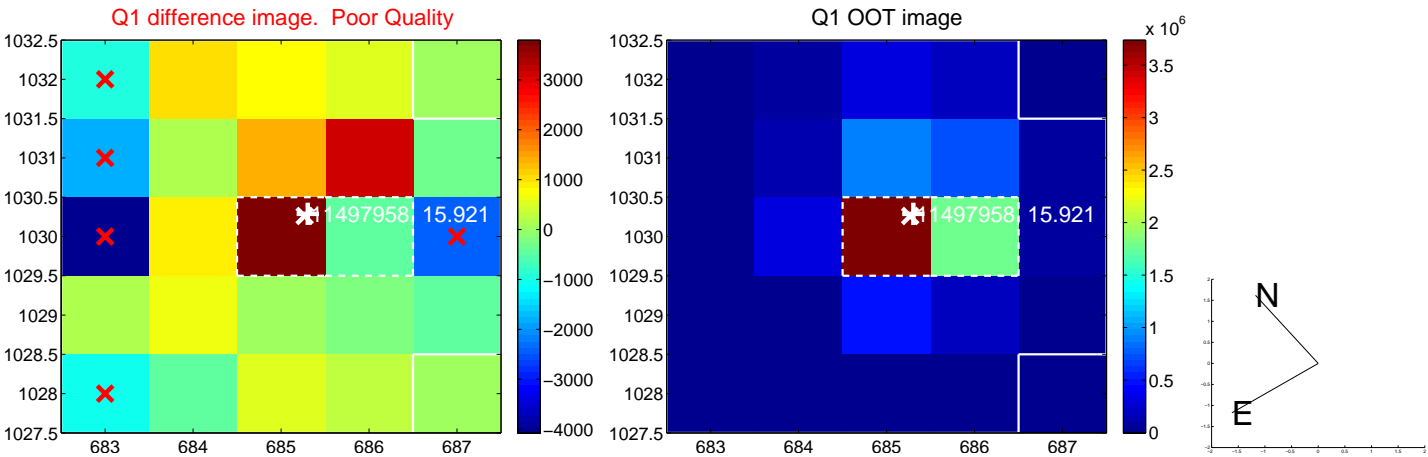


offset from photometric centroids

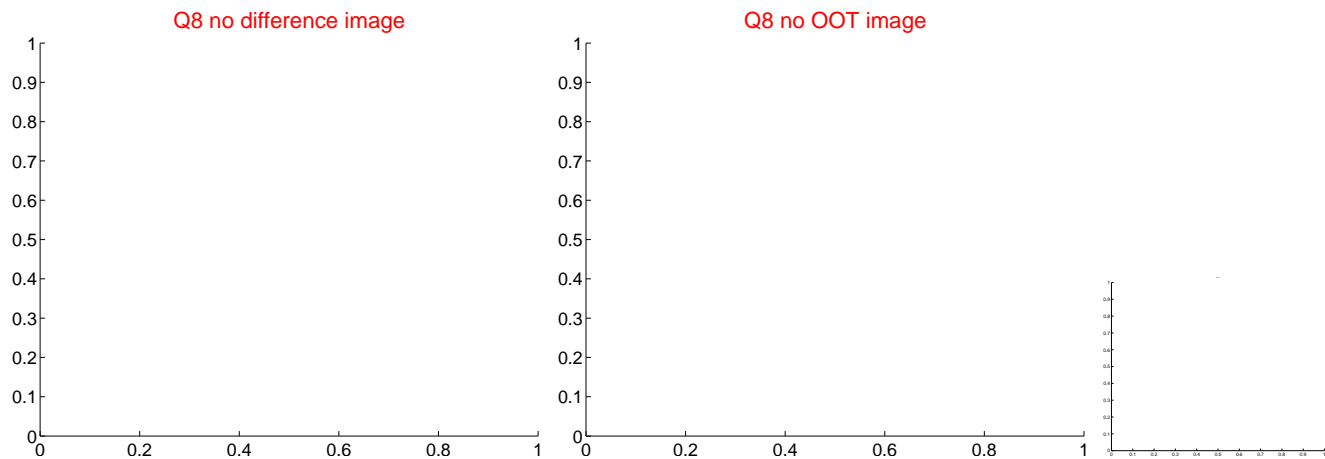
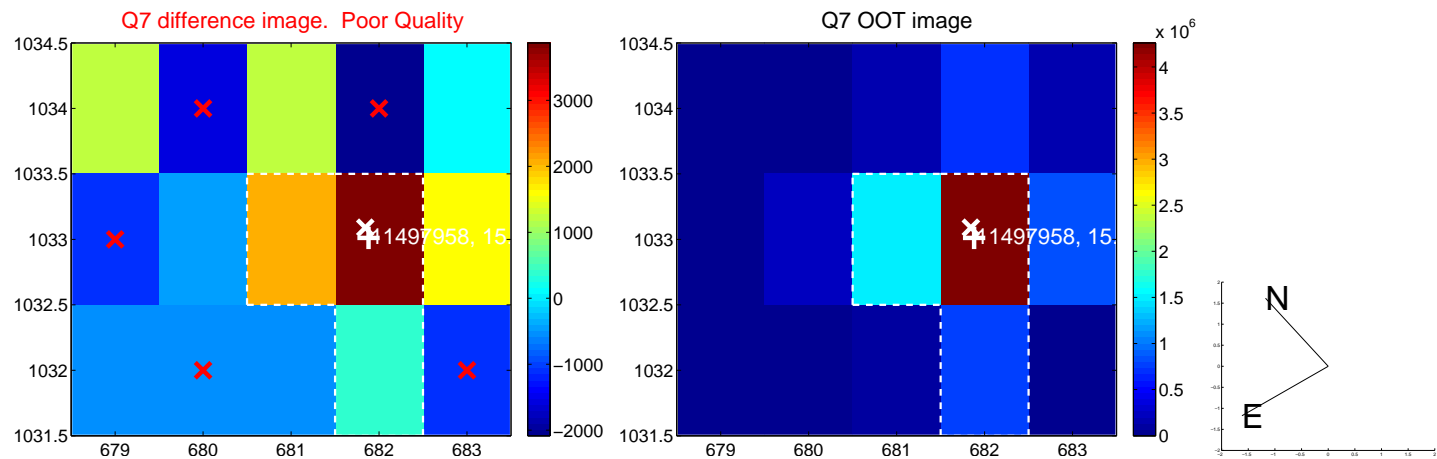
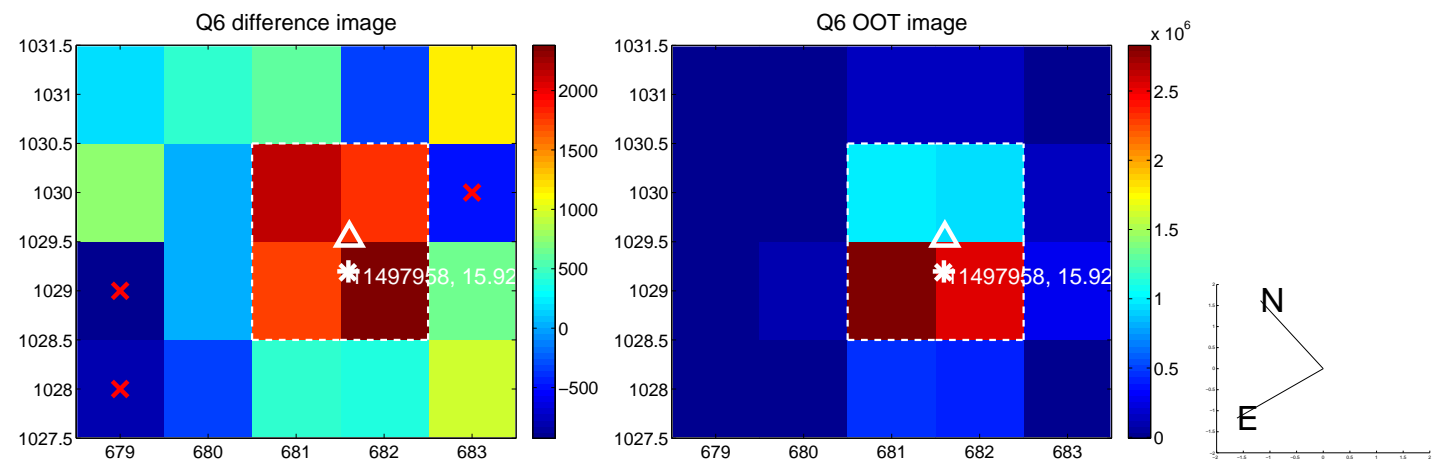
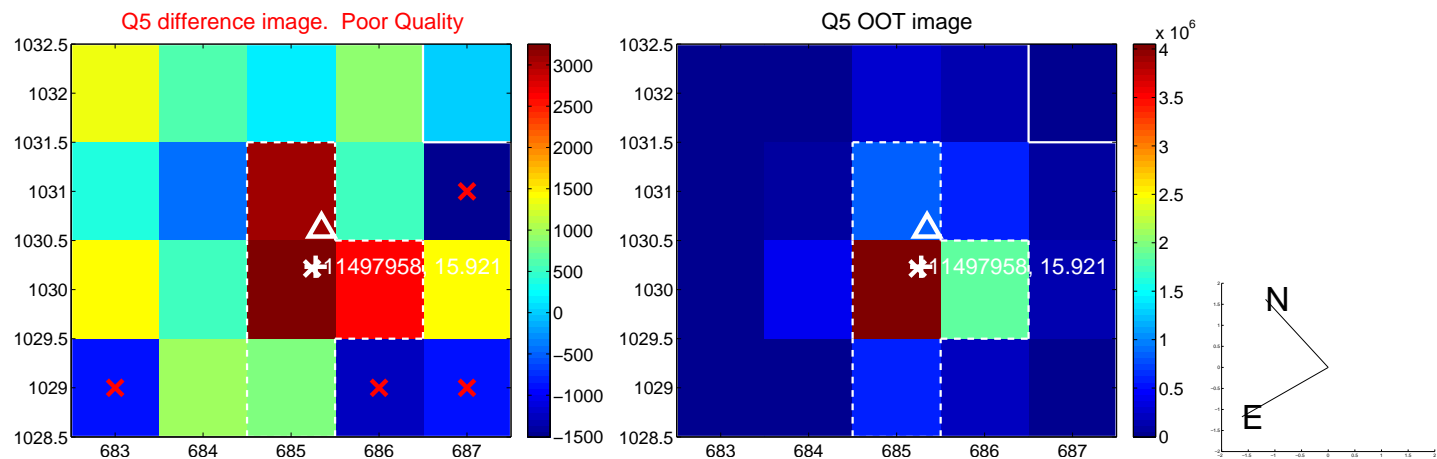


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

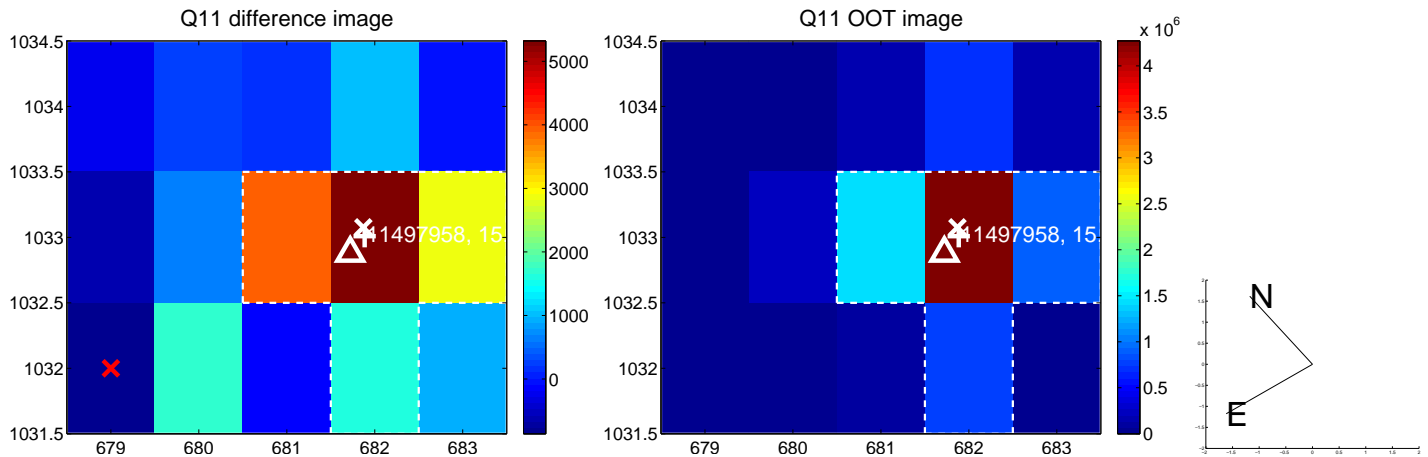
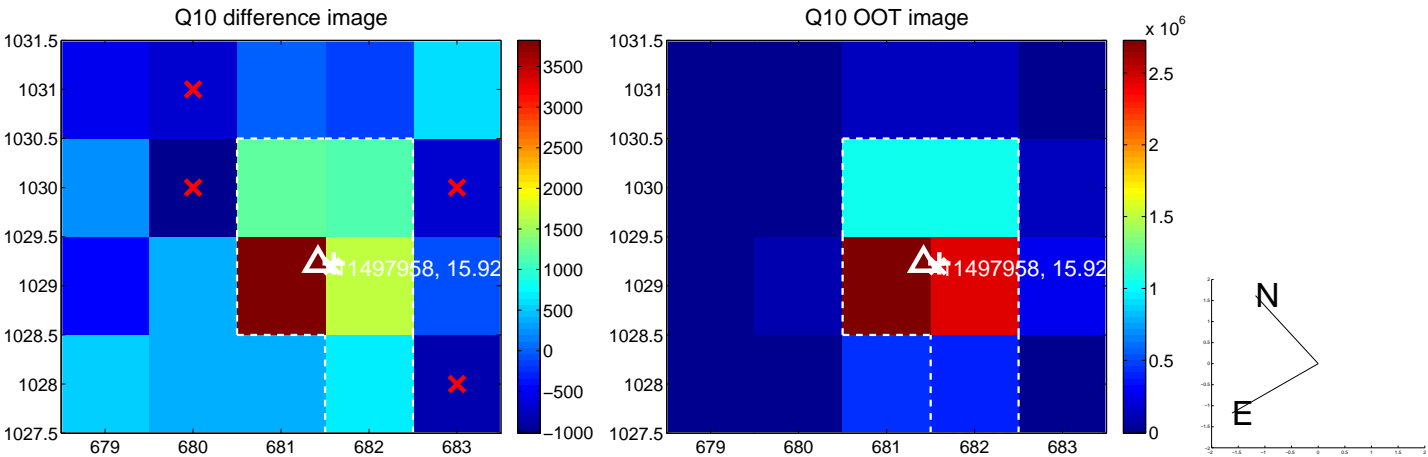
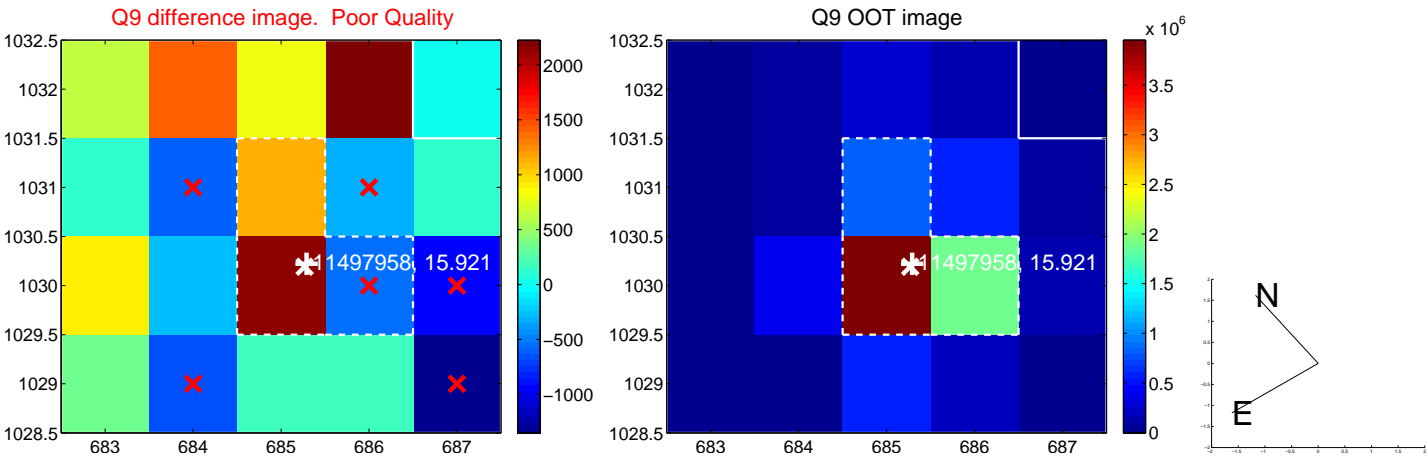
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



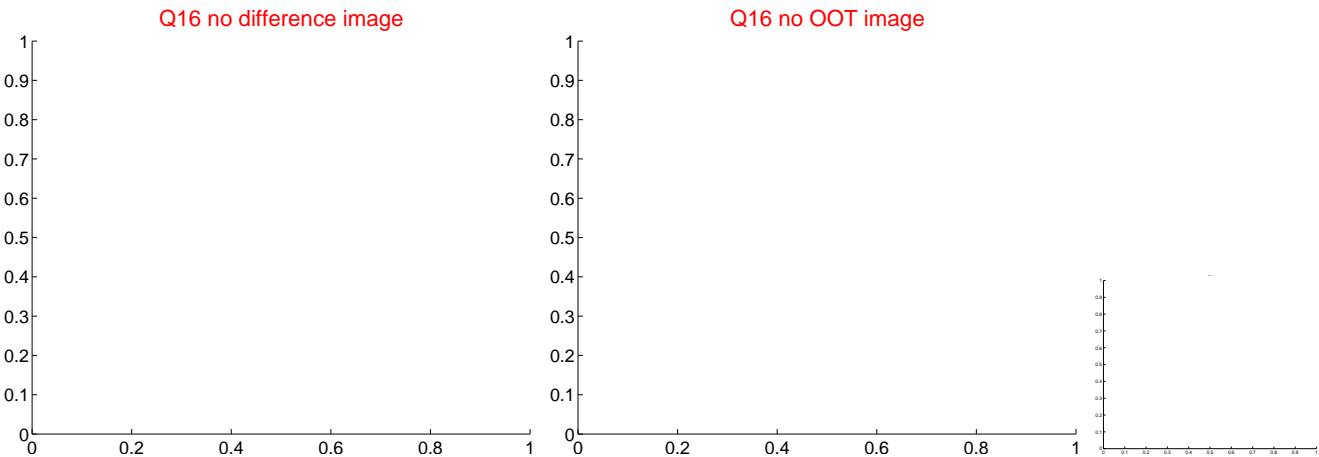
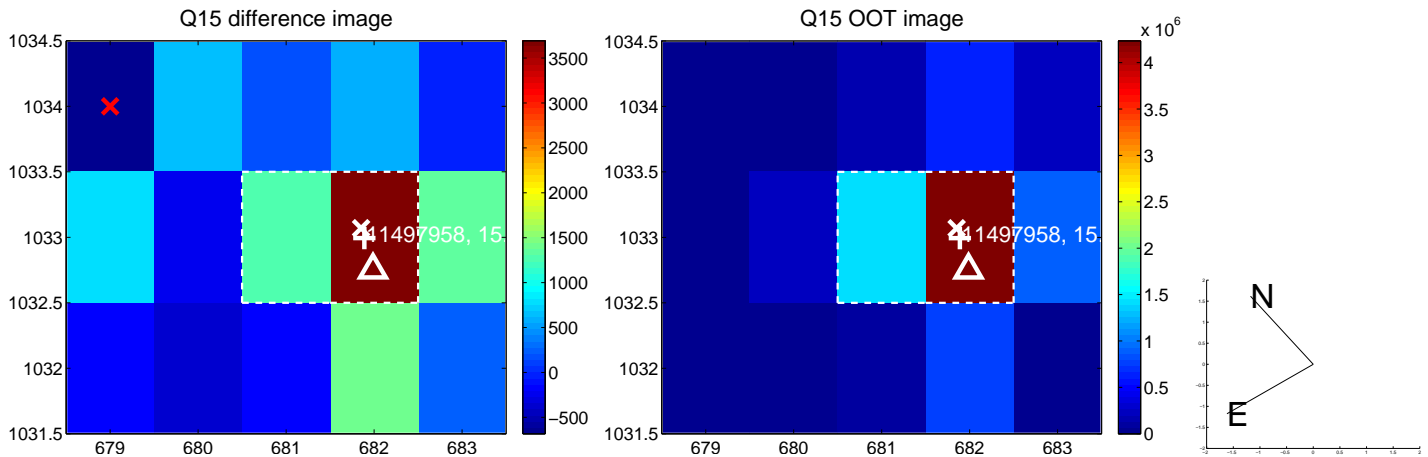
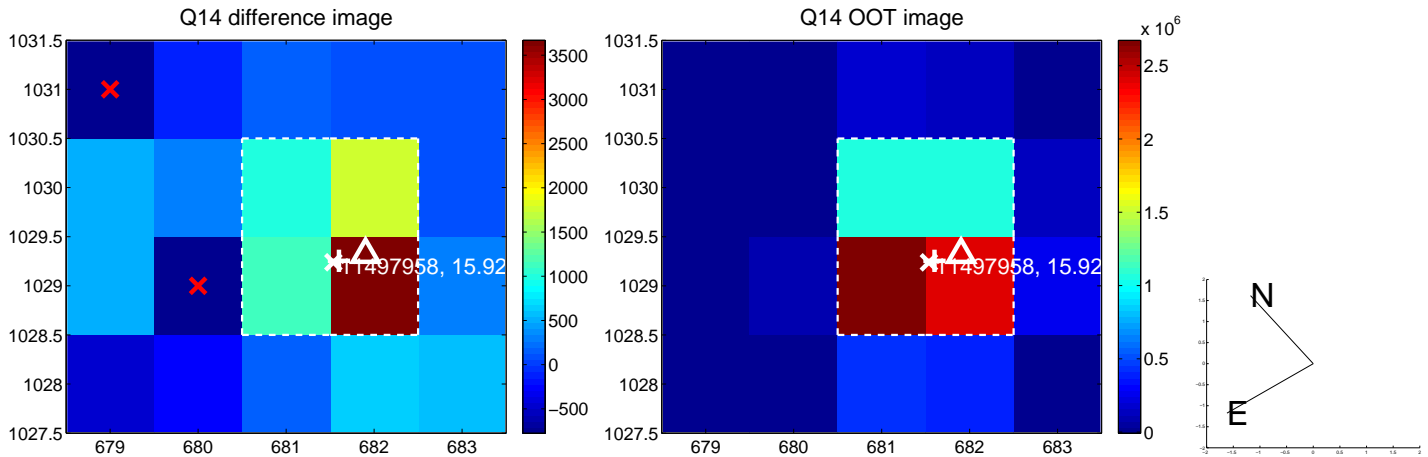
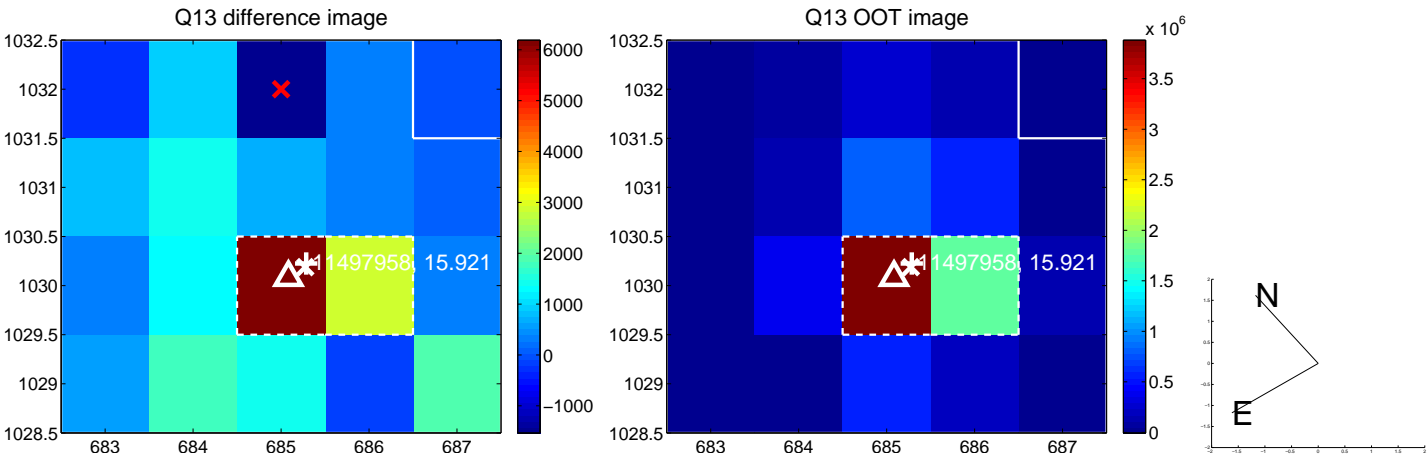
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



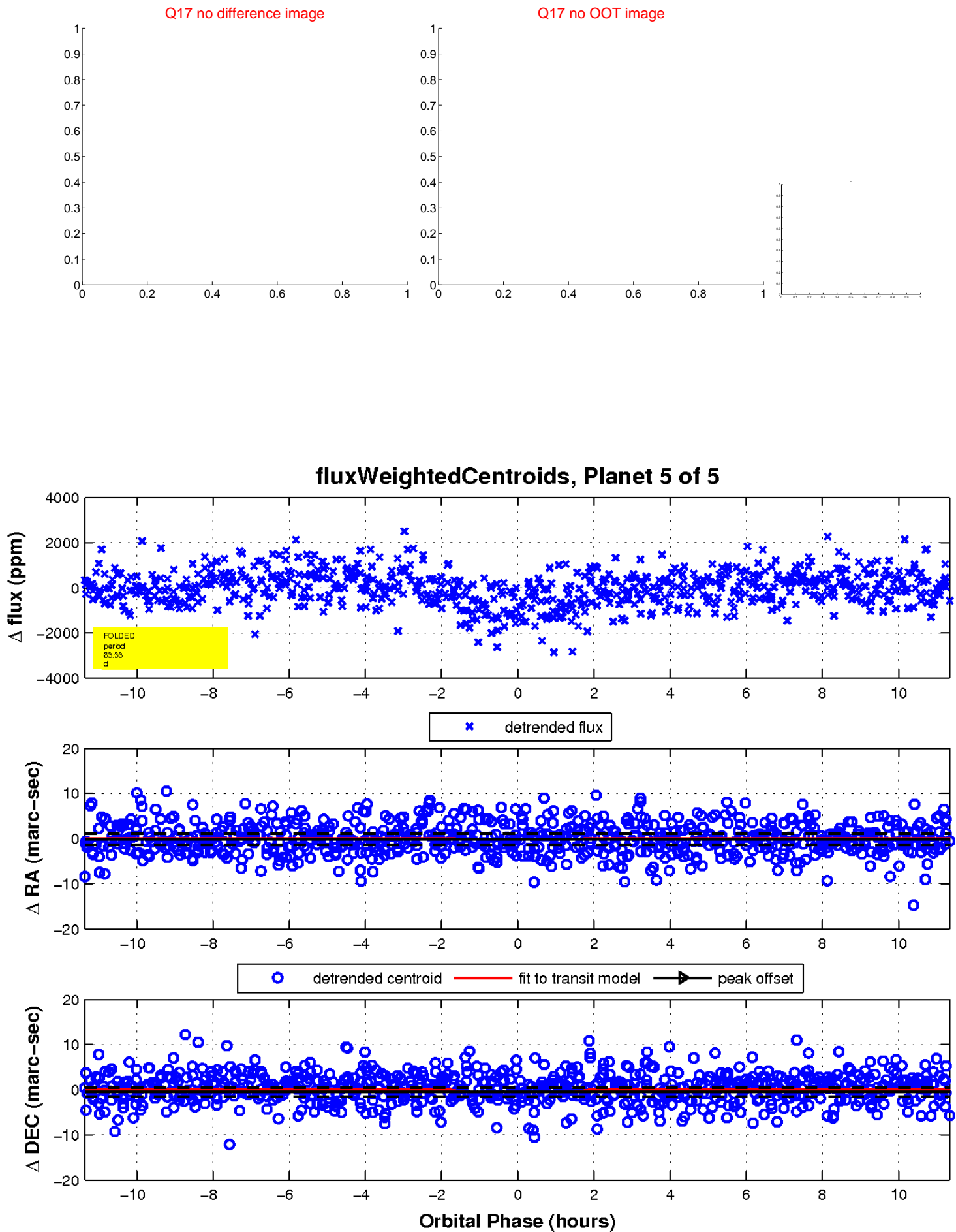
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

