

KIC 002557430

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})
002557430-01	OBS	6277.01	1.297745	131.840090	38390.4	2.718	3760.1	1902.0	1.52	6531	41.58	6484.61
002557430-02	OBS	No	1.297737	132.489119	8442.8	1.500	3496.0	-1.0	1.52	6531	14.16	6484.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002557430-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_SATURATED
002557430-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED

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 002557430-01

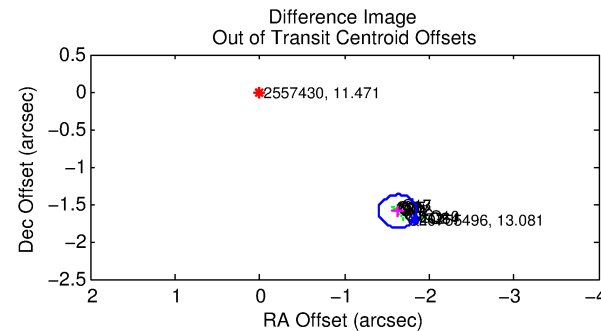
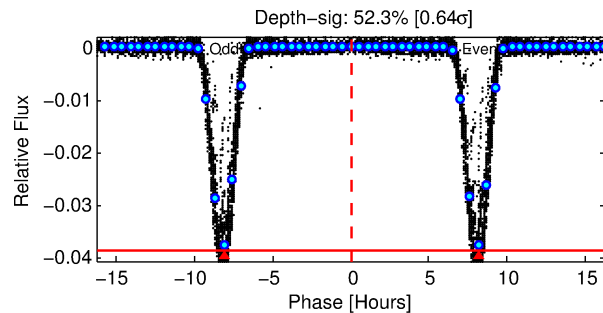
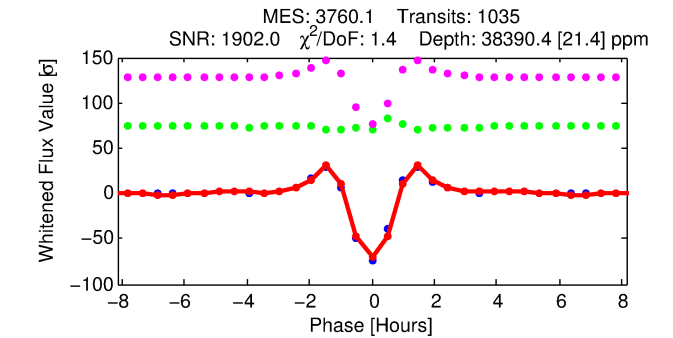
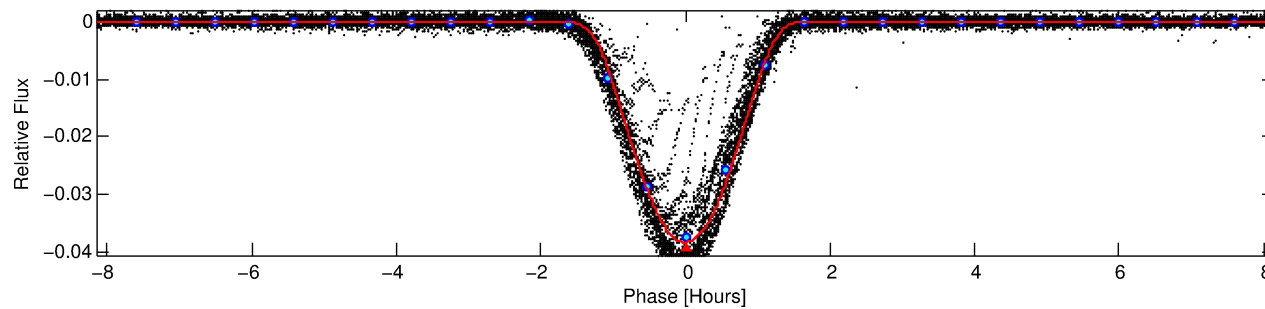
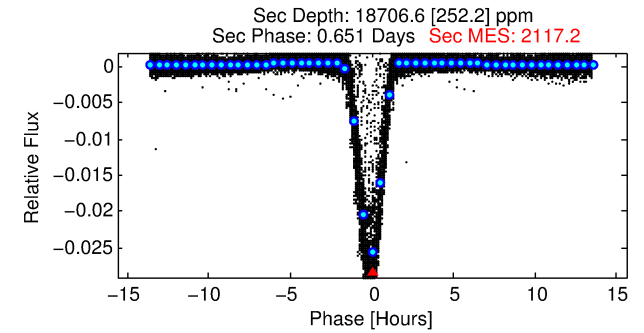
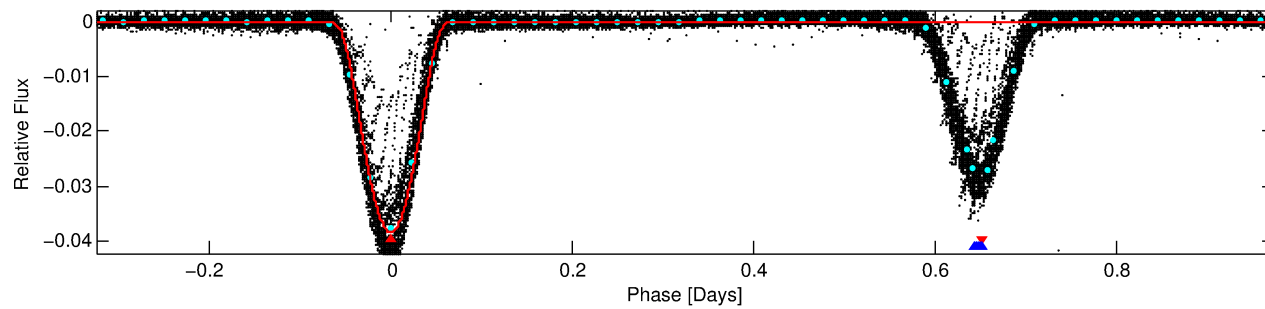
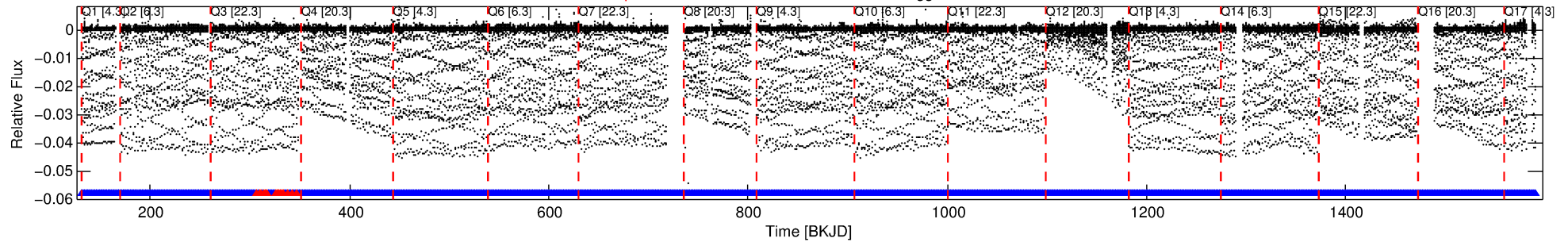
No Significant Match Found

DV One-Page Summary

KIC: 2557430 Candidate: 1 of 2 Period: 1.298 d

KOI: K06277 Corr: No Ephemeris Match

Kp: 11.47 R*: 1.52 Rs Teff: 6531.0 K Logg: 4.12 Fe/H: -0.340



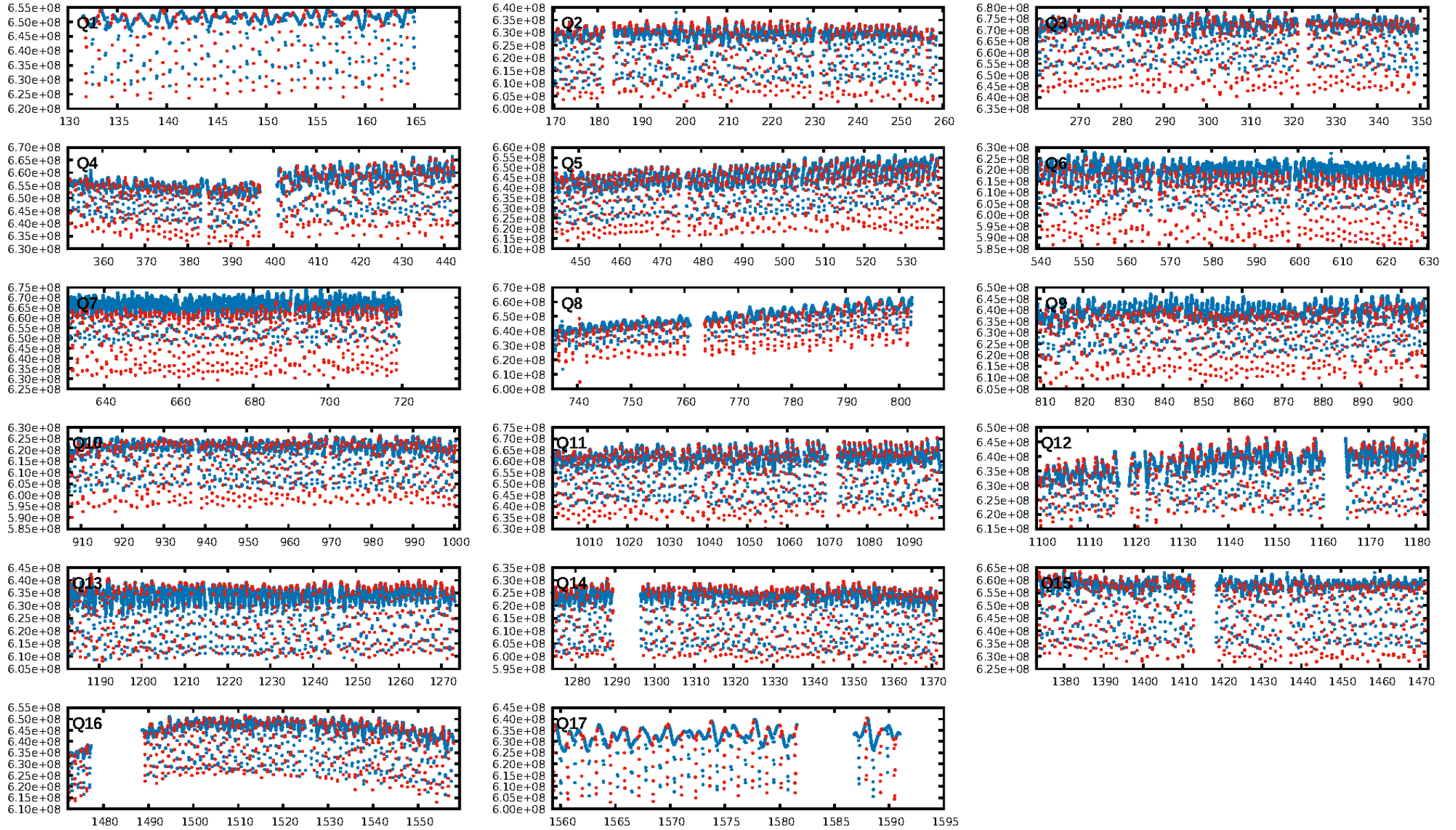
DV Fit Results:

Period = 1.29774 [0.00000] d
Epoch = 131.8401 [0.0000] BKJD
Rp/R* = 0.2500 [0.0010]
a/R* = 3.29 [0.00]
b = 0.91 [0.00]
Seff = 6484.61 [2814.66]
Teff = 2288 [248] K
Rp = 41.58 [11.49] Re
a = 0.0242 [0.0064] AU
Ag = 3.48 [1.46] [1.69σ]
Teffp = 4831 [133] K [9.03σ]

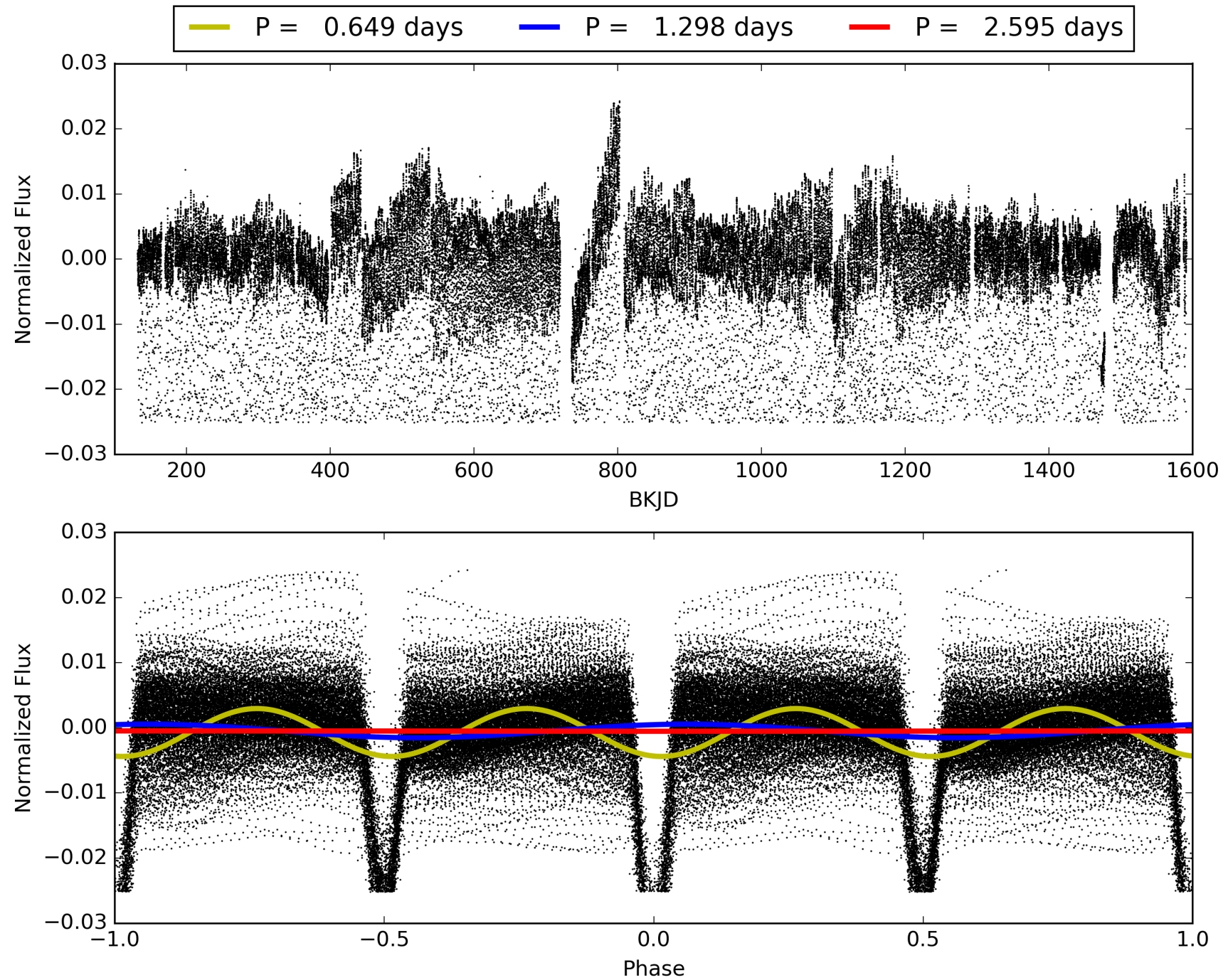
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [971/988]
GhostDiagnostic-chr: 1.099
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 2.281 arcsec [30.61σ]
KicOffset-rm: 2.560 arcsec [37.38σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 002557430-01, PDC Light Curves

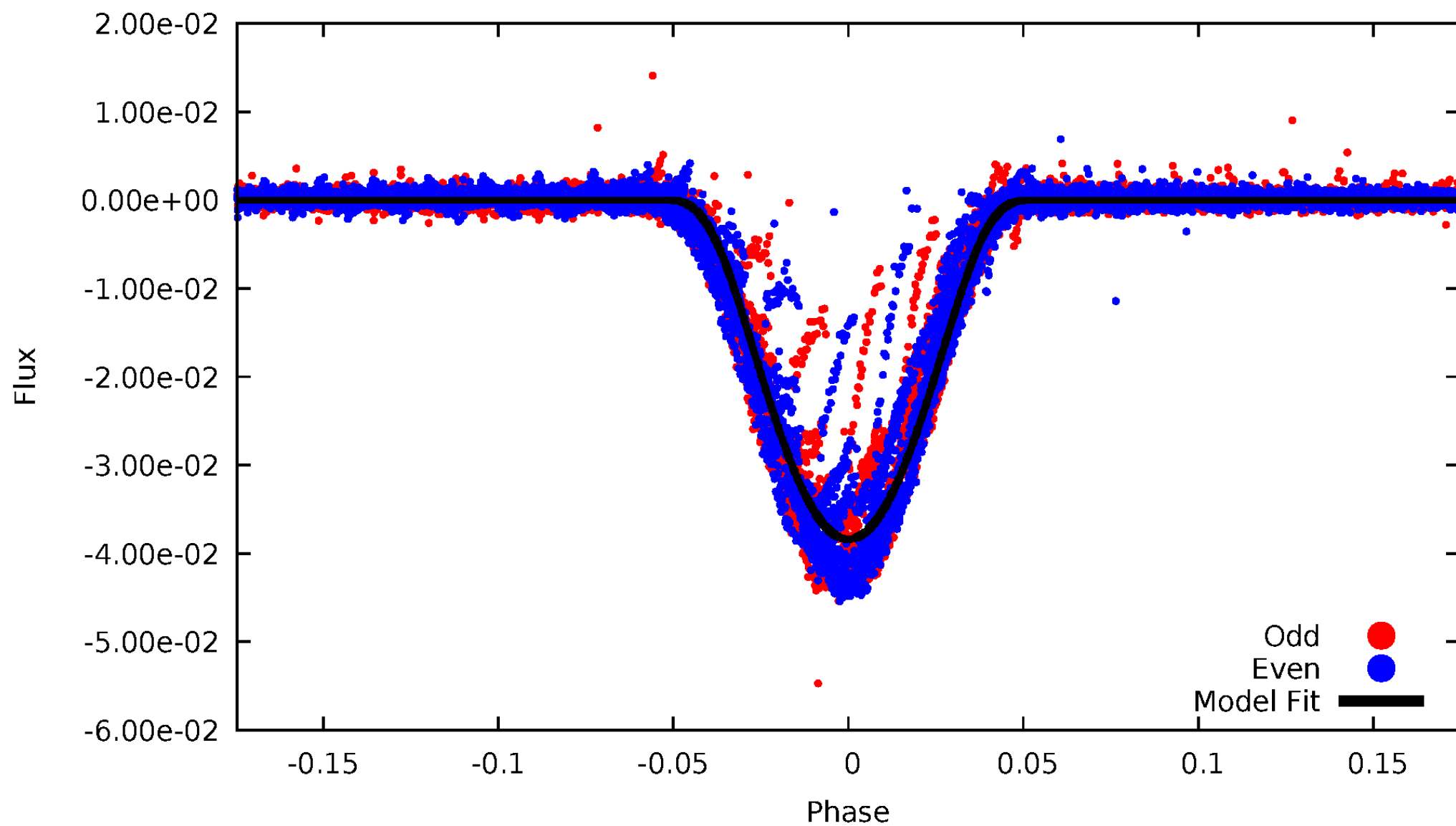


TCE 002557430-01



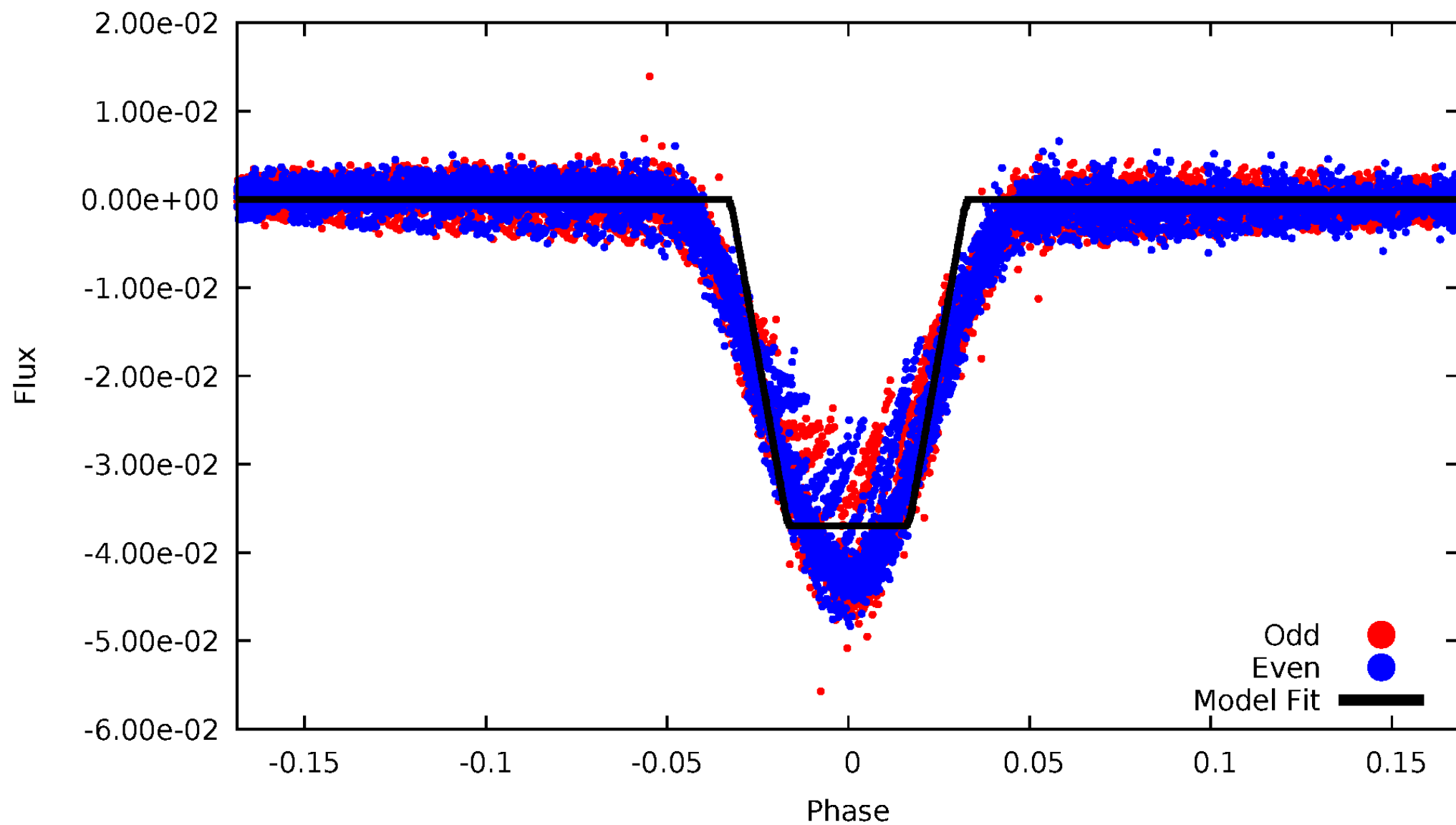
DV Odd/Even

TCE 002557430-01



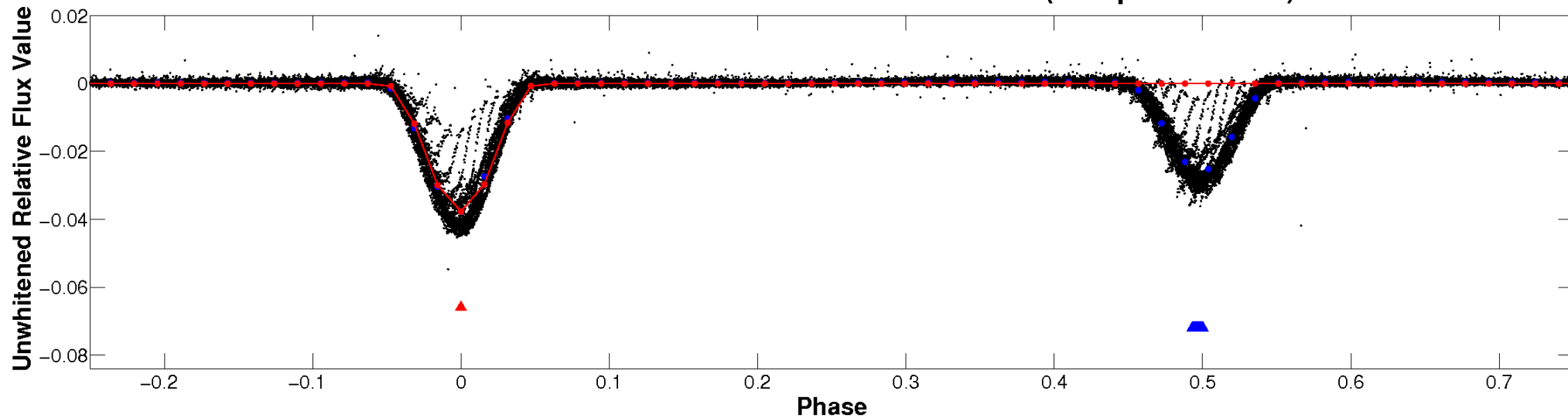
ALT Odd/Even

TCE 002557430-01

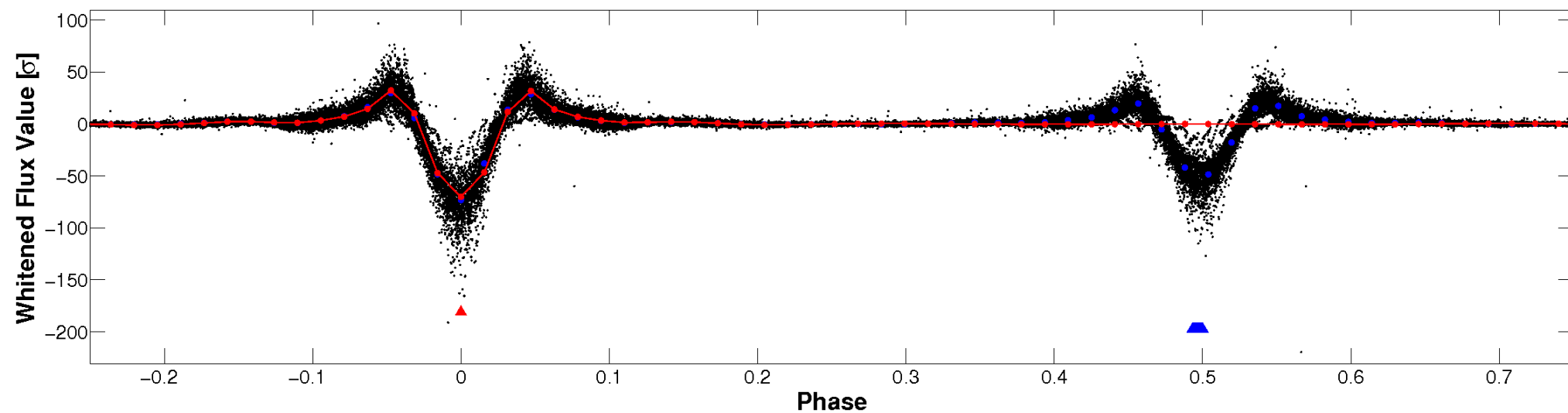


Non-Whitened Vs. Whitened Light Curve

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

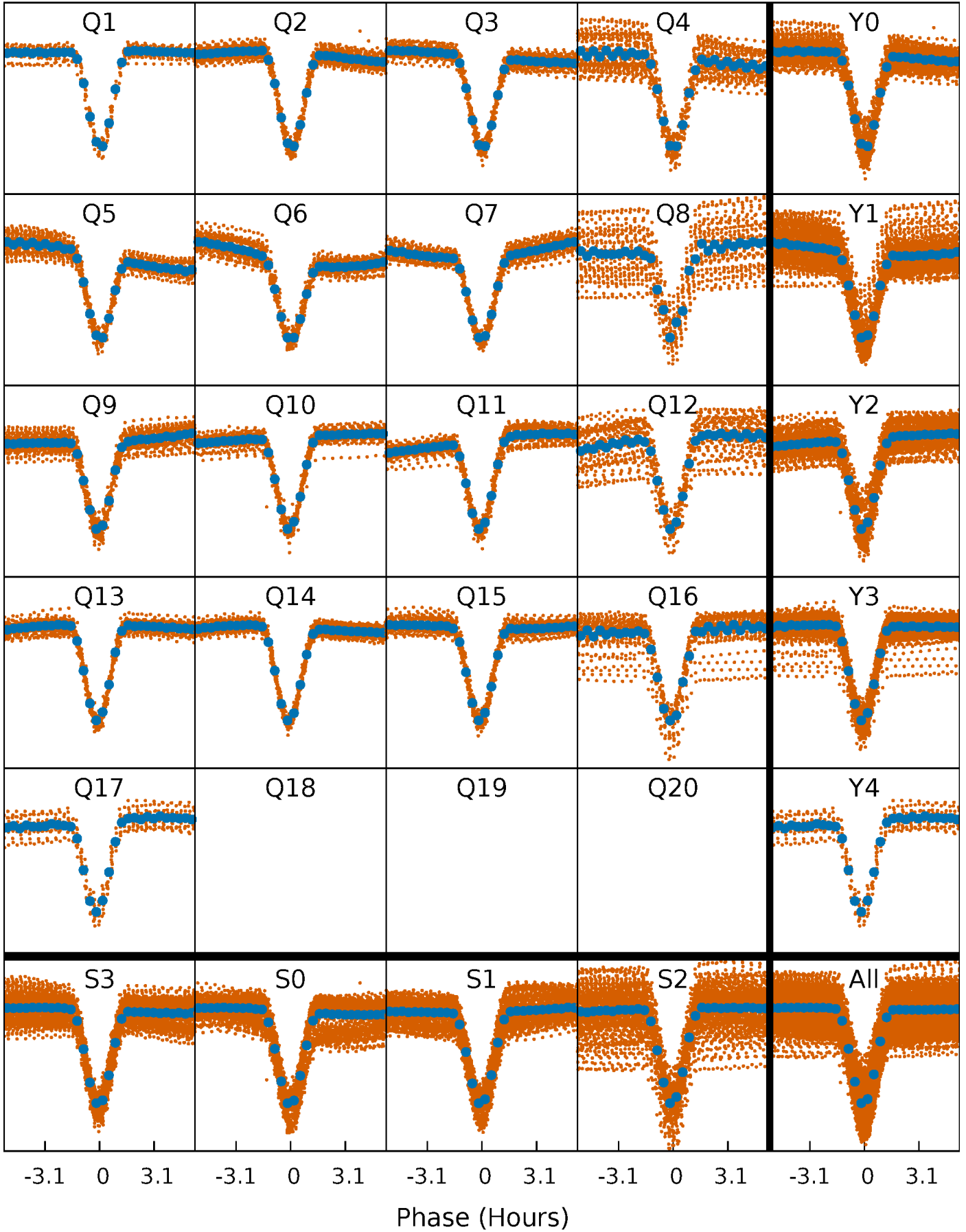


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



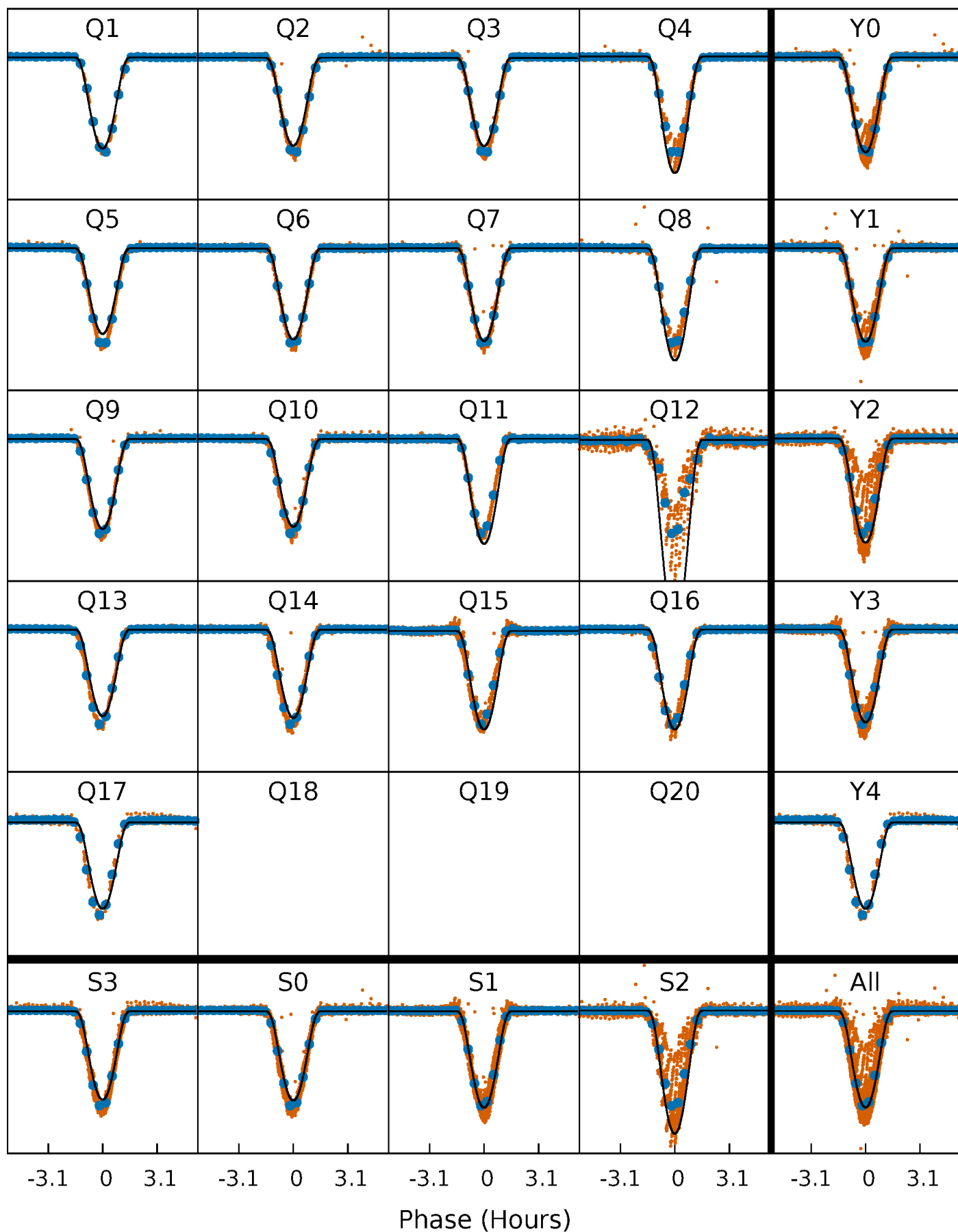
PDC Quarter-Phased Transit Curves

TCE 002557430-01 P= 1.297745 Days $T_0=131.840090$ (BKJD)



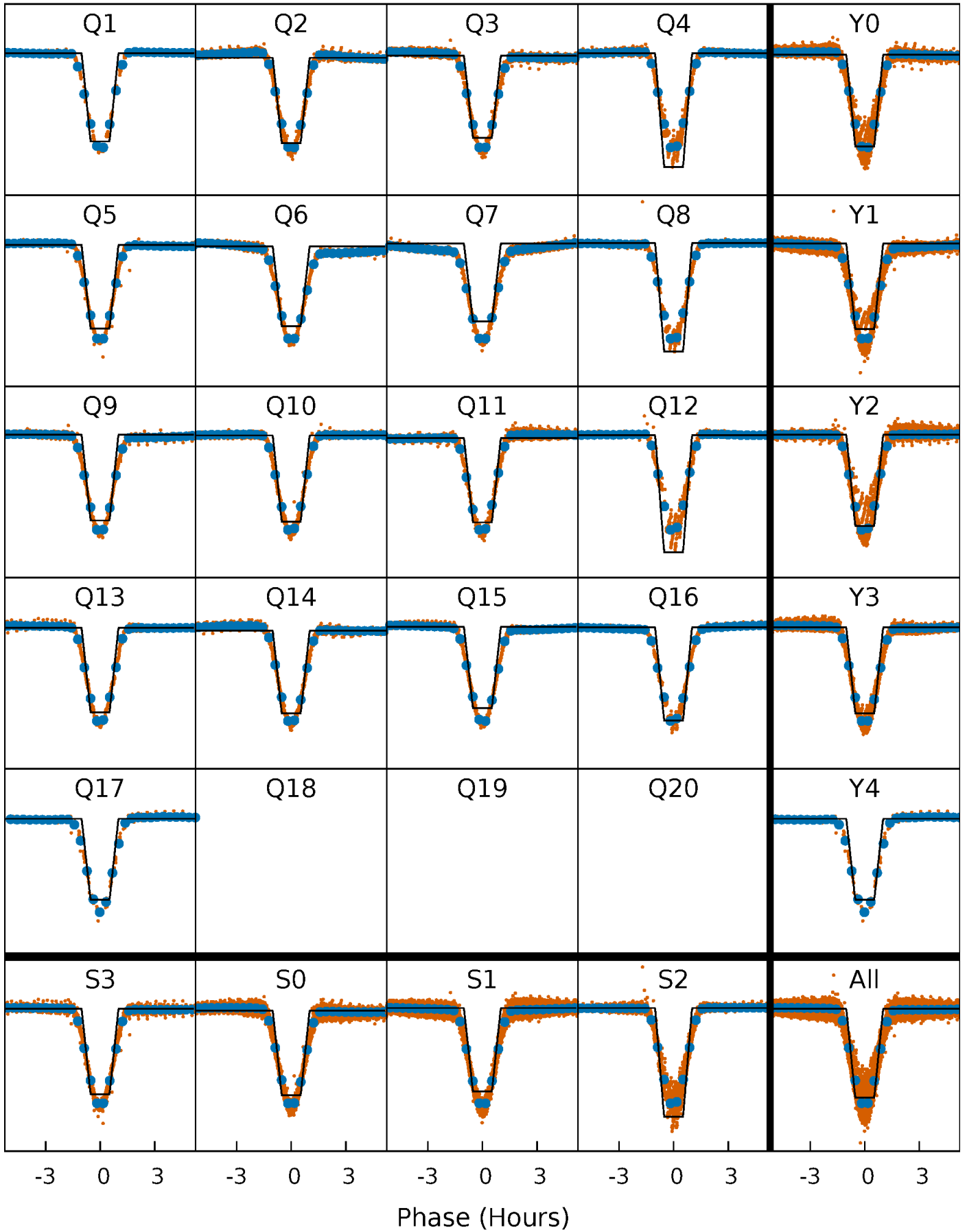
DV Quarter-Phased Transit Curves

TCE 002557430-01 P= 1.297745 Days $T_0=131.840090$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

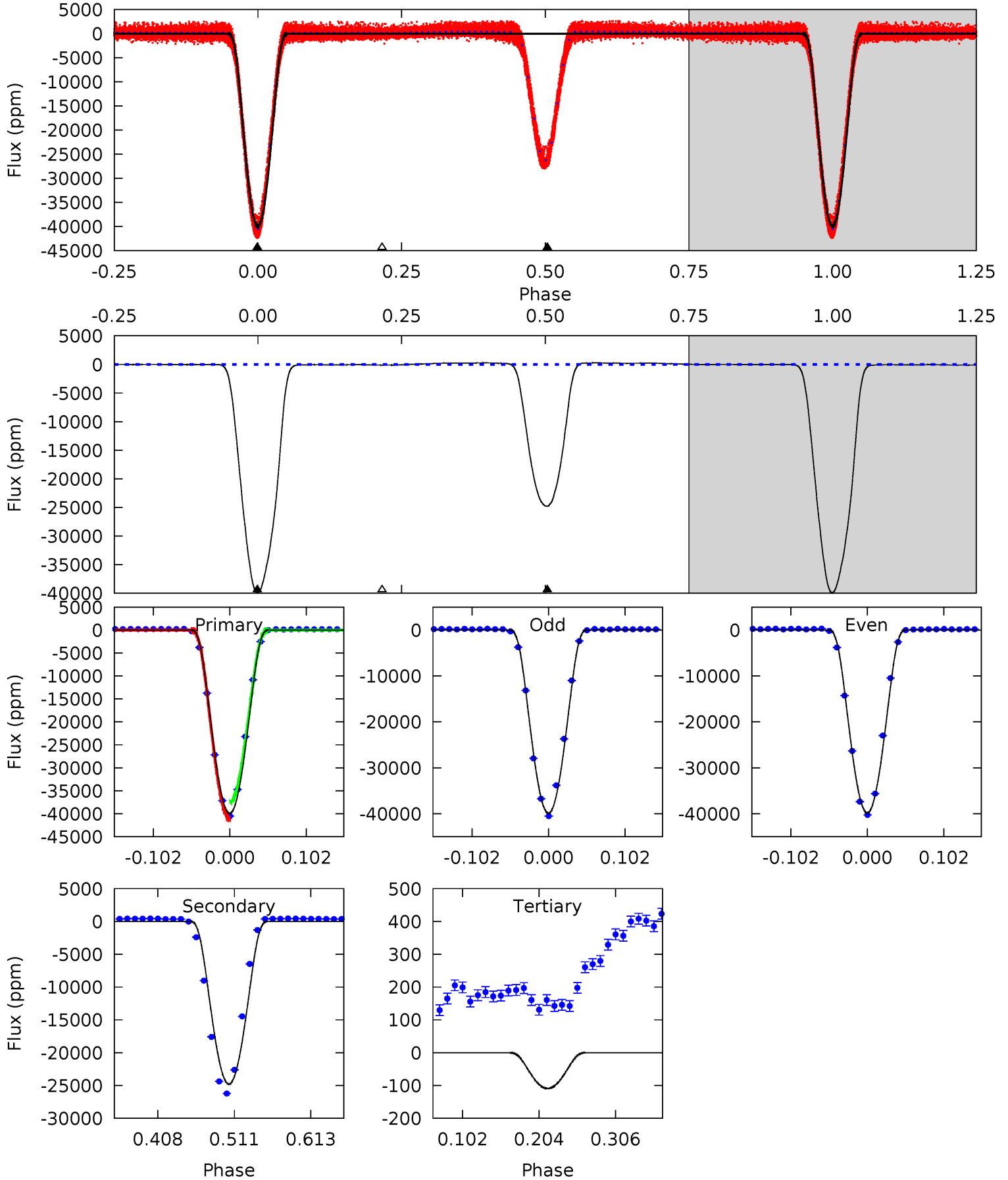
TCE 002557430-01 P= 1.297737 Days $T_0=131.842216$ (BKJD)



DV Model-Shift Uniqueness Test

002557430-01, P = 1.297745 Days, E = 130.542345 Days

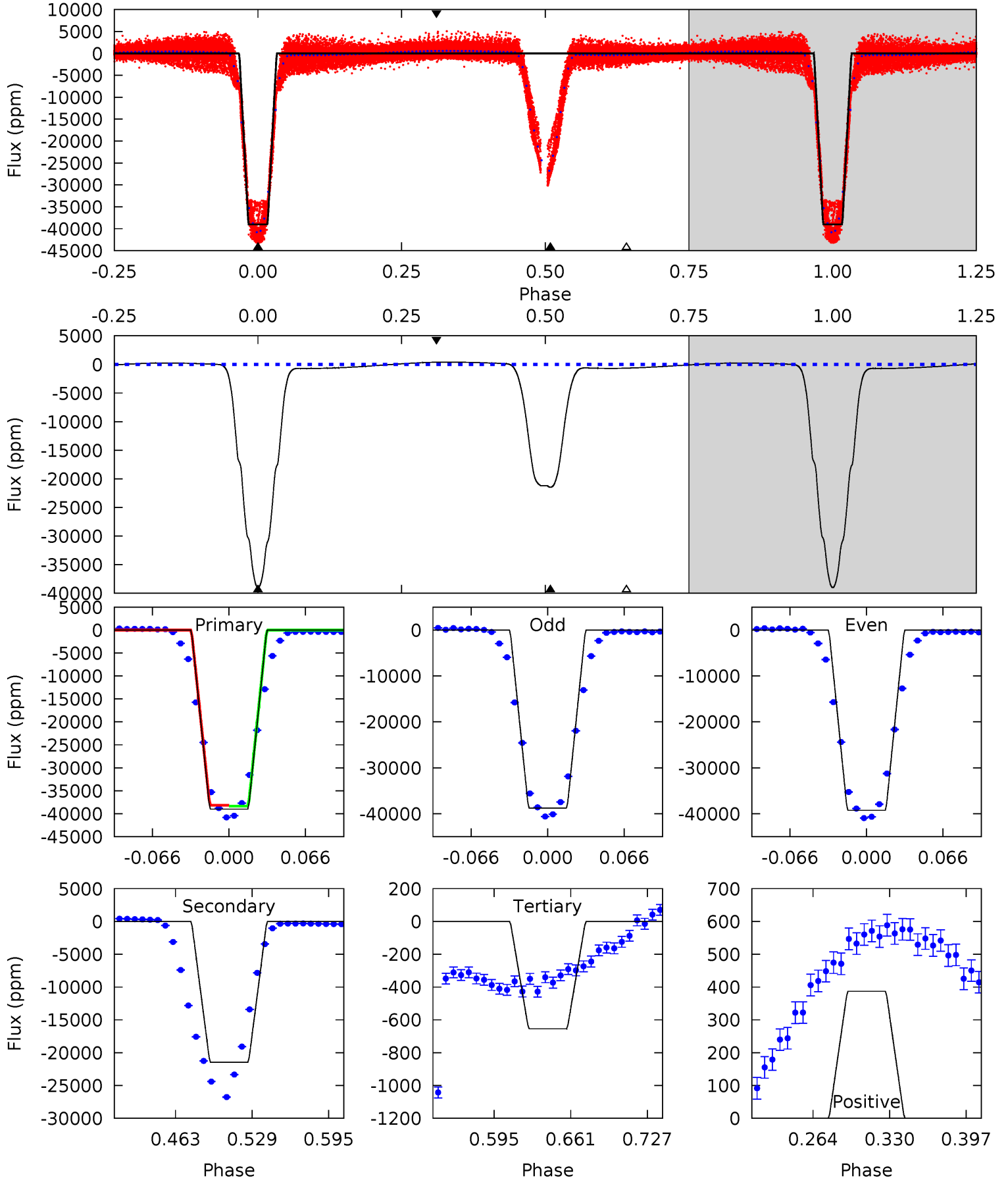
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4476	2779	12.2	0	4.56	1.63	14.0	4463	4476	2766	2779	3.74	0.94	0.01	0



Alt Model-Shift Uniqueness Test

002557430-01, P = 1.297737 Days, E = 130.544479 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1927	1061	32.3	19.1	4.65	1.84	19.1	1895	1908	1029	1042	12.1	0.98	0.01	4.65



Stellar Parameters For KIC 002557430

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6531^{+146}_{-178}	$4.120^{+0.246}_{-0.164}$	$-0.340^{+0.250}_{-0.300}$	$1.524^{+0.421}_{-0.421}$	$1.117^{+0.193}_{-0.145}$	$0.445^{+0.609}_{-0.191}$
	+2%/-3%	+6%/-4%	+74%/-88%	+28%/-28%	+17%/-13%	+137%/-43%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 002557430-01 / KOI 6277.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-24791 ± 9	$41.59^{+6.38}_{-5.98}$	3189^{+232}_{-250}	5185^{+105}_{-123}	$4.768^{+1.563}_{-1.100}$
Alt.	-21469 ± 20	$31.43^{+5.40}_{-4.68}$	3157^{+246}_{-238}	5673^{+105}_{-134}	$7.182^{+2.645}_{-1.840}$

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

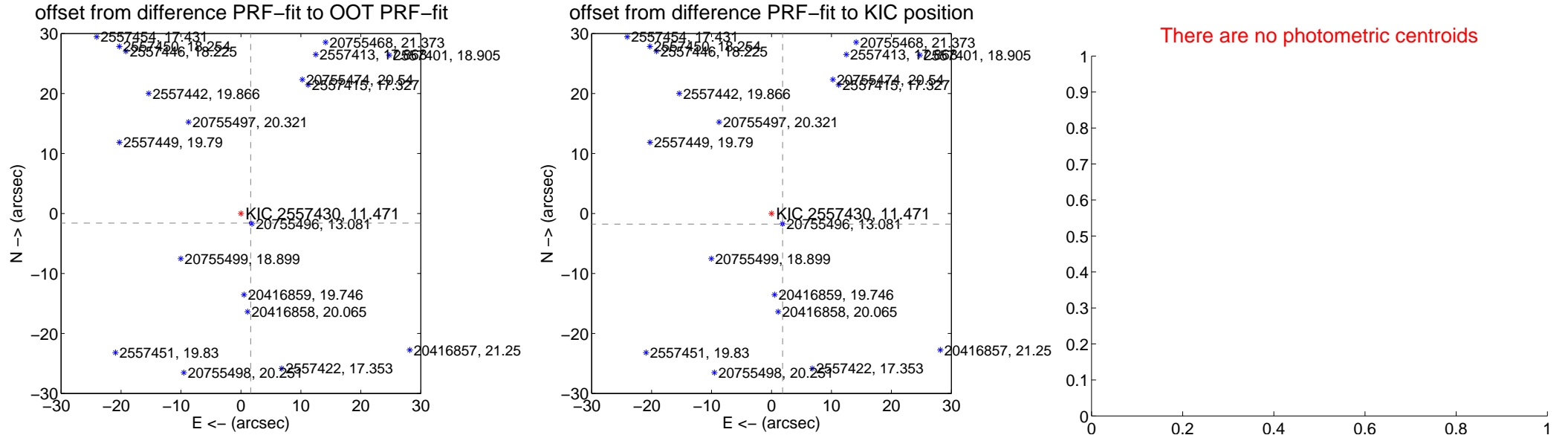
DV Centroid Data

Supplemental centroid analysis for 002557430-01. **Kepler magnitude: 11.47.** Transit SNR 1902.01

There are 17 quarters with good PRF difference image offsets

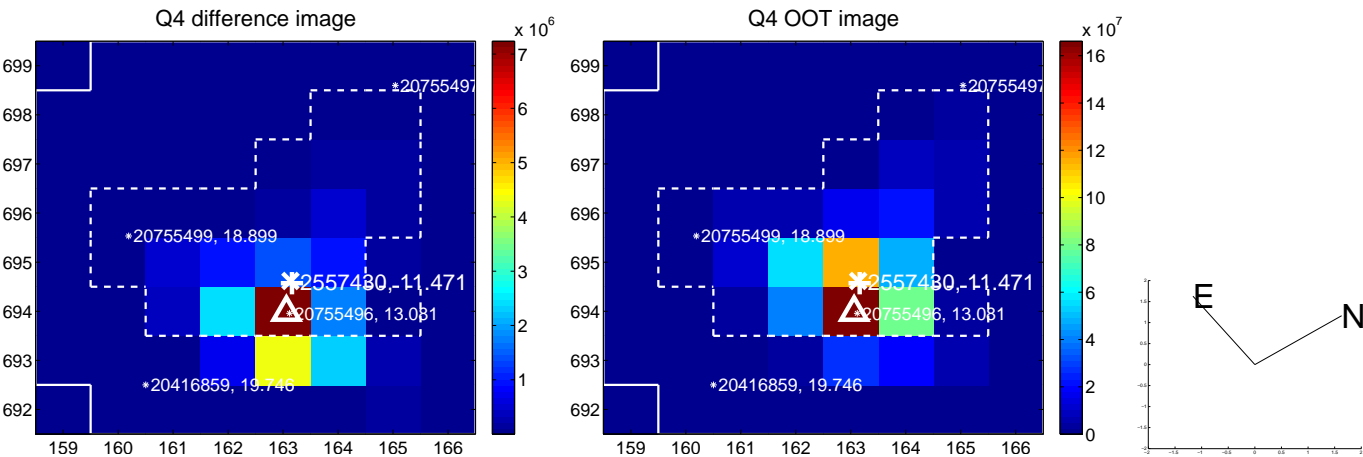
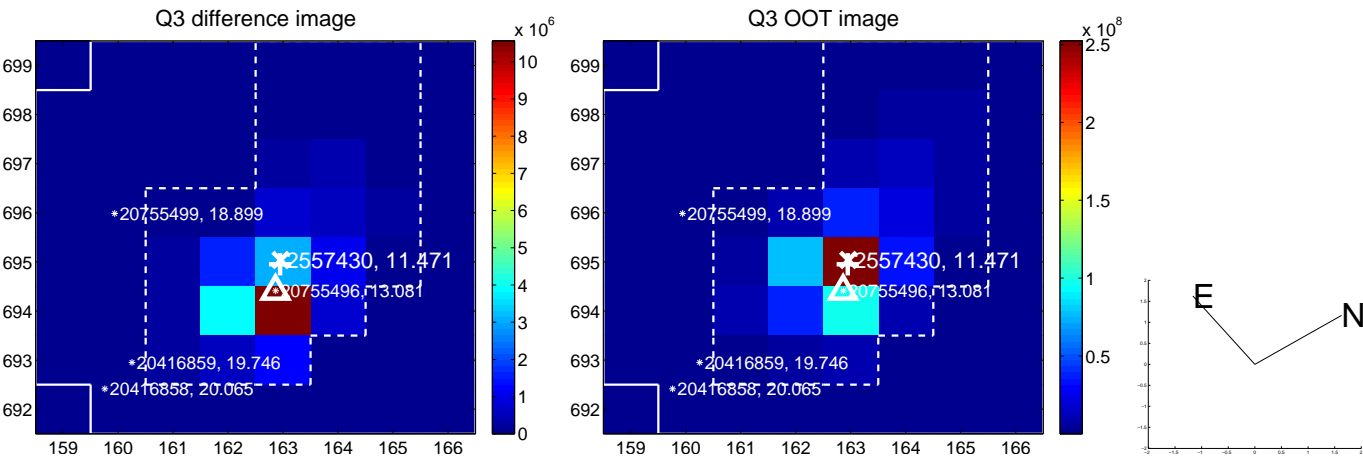
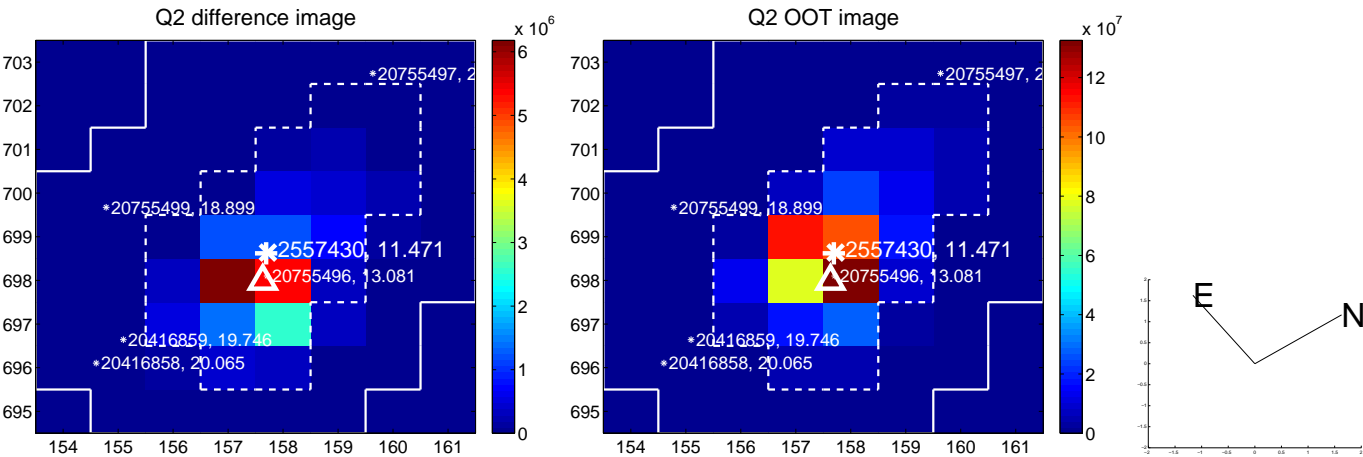
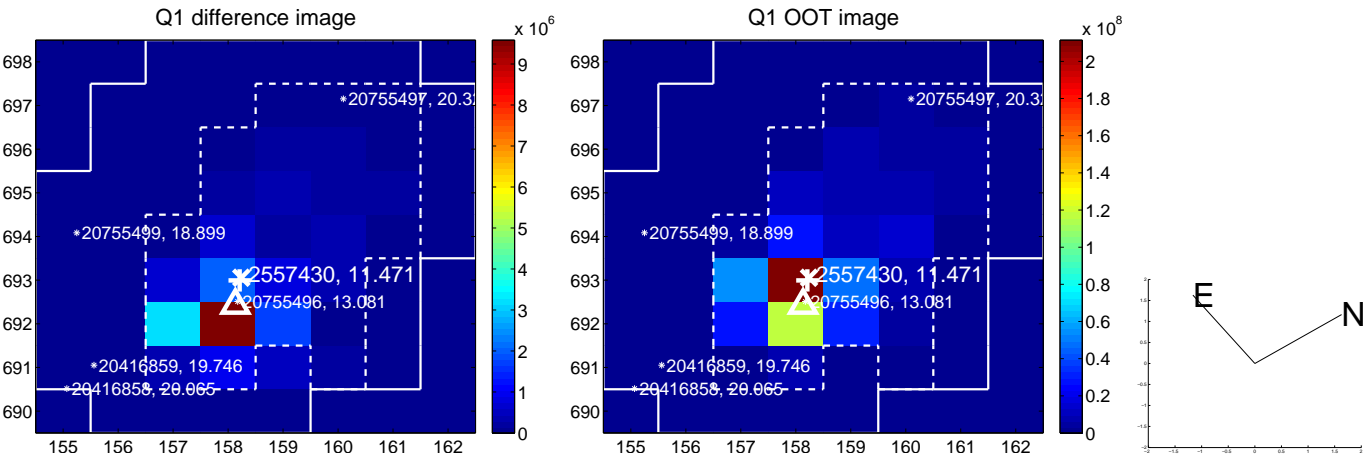
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.281 ± 0.075	30.61	-1.628 ± 0.075	-1.597 ± 0.069
PRF-fit source offset from KIC position	2.560 ± 0.068	37.38	-1.849 ± 0.068	-1.771 ± 0.067
photometric centroid source offset	—	—	—	—

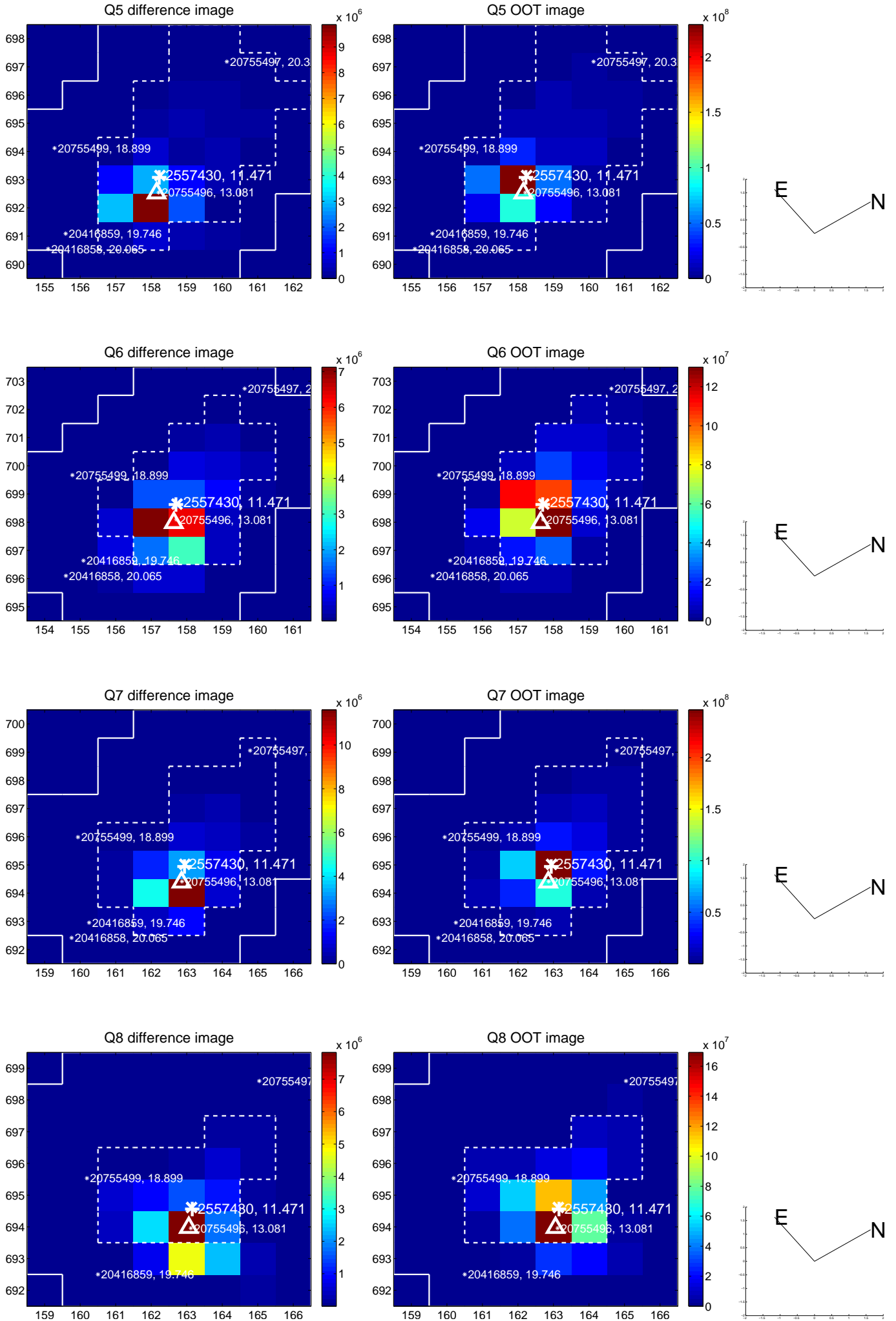


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

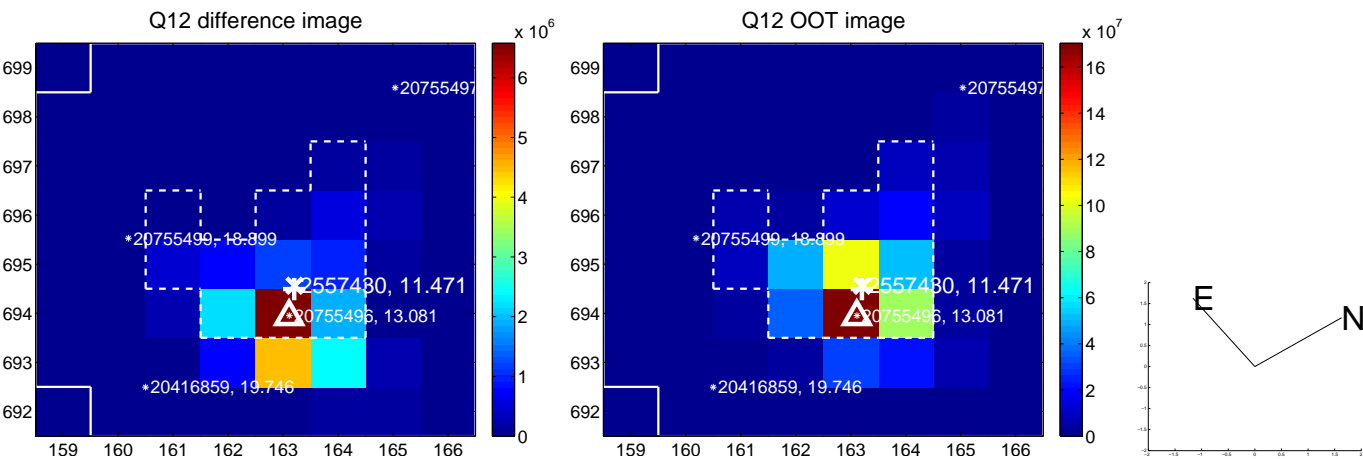
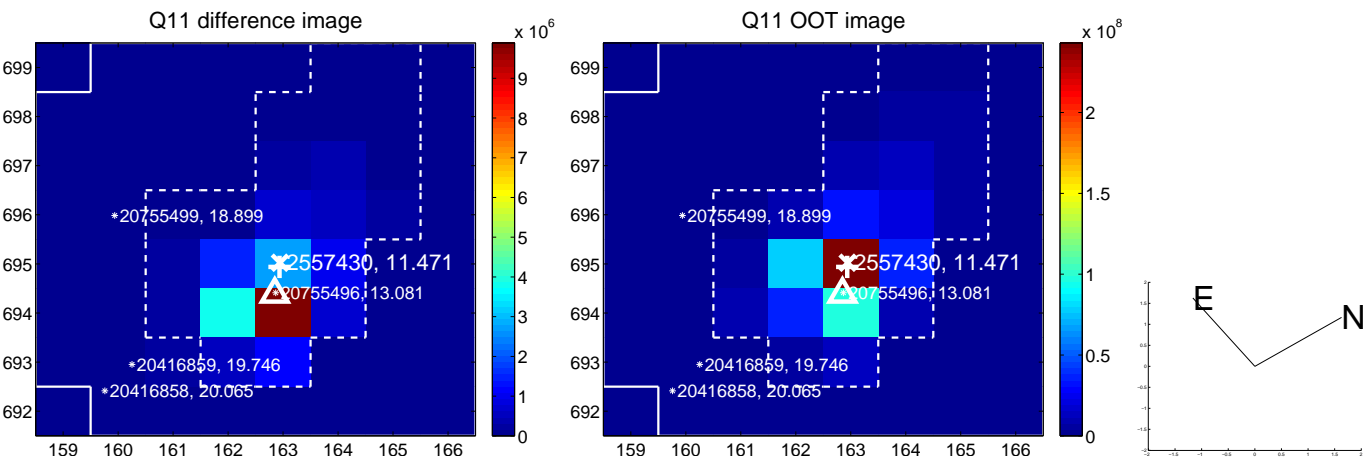
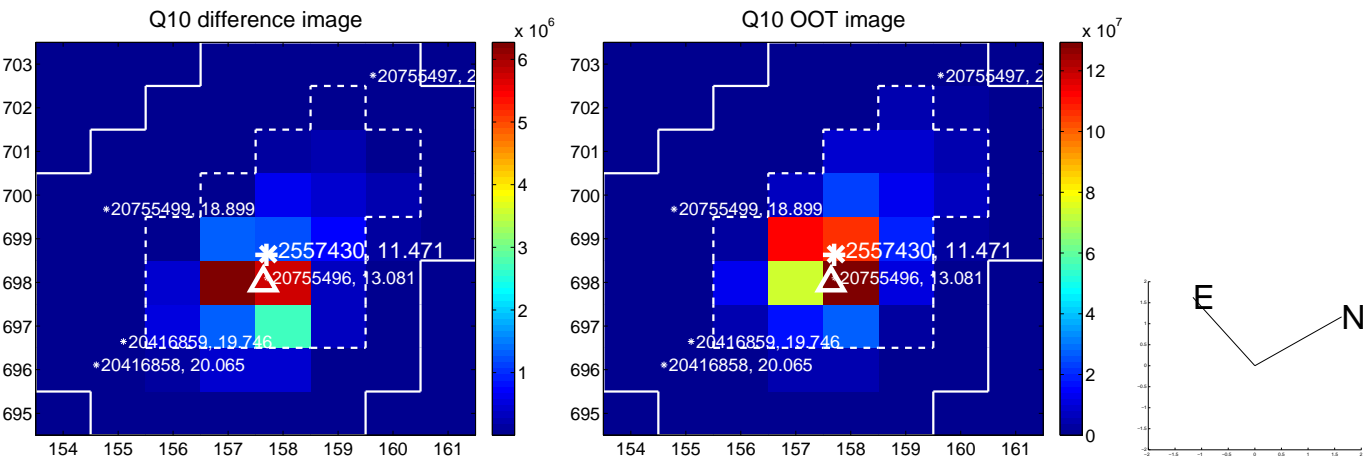
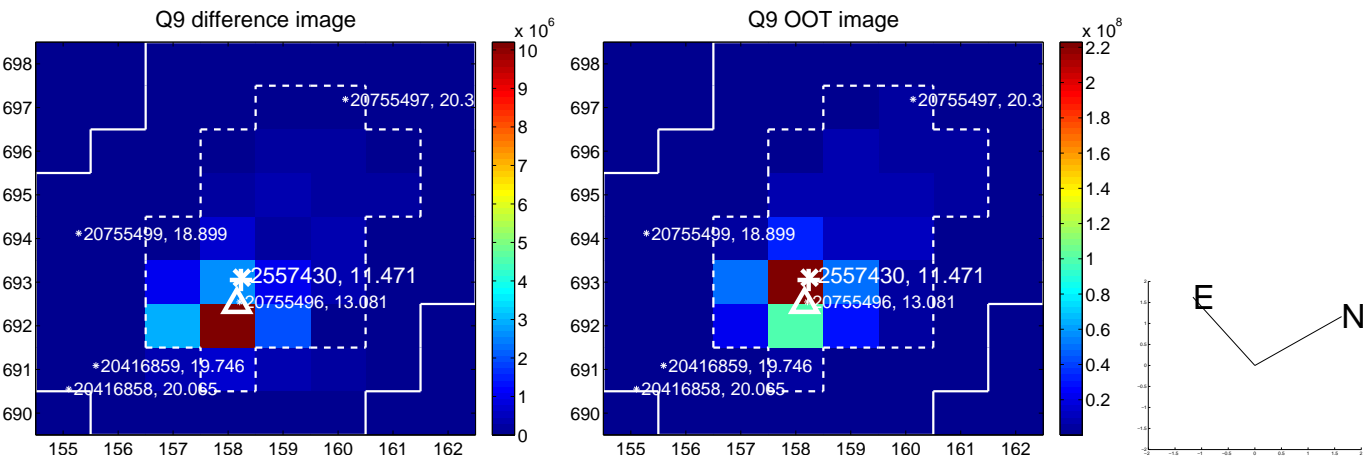
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



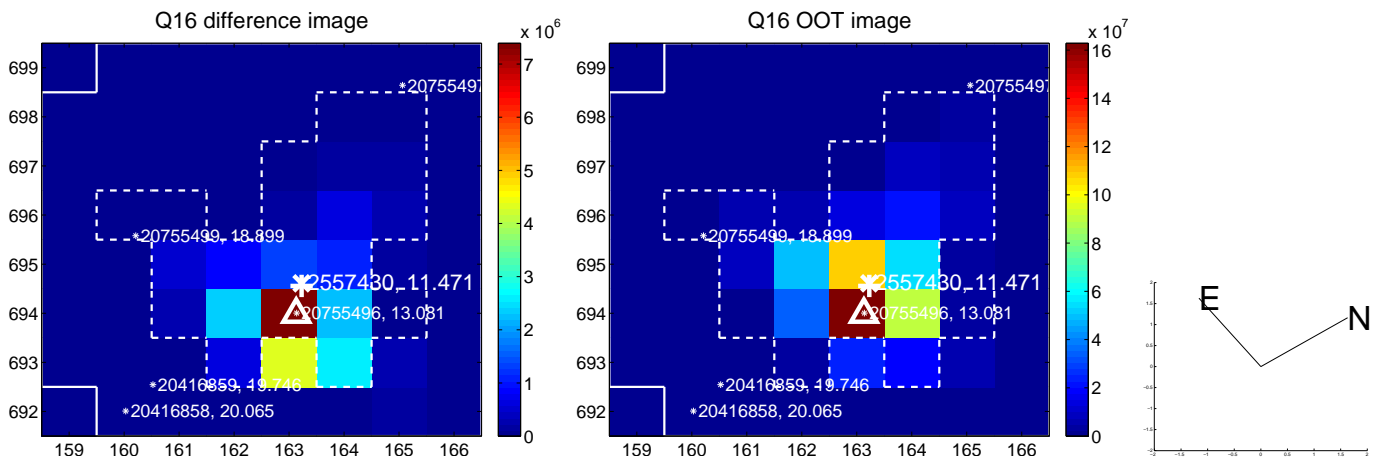
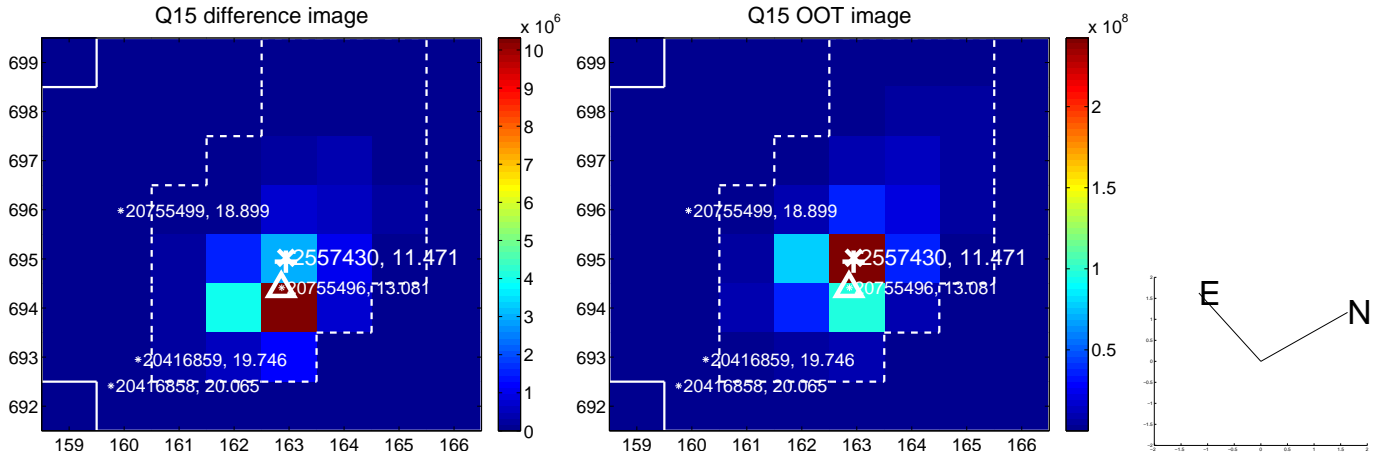
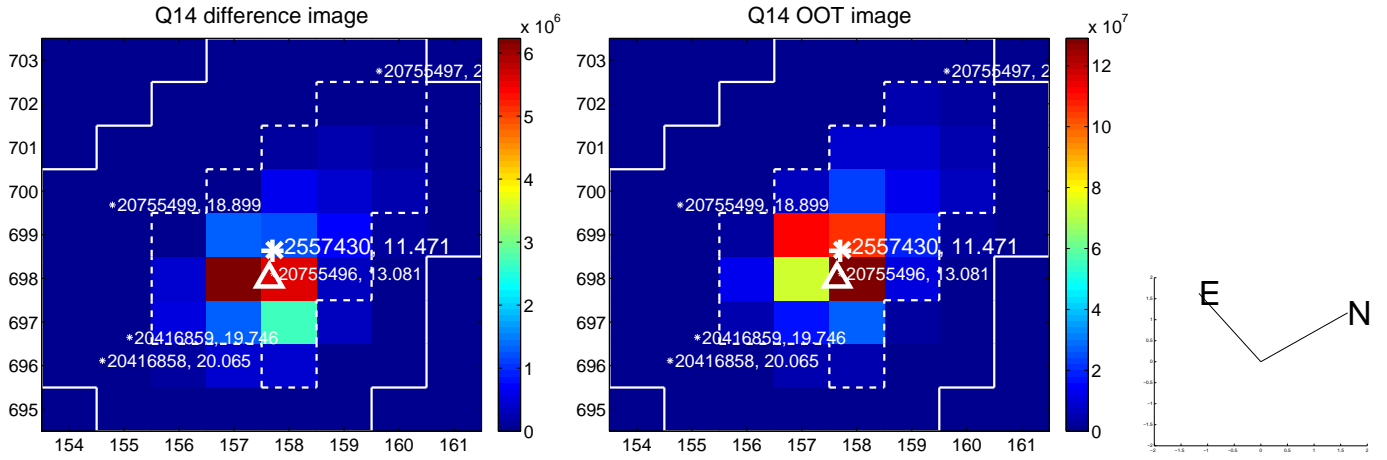
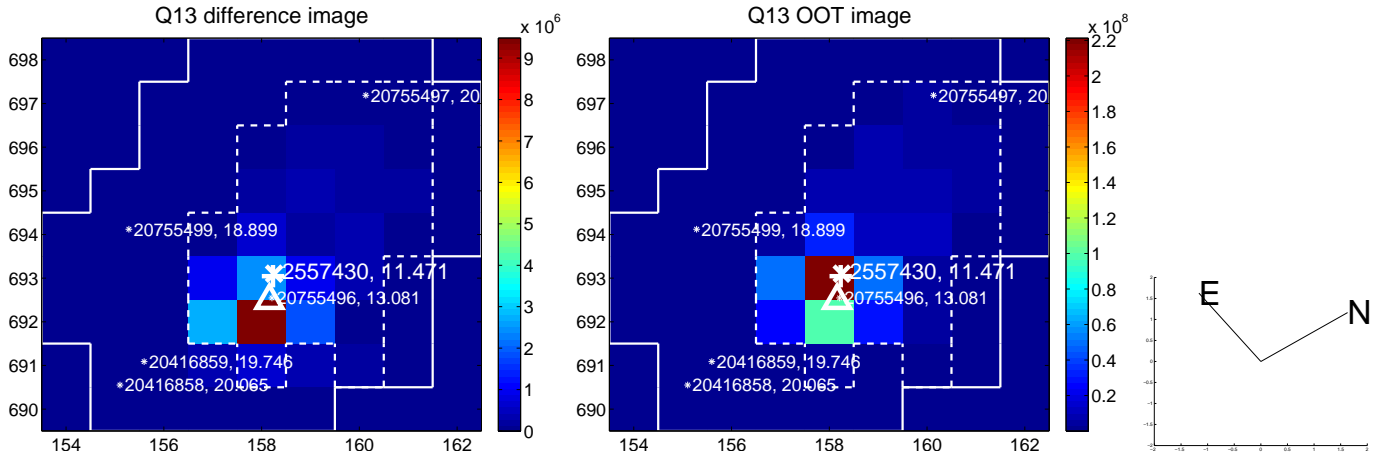
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



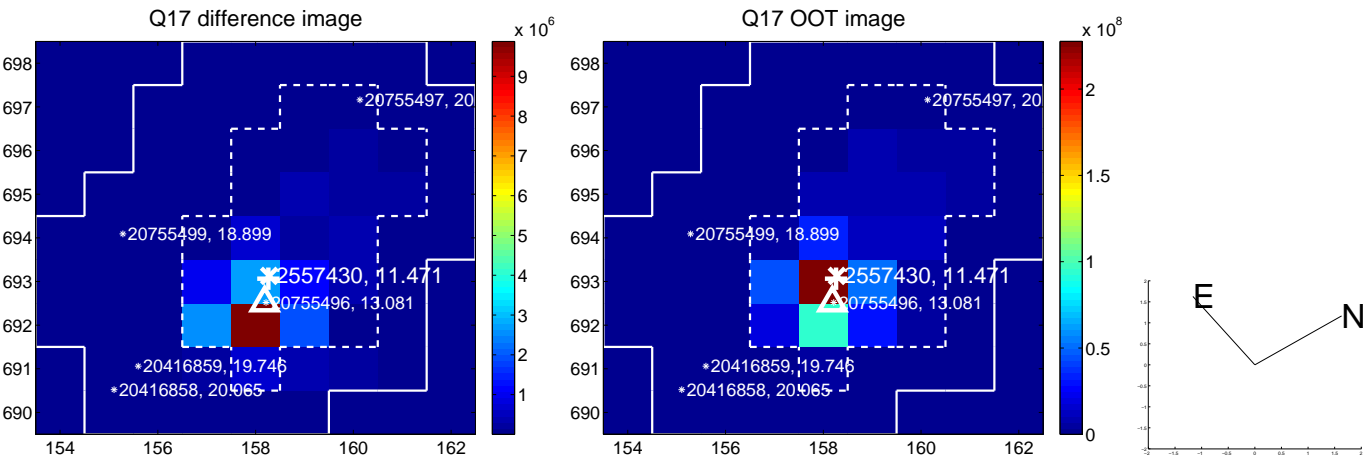
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



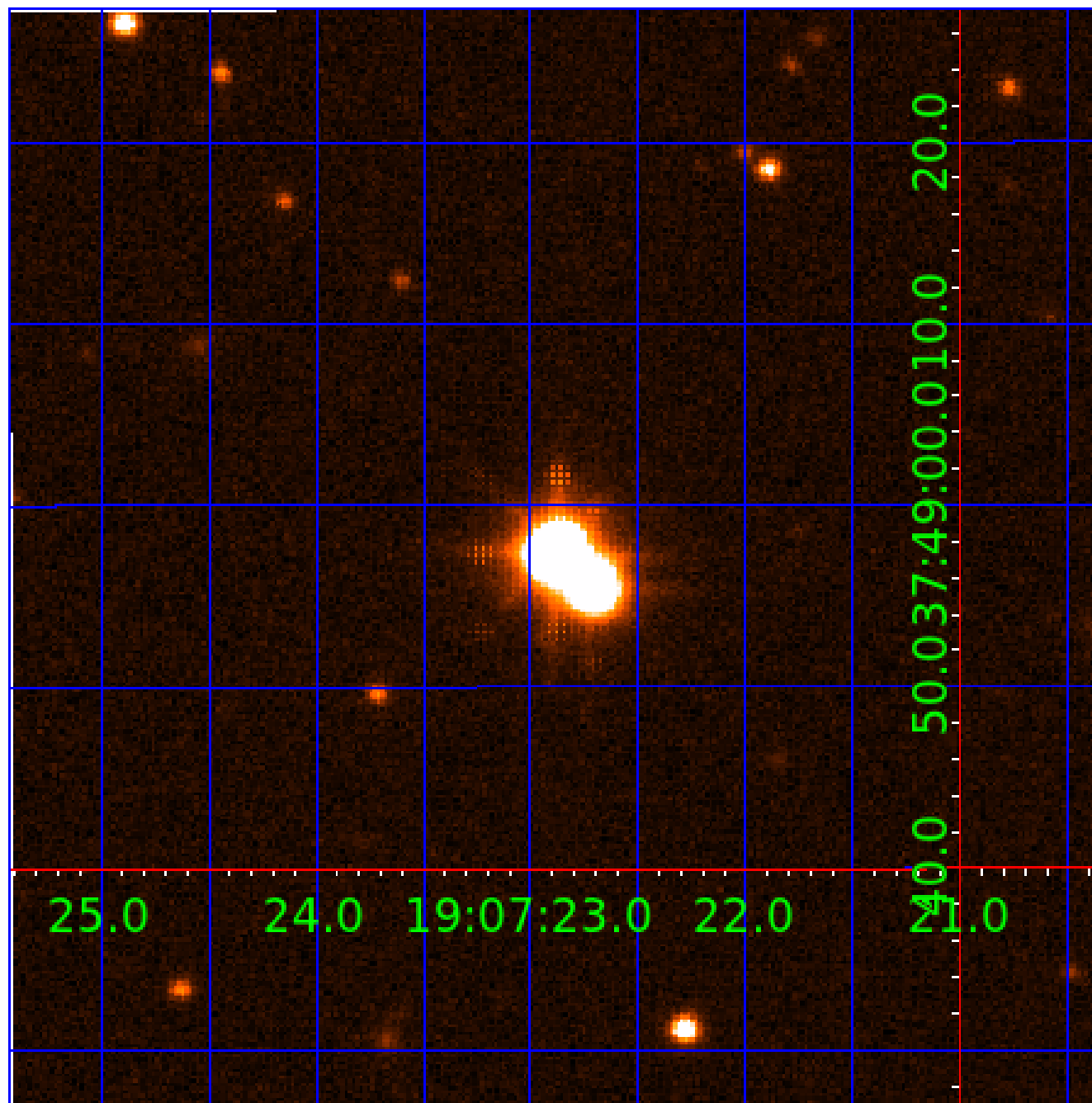
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 002557430

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})
002557430-01	OBS	6277.01	1.297745	131.840090	38390.4	2.718	3760.1	1902.0	1.52	6531	41.58	6484.61
002557430-02	OBS	No	1.297737	132.489119	8442.8	1.500	3496.0	-1.0	1.52	6531	14.16	6484.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002557430-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_SATURATED
002557430-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED

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 002557430-02

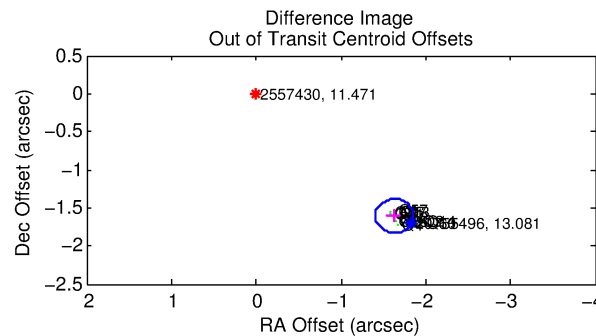
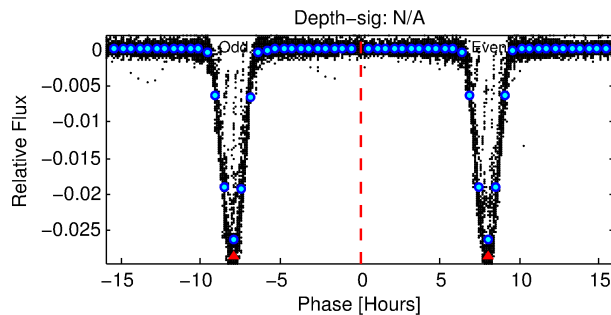
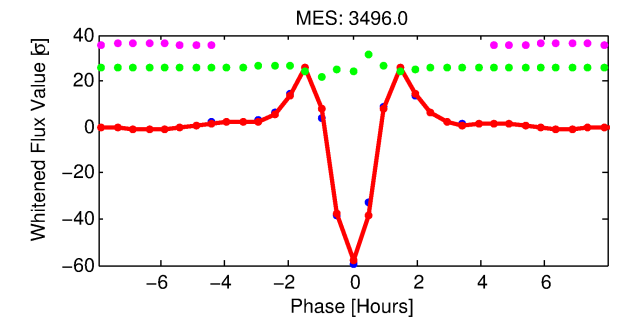
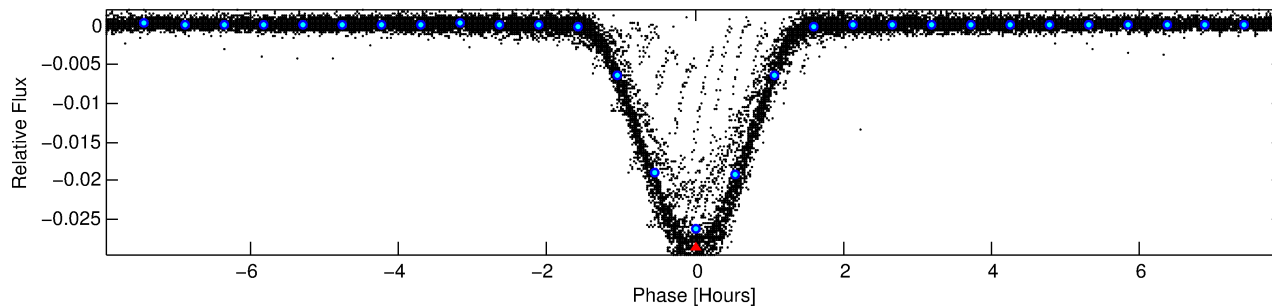
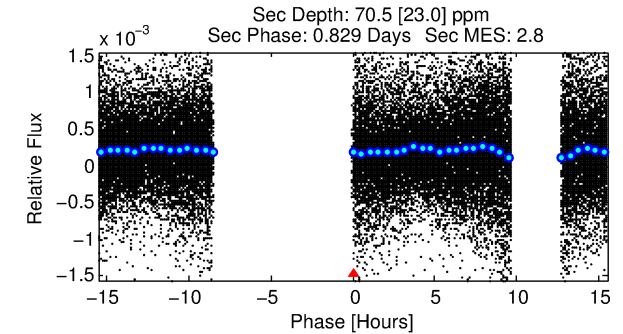
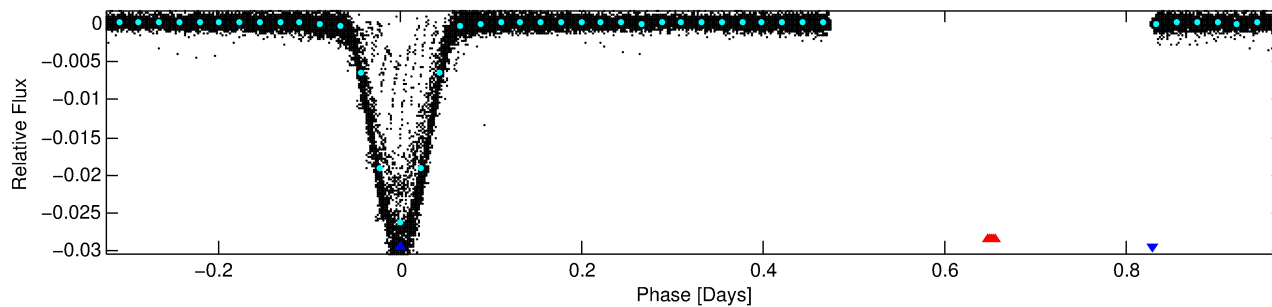
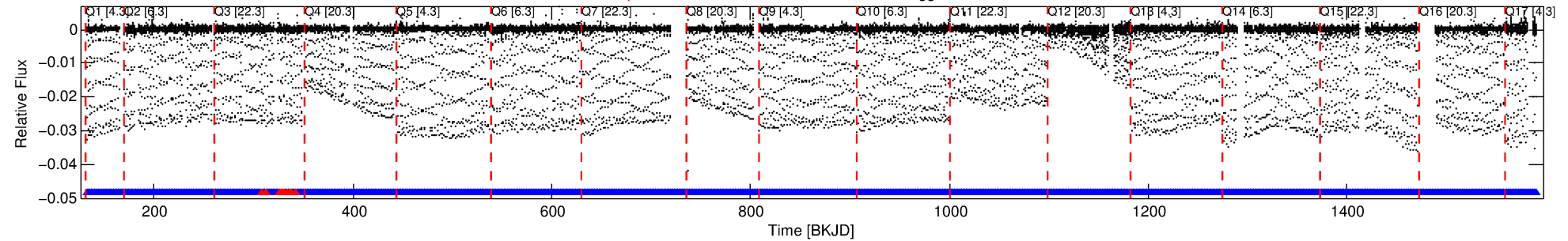
No Significant Match Found

DV One-Page Summary

KIC: 2557430 Candidate: 2 of 2 Period: 1.298 d

KOI: K06277 Corr: No Ephemeris Match

Kp: 11.47 R*: 1.52 Rs Teff: 6531.0 K Logg: 4.12 Fe/H: -0.340



TPS TCE Results:

Period = 1.29774 d
Epoch = 132.4891 BKJD

DV fit results are unavailable

DV Diagnostic Results:

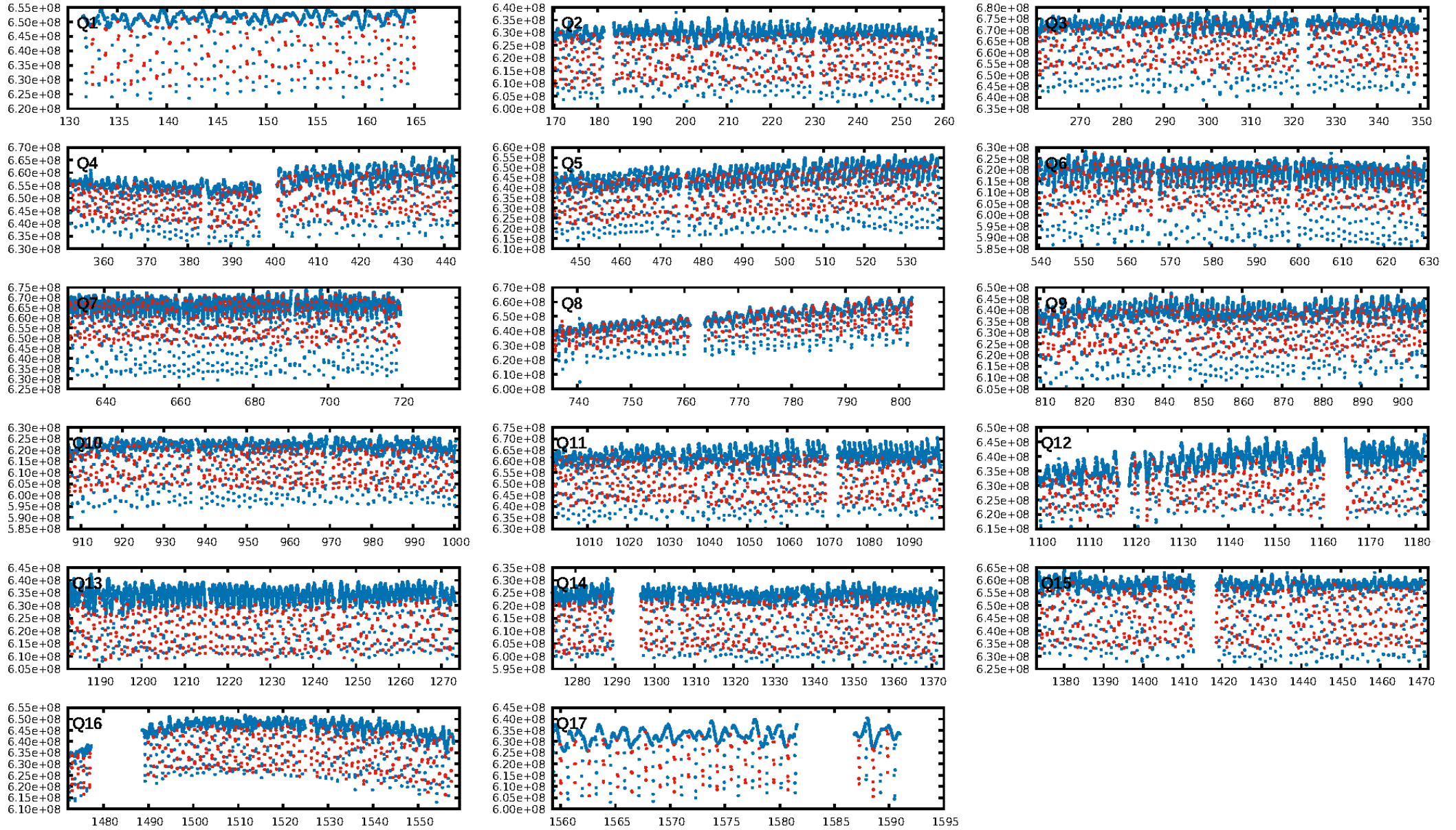
ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [979/989]
GhostDiagnostic-chr: 0.9384

Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 2.287 arcsec [30.76σ]
KicOffset-rm: 2.563 arcsec [37.57σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

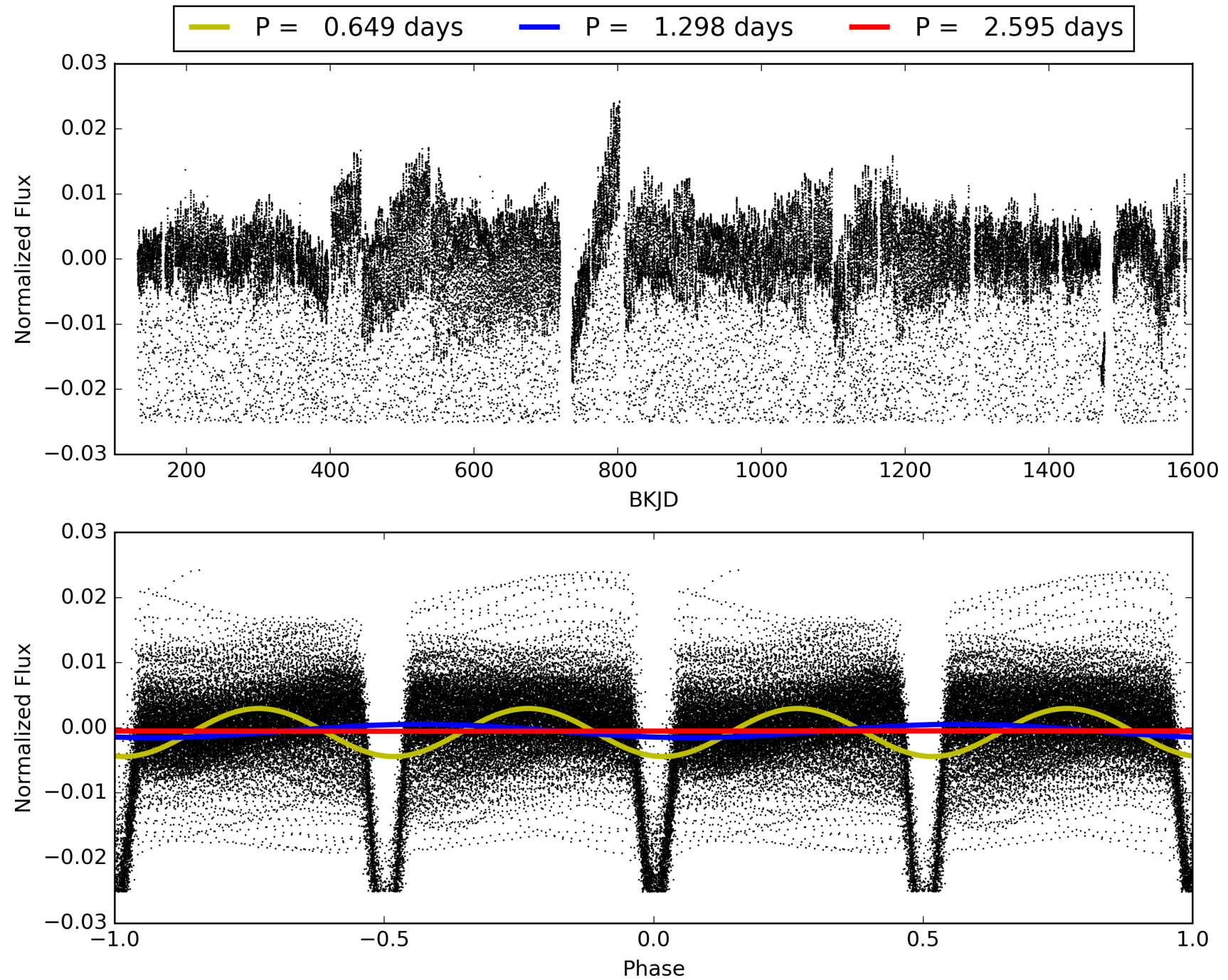
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 03:32:50 Z

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

TCE 002557430-02, PDC Light Curves

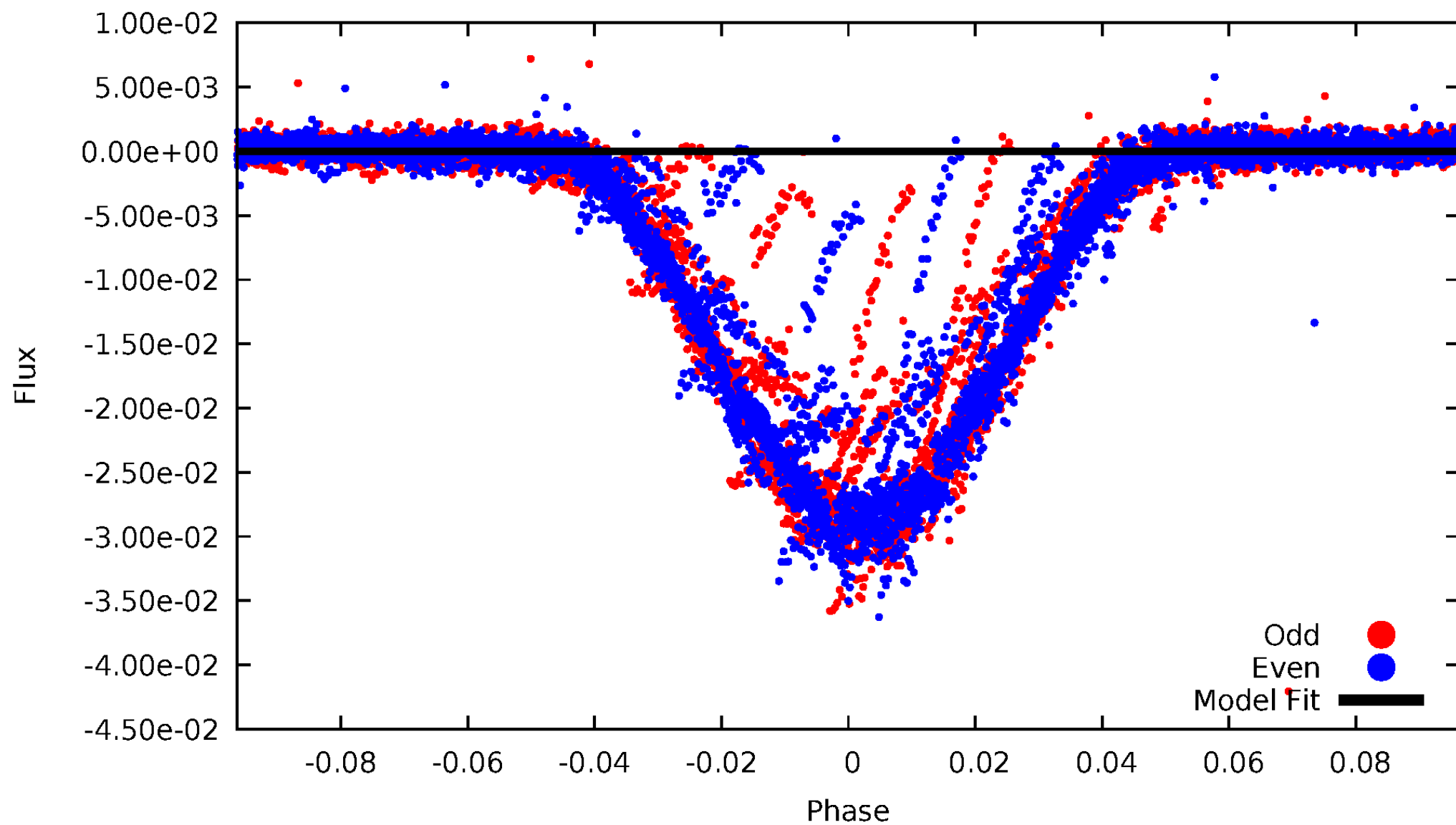


TCE 002557430-02



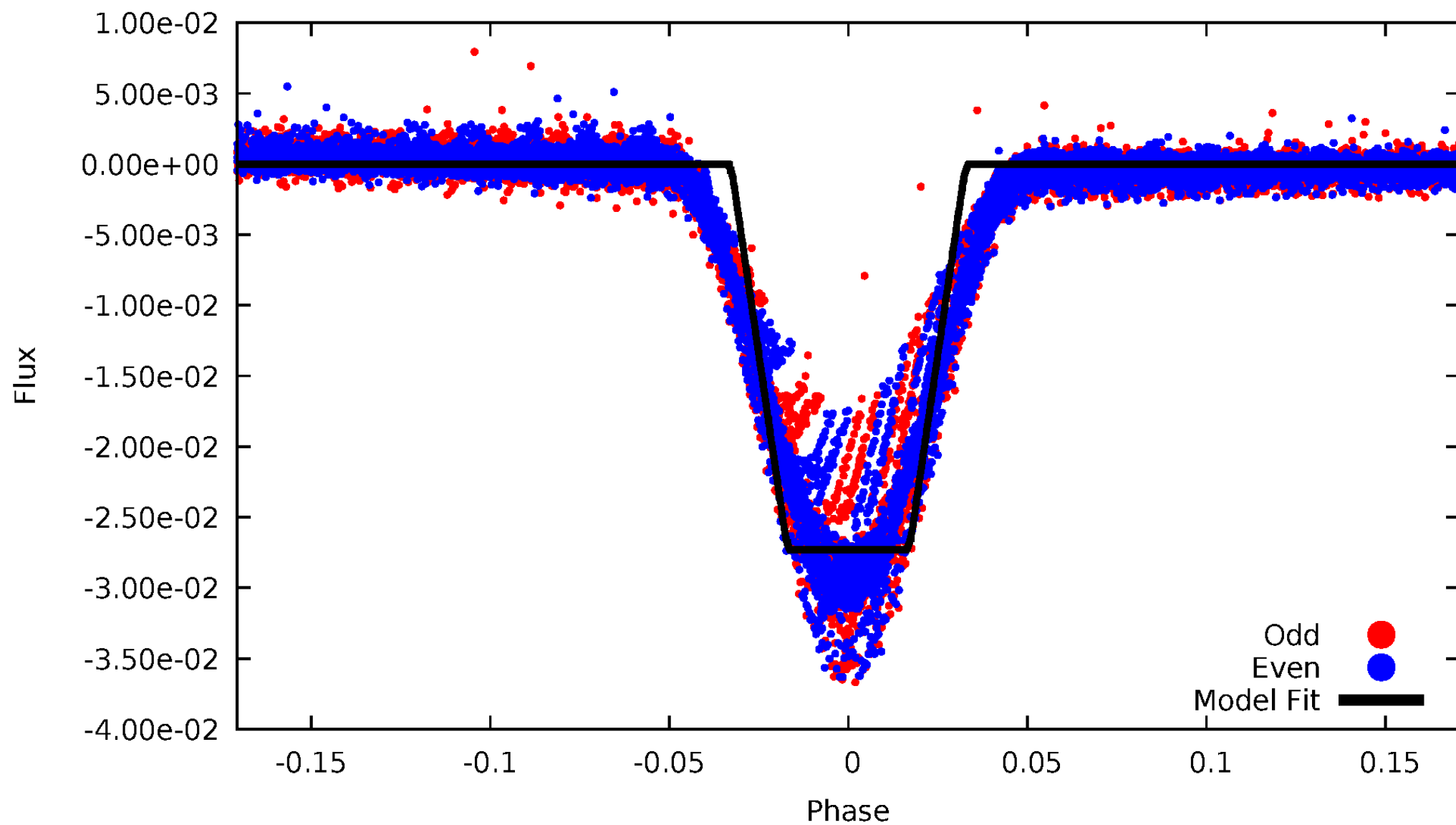
DV Odd/Even

TCE 002557430-02



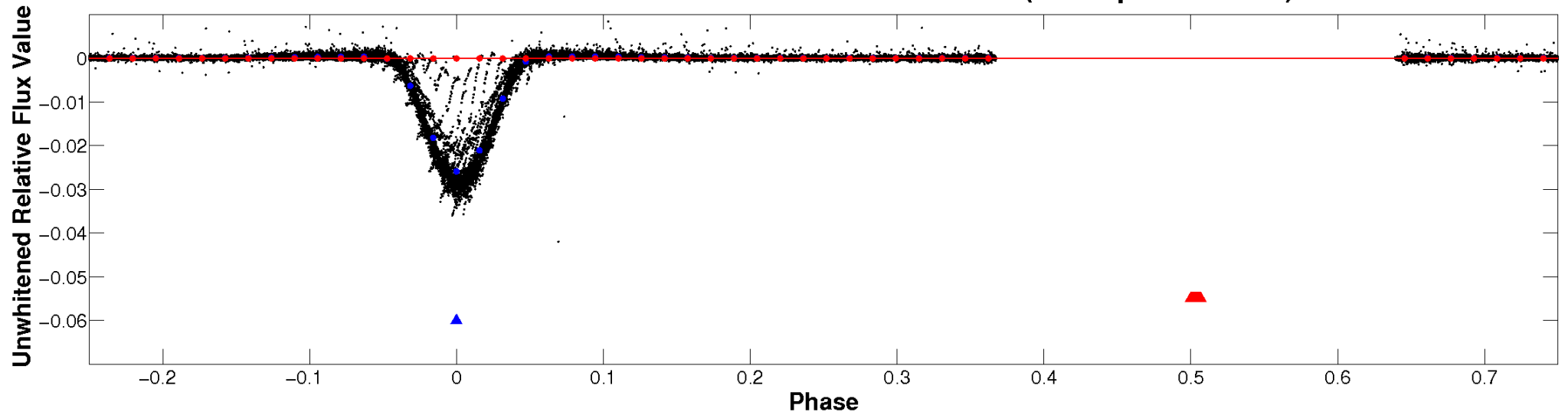
ALT Odd/Even

TCE 002557430-02



Non-Whitened Vs. Whitened Light Curve

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

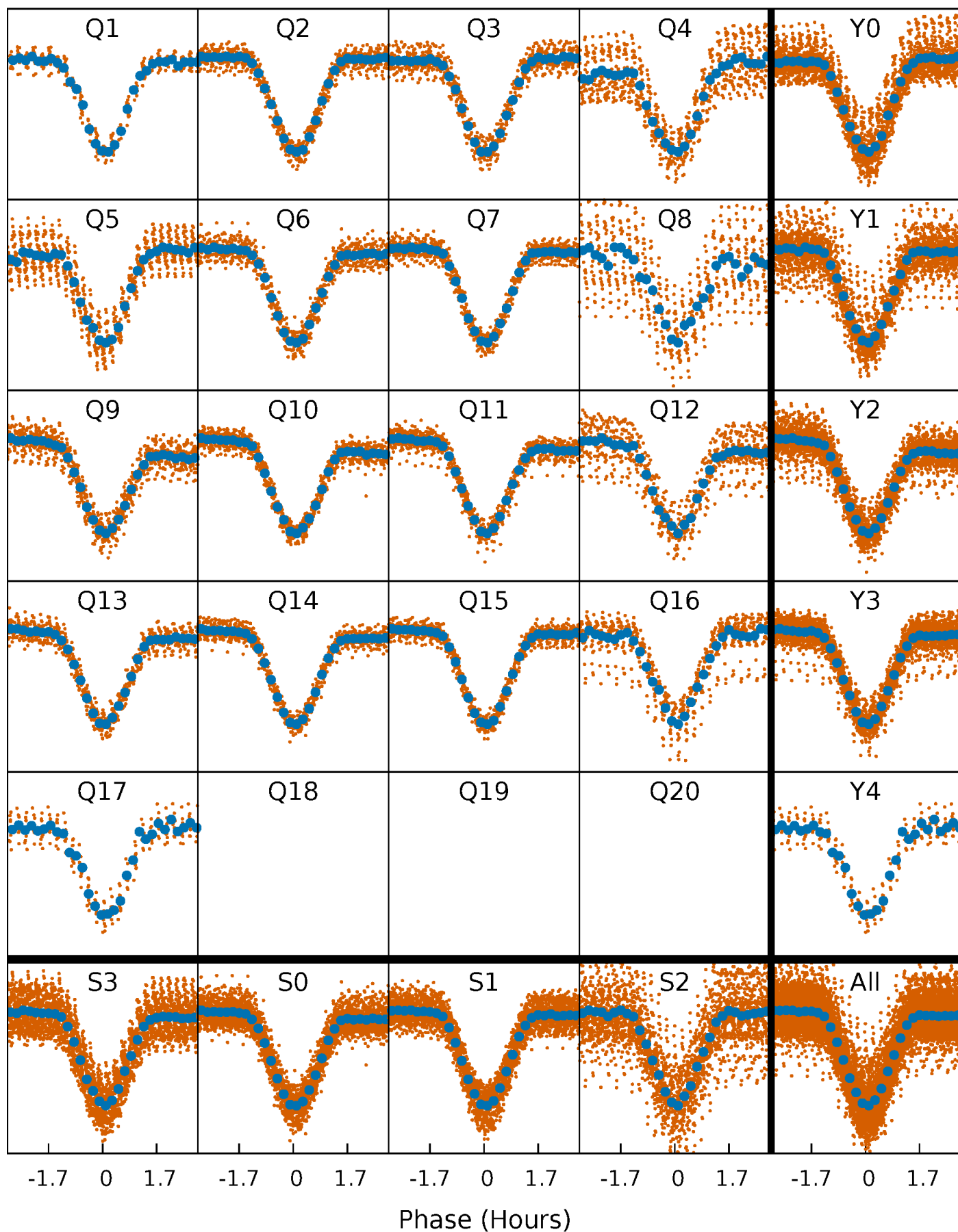


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



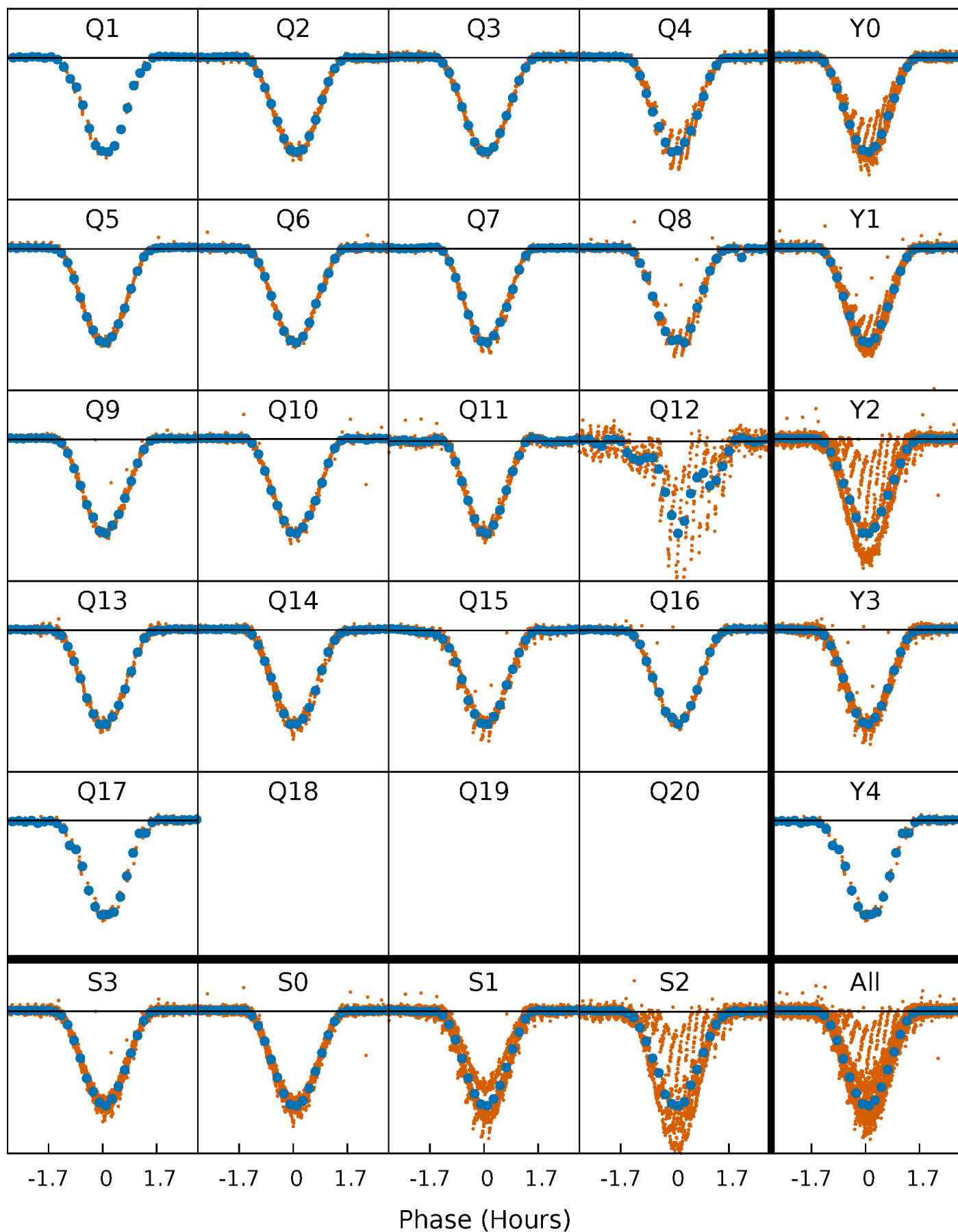
PDC Quarter-Phased Transit Curves

TCE 002557430-02 P= 1.297737 Days $T_0=132.489119$ (BKJD)



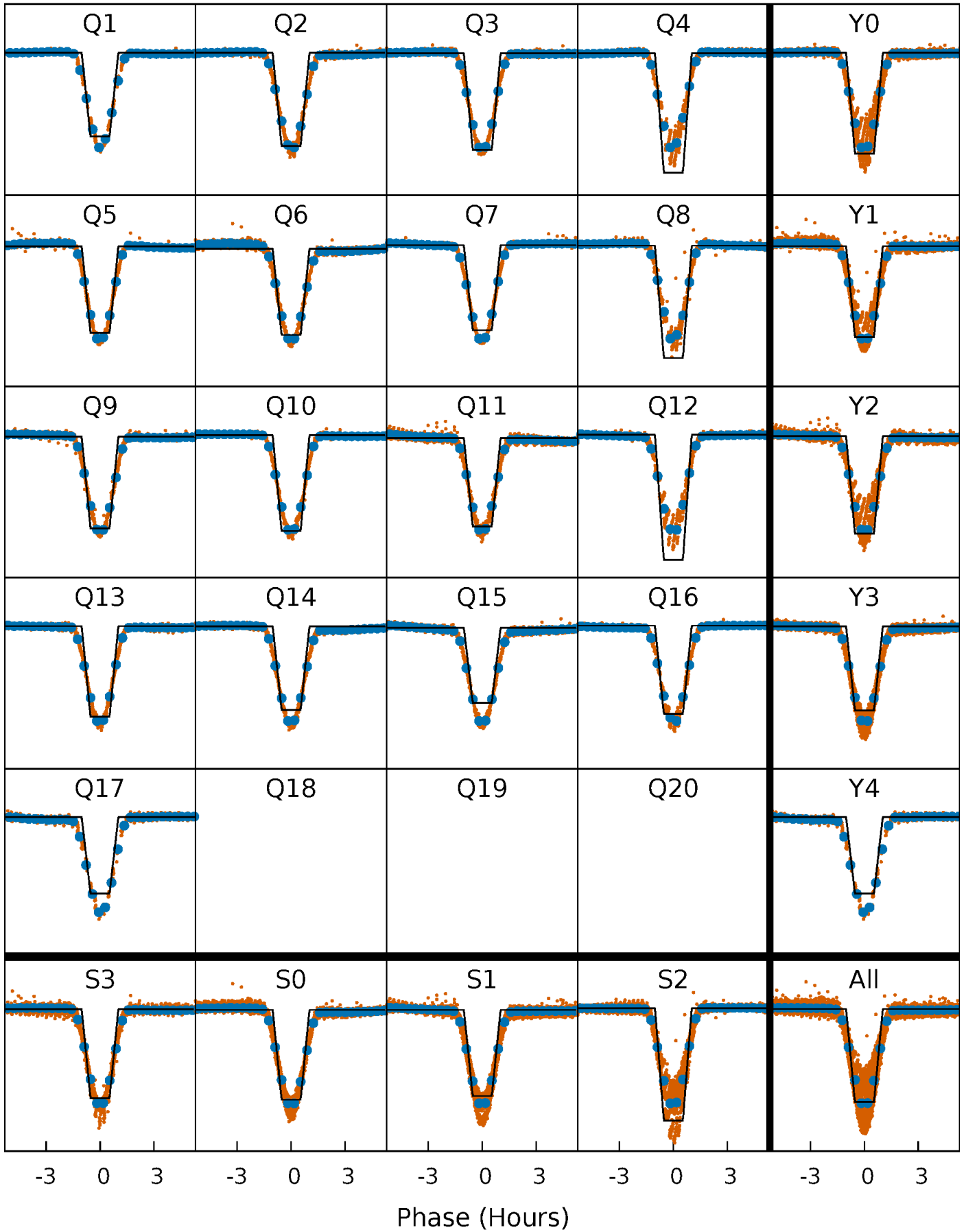
DV Quarter-Phased Transit Curves

TCE 002557430-02 P= 1.297737 Days $T_0=132.489119$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

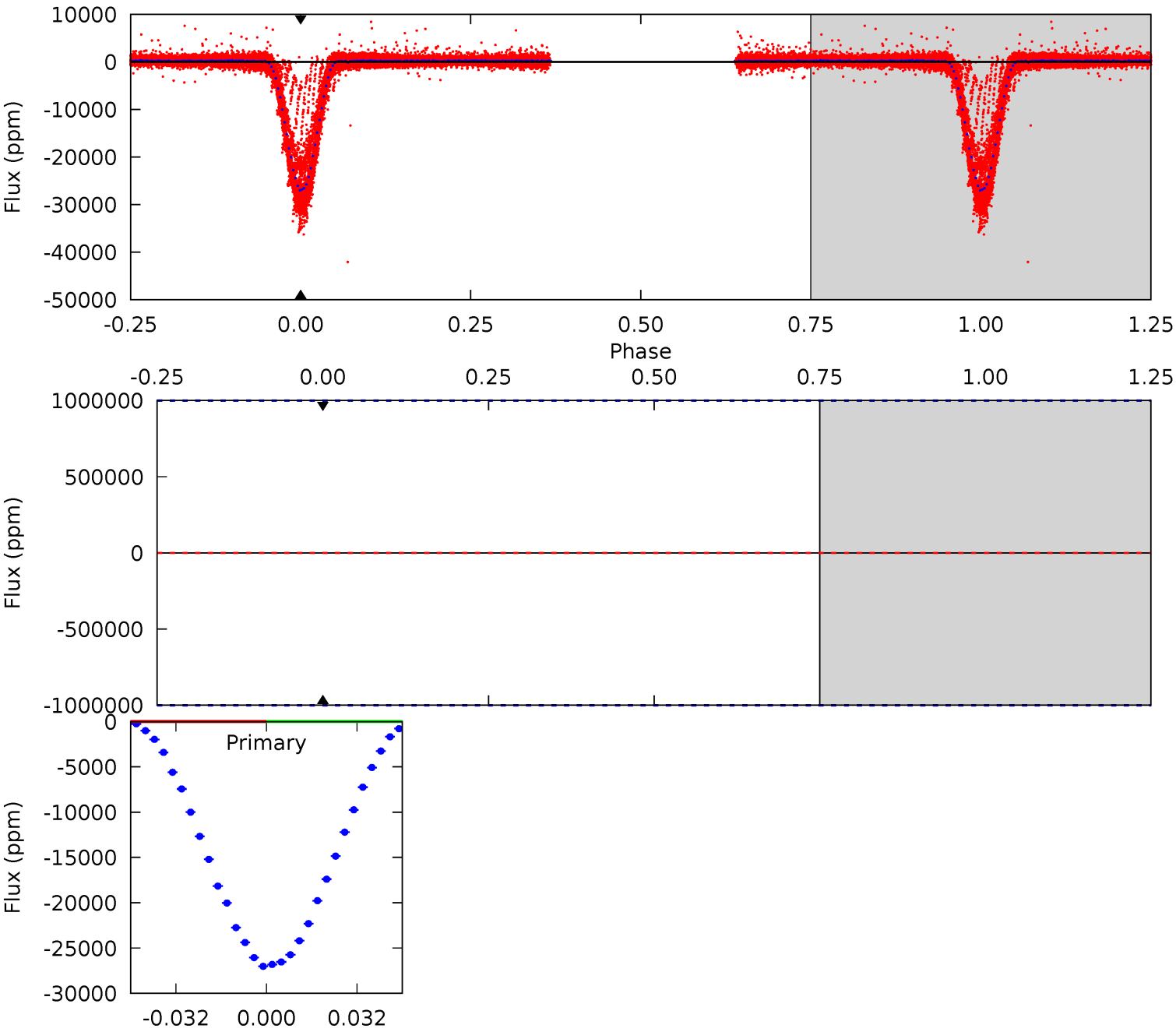
TCE 002557430-02 $P = 1.297737$ Days $T_0 = 132.491576$ (BKJD)



DV Model-Shift Uniqueness Test

002557430-02, P = 1.297737 Days, E = 131.191382 Days

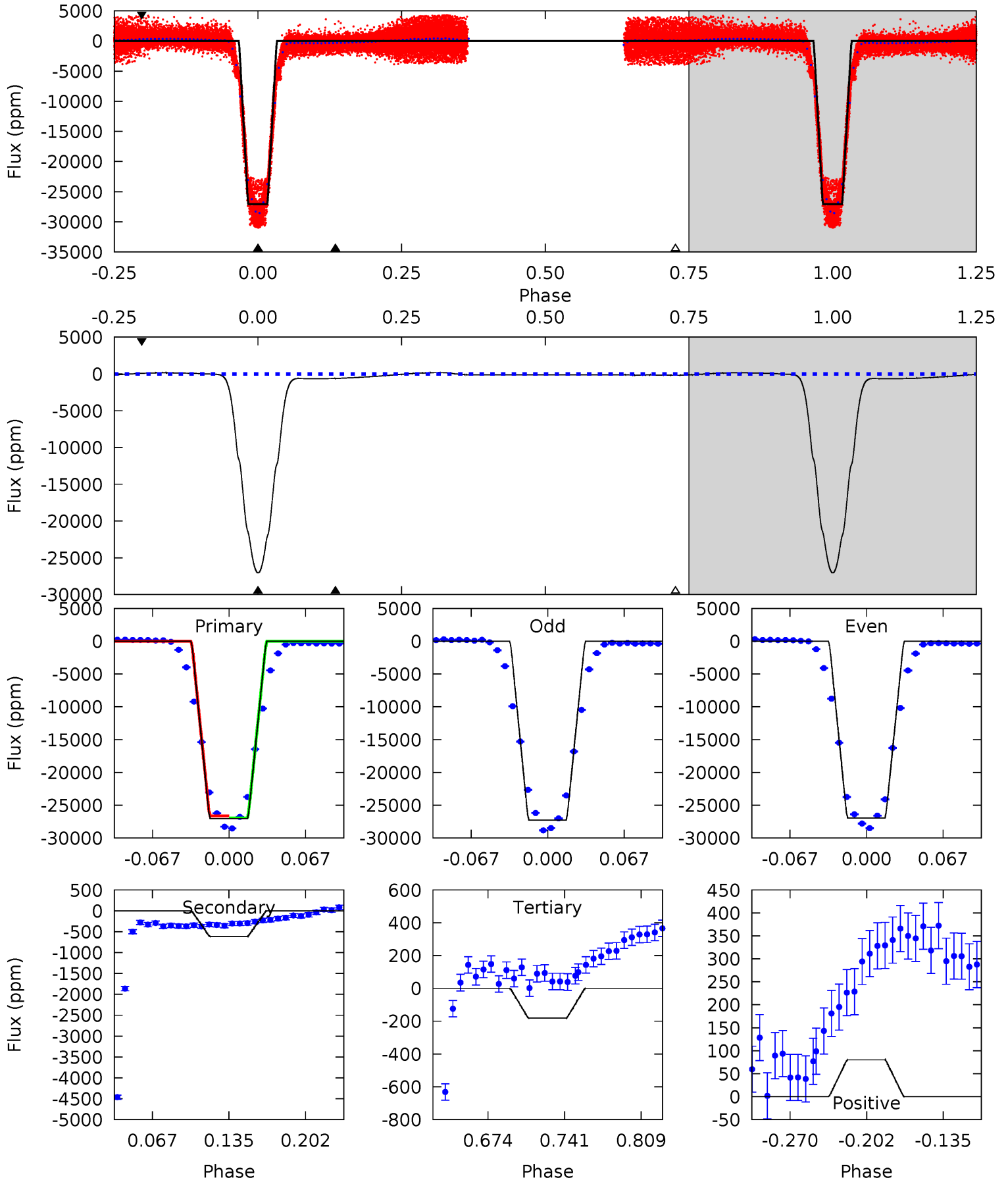
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

002557430-02, P = 1.297737 Days, E = 131.193839 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1230	27.9	8.24	3.64	4.65	1.83	6.17	1222	1227	19.6	24.2	7.22	0.99	0.01	8.55



Stellar Parameters For KIC 002557430

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6531^{+146}_{-178}	$4.120^{+0.246}_{-0.164}$	$-0.340^{+0.250}_{-0.300}$	$1.524^{+0.421}_{-0.421}$	$1.117^{+0.193}_{-0.145}$	$0.445^{+0.609}_{-0.191}$
	+2%/-3%	+6%/-4%	+74%/-88%	+28%/-28%	+17%/-13%	+137%/-43%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 002557430-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$17.60^{+14.81}_{-11.28}$	3171^{+243}_{-236}	-3329^{+22241}_{-11363}	$-0.076^{+195.779}_{-122.716}$
Alt.	-613 ± 22	$26.67^{+17.74}_{-13.33}$	3147^{+226}_{-237}	-2211^{+5840}_{-809}	$0.282^{+0.810}_{-0.179}$

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

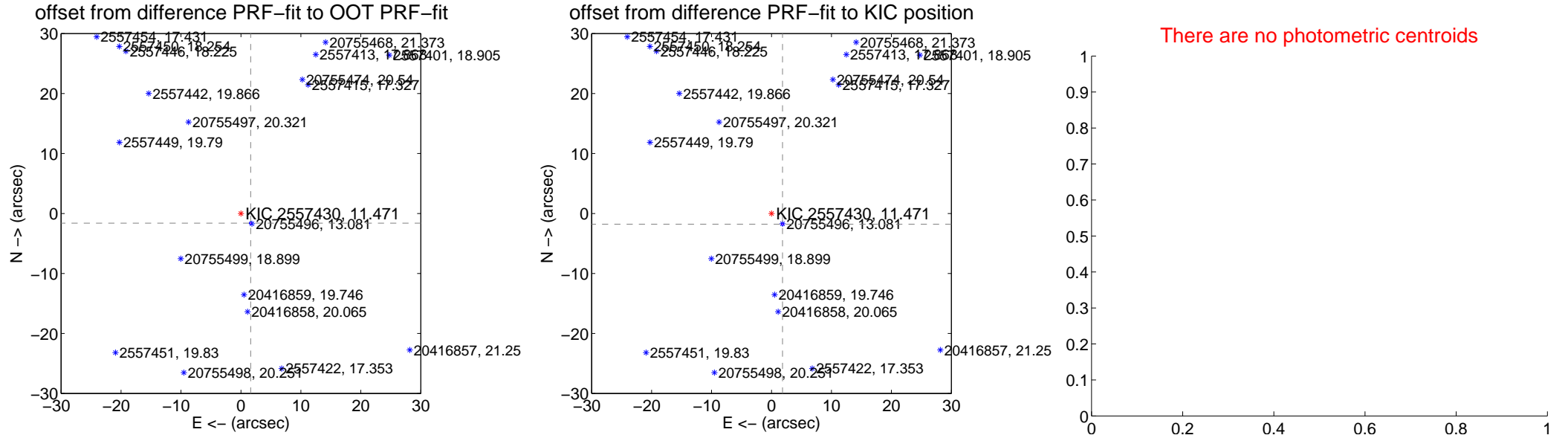
DV Centroid Data

Supplemental centroid analysis for 002557430-02. **Kepler magnitude: 11.47.** Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

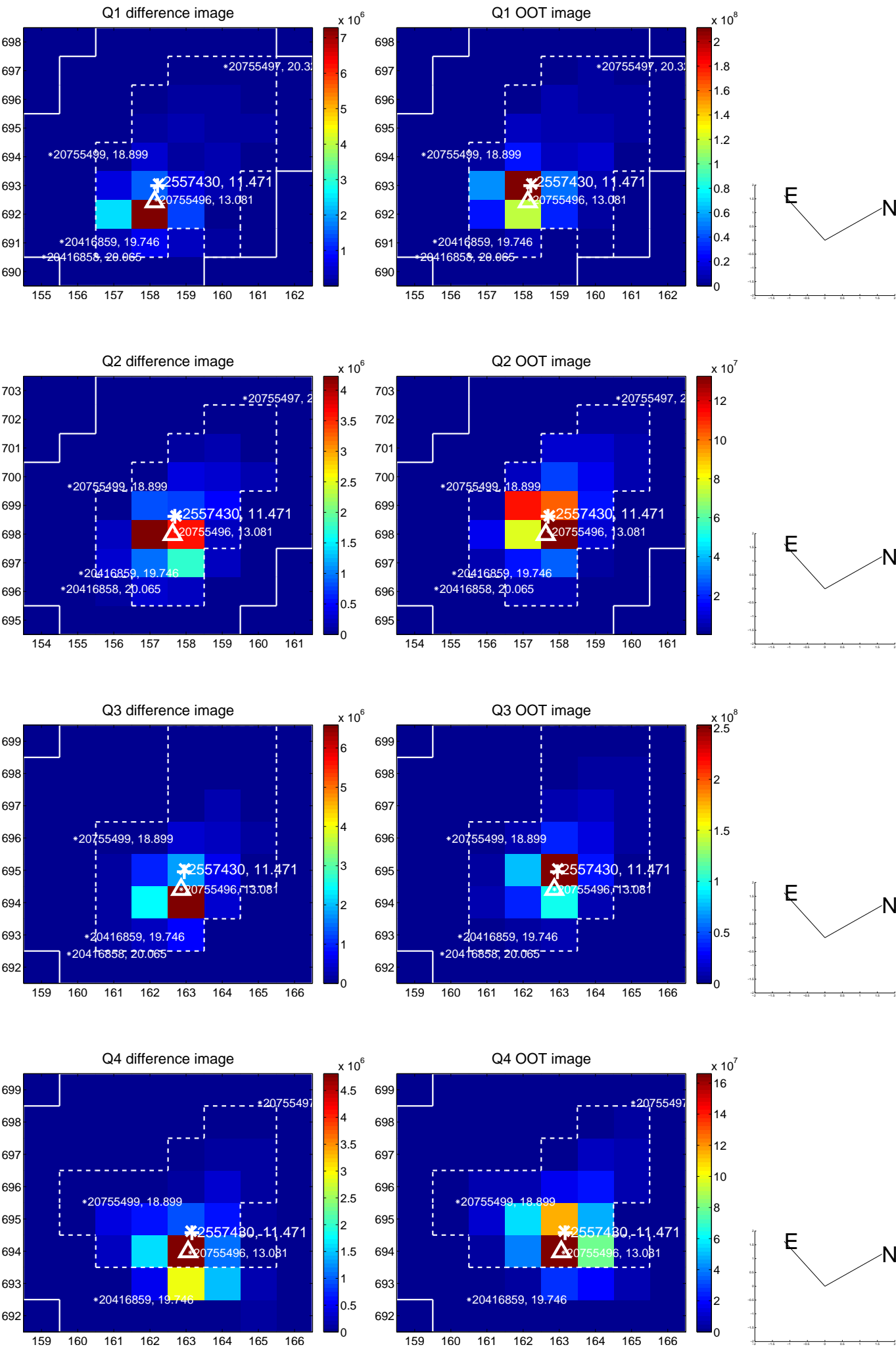
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.287 \pm 0.074	30.76	-1.627 \pm 0.075	-1.607 \pm 0.068
PRF-fit source offset from KIC position	2.563 \pm 0.068	37.57	-1.841 \pm 0.068	-1.783 \pm 0.067
photometric centroid source offset	—	—	—	—

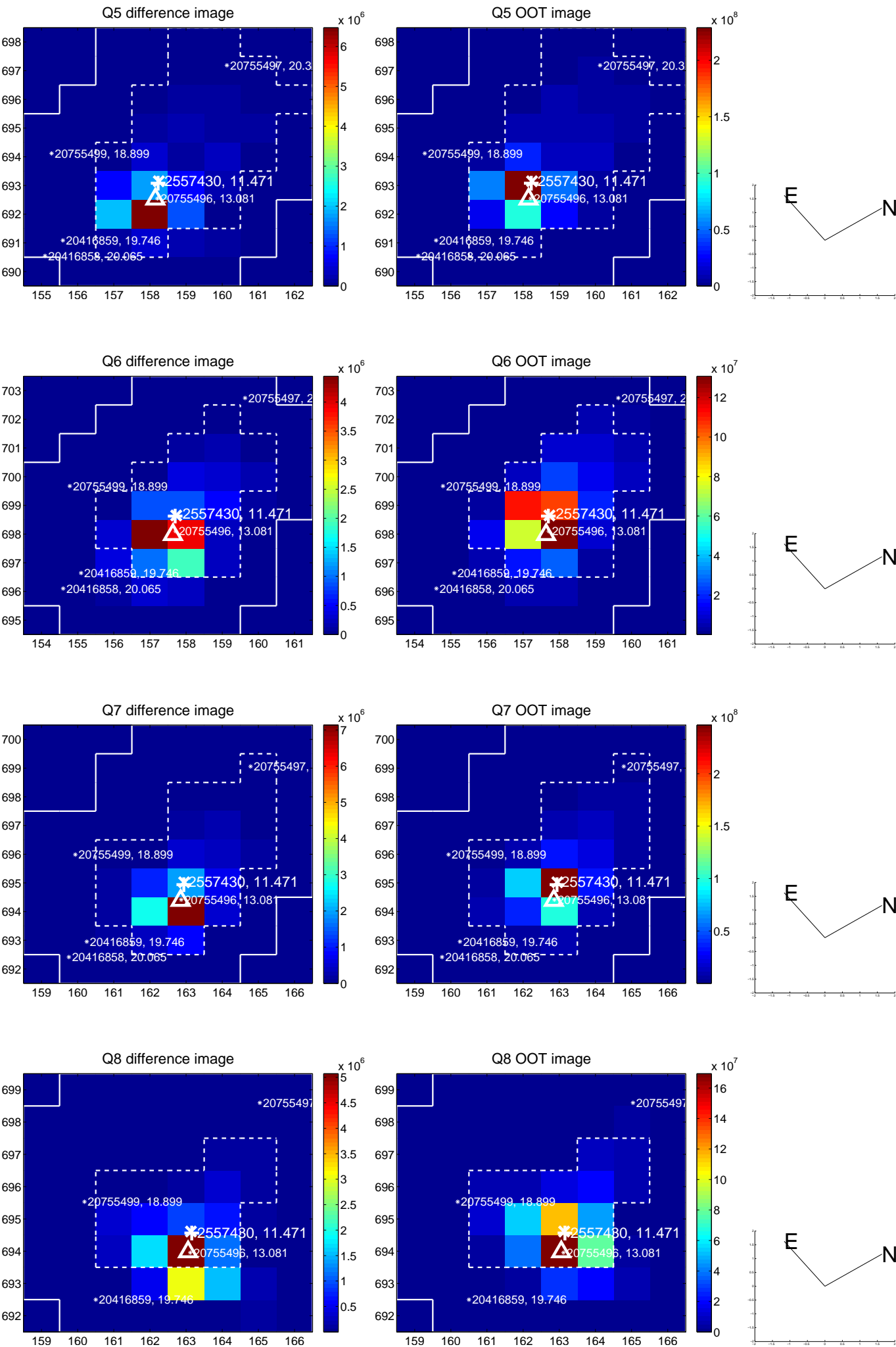


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

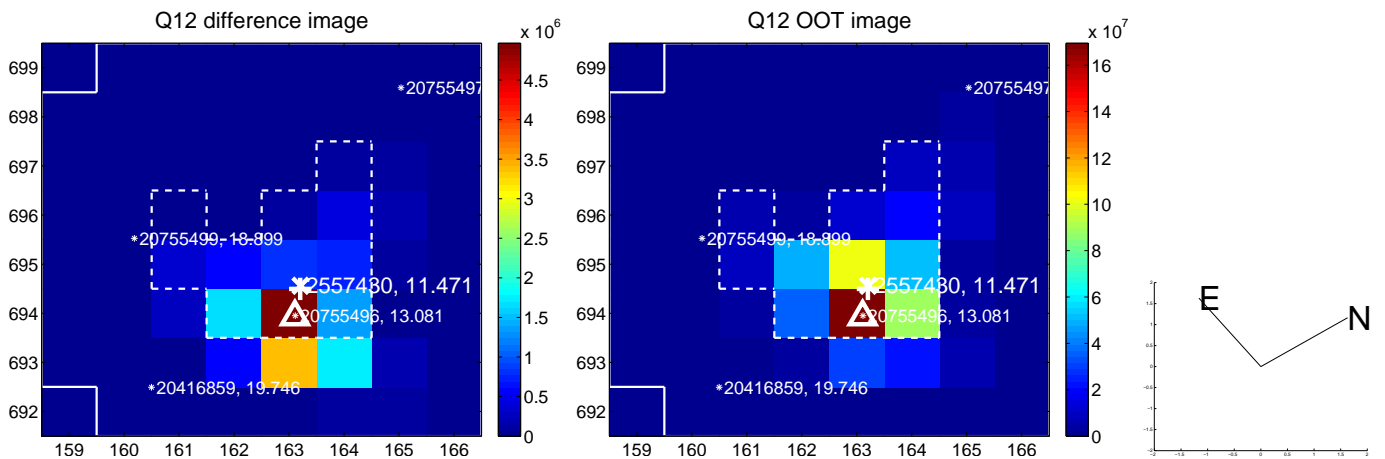
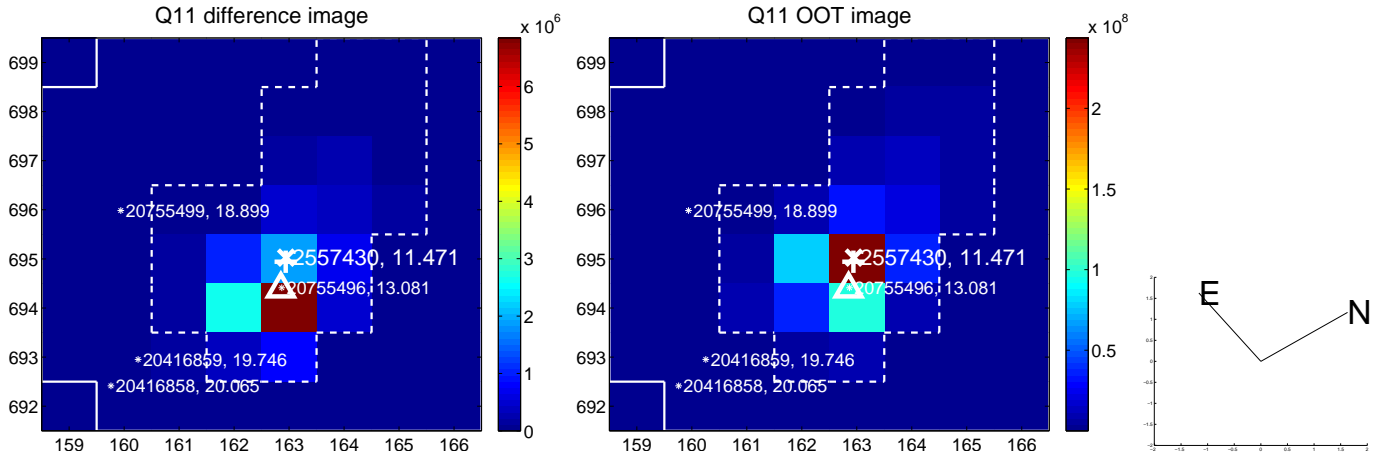
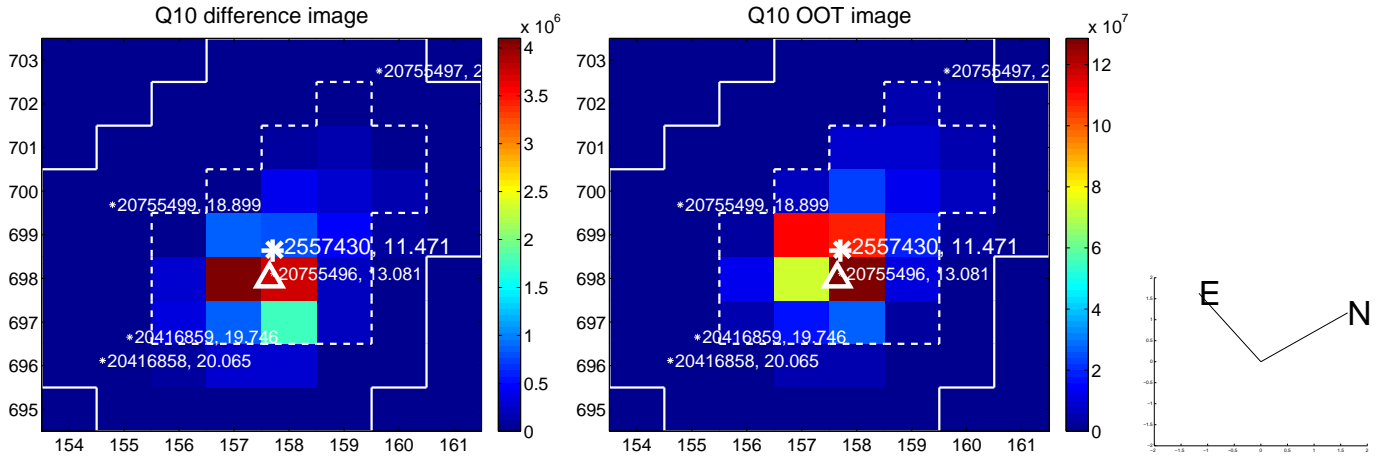
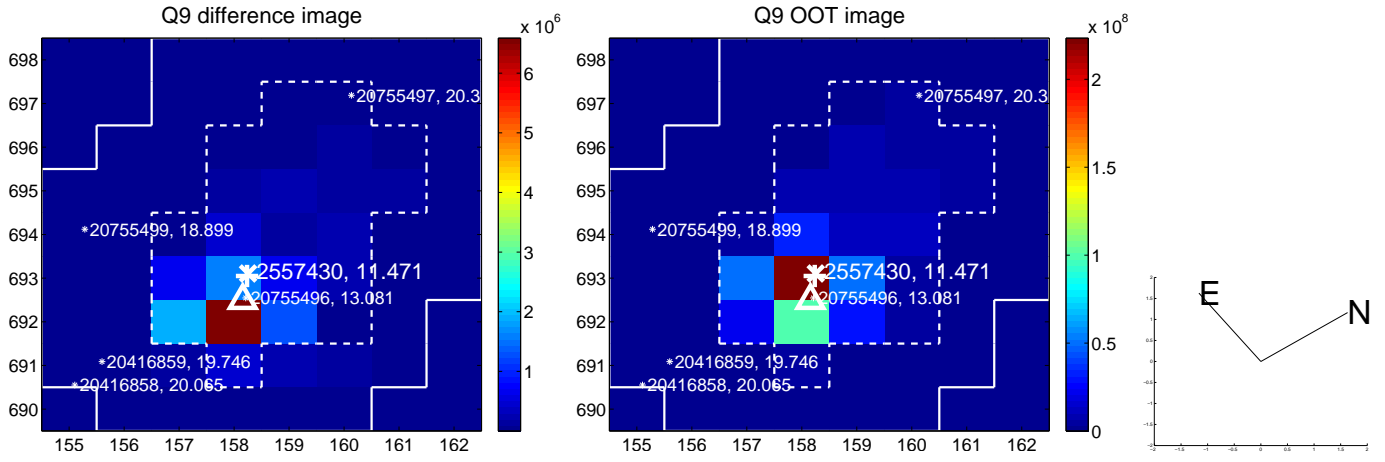
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



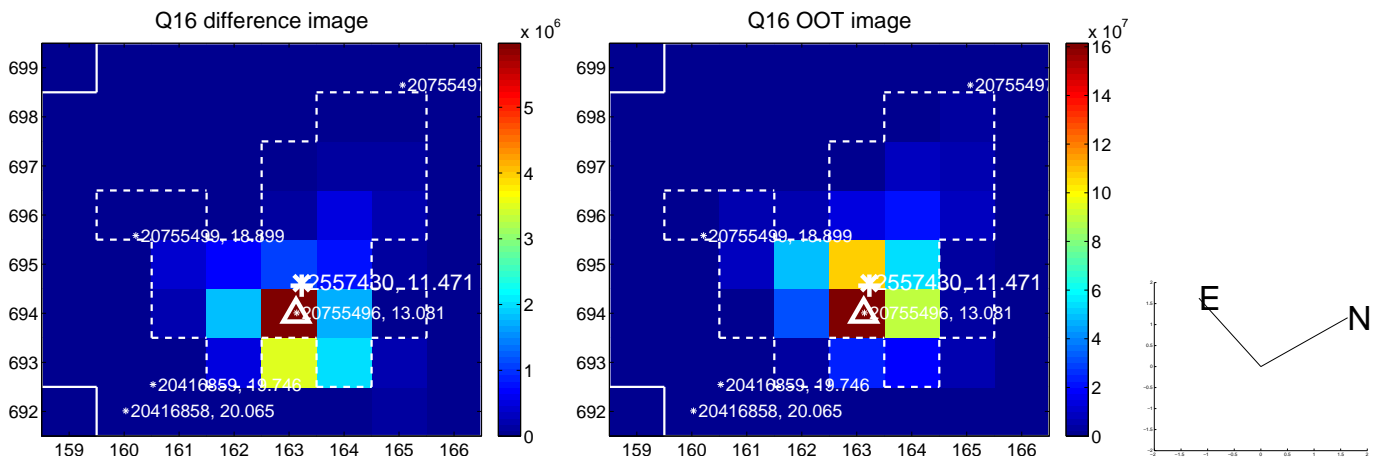
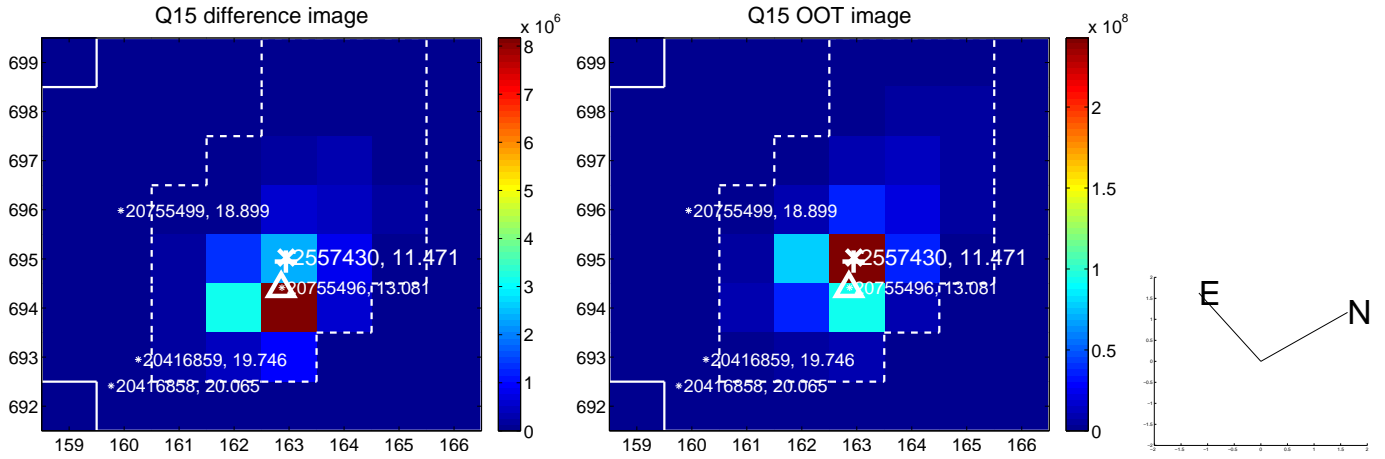
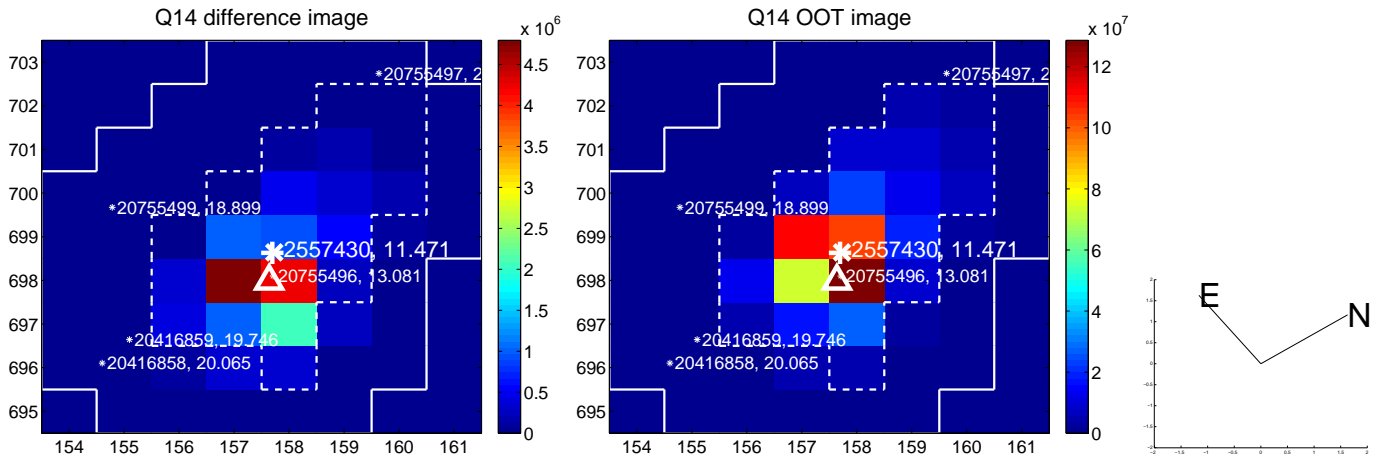
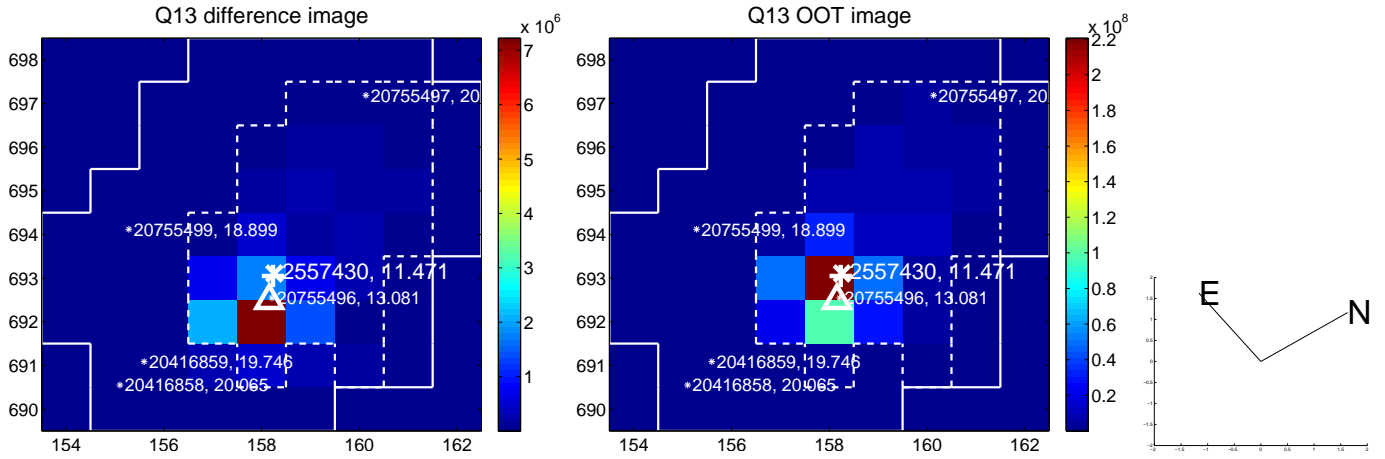
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



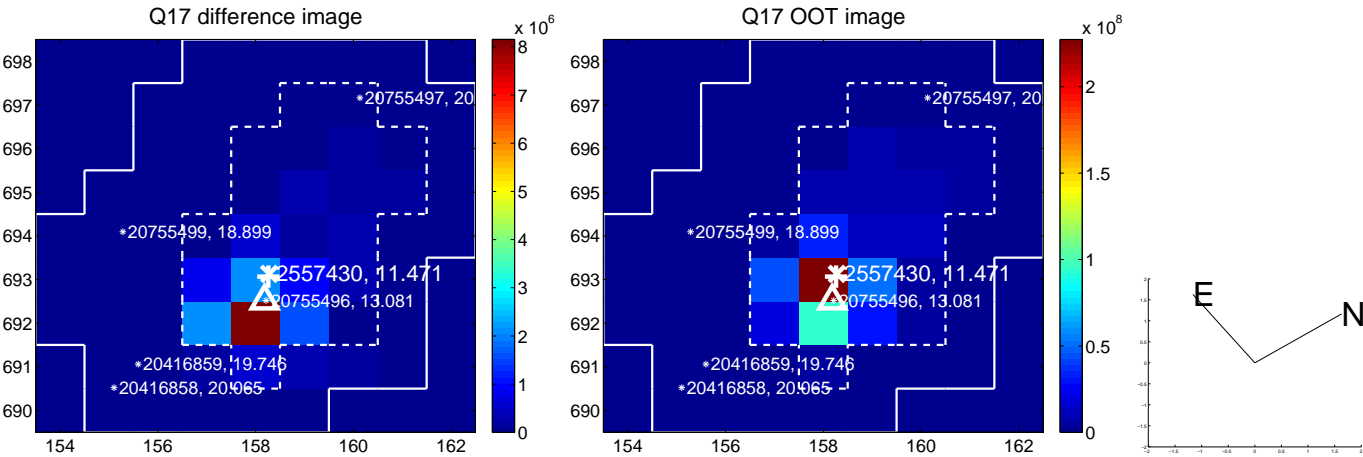
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

