

KIC 002707479

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})
002707479-01	OBS	No	1.425133	132.585070	396.6	6.501	11.8	12.5	1.78	7504	4.49	10533.04
002707479-02	OBS	No	1.425158	132.230786	516.5	13.171	13.1	16.3	1.78	7504	4.64	10532.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002707479-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
002707479-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

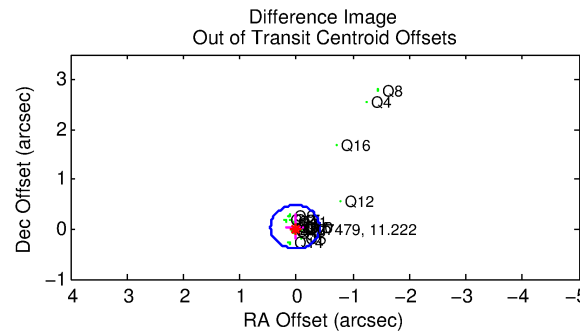
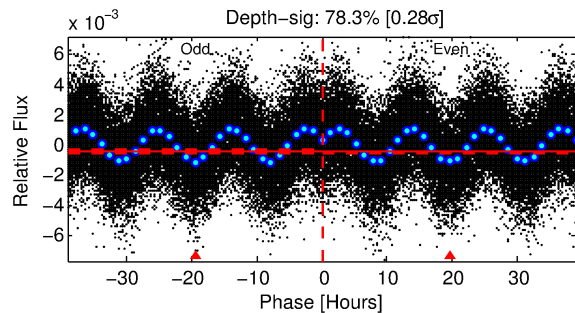
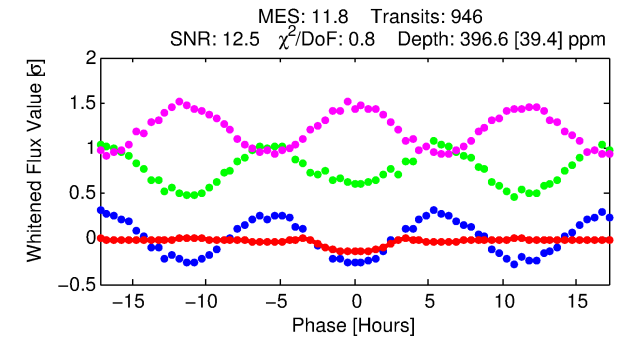
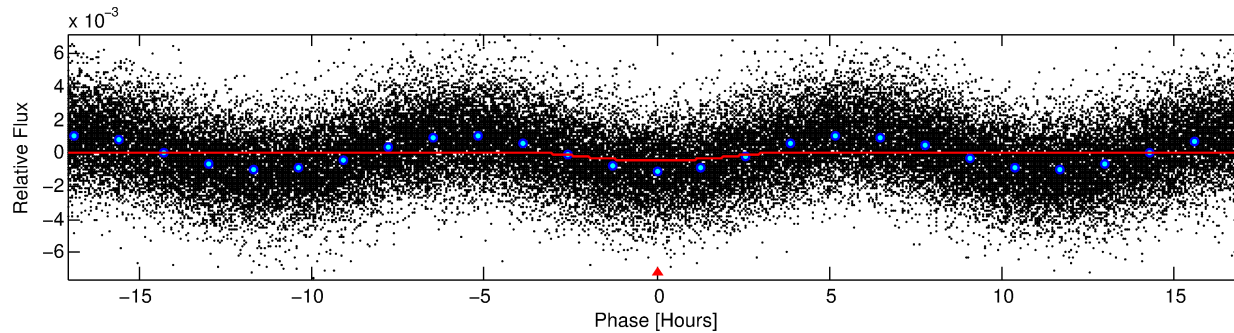
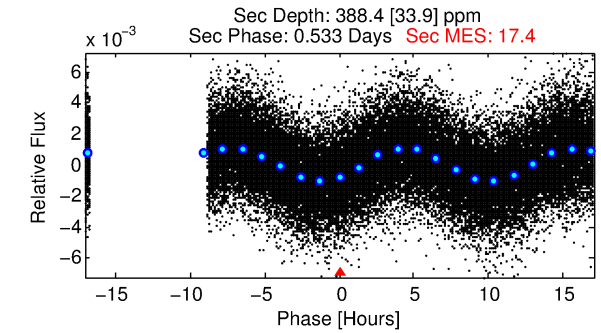
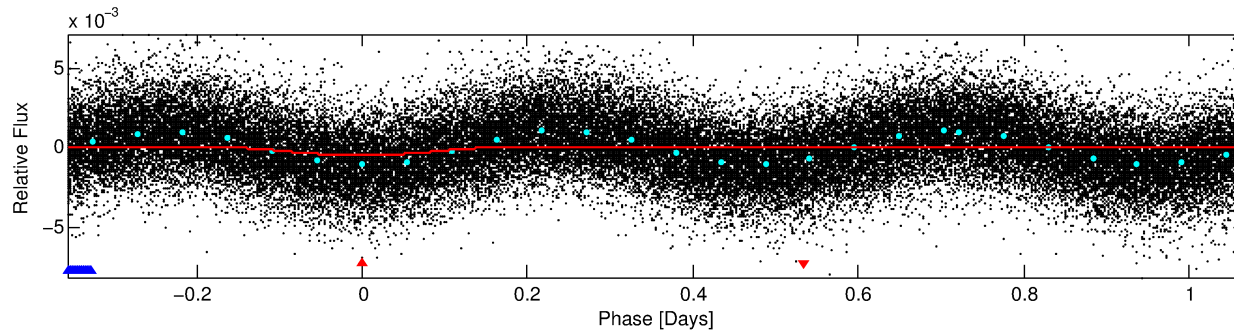
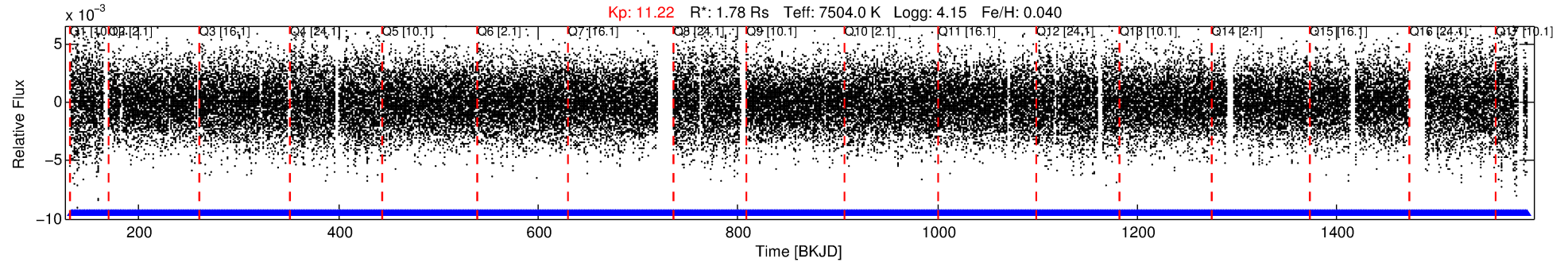
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002707479-01

No Significant Match Found

DV One-Page Summary

KIC: 2707479 Candidate: 1 of 2 Period: 1.425 d



DV Fit Results:

Period = 1.42513 [0.00002] d
Epoch = 132.5851 [0.0073] BKJD
Rp/R* = 0.0232 [0.0014]
a/R* = 1.13 [0.03]
b = 0.97 [0.01]
Seff = 10533.04 [4243.13]
Teq = 2583 [260] K
Rp = 4.49 [1.45] Re
a = 0.0292 [0.0076] AU
Ag = 9.01 [3.56] [2.25σ]
Teffp = 6920 [388] K [9.29σ]

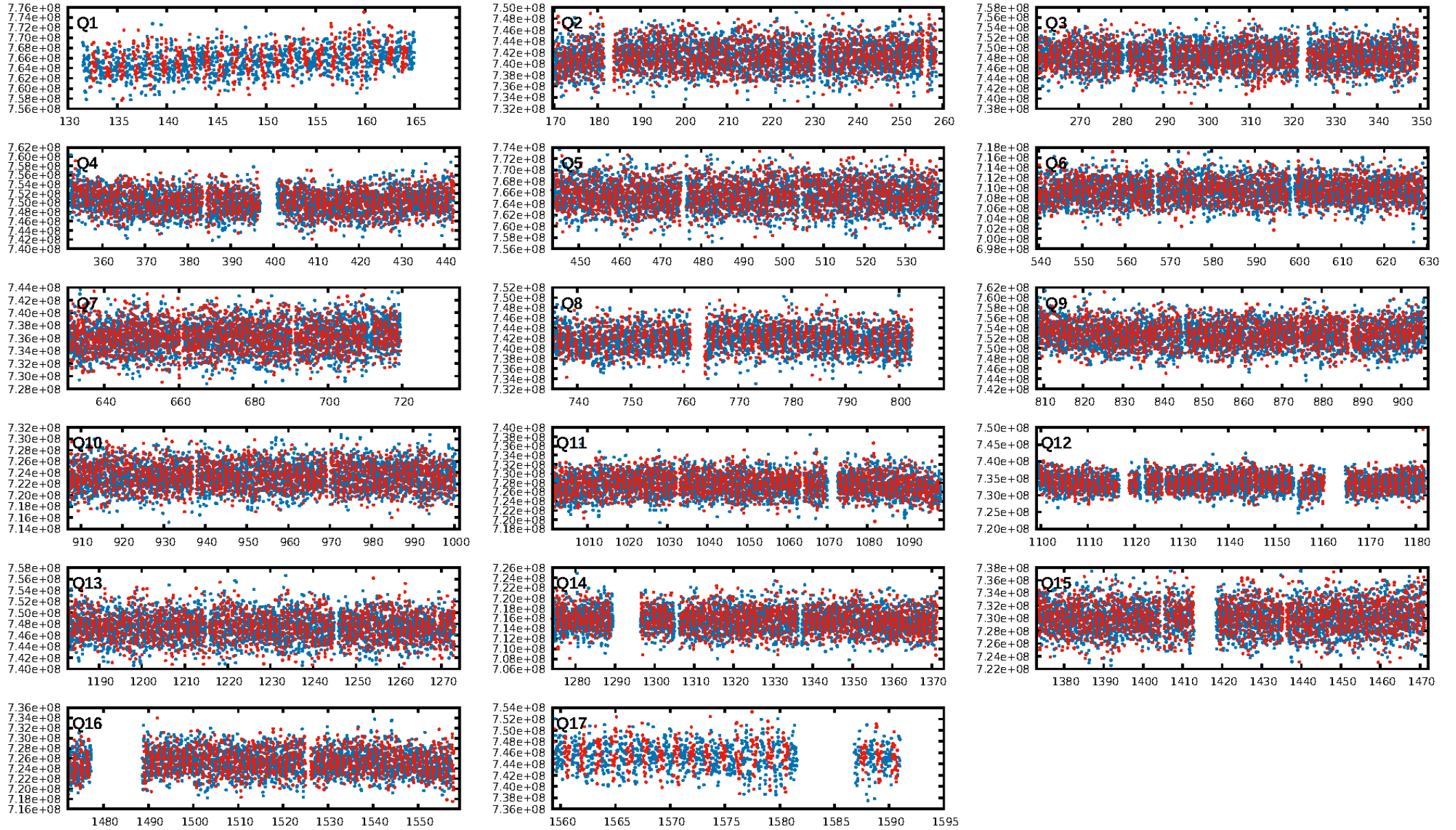
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [904/904]
GhostDiagnostic-chr: 1.011
Centroid-sig: 0.0%
Centroid-so: 0.226 arcsec [5.14σ]
OotOffset-rm: 0.047 arcsec [0.33σ]
KicOffset-rm: 0.036 arcsec [0.25σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

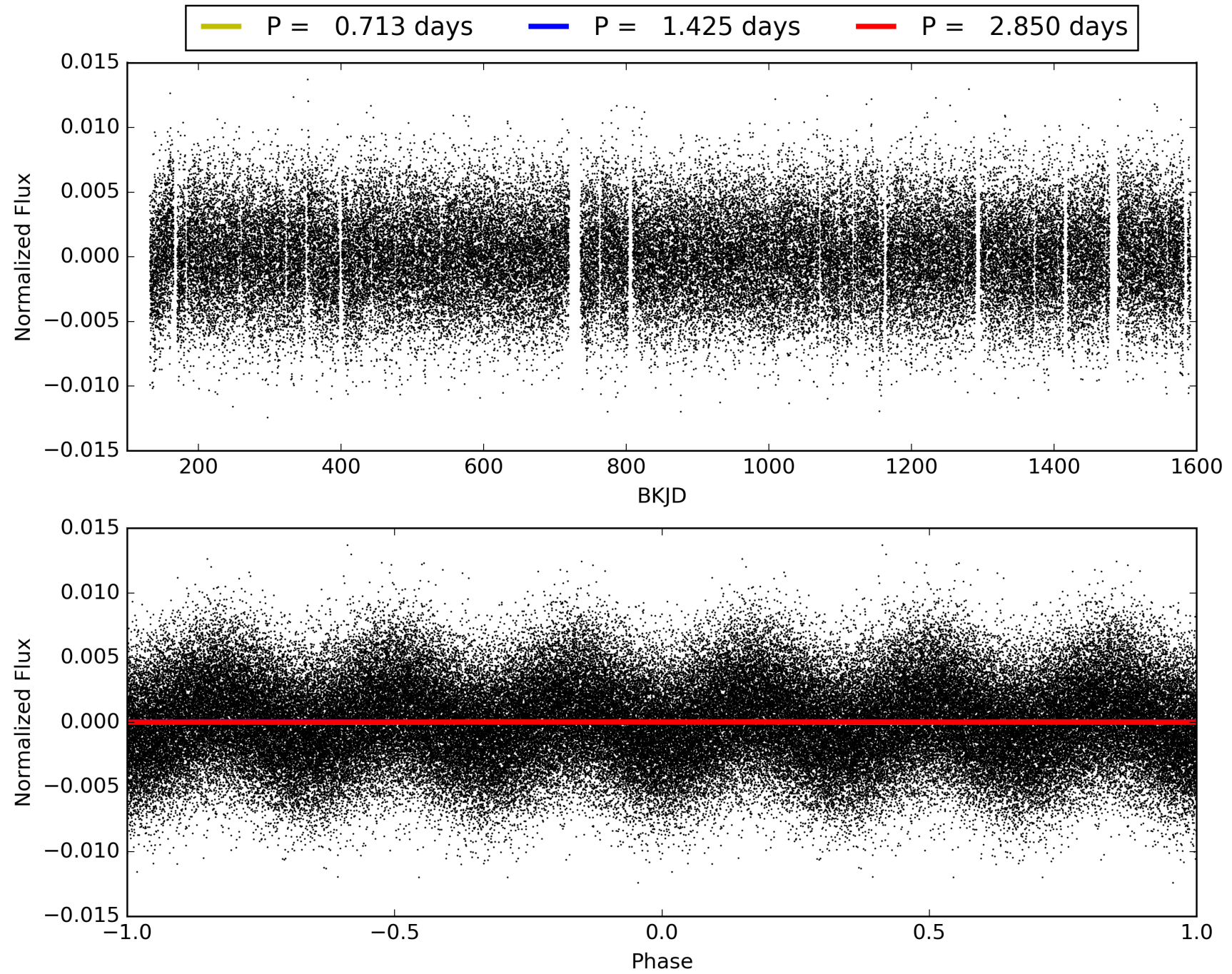
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:32:00 Z

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

TCE 002707479-01, PDC Light Curves

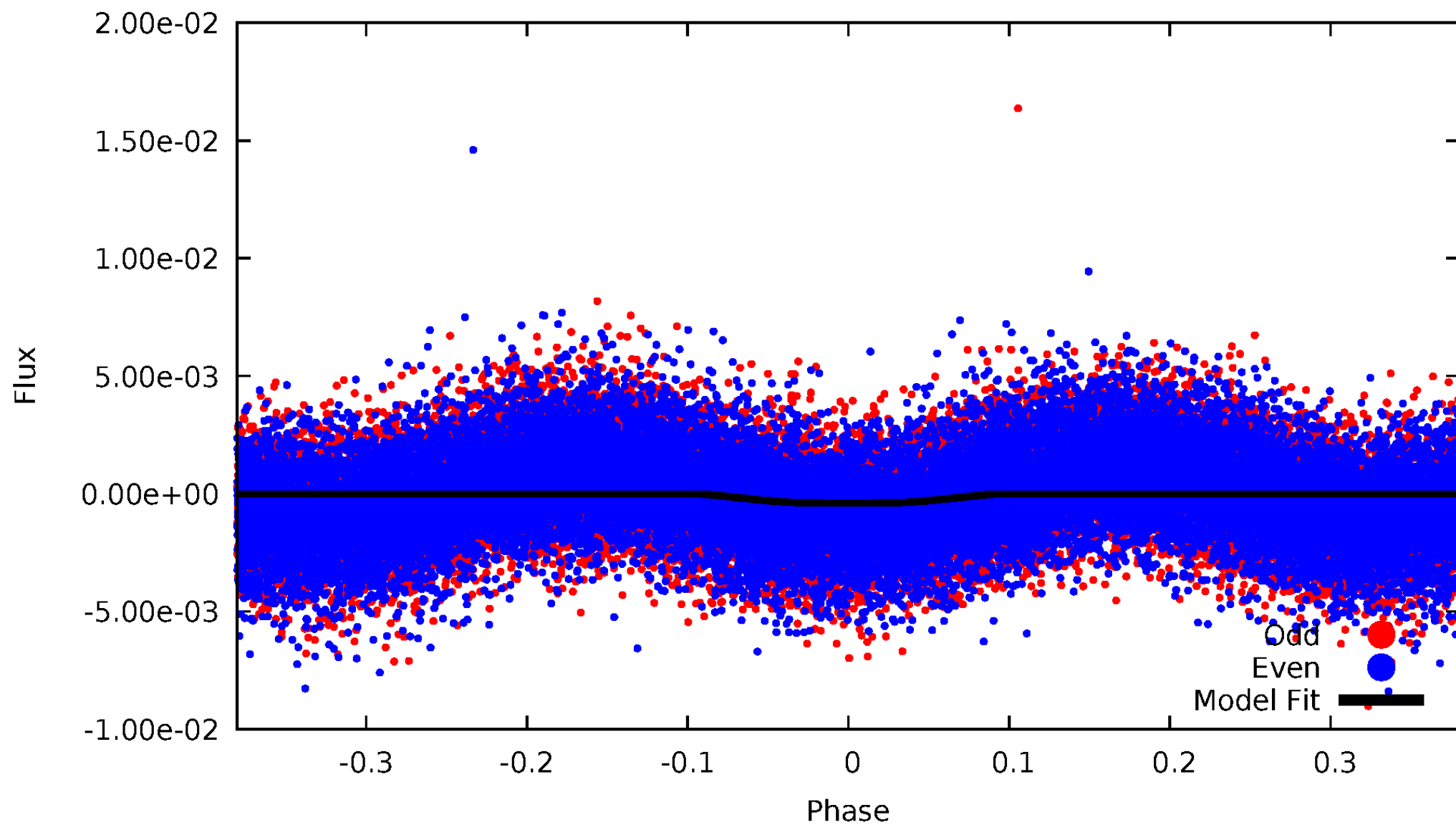


TCE 002707479-01



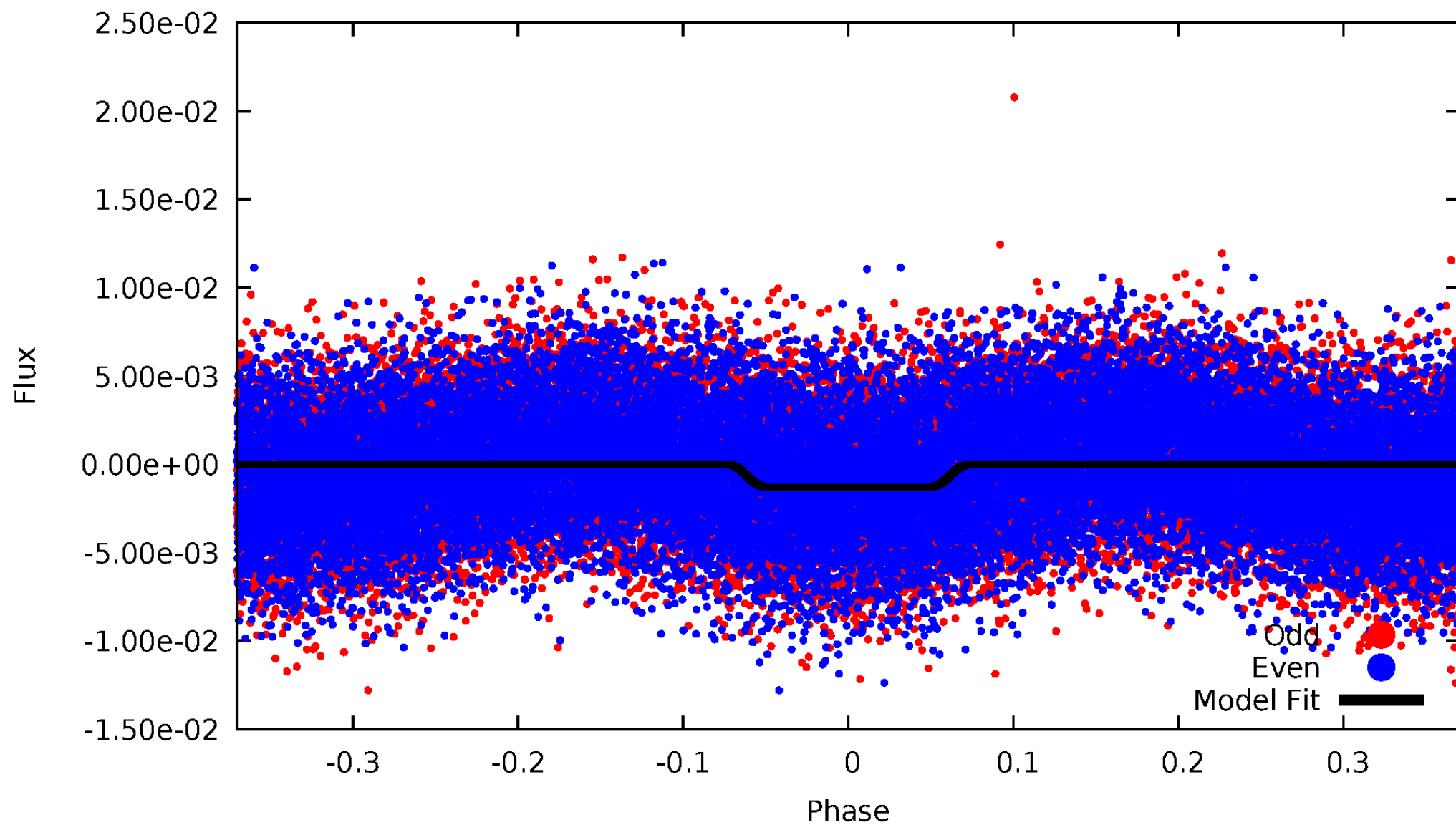
DV Odd/Even

TCE 002707479-01

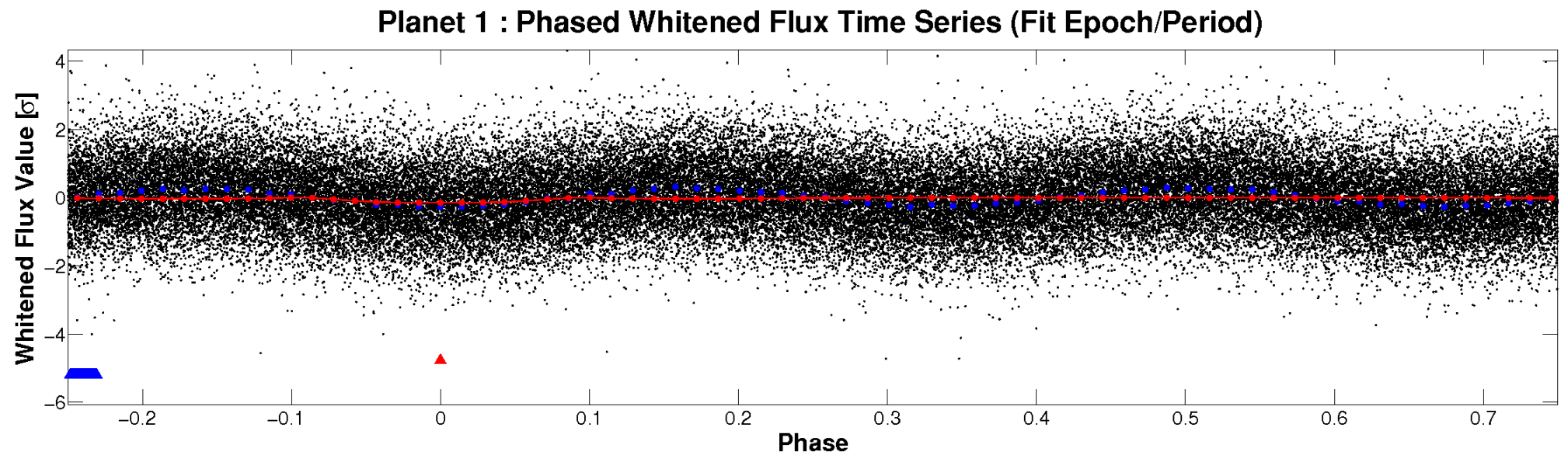
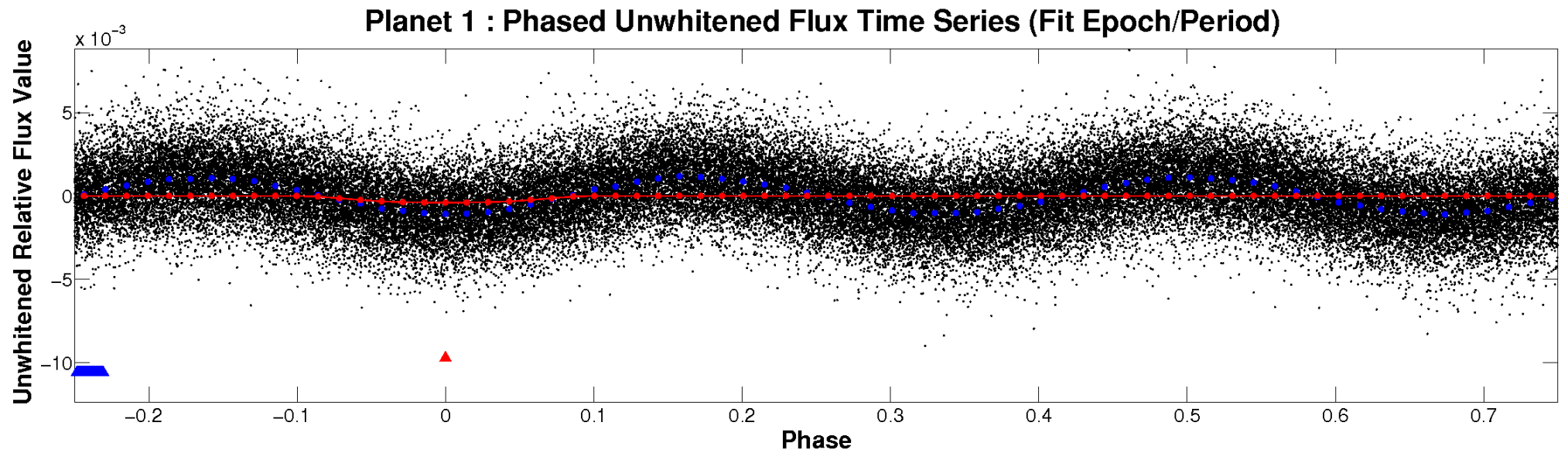


ALT Odd/Even

TCE 002707479-01

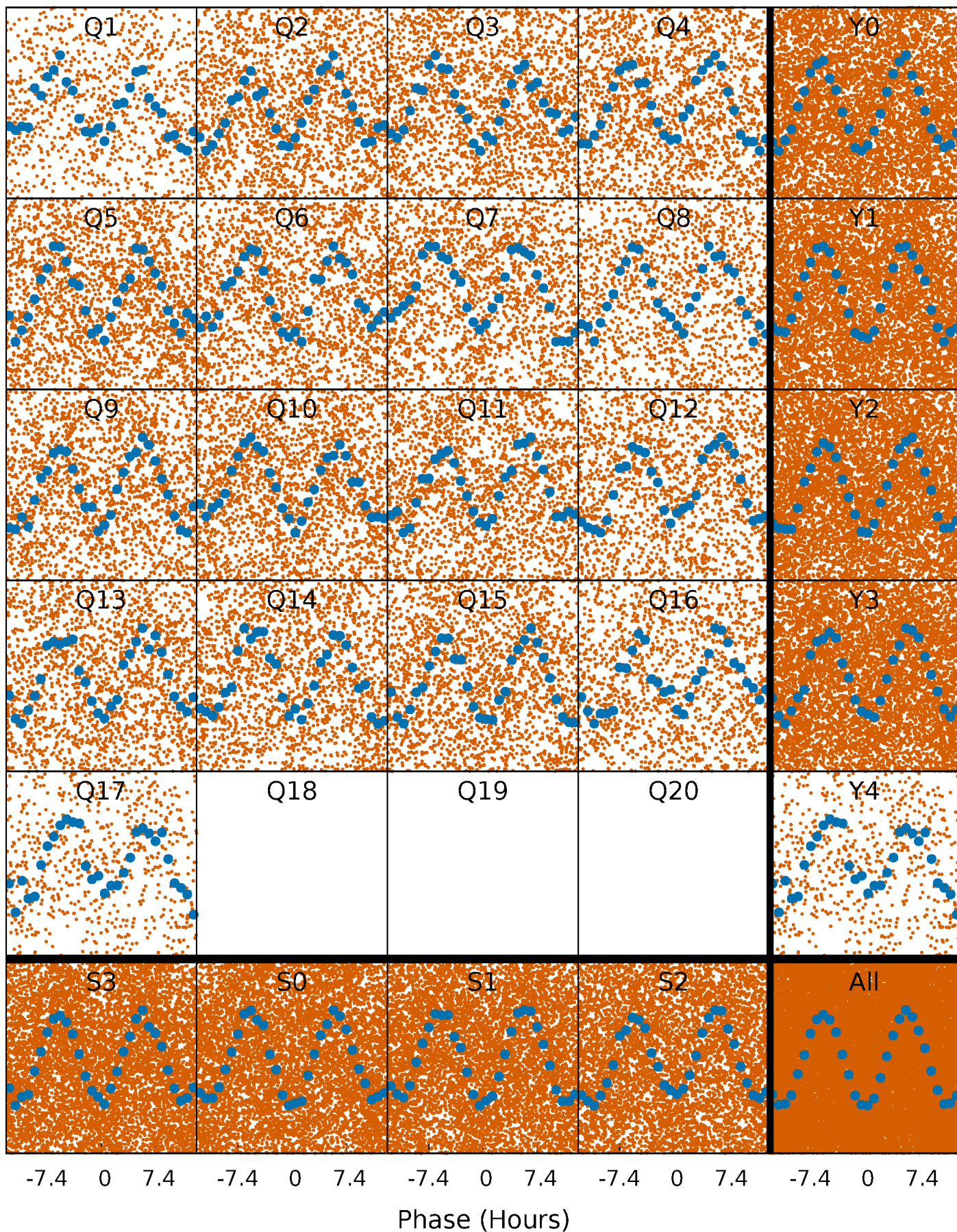


Non-Whitened Vs. Whitened Light Curve



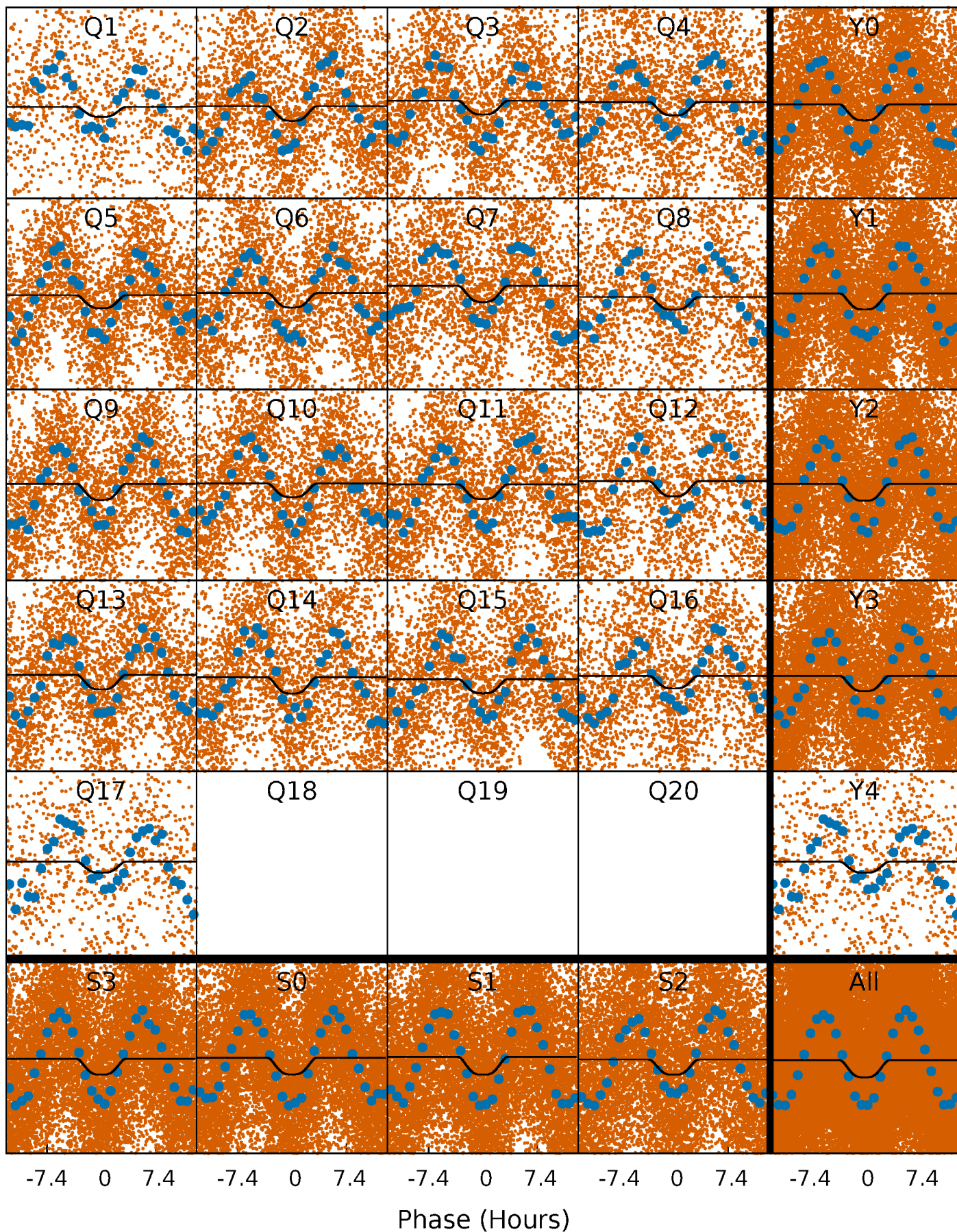
PDC Quarter-Phased Transit Curves

TCE 002707479-01 P= 1.425133 Days $T_0=132.585070$ (BKJD)



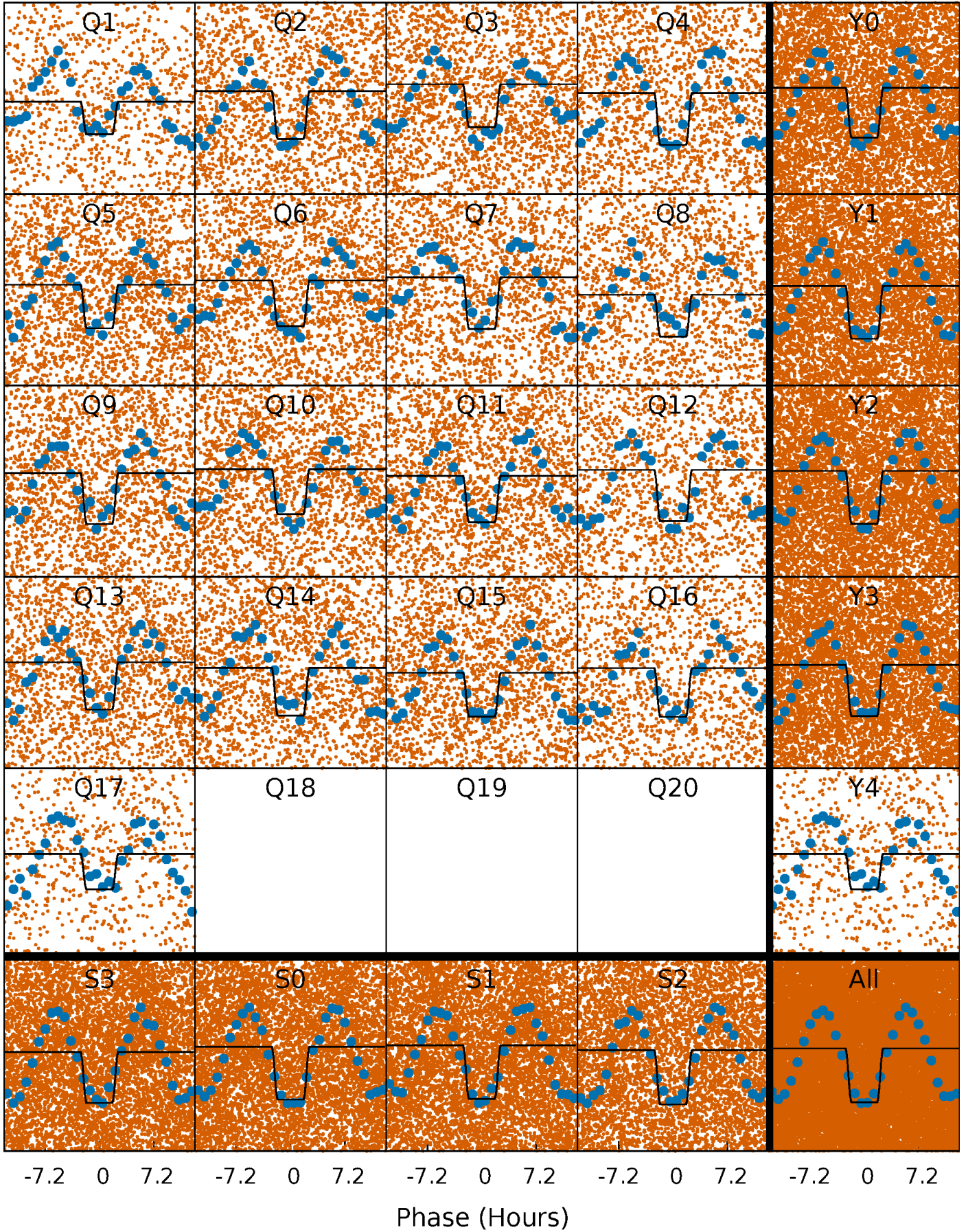
DV Quarter-Phased Transit Curves

TCE 002707479-01 P= 1.425133 Days $T_0=132.585070$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

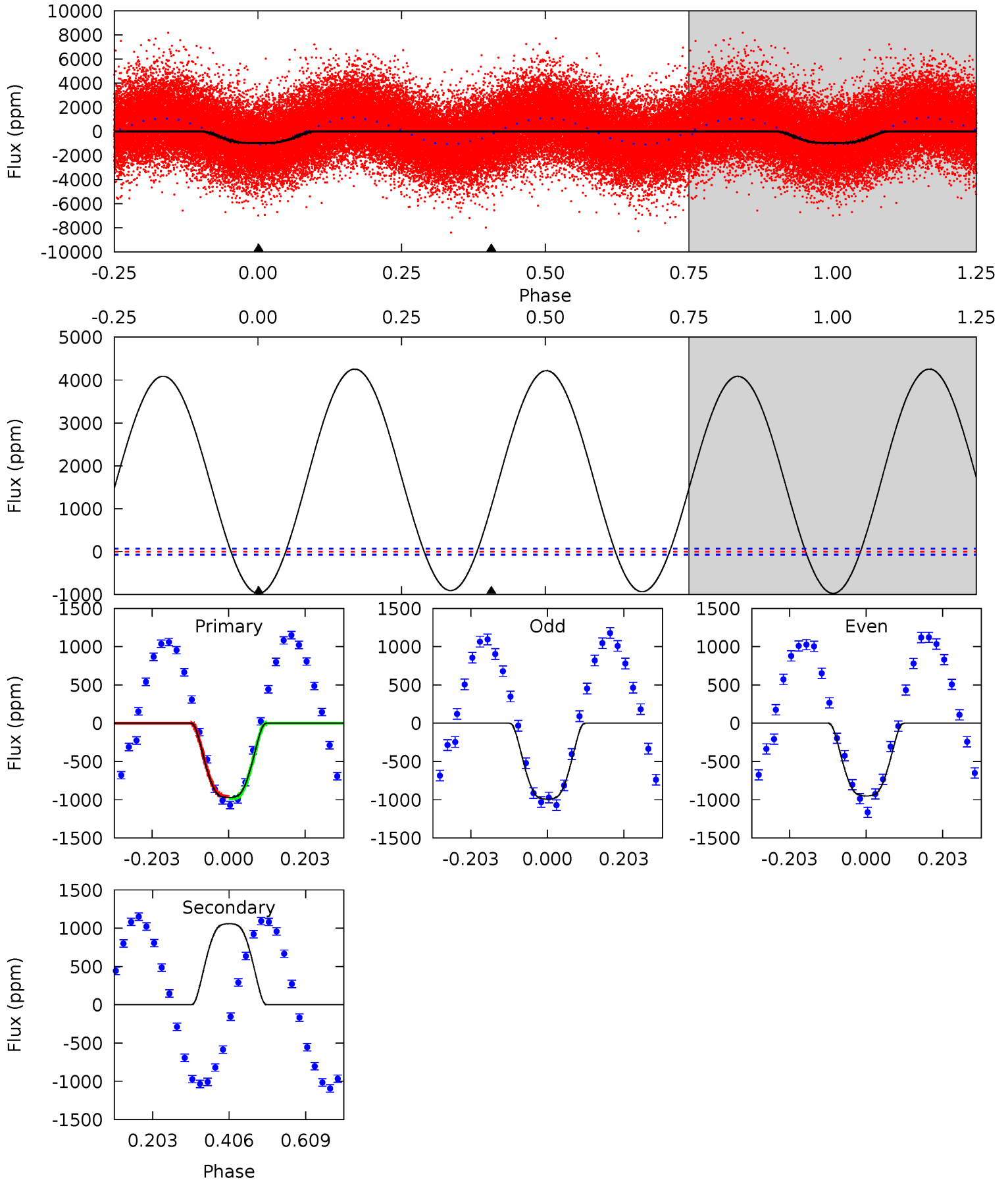
TCE 002707479-01 P= 1.425151 Days $T_0=132.578624$ (BKJD)



DV Model-Shift Uniqueness Test

002707479-01, P = 1.425133 Days, E = 131.159937 Days

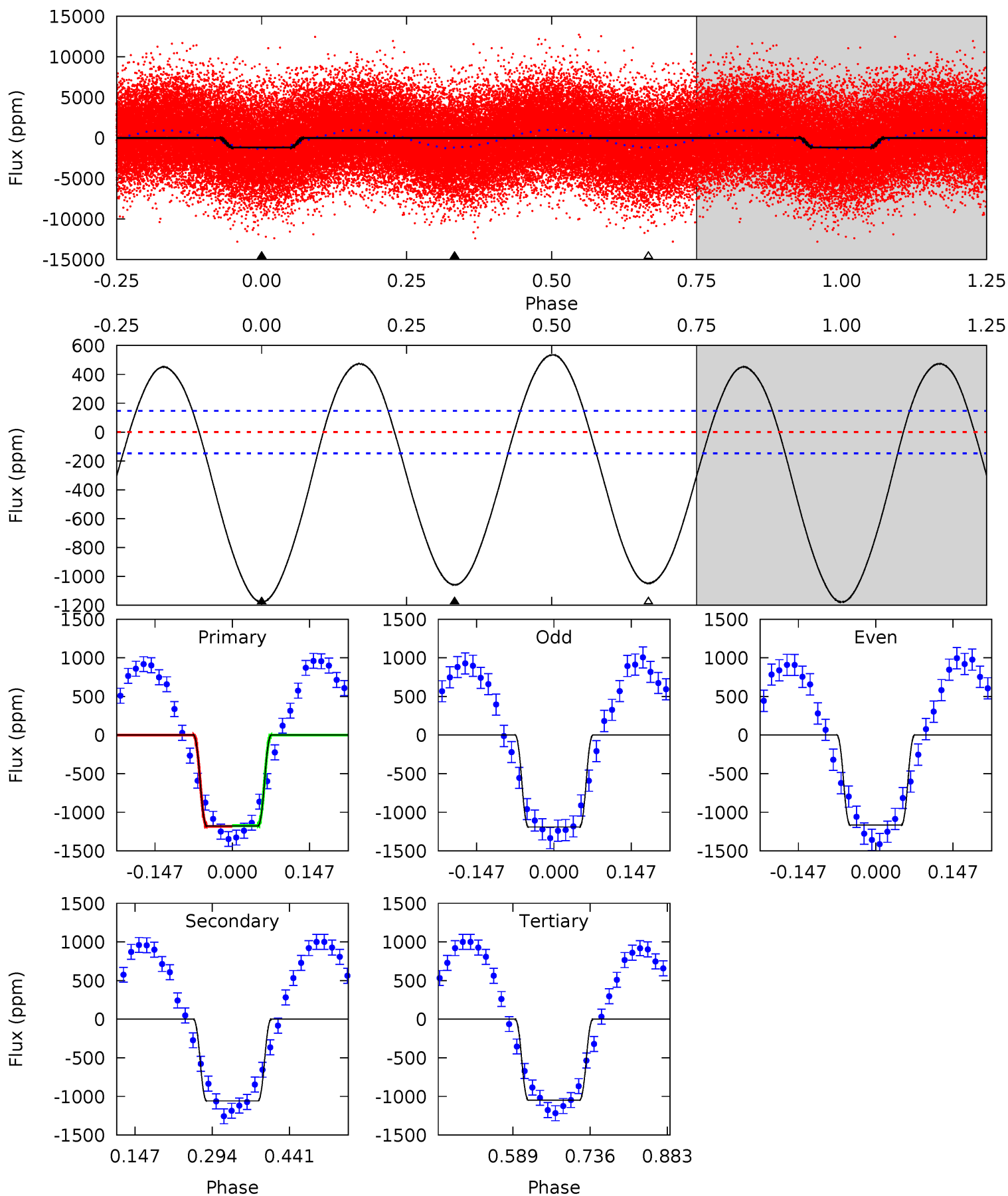
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.4	-65.9	0	0	4.41	1.27	84.8	60.4	60.4	-65.9	-65.9	1.31	1.03	0.81	1.02



Alt Model-Shift Uniqueness Test

002707479-01, P = 1.425151 Days, E = 131.153473 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.0	32.4	32.0	0	4.48	1.45	17.5	3.97	36.0	0.32	32.4	0.37	0.99	0.31	0.14



Stellar Parameters For KIC 002707479

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7504^{+209}_{-314}	$4.151^{+0.105}_{-0.195}$	$0.040^{+0.200}_{-0.350}$	$1.776^{+0.563}_{-0.303}$	$1.628^{+0.198}_{-0.242}$	$0.409^{+0.235}_{-0.200}$
	+3%/-4%	+3%/-5%	+500%/-875%	+32%/-17%	+12%/-15%	+57%/-49%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 002707479-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	1060 ± 16	$4.58^{+0.88}_{-0.60}$	3639^{+316}_{-213}	-9359^{+568}_{-571}	$-23.333^{+6.487}_{-6.712}$
Alt.	-1059 ± 33	$7.13^{+1.21}_{-0.75}$	3670^{+254}_{-241}	7005^{+273}_{-283}	$9.613^{+2.175}_{-2.454}$

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 $A_{obs} \gg 1.0$

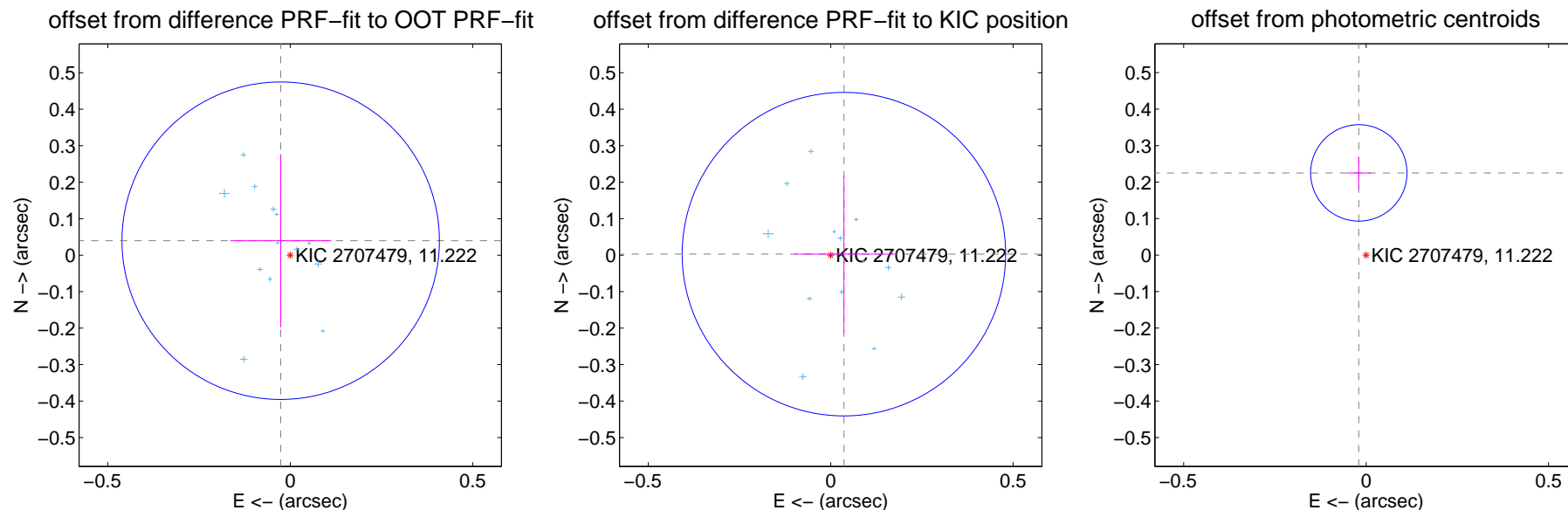
DV Centroid Data

Supplemental centroid analysis for 002707479-01. **Kepler magnitude: 11.22.** Transit SNR 12.51

There are 17 quarters with good PRF difference image offsets

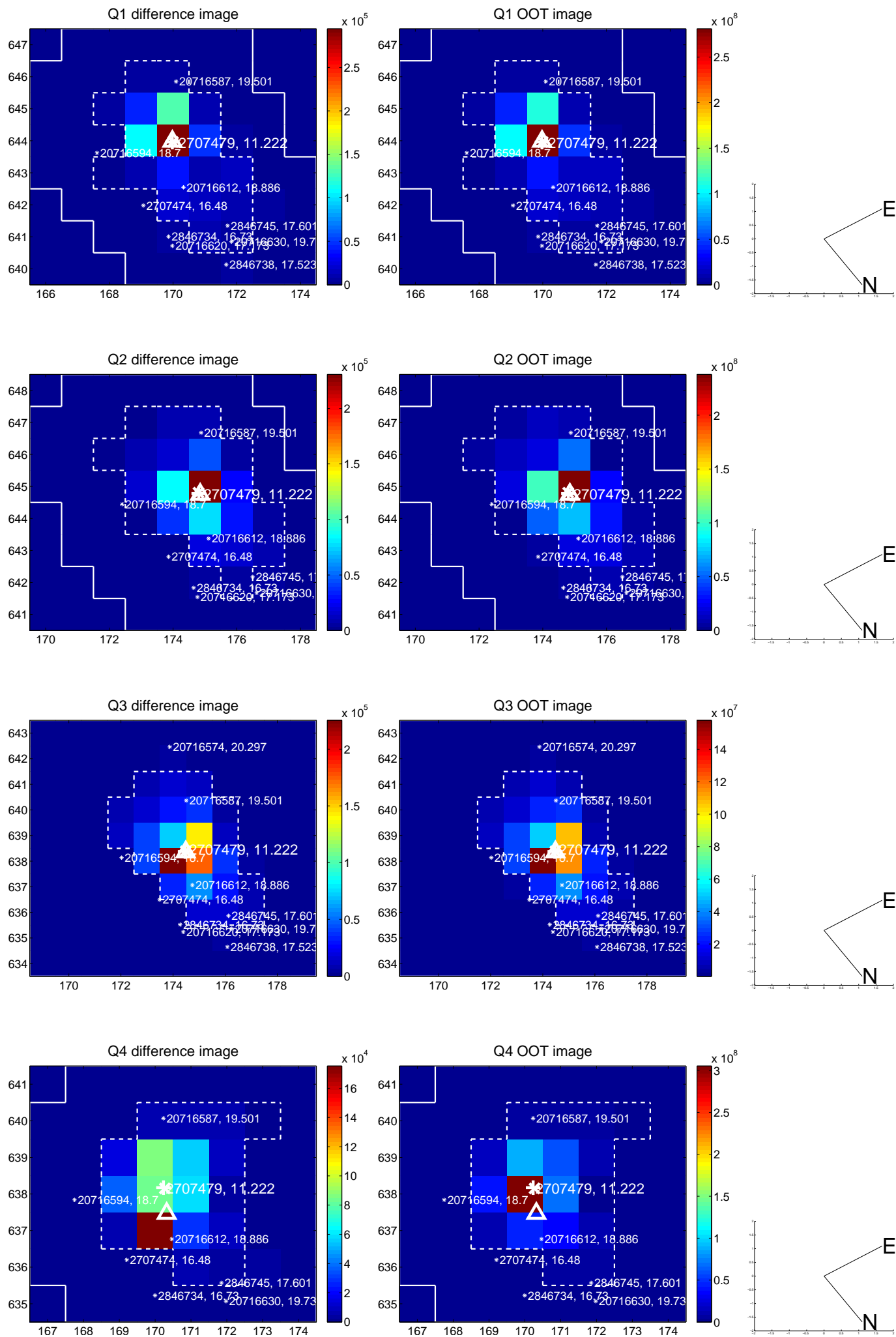
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.047 ± 0.145	0.33	0.026 ± 0.138	0.040 ± 0.237
PRF-fit source offset from KIC position	0.036 ± 0.148	0.25	-0.036 ± 0.136	0.003 ± 0.215
photometric centroid source offset	0.23 ± 0.04	5.14	0.02 ± 0.03	0.23 ± 0.04

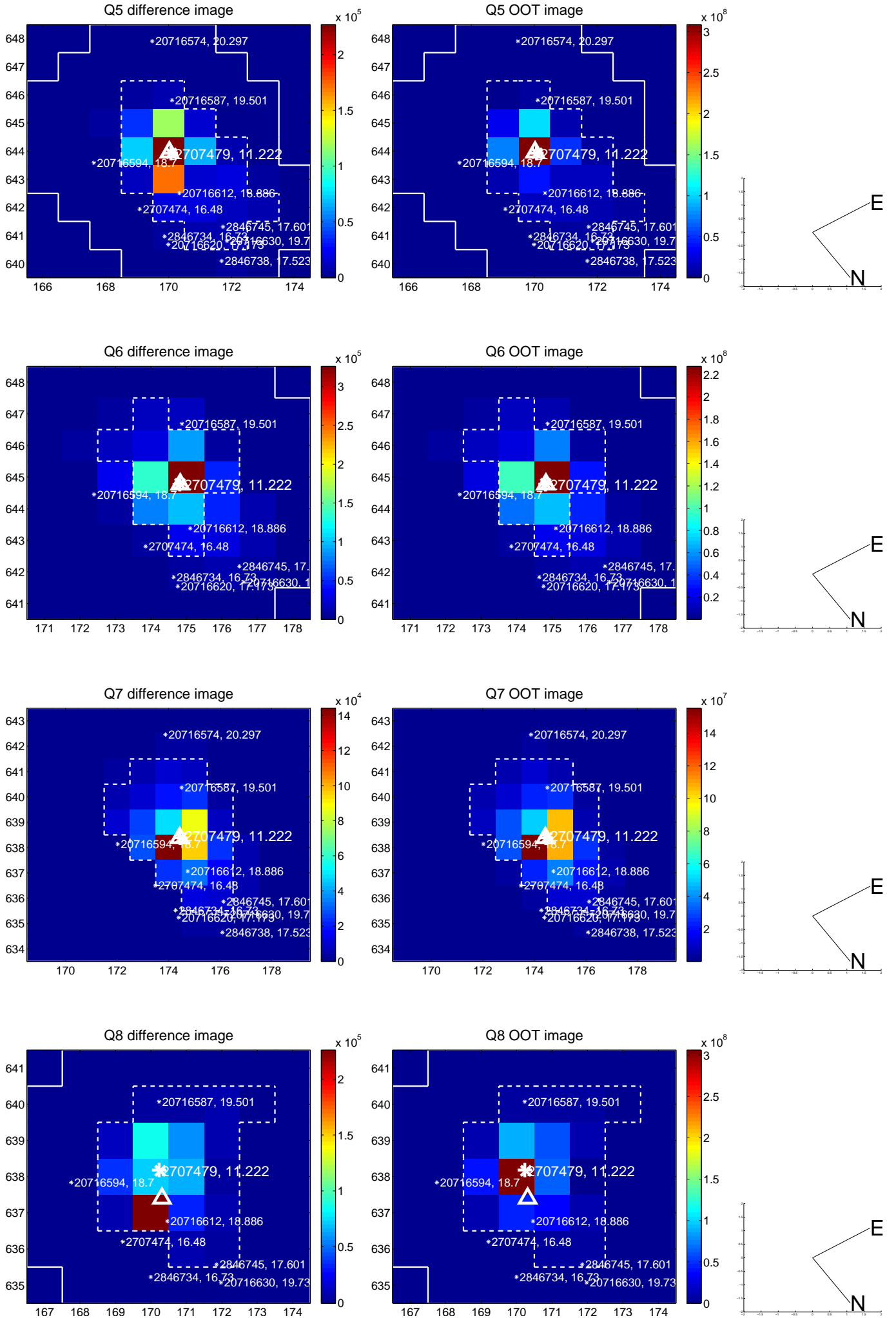


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

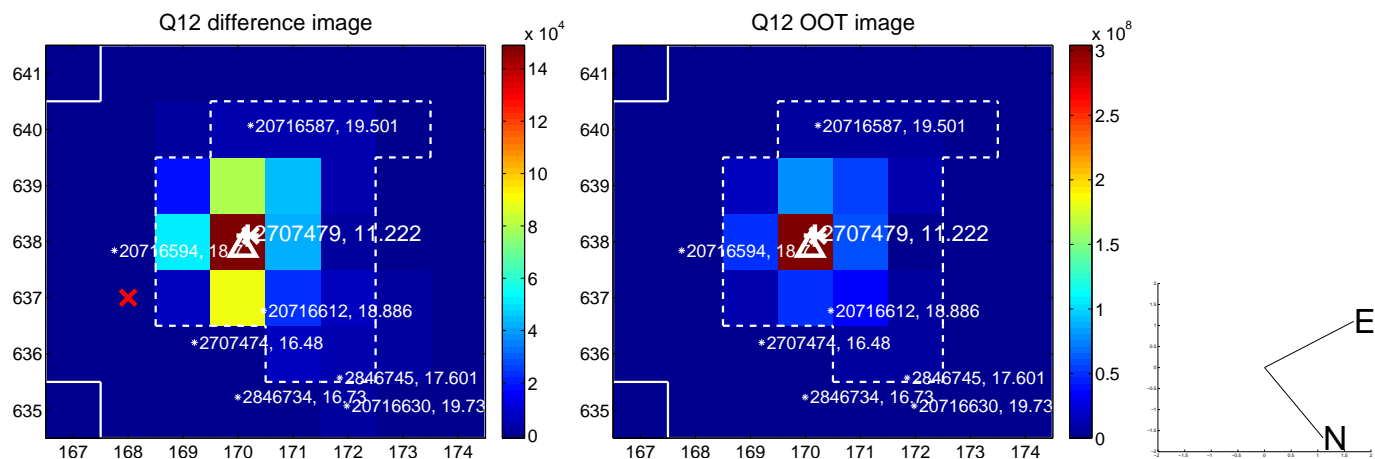
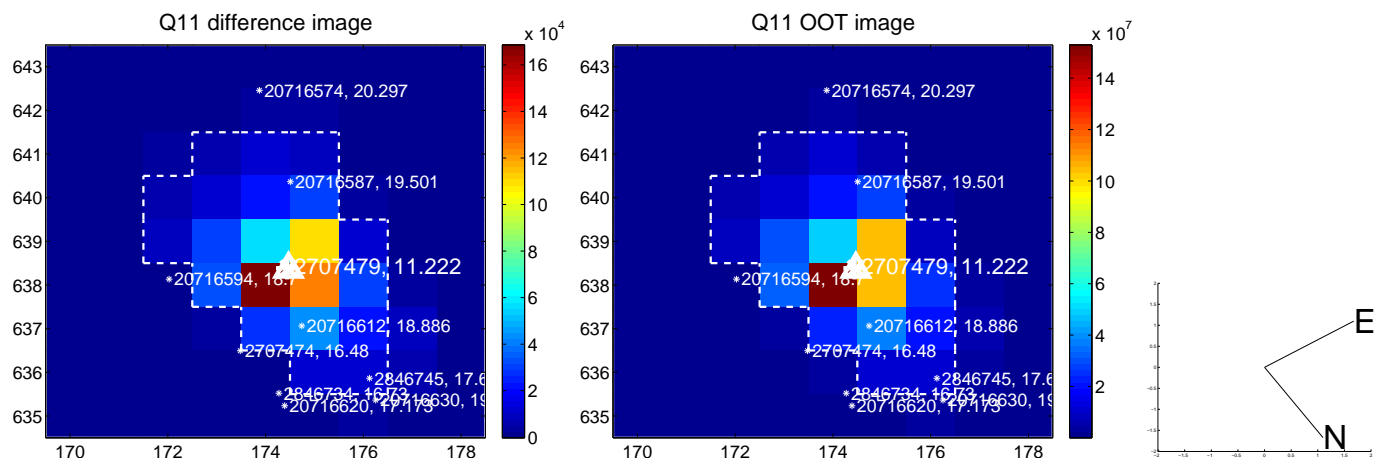
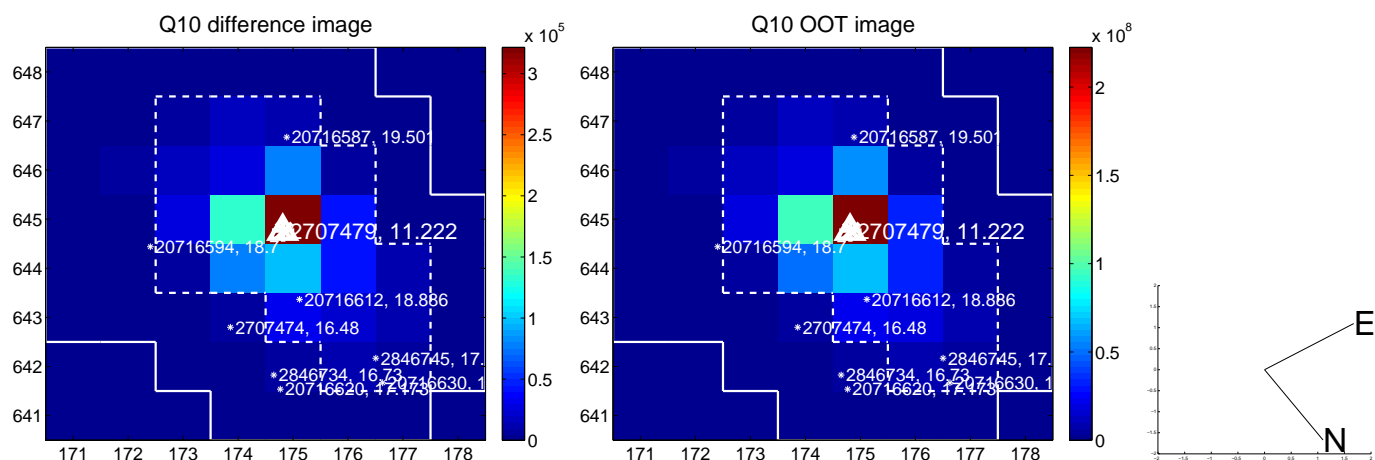
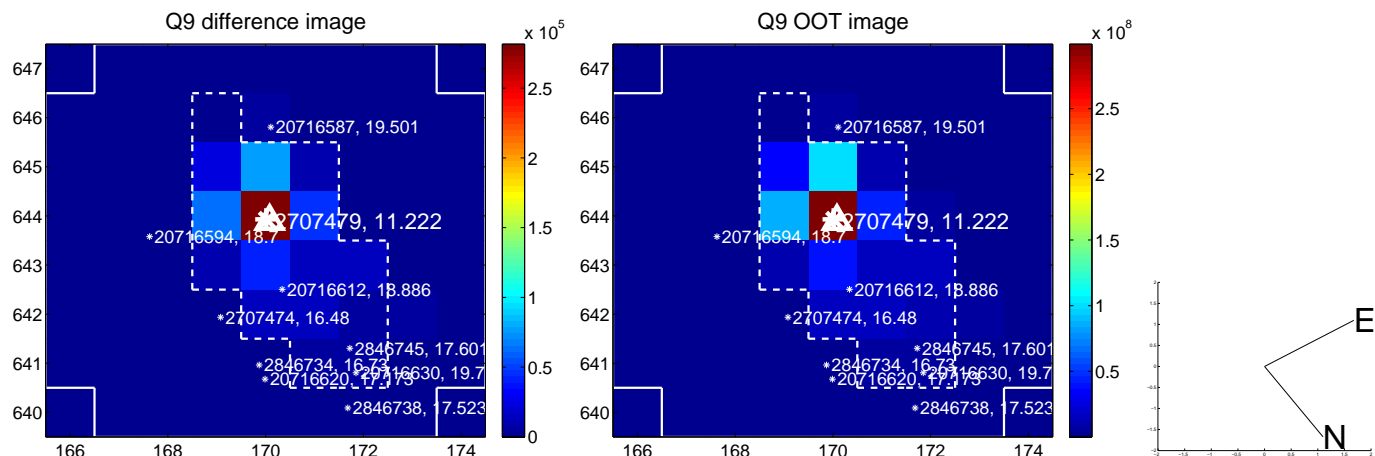
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



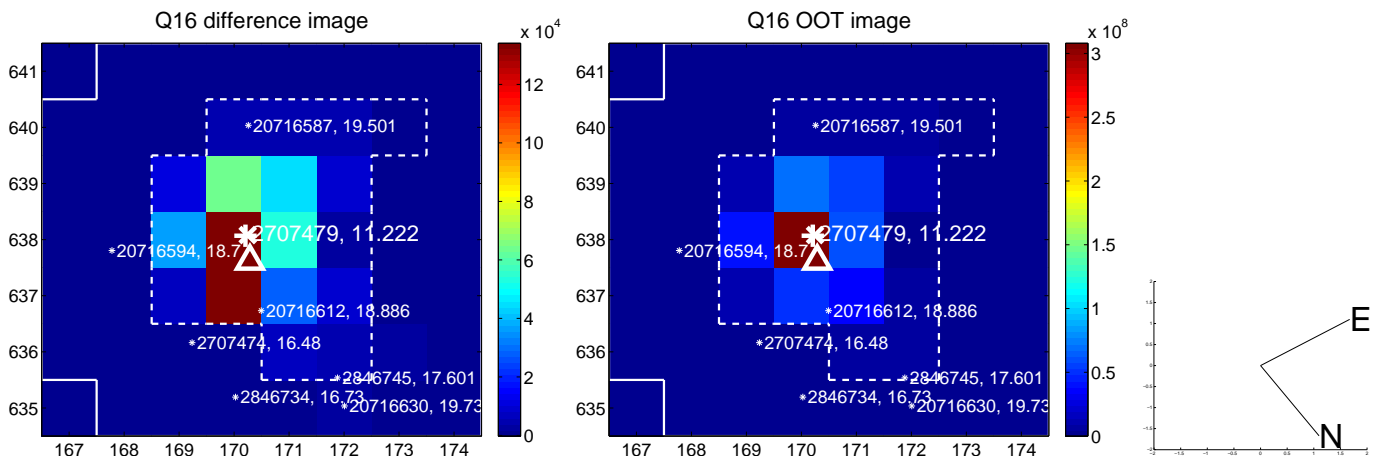
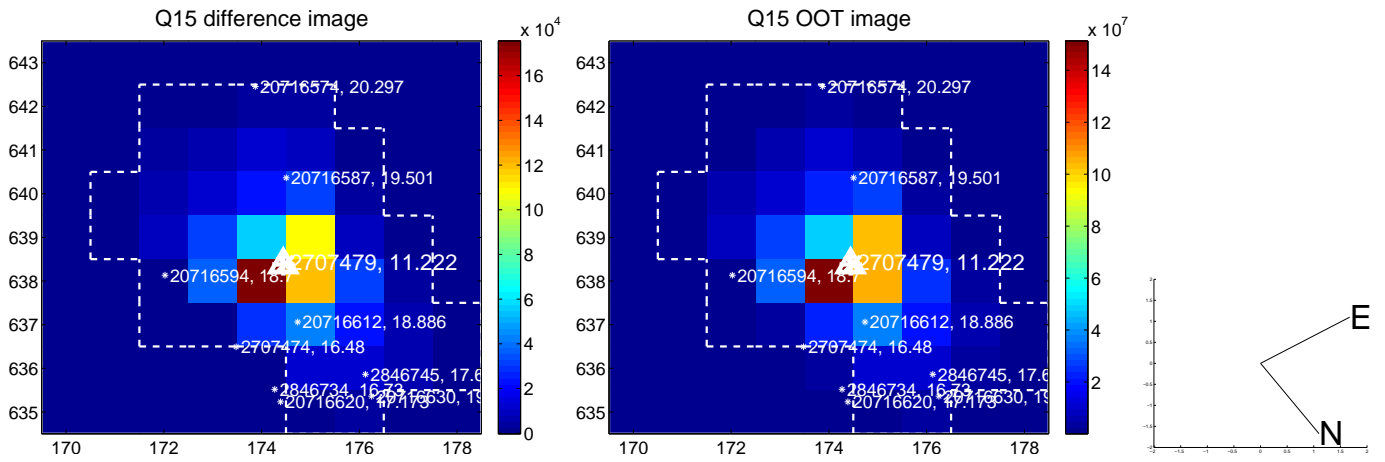
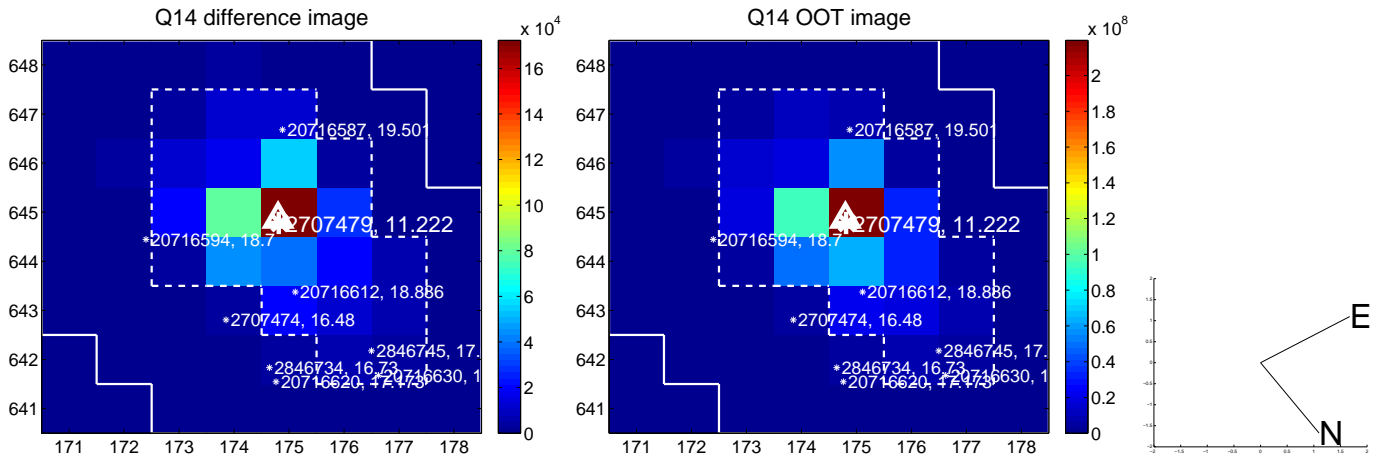
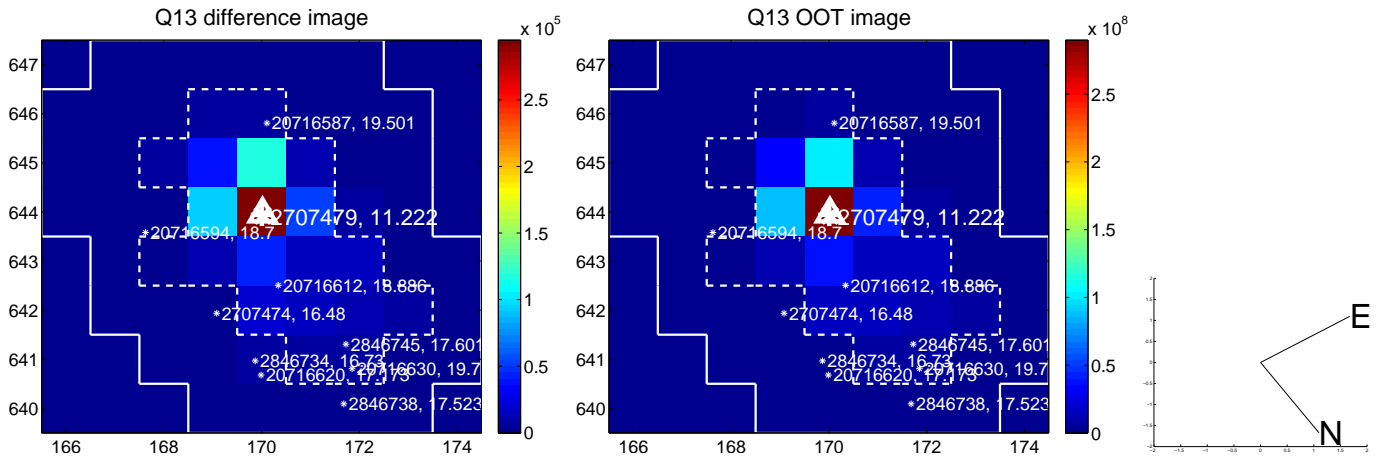
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



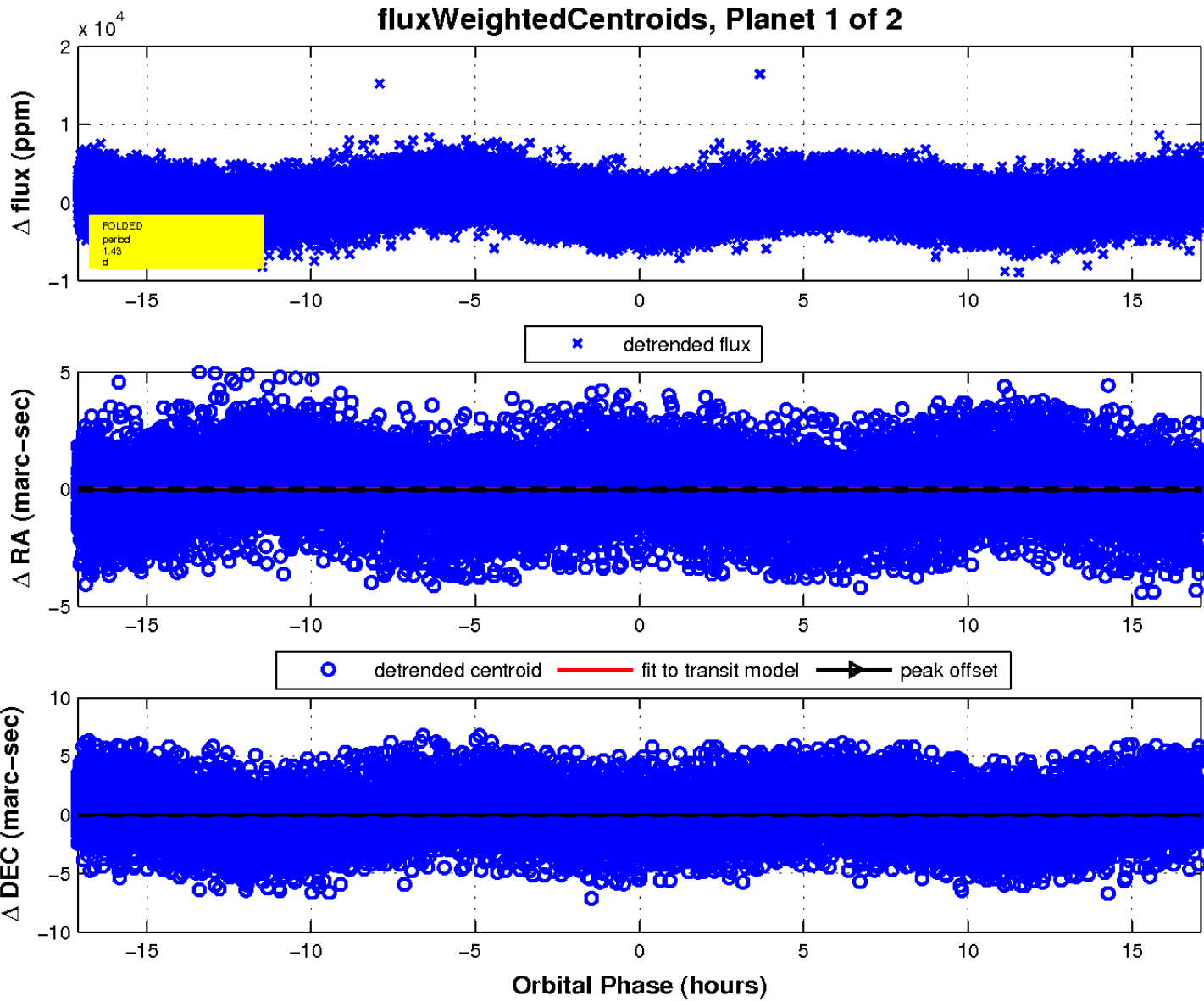
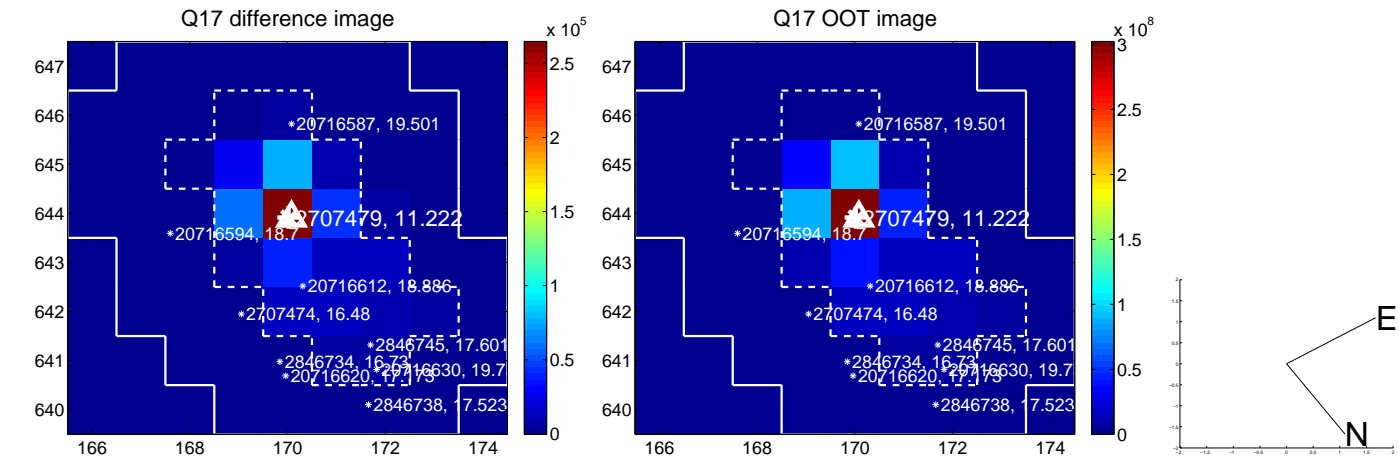
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

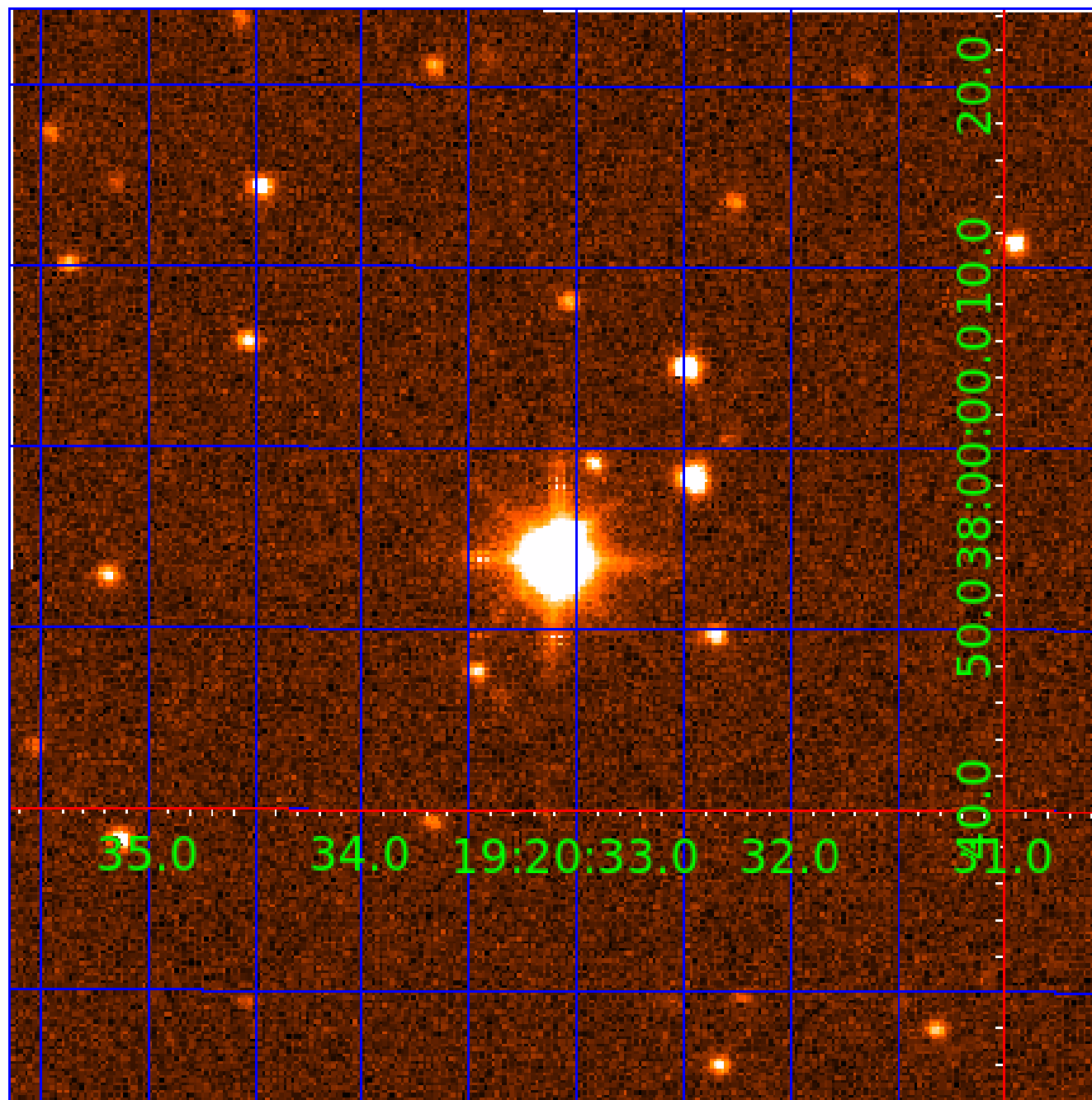


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002707479

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})
002707479-01	OBS	No	1.425133	132.585070	396.6	6.501	11.8	12.5	1.78	7504	4.49	10533.04
002707479-02	OBS	No	1.425158	132.230786	516.5	13.171	13.1	16.3	1.78	7504	4.64	10532.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002707479-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
002707479-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

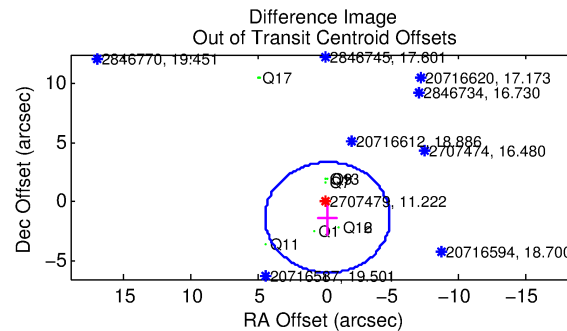
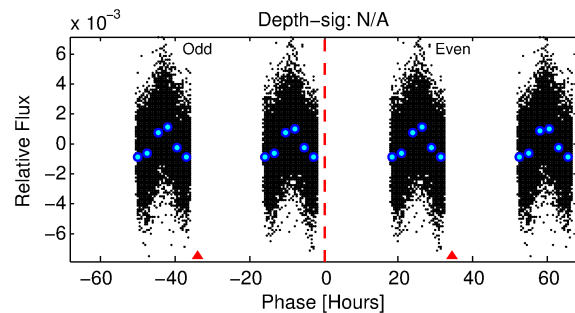
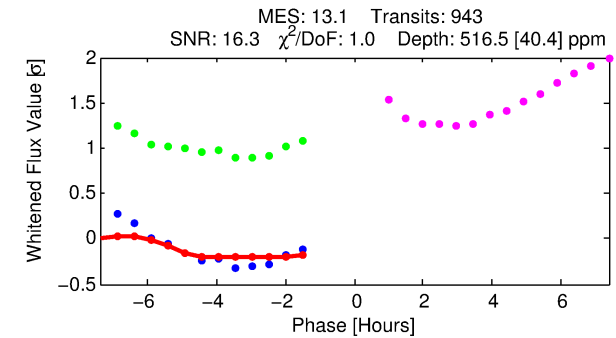
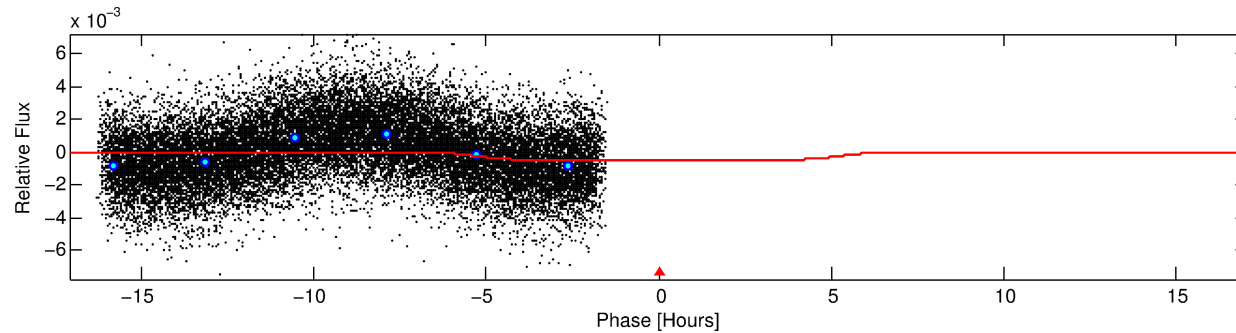
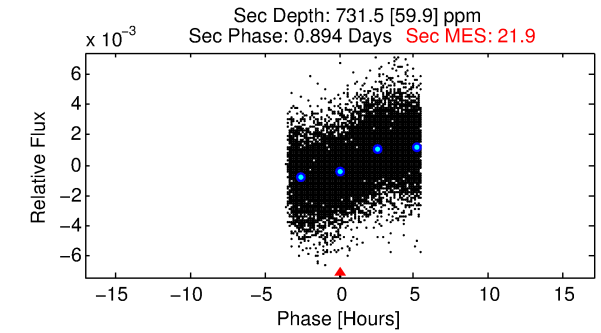
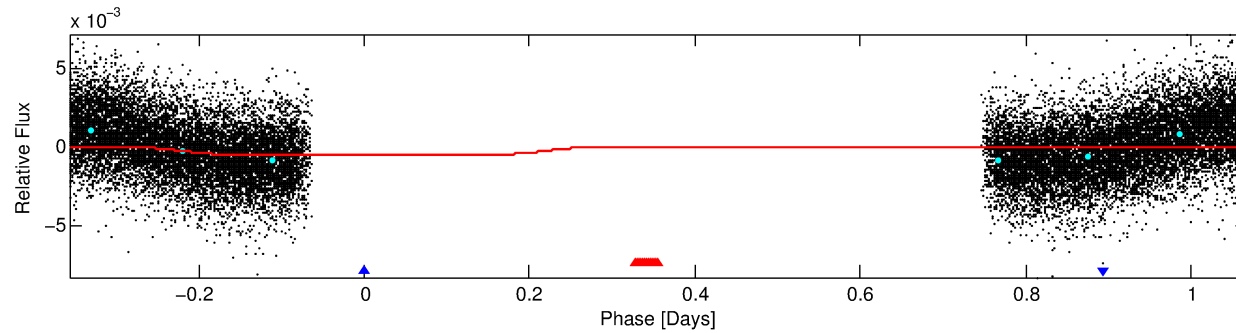
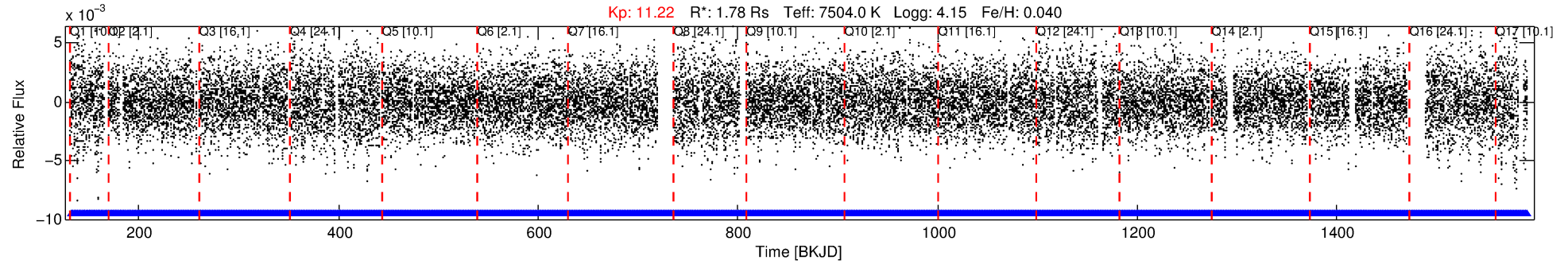
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002707479-02

No Significant Match Found

DV One-Page Summary

KIC: 2707479 Candidate: 2 of 2 Period: 1.425 d



DV Fit Results:

Period = 1.42516 [0.00002] d
Epoch = 132.2308 [0.0307] BKJD
Rp/R* = 0.0239 [0.0013]
a/R* = 1.04 [0.02]
b = 0.89 [0.05]
Seff = 10532.80 [4243.04]
Teq = 2583 [260] K
Rp = 4.64 [1.49] Re
a = 0.0292 [0.0076] AU
Ag = 15.93 [6.21] [2.40σ]
Teffp = 7979 [426] K [10.80σ]

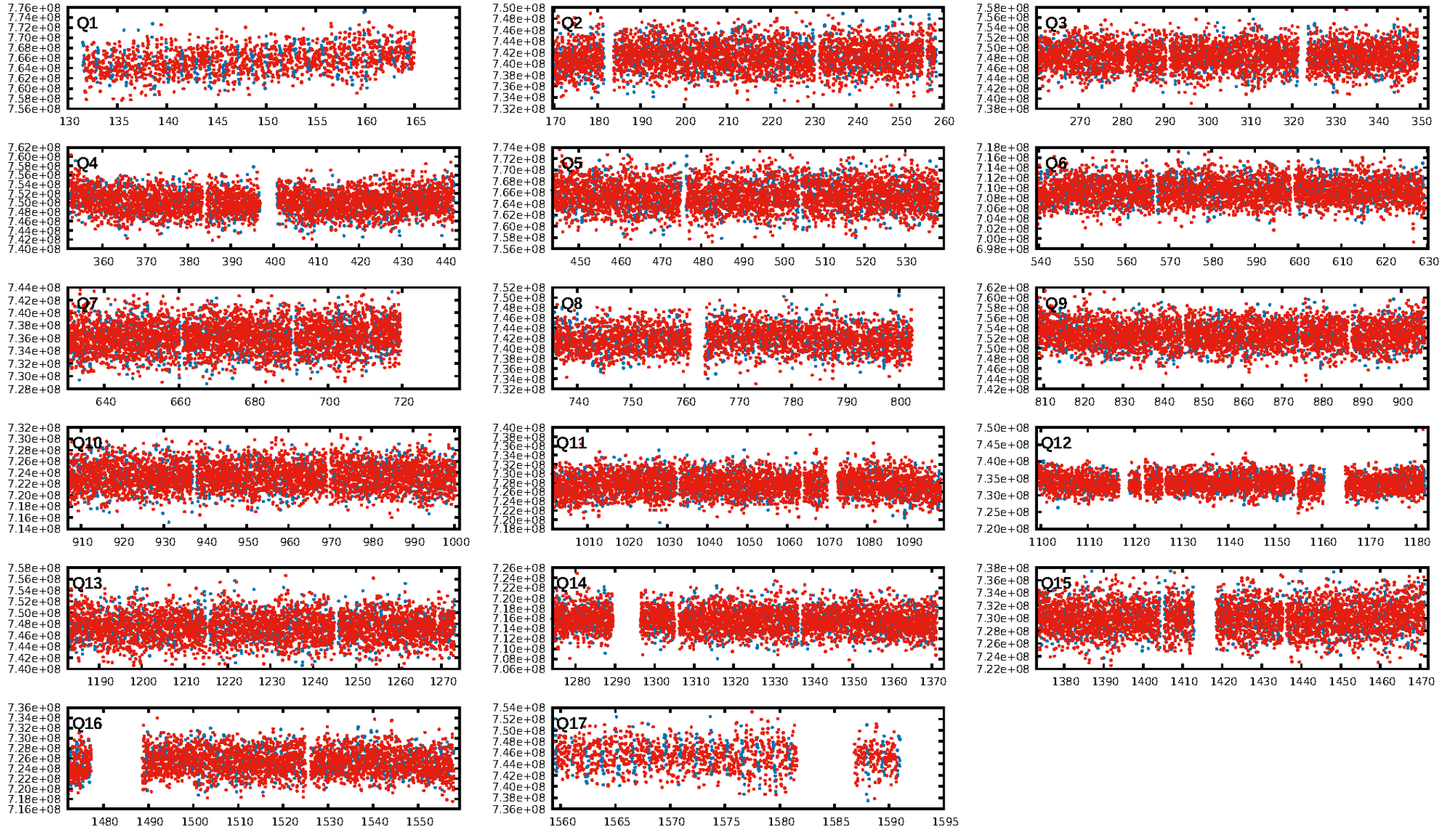
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [900/900]
GhostDiagnostic-chr: 1.286
Centroid-sig: 0.0%
Centroid-so: 0.190 arcsec [7.70σ]
OotOffset-rm: 1.321 arcsec [0.85σ]
OotOffset-st: 0/2/2/4 [8]
KicOffset-rm: 1.418 arcsec [0.90σ]
KicOffset-st: 0/2/2/4 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 0.00 [0/17]

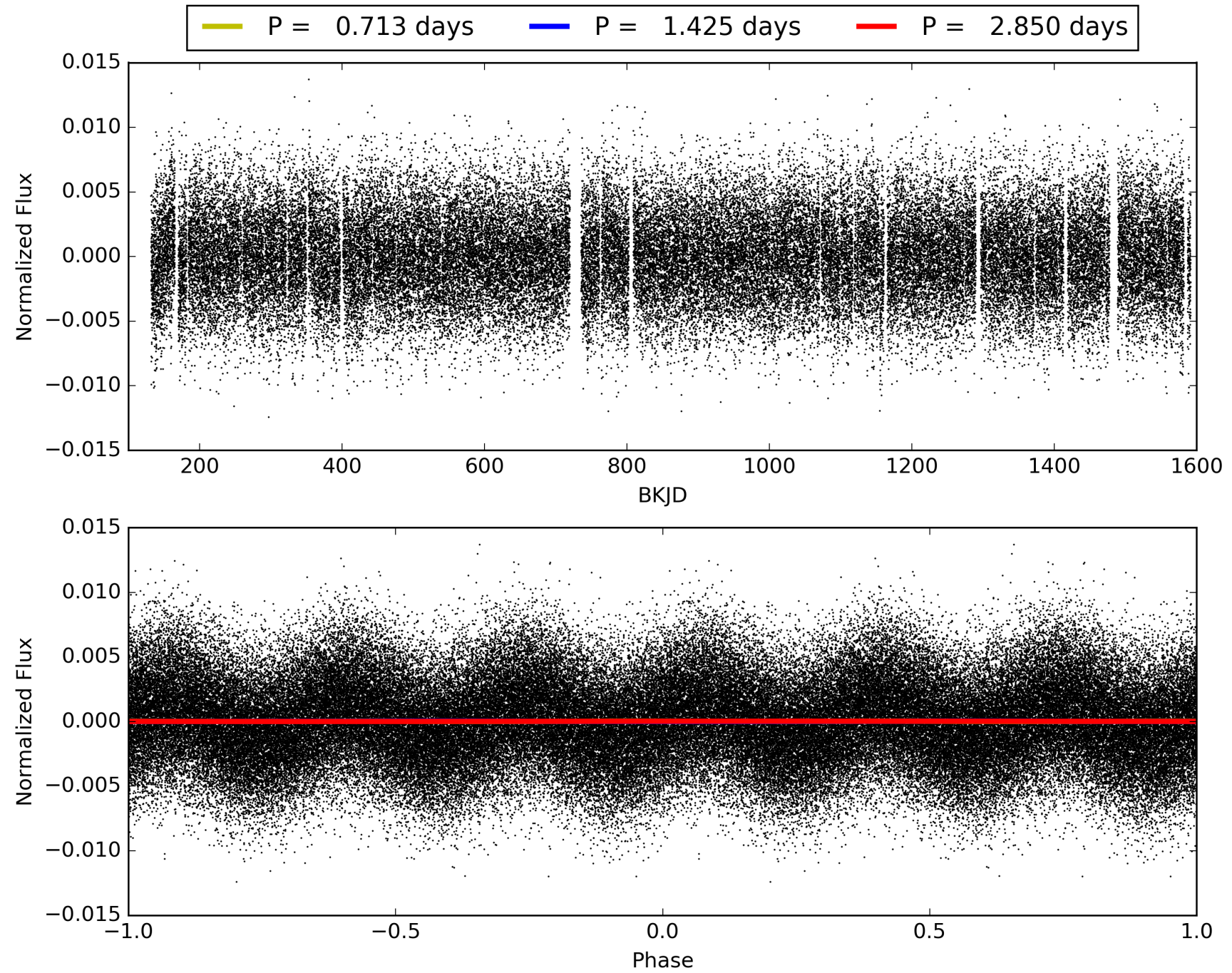
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:32:16 Z

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

TCE 002707479-02, PDC Light Curves

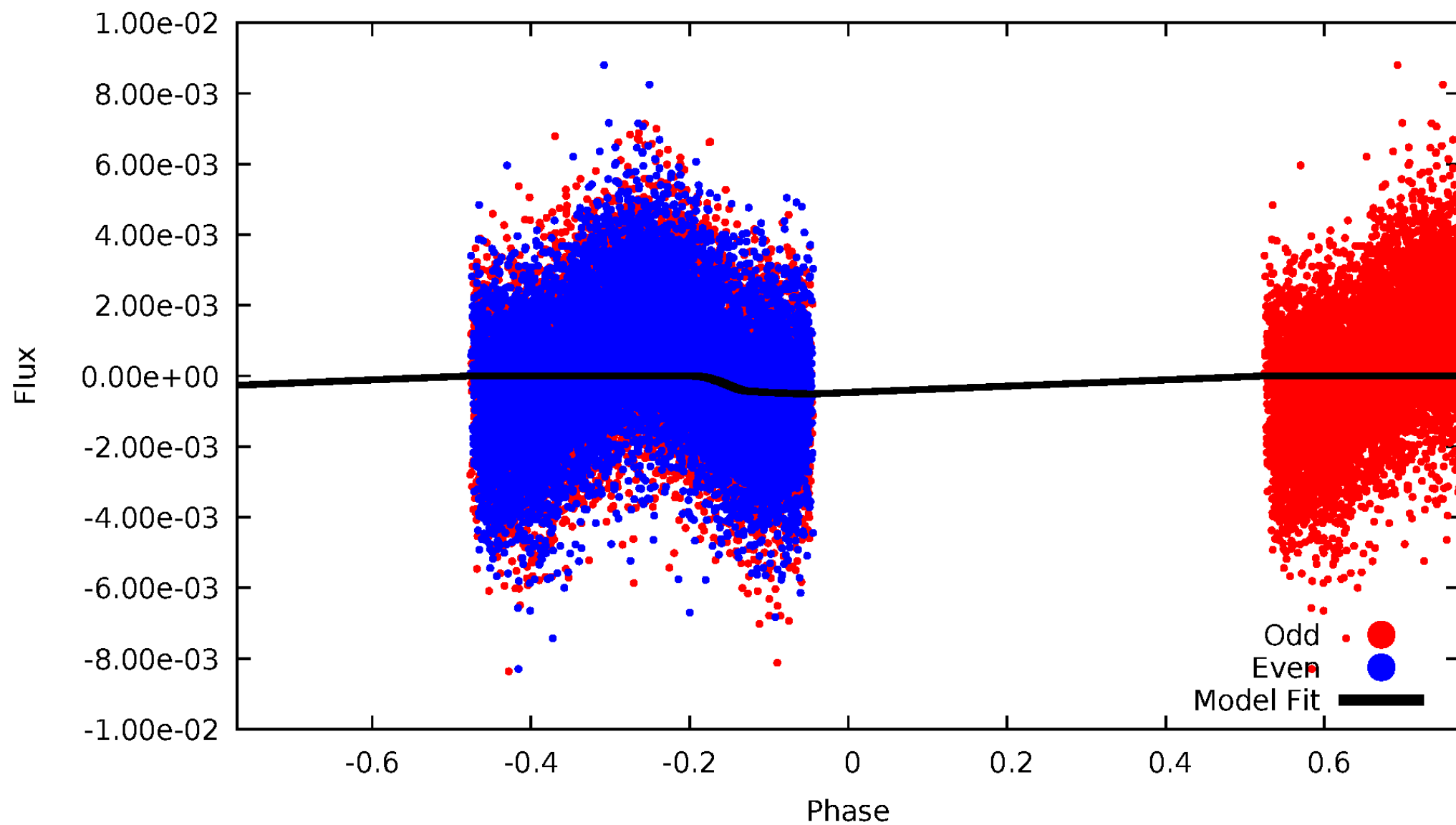


TCE 002707479-02



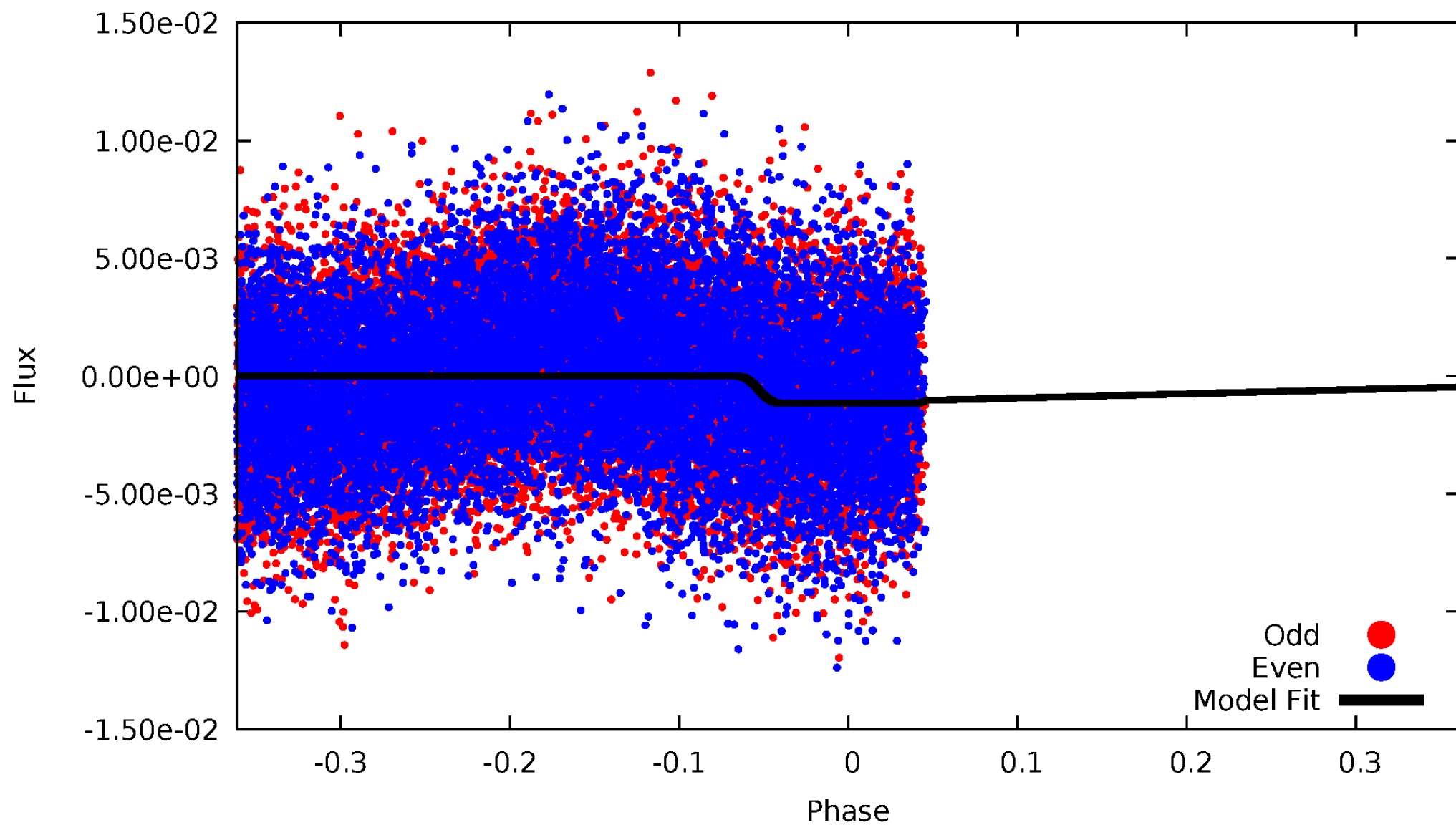
DV Odd/Even

TCE 002707479-02



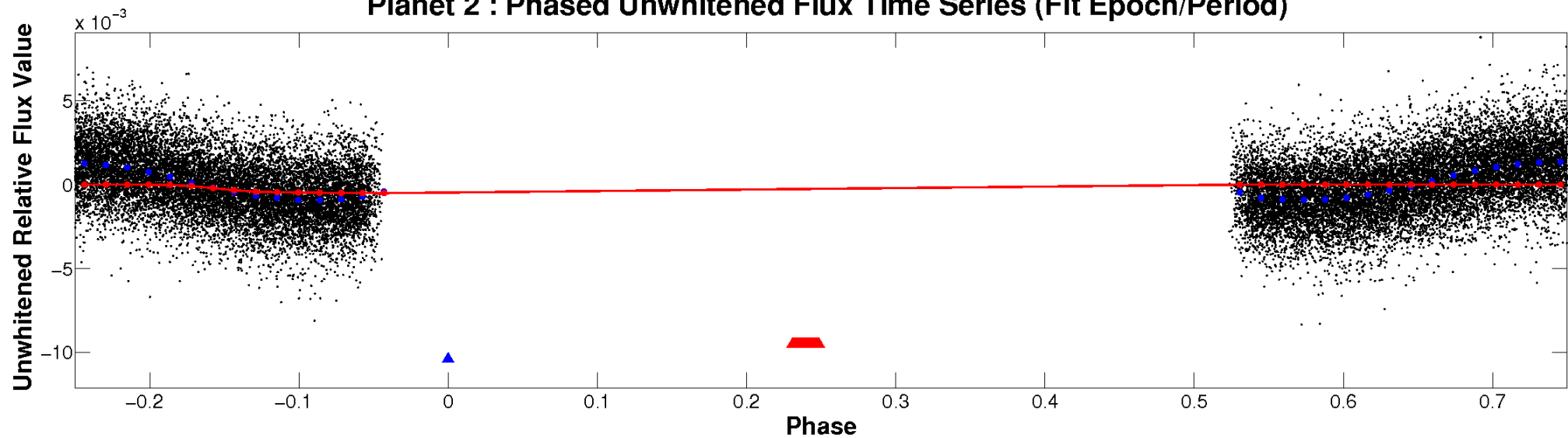
ALT Odd/Even

TCE 002707479-02

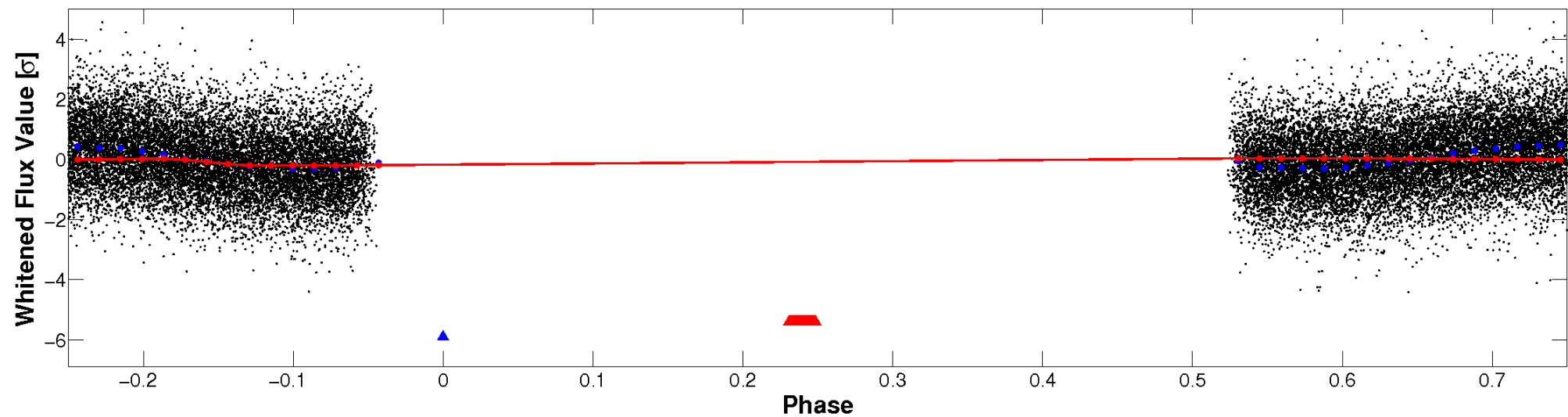


Non-Whitened Vs. Whitened Light Curve

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

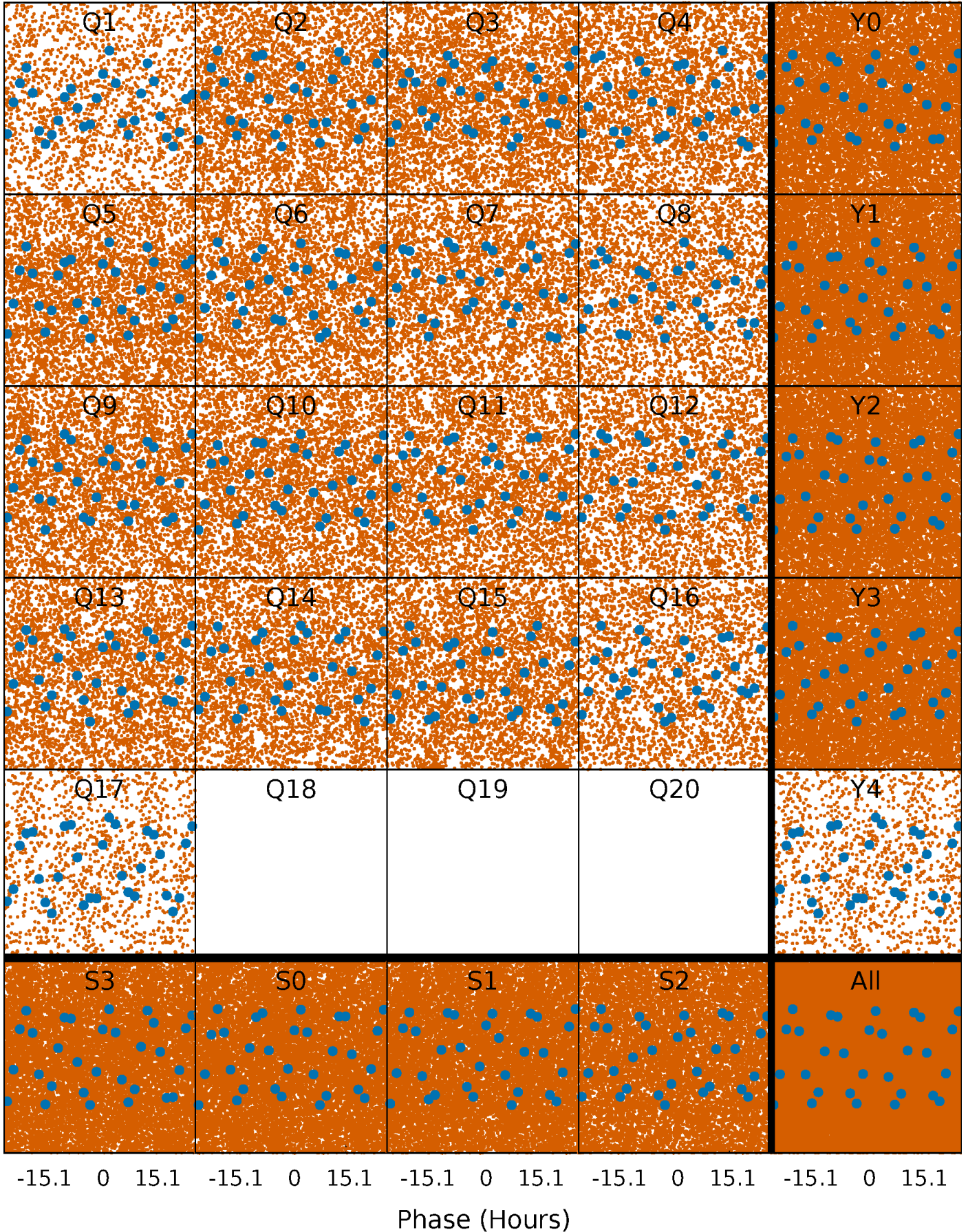


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



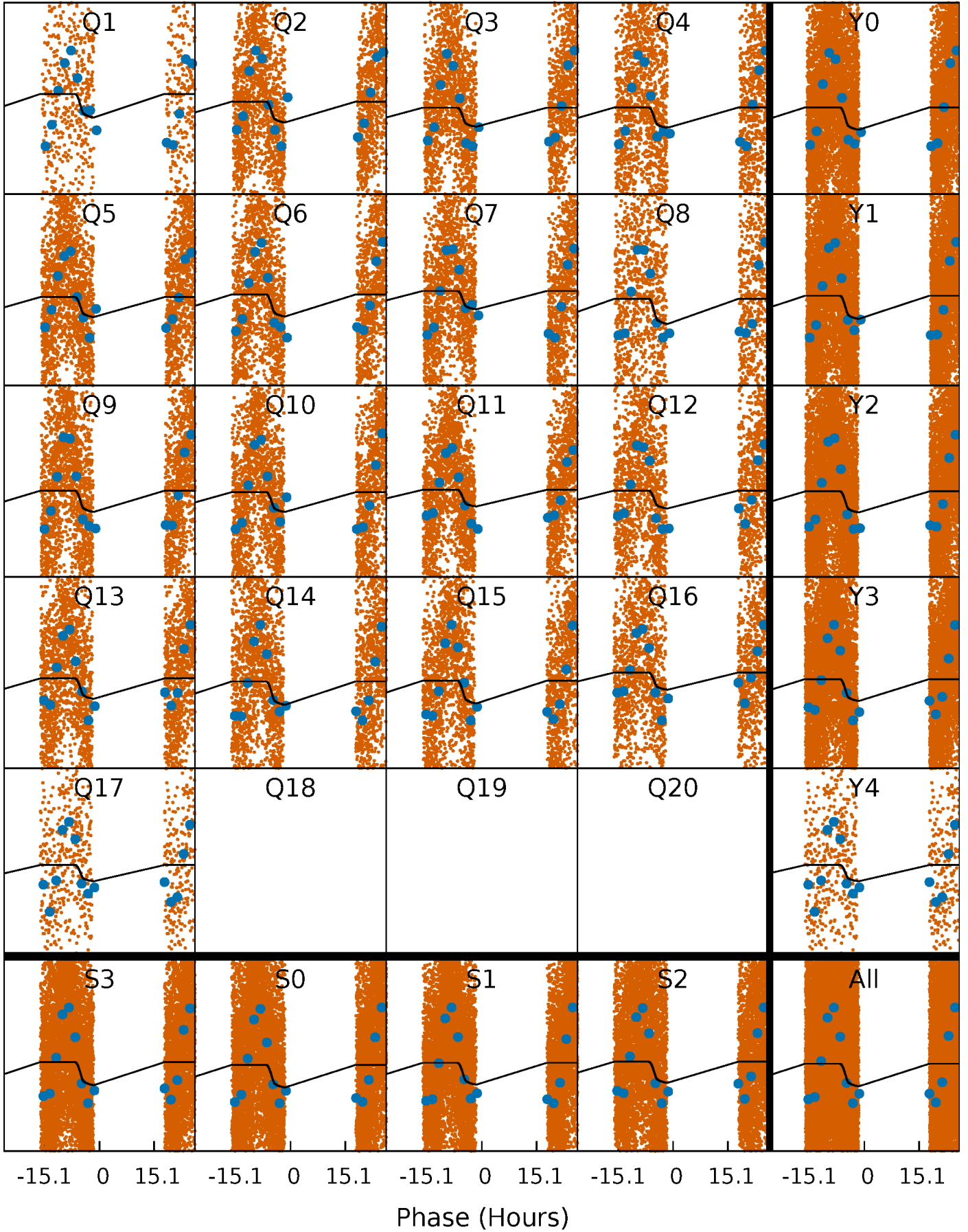
PDC Quarter-Phased Transit Curves

TCE 002707479-02 P= 1.425158 Days $T_0=132.230786$ (BKJD)



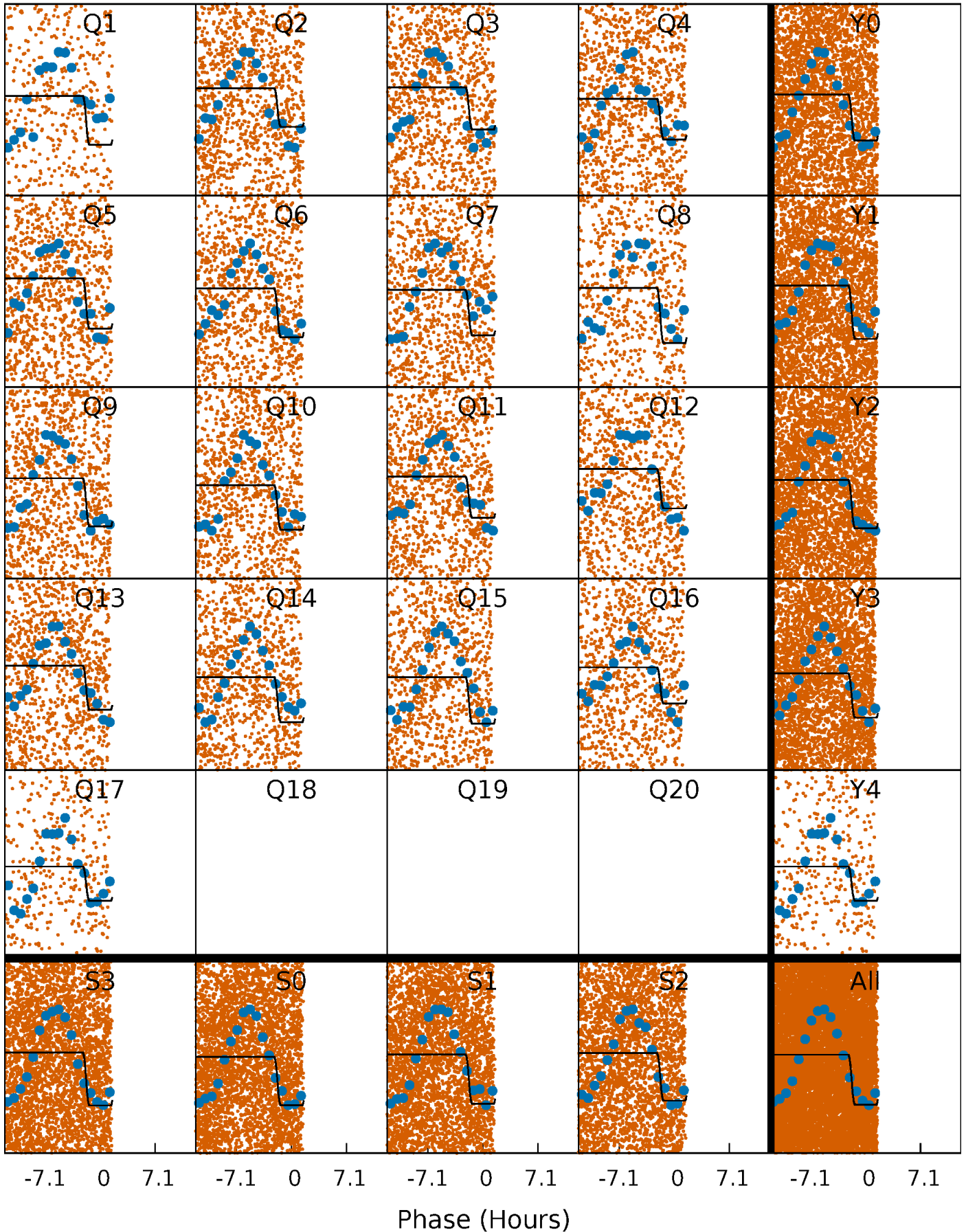
DV Quarter-Phased Transit Curves

TCE 002707479-02 P= 1.425158 Days $T_0=132.230786$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

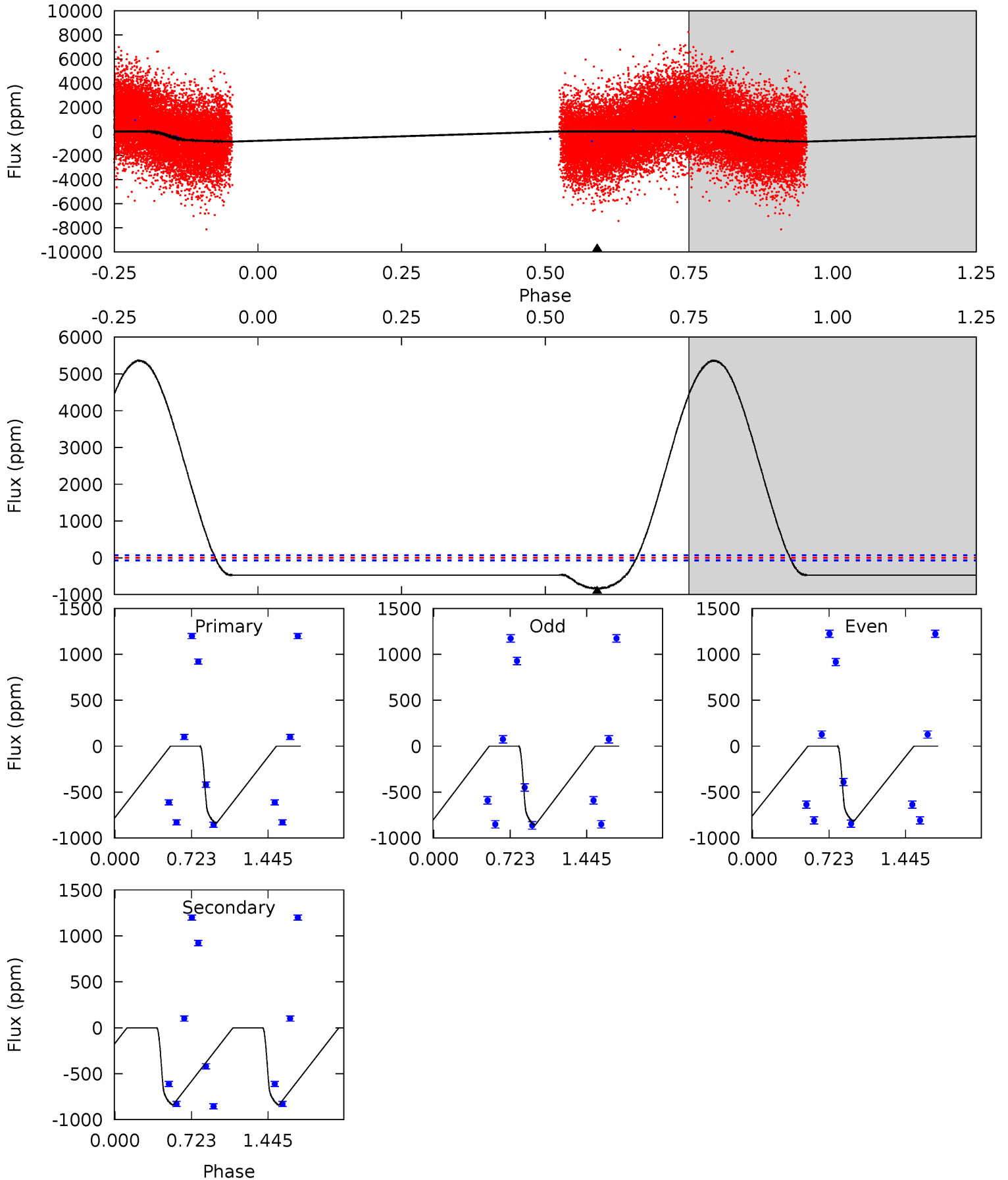
TCE 002707479-02 $P = 1.425151$ Days $T_0 = 132.102344$ (BKJD)



DV Model-Shift Uniqueness Test

002707479-02, P = 1.425158 Days, E = 130.805628 Days

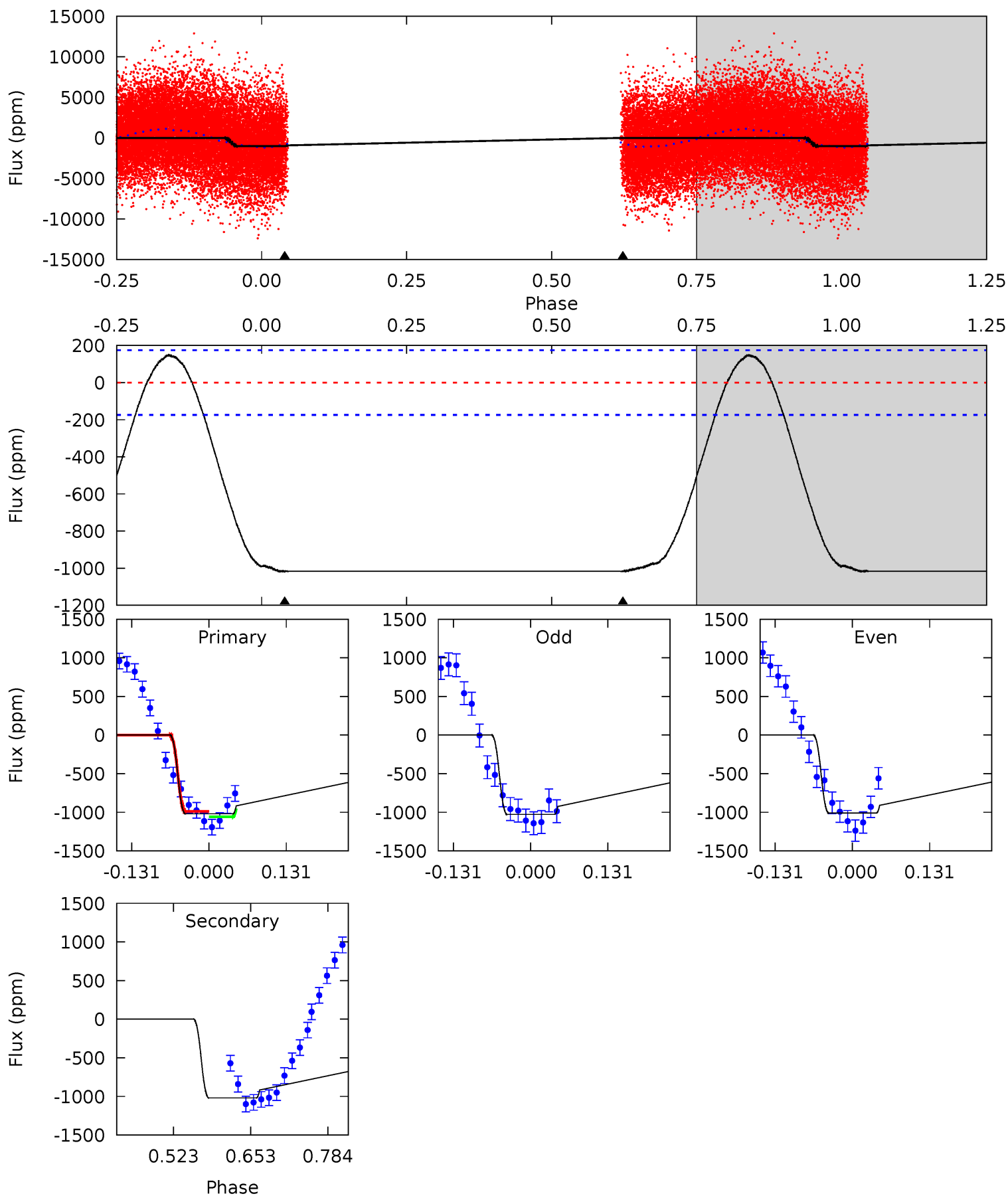
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.8	49.8	0	0	4.13	0.36	24.0	49.8	49.8	49.8	49.8	1.27	0	0.86	0



Alt Model-Shift Uniqueness Test

002707479-02, P = 1.425151 Days, E = 130.677193 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.3	26.3	0	0	4.51	1.51	4.41	26.3	26.3	26.3	26.3	0.21	1.09	0.13	0.84



Stellar Parameters For KIC 002707479

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7504^{+209}_{-314}	$4.151^{+0.105}_{-0.195}$	$0.040^{+0.200}_{-0.350}$	$1.776^{+0.563}_{-0.303}$	$1.628^{+0.198}_{-0.242}$	$0.409^{+0.235}_{-0.200}$
	+3%/-4%	+3%/-5%	+500%/-875%	+32%/-17%	+12%/-15%	+57%/-49%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 002707479-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-842±17	$4.72^{+0.79}_{-0.56}$	3636^{+272}_{-215}	8356^{+434}_{-402}	17^{+5}_{-5}
Alt.	-1019±39	$6.62^{+1.13}_{-0.67}$	3623^{+273}_{-211}	7159^{+274}_{-312}	11^{+2}_{-3}

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 $A_{obs} \gg 1.0$

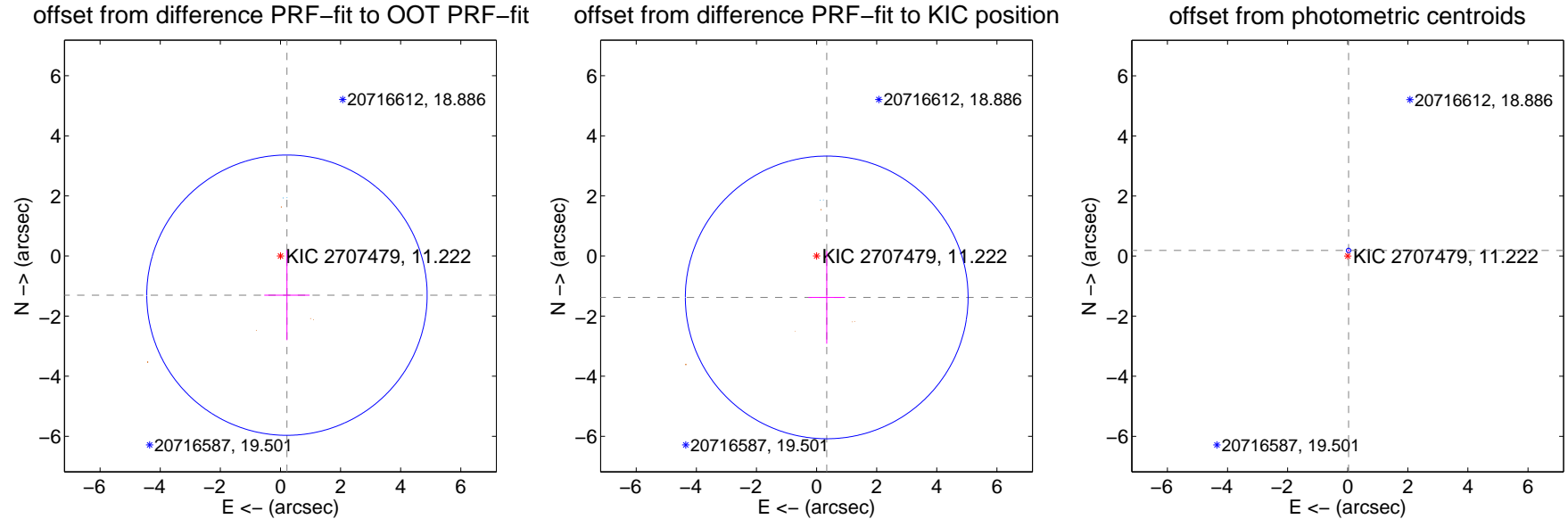
DV Centroid Data

Supplemental centroid analysis for 002707479-02. **Kepler magnitude: 11.22.** Transit SNR 16.33

There are 2 quarters with good PRF difference image offsets

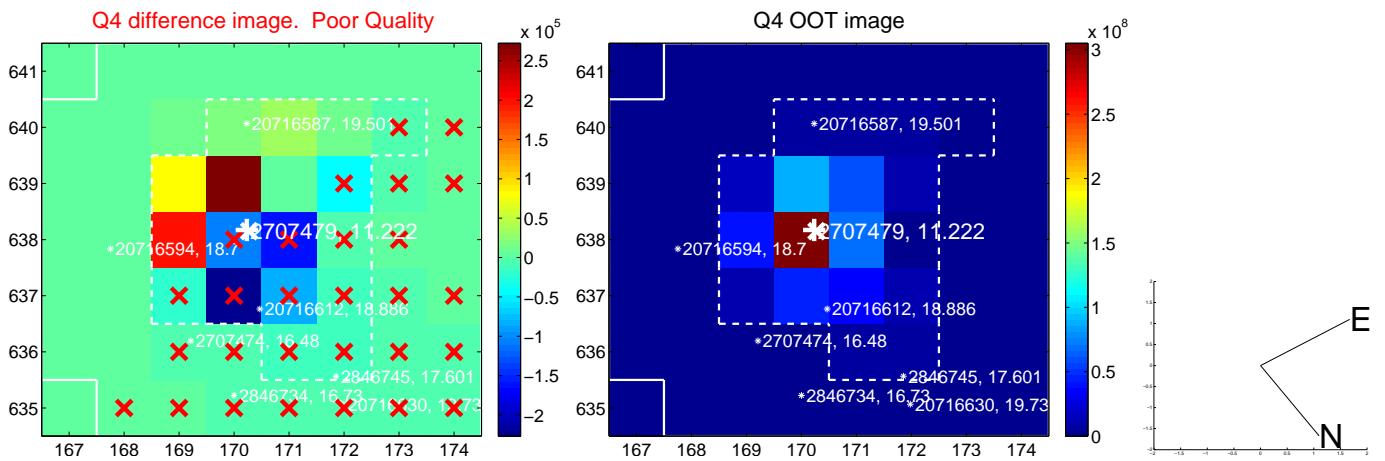
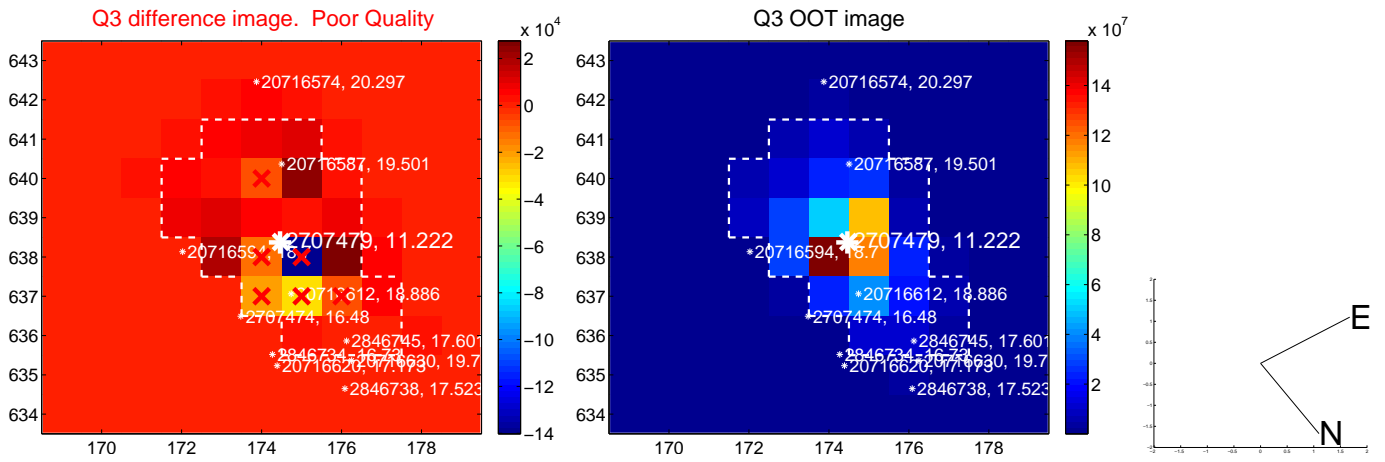
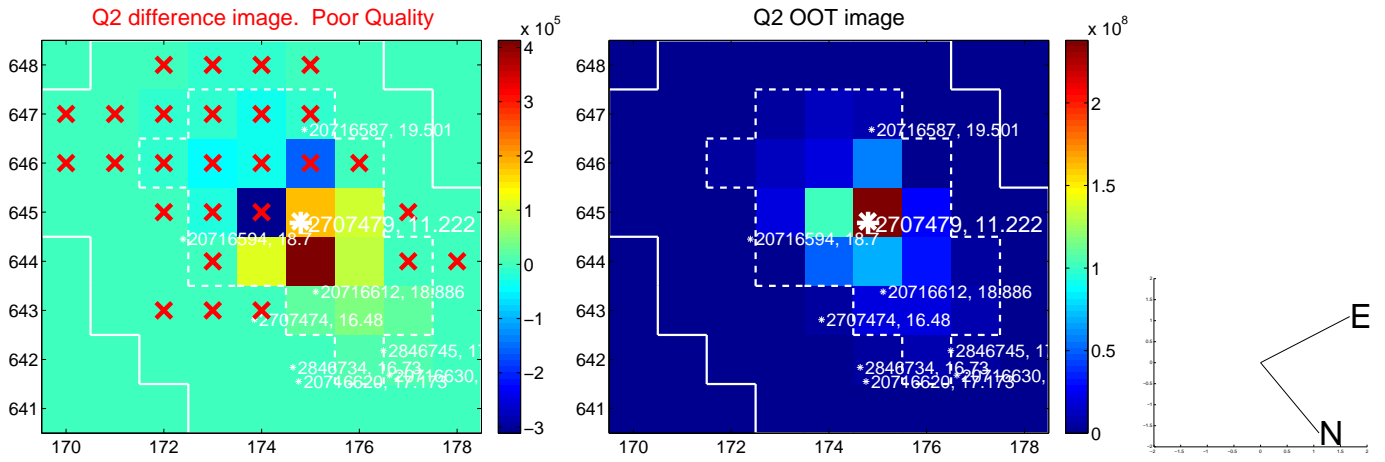
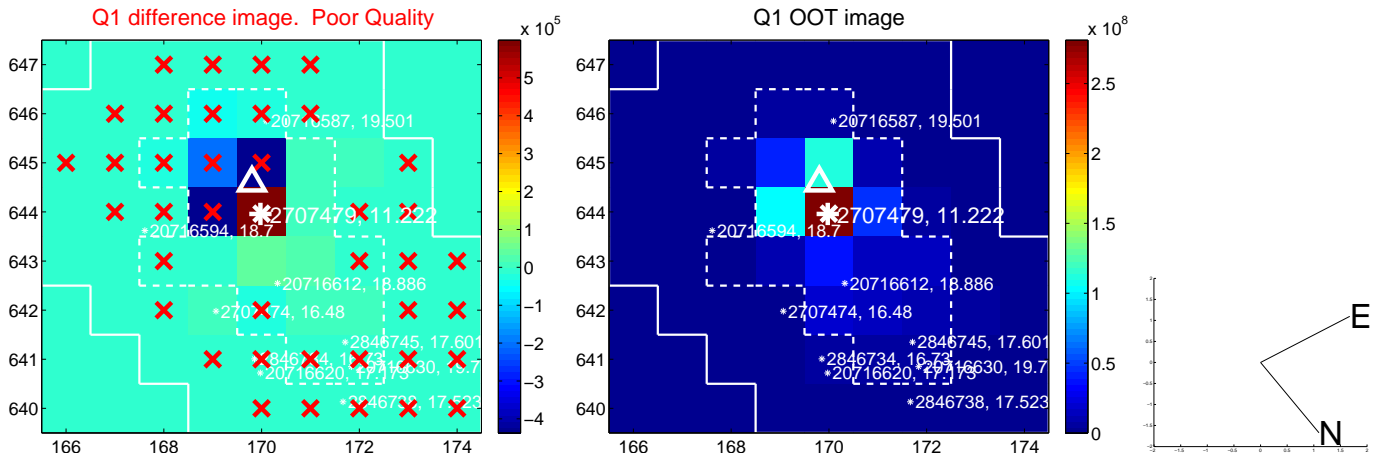
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.321 ± 1.555	0.85	-0.216 ± 0.753	-1.303 ± 1.498
PRF-fit source offset from KIC position	1.418 ± 1.568	0.90	-0.337 ± 0.610	-1.377 ± 1.541
photometric centroid source offset	0.19 ± 0.02	7.70	-0.03 ± 0.02	0.19 ± 0.02

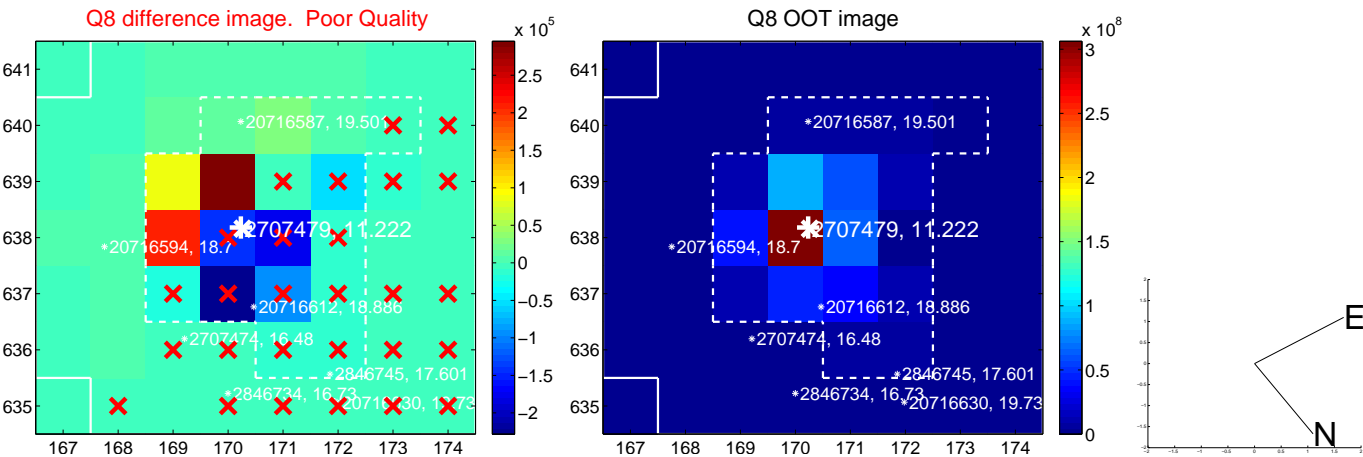
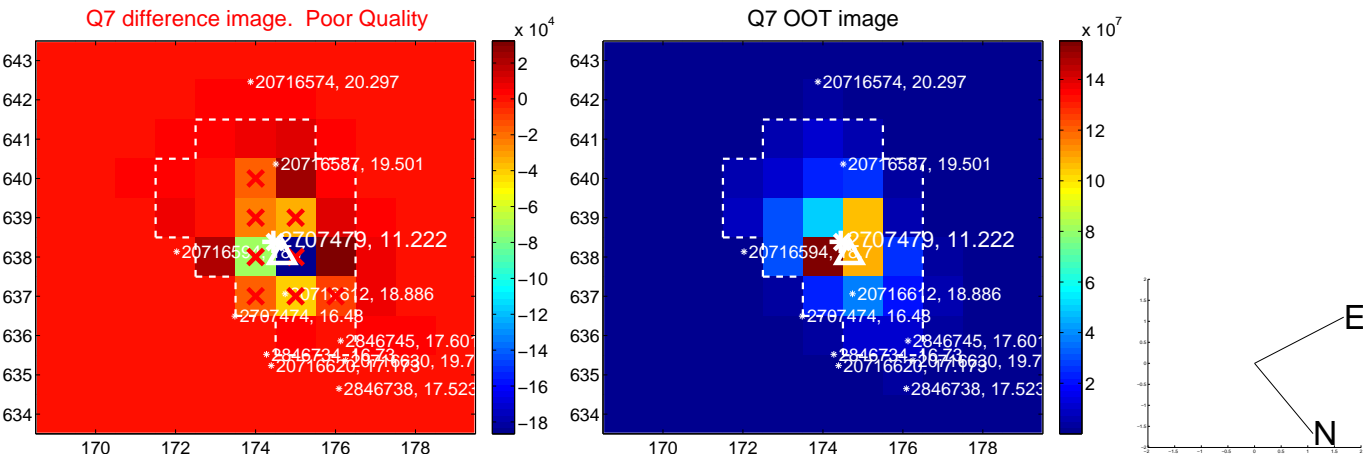
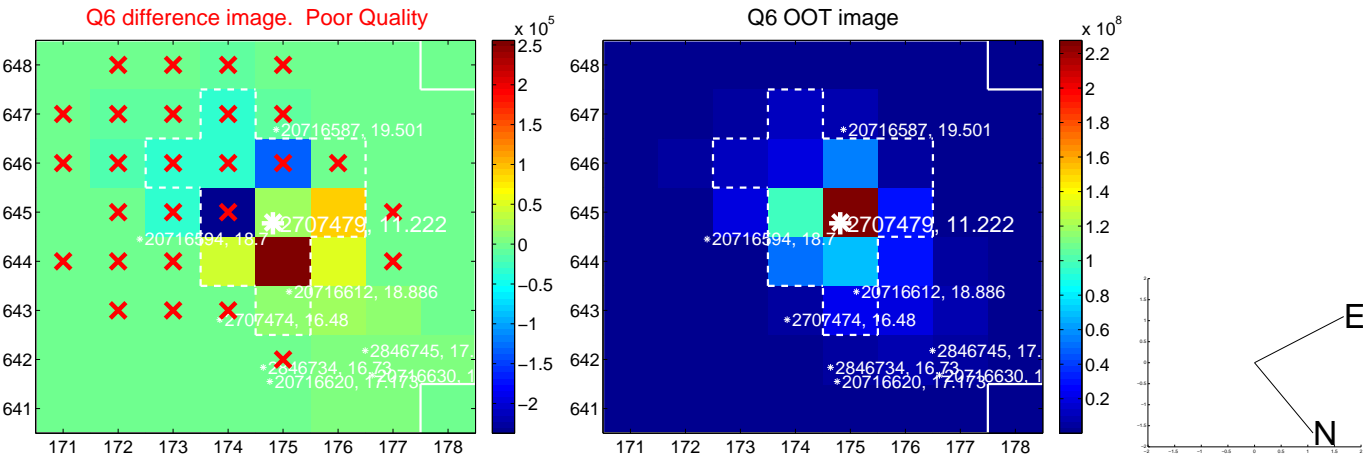
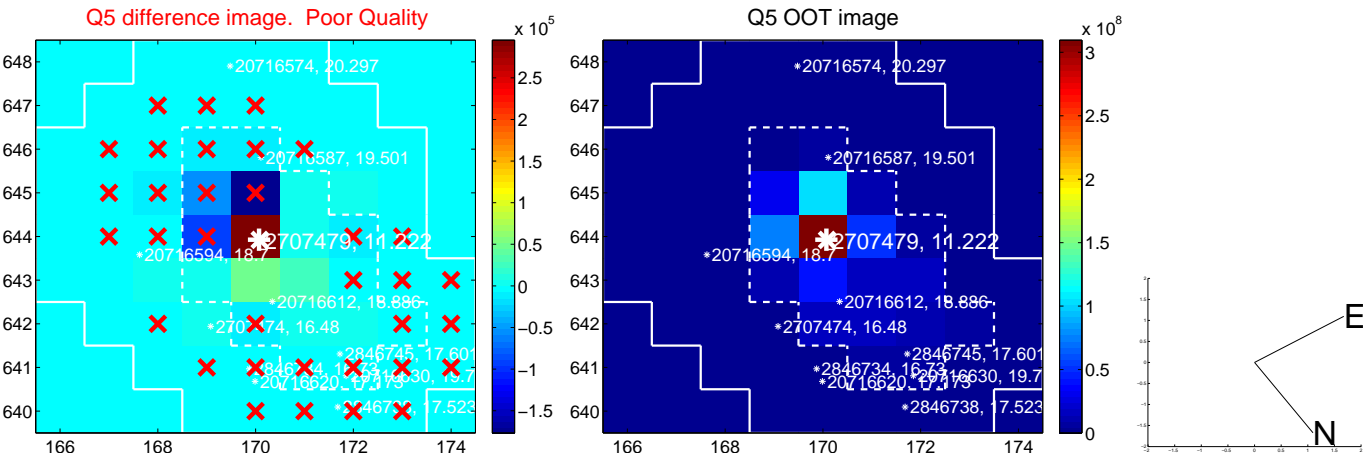


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

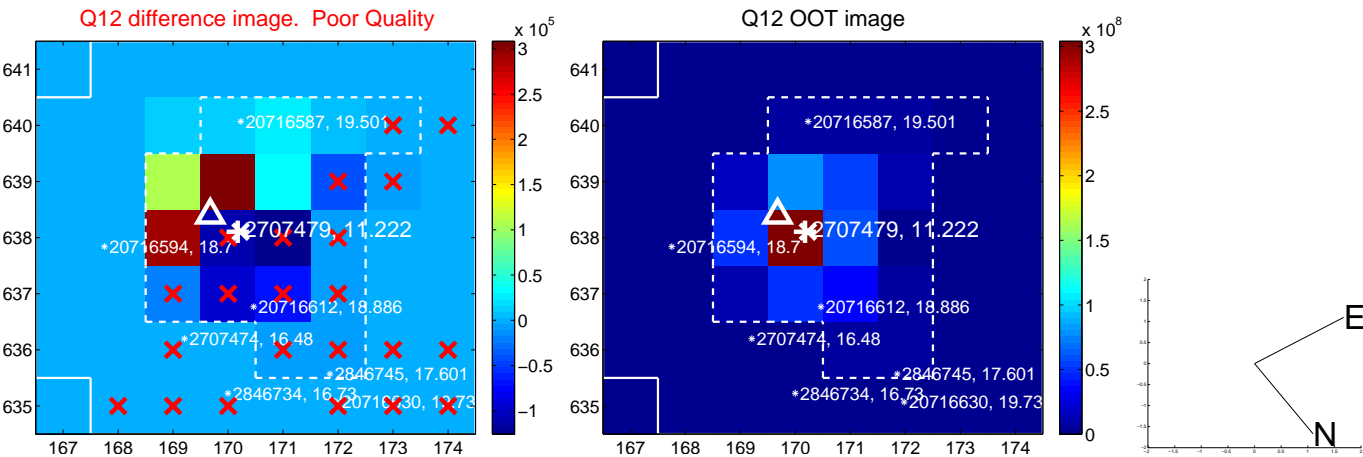
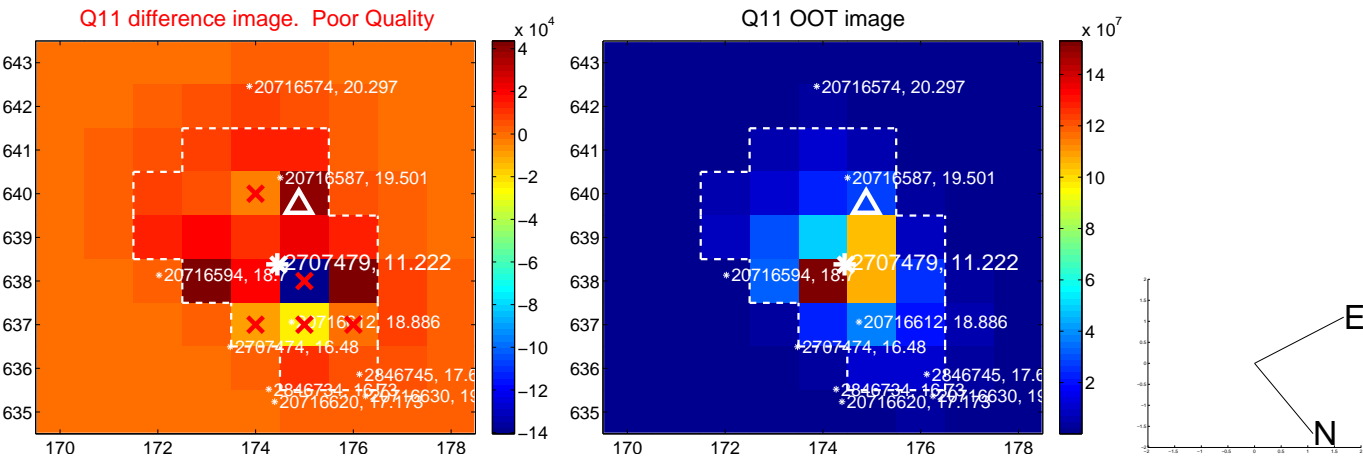
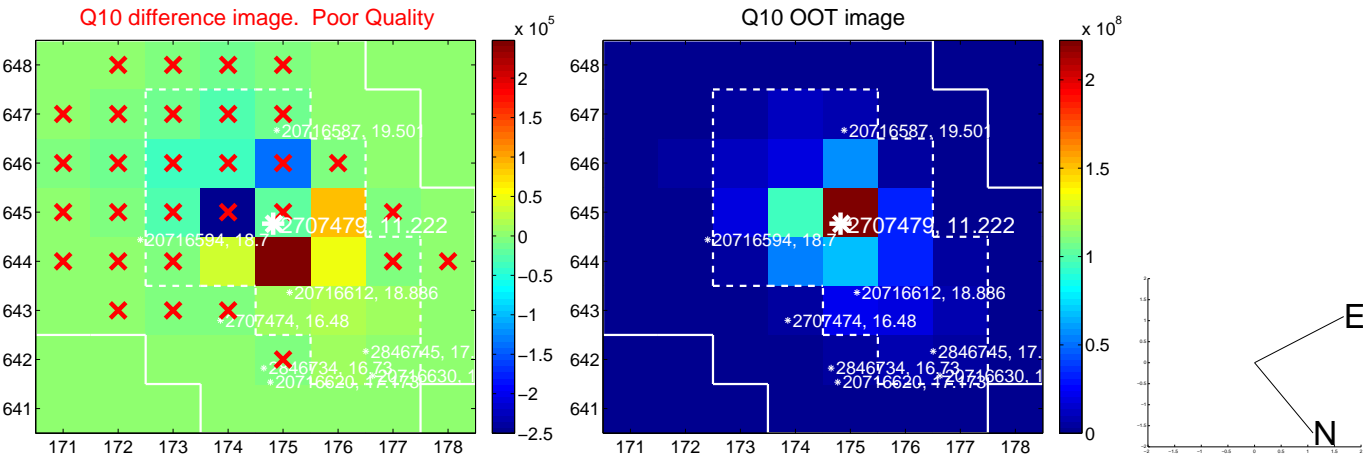
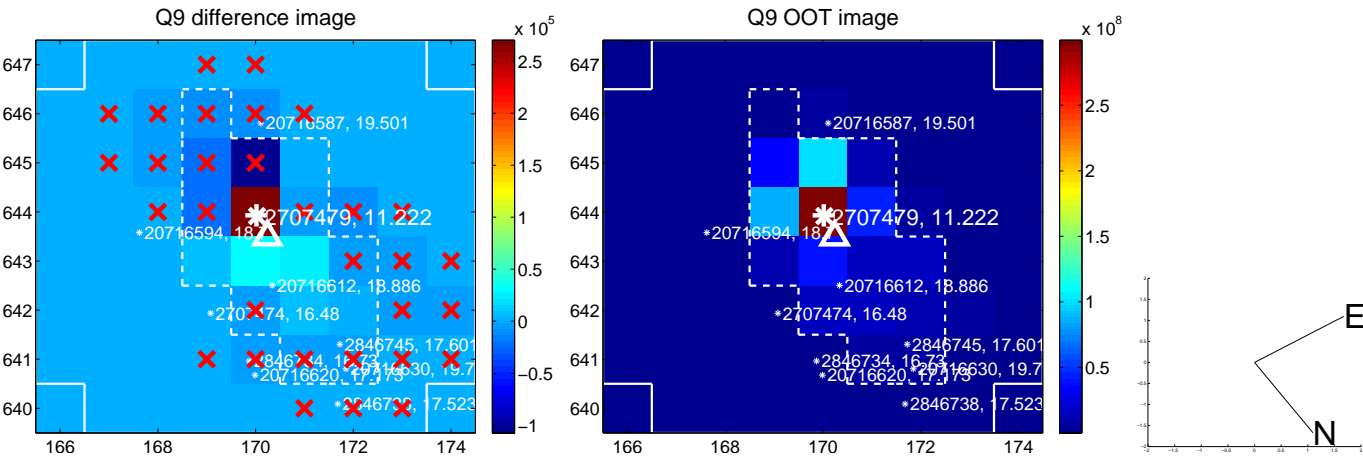
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



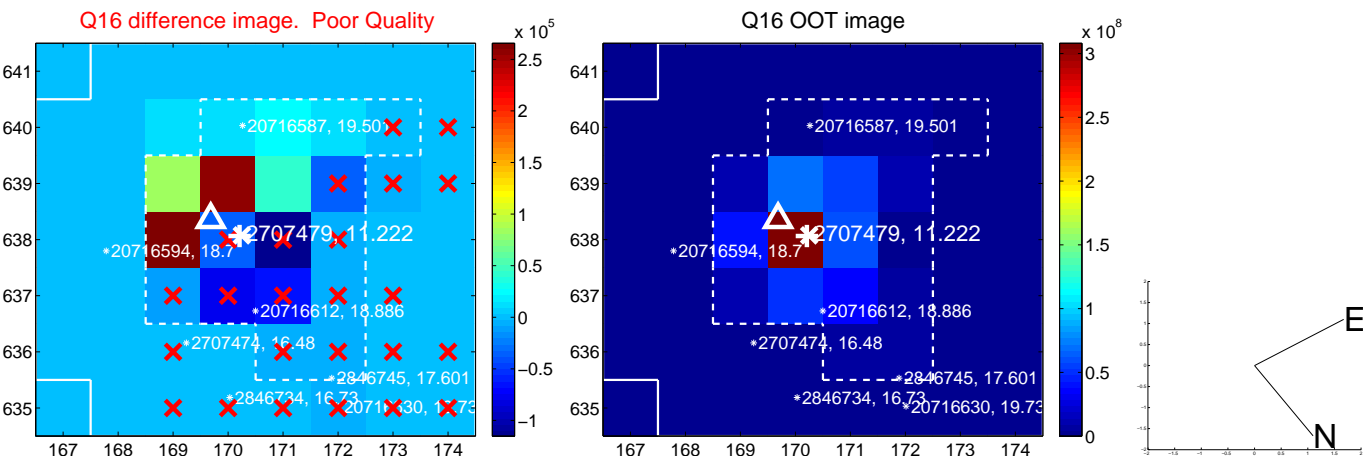
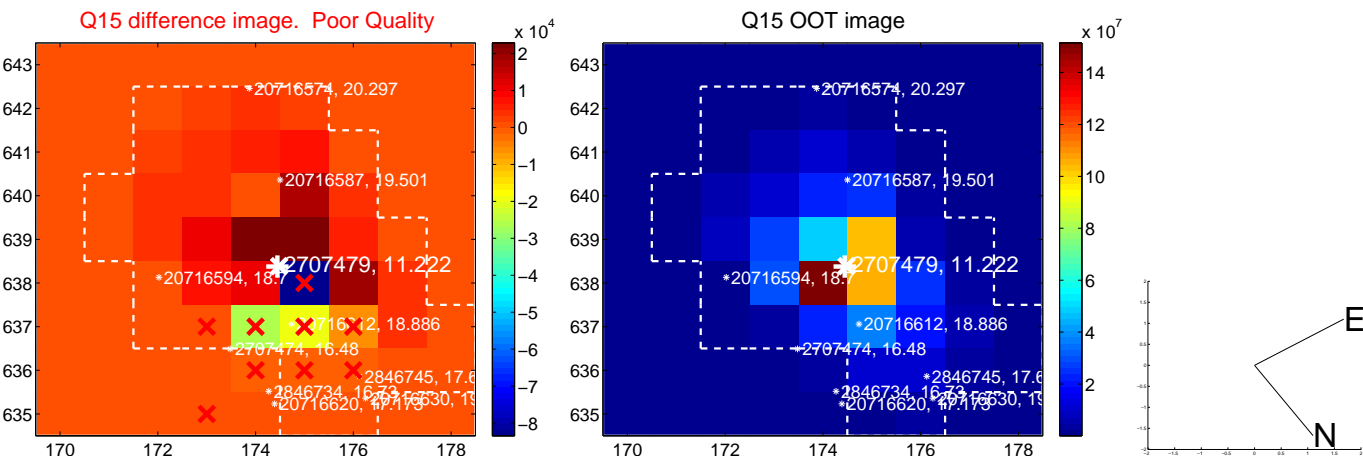
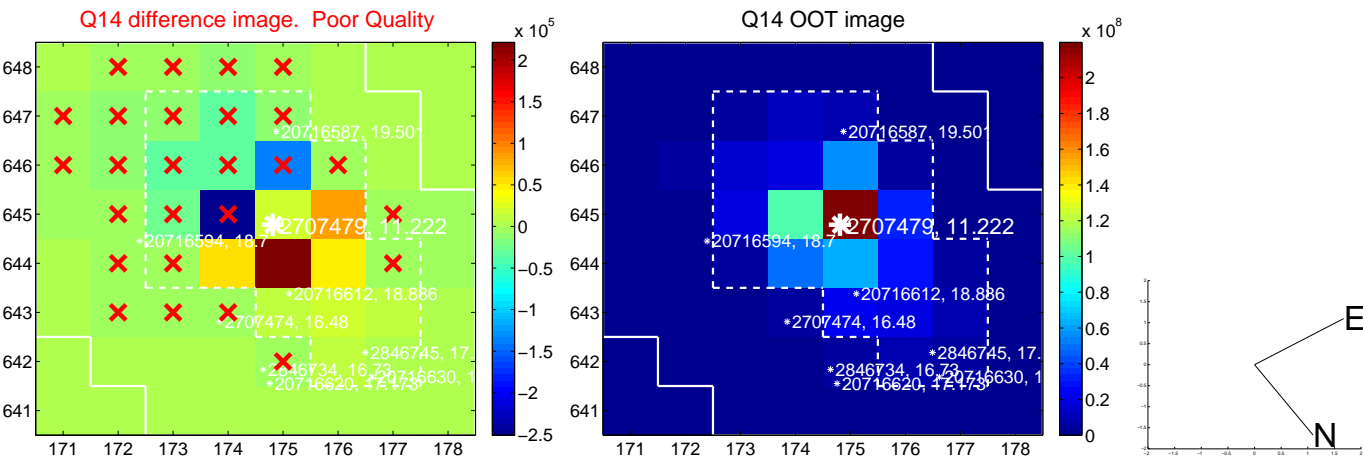
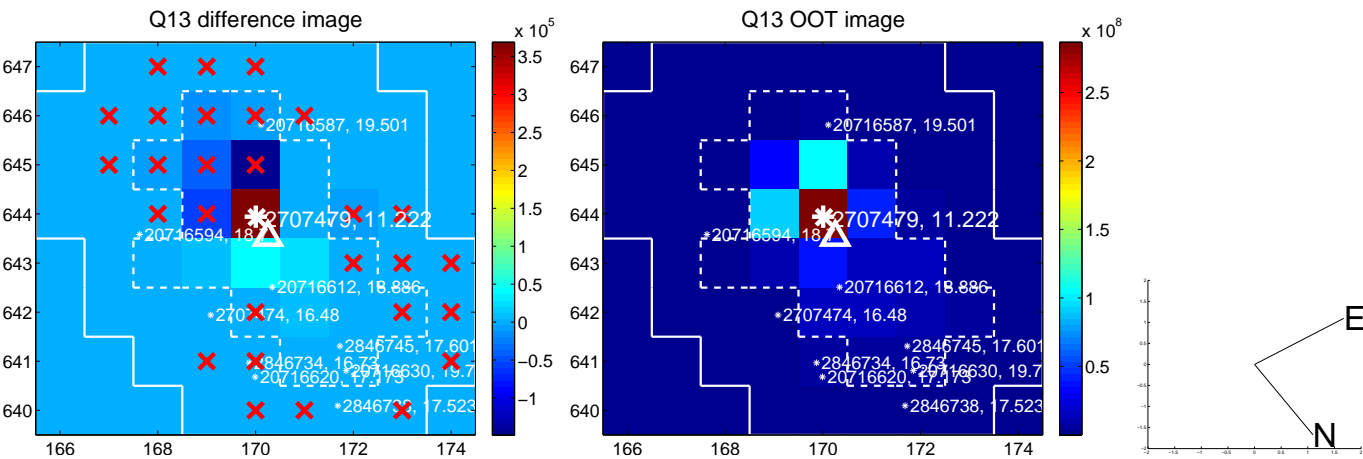
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

