

KIC 011920497

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})
011920497-01	OBS	No	1.668294	132.291368	48.6	10.461	7.8	7.7	0.88	5508	0.61	973.82
011920497-02	OBS	No	87.936997	148.105495	632.5	6.008	7.9	6.7	0.88	5508	2.46	4.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011920497-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—HALO_GHOST
011920497-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

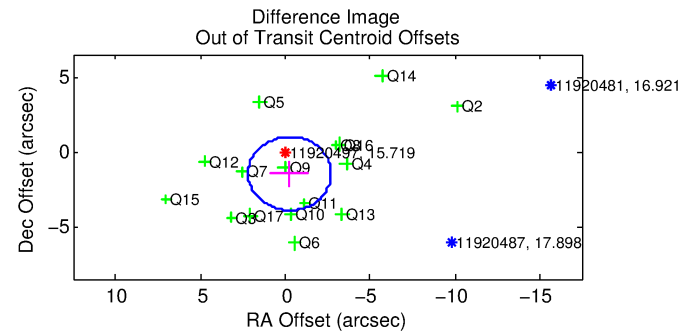
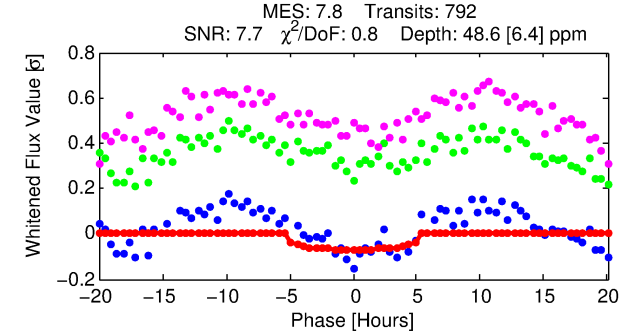
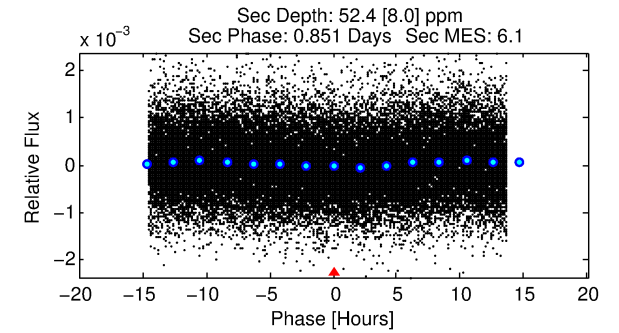
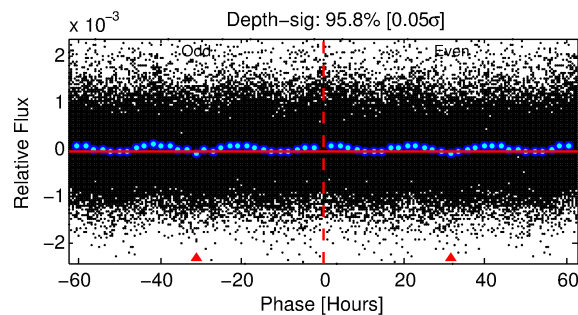
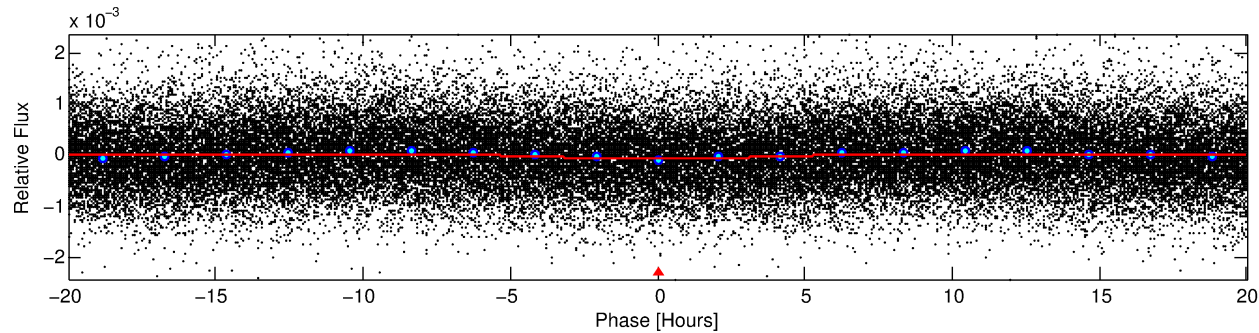
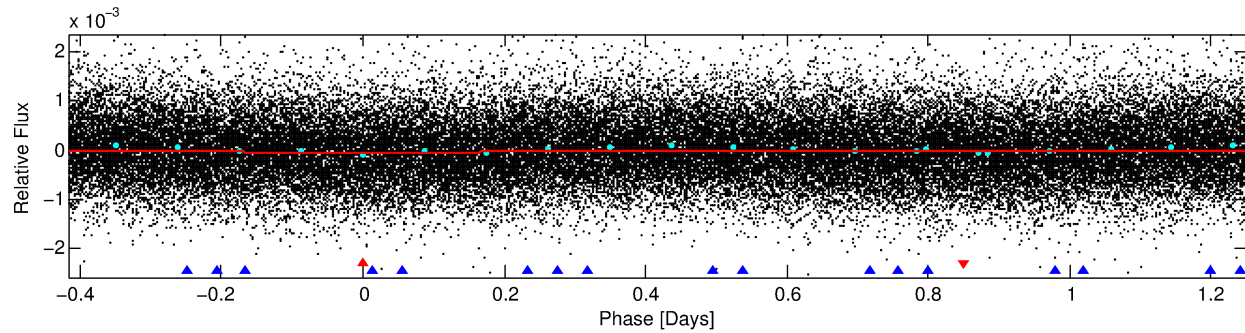
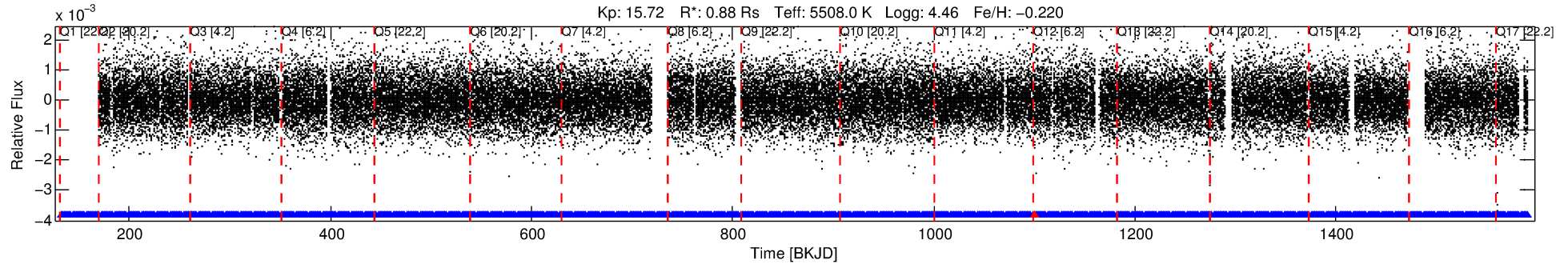
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011920497-01

No Significant Match Found

DV One-Page Summary

KIC: 11920497 Candidate: 1 of 2 Period: 1.668 d



DV Fit Results:

Period = 1.66829 [0.00004] d
Epoch = 132.2914 [0.0137] BKJD
Rp/R* = 0.0063 [0.0136]
a/R* = 1.37 [5.72]
b = 0.15 [58.94]
Seff = 973.82 [291.95]
Teq = 1424 [107] K
Rp = 0.61 [1.31] Re
a = 0.0257 [0.0047] AU
Ag = 51.54 [222.13] [0.23 σ]
Teffp = 5901 [6349] K [0.70 σ]

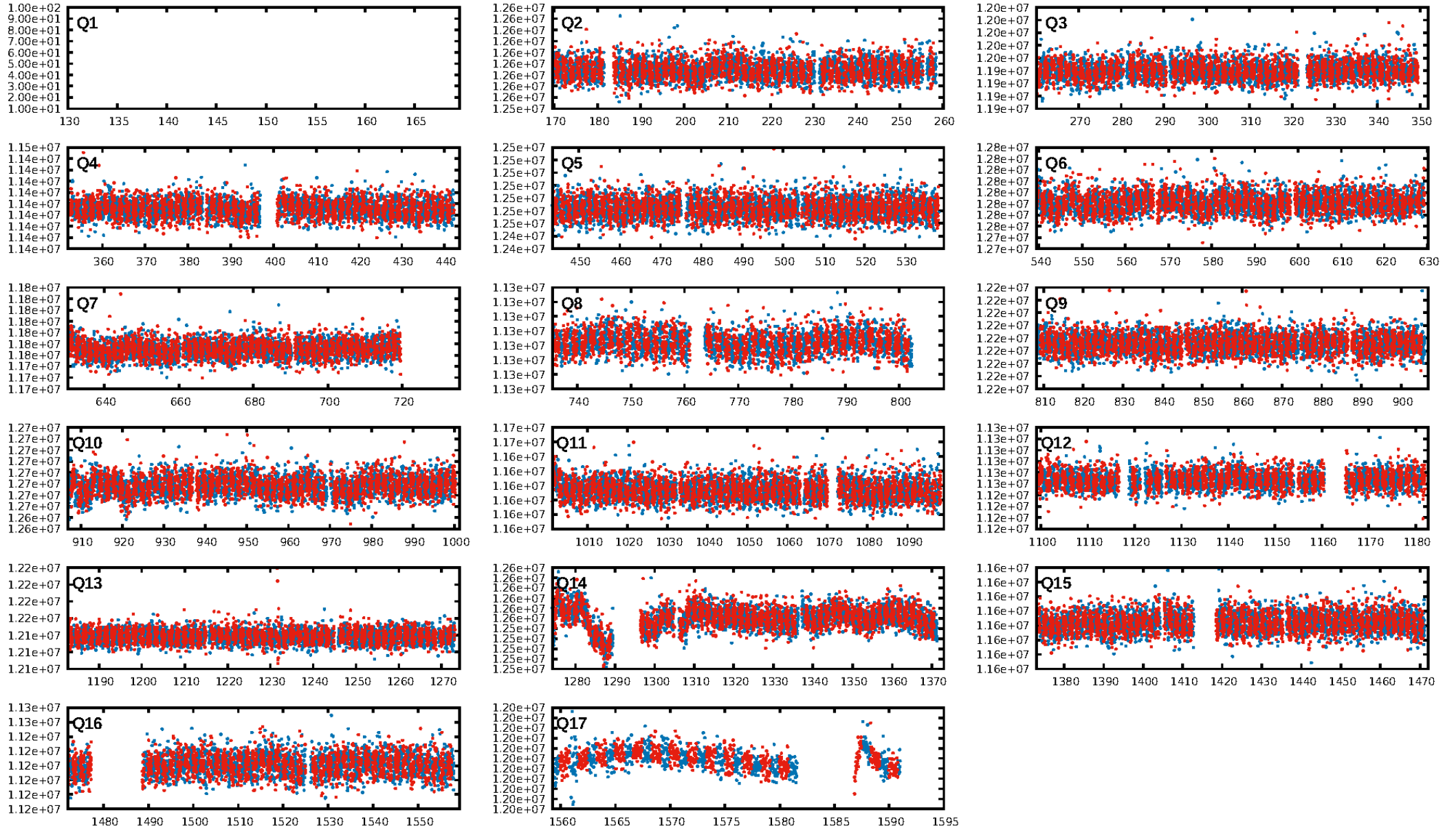
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [171.63 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.90e-11
RollingBand-fgt: 1.00 [775/776]
GhostDiagnostic-chr: 0.003878
Centroid-sig: 0.0%
Centroid-so: 4.241 arcsec [2.35 σ]
OotOffset-rm: 1.486 arcsec [1.82 σ]
KicOffset-rm: 1.405 arcsec [1.75 σ]
OotOffset-st: 4/4/4 [16]
KicOffset-st: 4/4/4 [16]
DiffImageQuality-fgm: 0.06 [1/16]
DiffImageOverlap-fno: 1.00 [16/16]

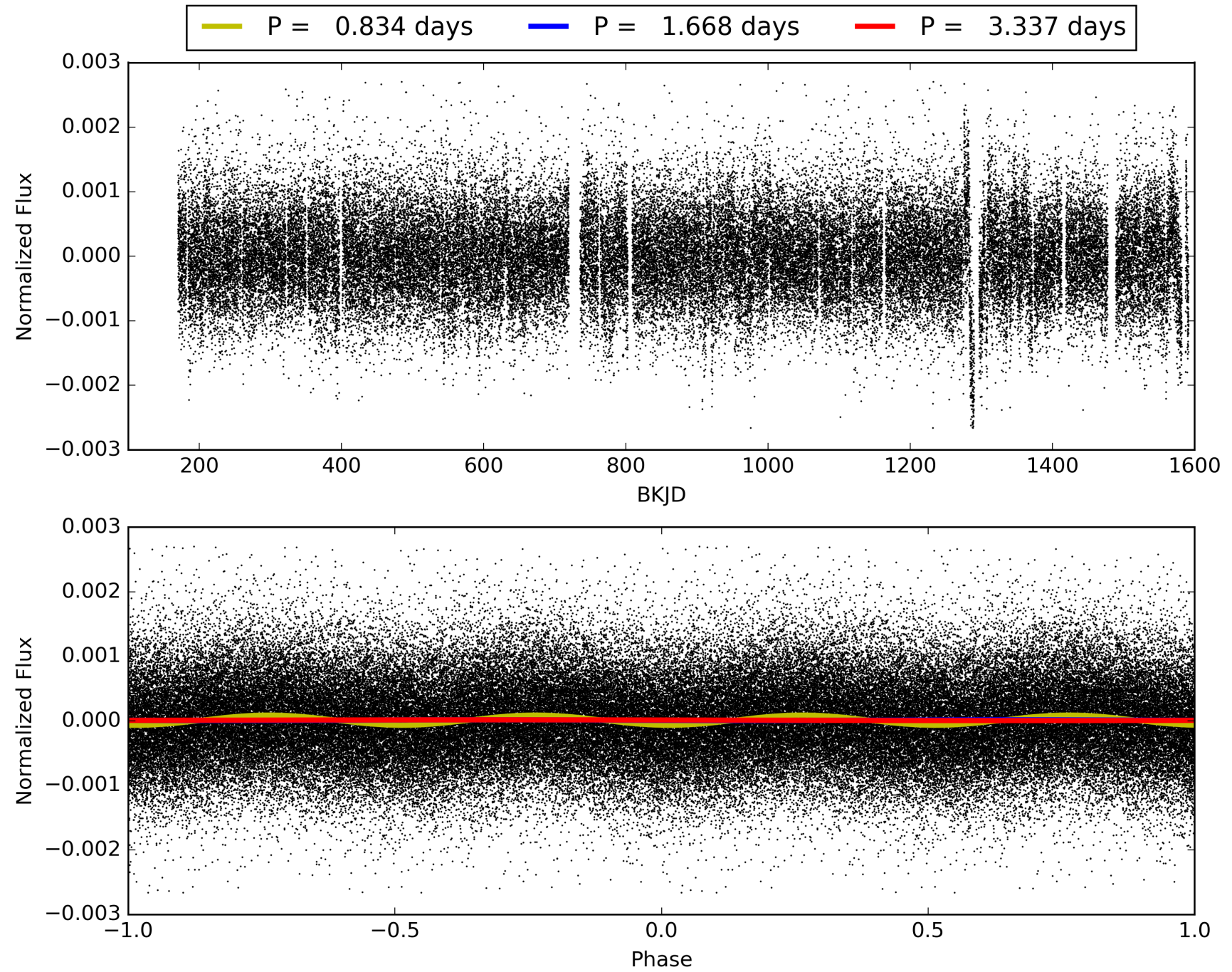
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011920497-01, PDC Light Curves

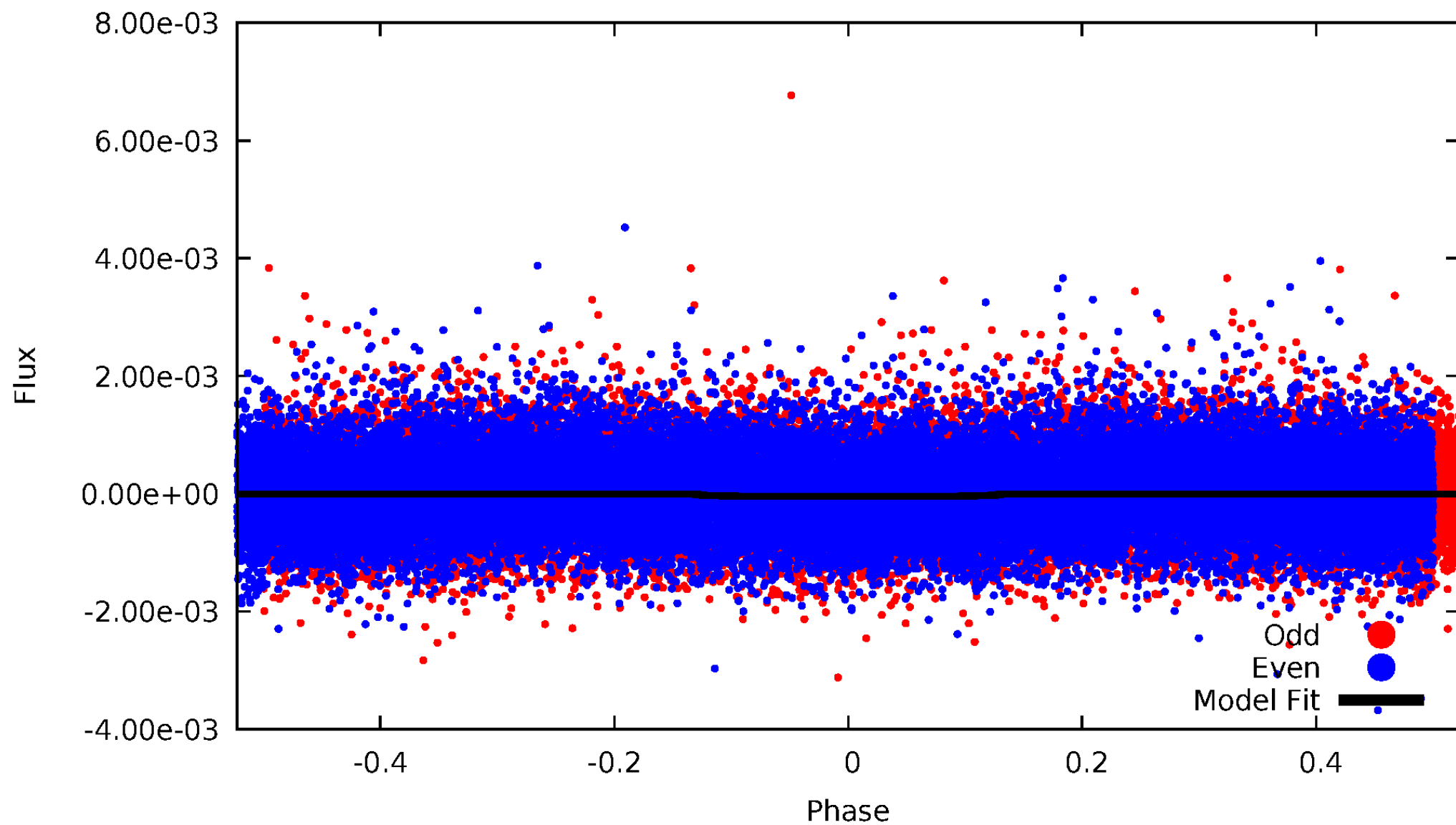


TCE 011920497-01



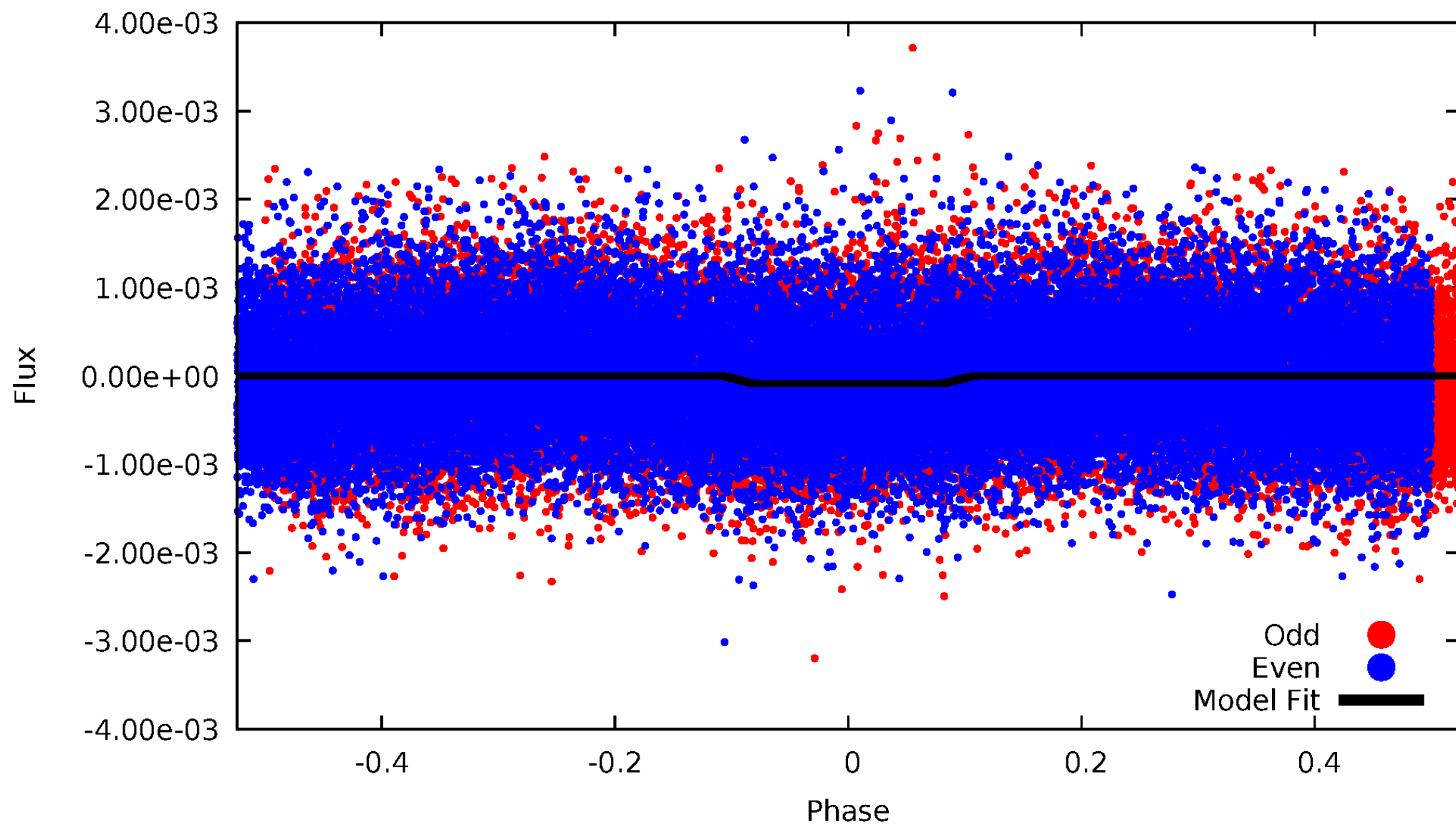
DV Odd/Even

TCE 011920497-01

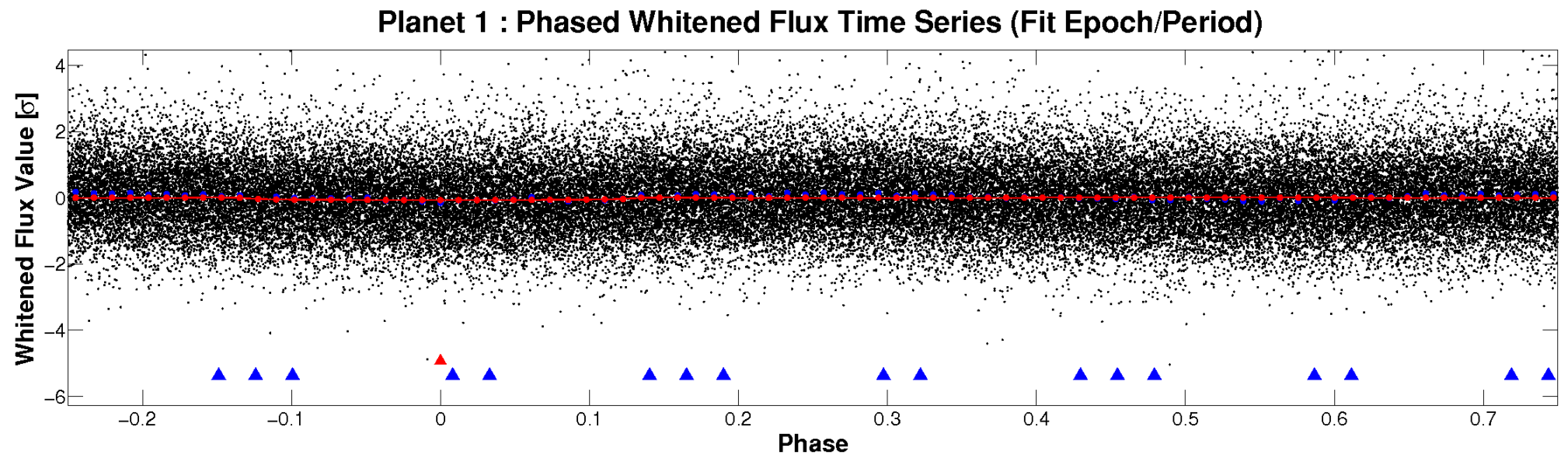
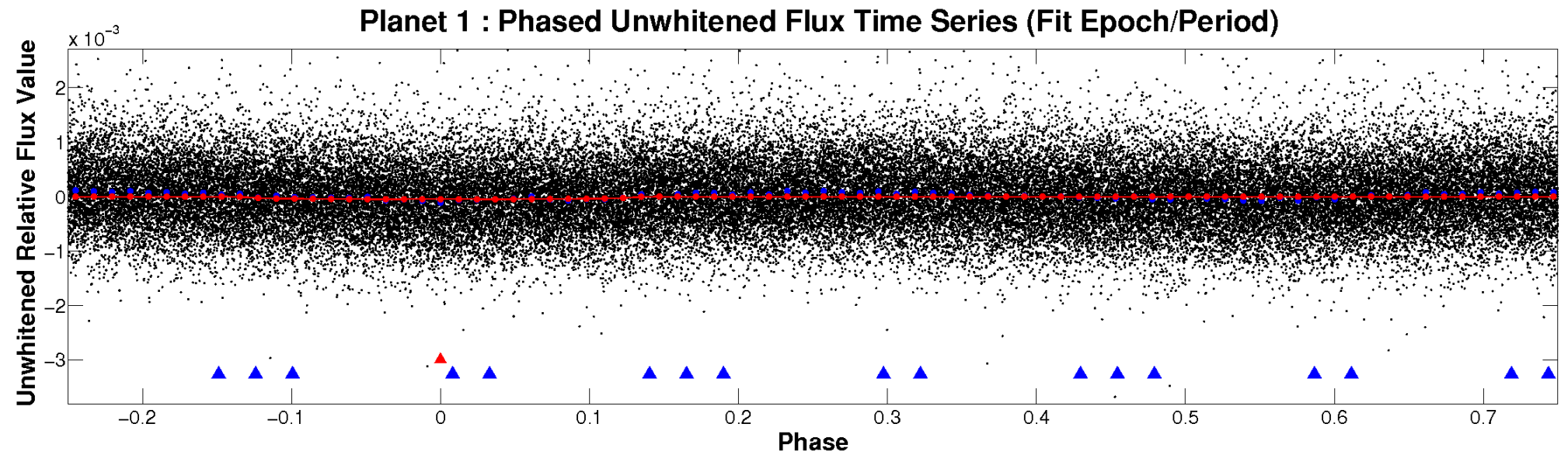


ALT Odd/Even

TCE 011920497-01

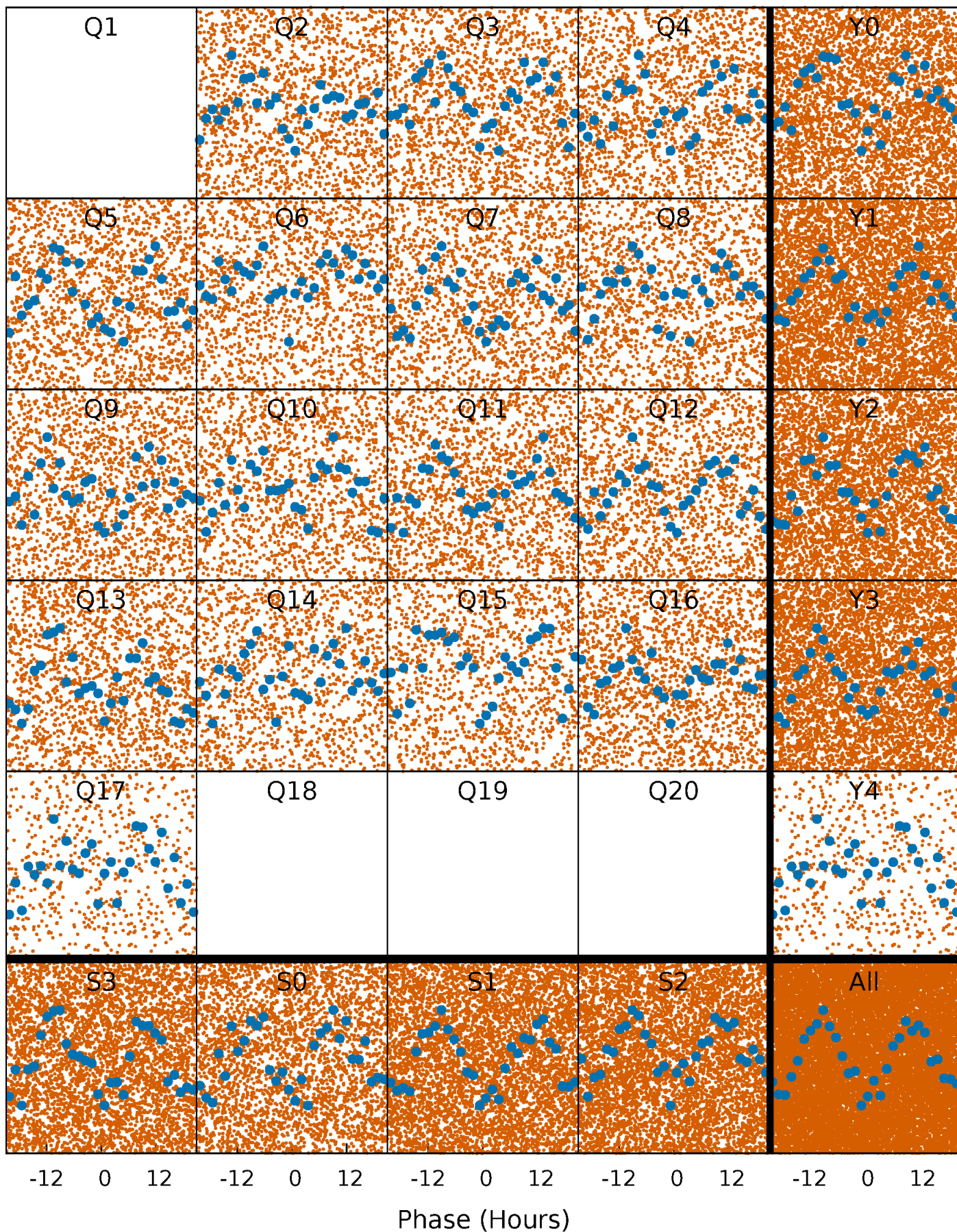


Non-Whitened Vs. Whitened Light Curve



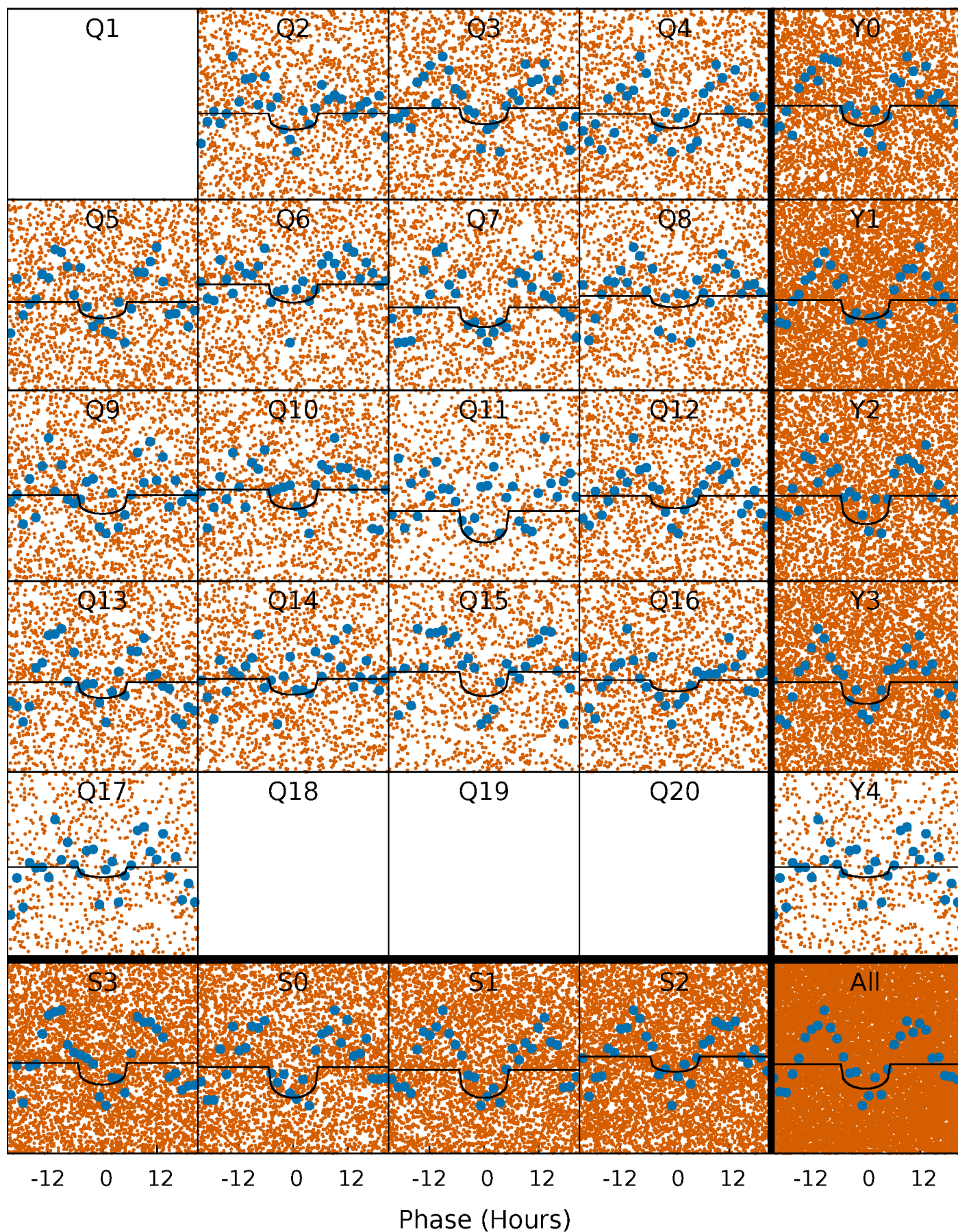
PDC Quarter-Phased Transit Curves

TCE 011920497-01 P= 1.668294 Days $T_0=132.291368$ (BKJD)



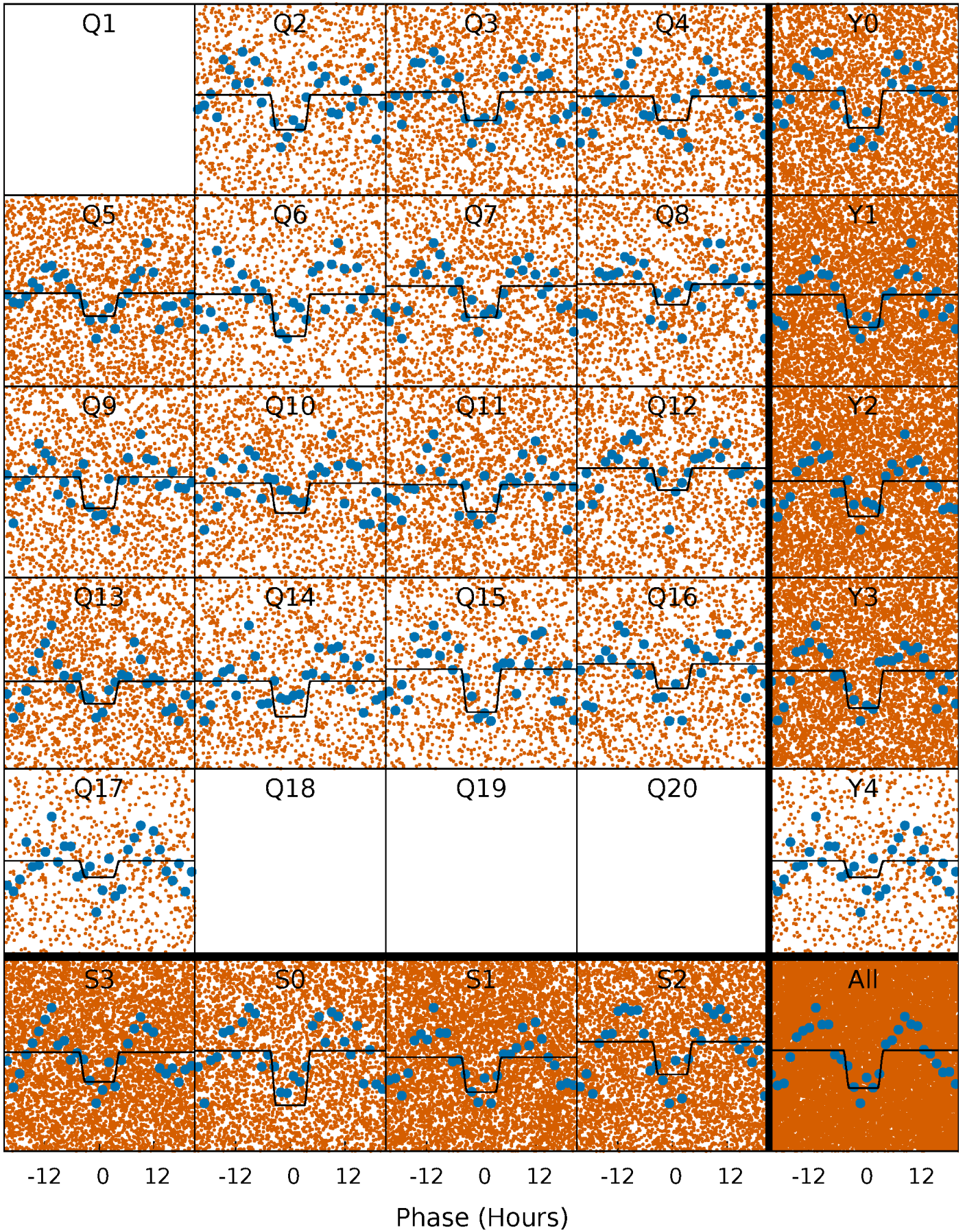
DV Quarter-Phased Transit Curves

TCE 011920497-01 P= 1.668294 Days $T_0=132.291368$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

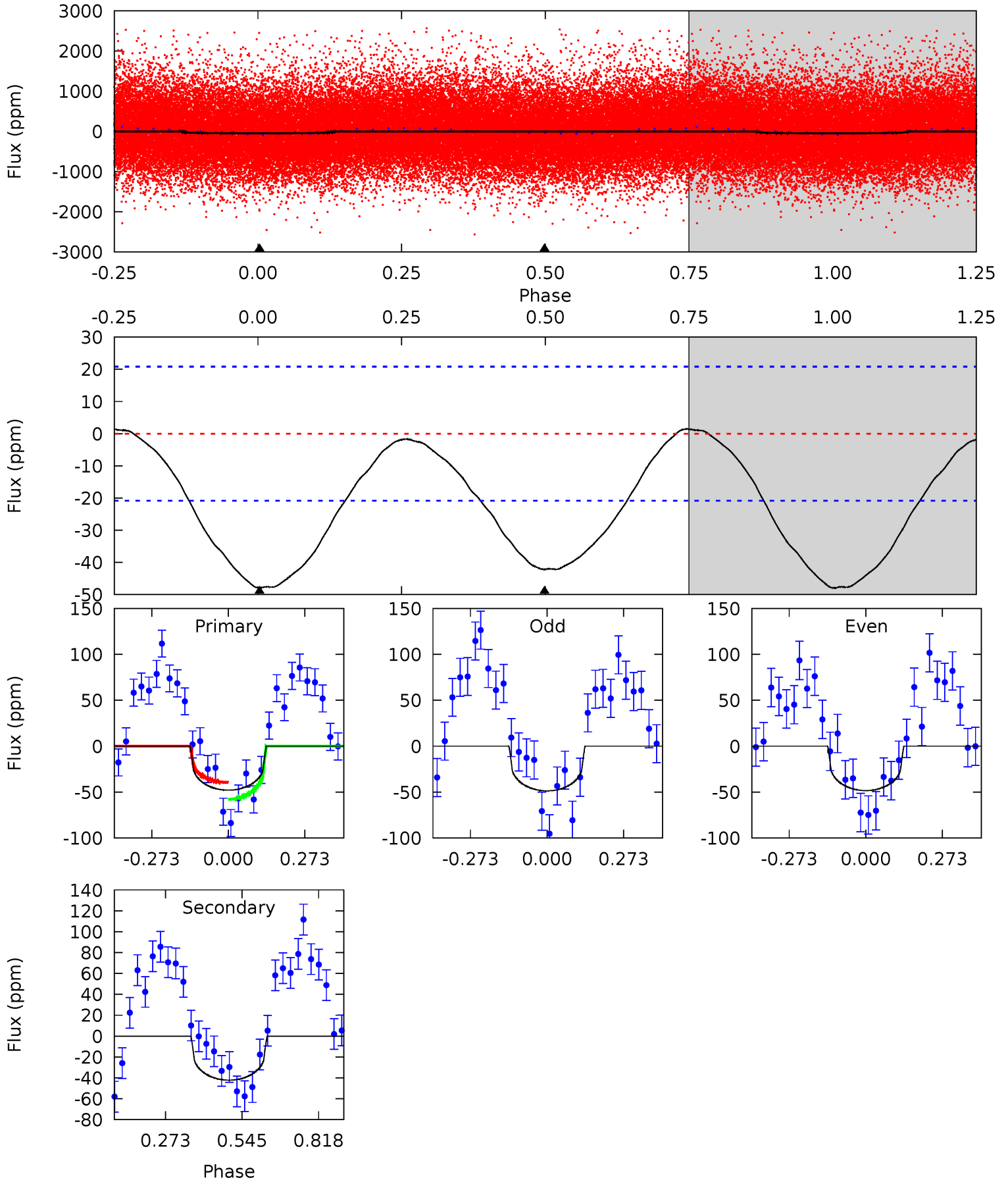
TCE 011920497-01 P= 1.668267 Days $T_0=132.341379$ (BKJD)



DV Model-Shift Uniqueness Test

011920497-01, P = 1.668294 Days, E = 132.291368 Days

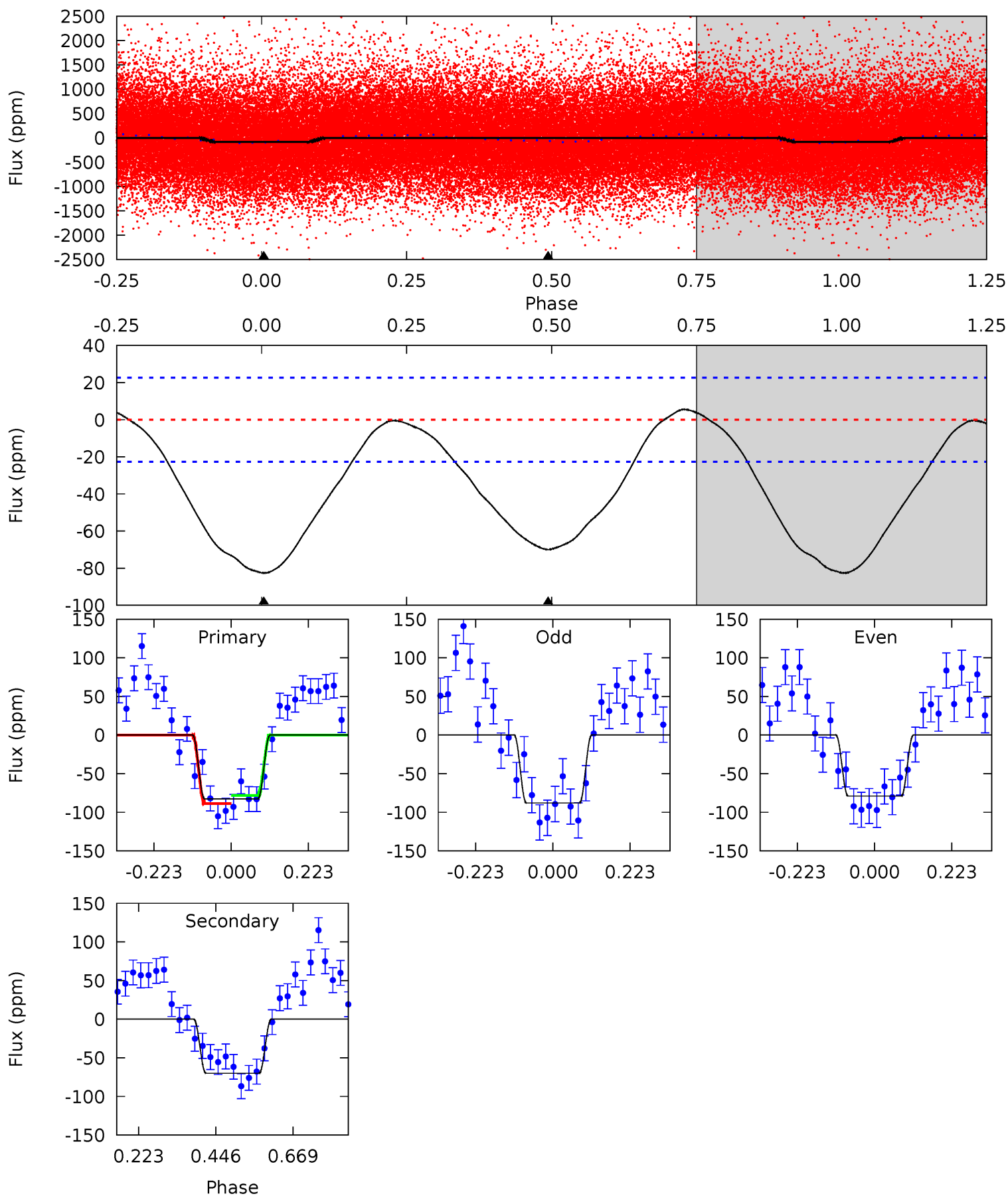
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	8.81	0	0	4.35	1.10	0.36	10.0	10.0	8.81	8.81	0.03	0.91	0.03	1.97



Alt Model-Shift Uniqueness Test

011920497-01, P = 1.668267 Days, E = 132.341379 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	13.6	0	0	4.39	1.22	0.63	16.0	16.0	13.6	13.6	0.87	0.87	0.06	1.02



Stellar Parameters For KIC 011920497

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5508^{+182}_{-149}	$4.456^{+0.108}_{-0.148}$	$-0.220^{+0.300}_{-0.300}$	$0.883^{+0.191}_{-0.127}$	$0.812^{+0.116}_{-0.067}$	$1.664^{+0.776}_{-0.731}$
	+3%/-3%	+2%/-3%	+136%/-136%	+22%/-14%	+14%/-8%	+47%/-44%
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 011920497-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-42 ± 5	$1.12^{+1.12}_{-0.75}$	2003^{+120}_{-106}	4345^{+2986}_{-966}	12^{+101}_{-9}
Alt.	-70 ± 5	$1.27^{+1.16}_{-0.83}$	2004^{+122}_{-106}	4570^{+3046}_{-972}	16^{+121}_{-12}

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

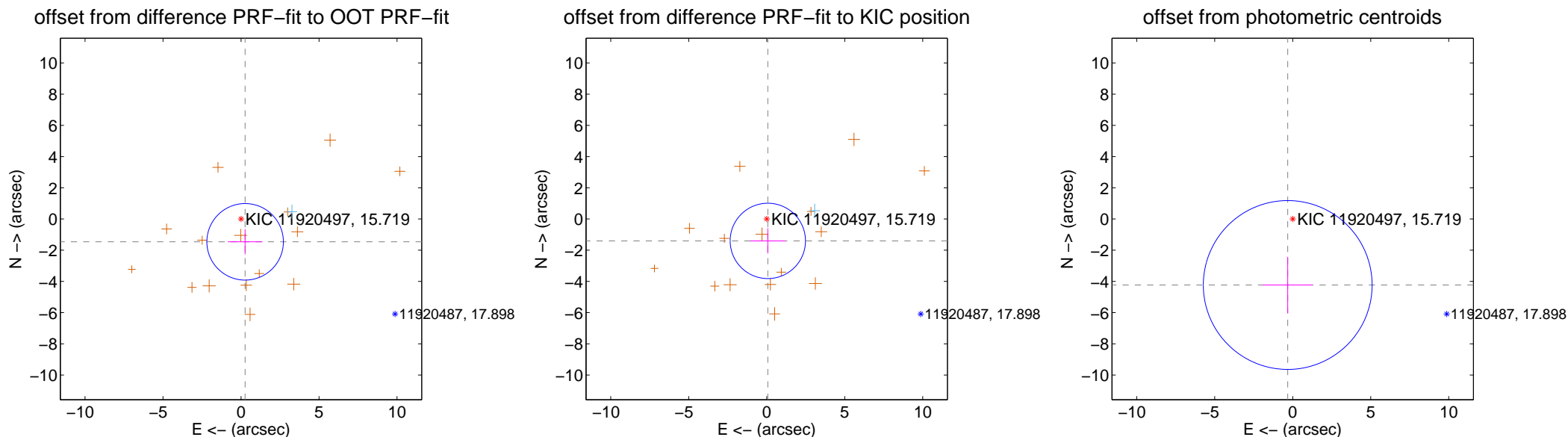
DV Centroid Data

Supplemental centroid analysis for 011920497-01. Kepler magnitude: 15.72. Transit SNR 7.71

There are 1 quarters with good PRF difference image offsets

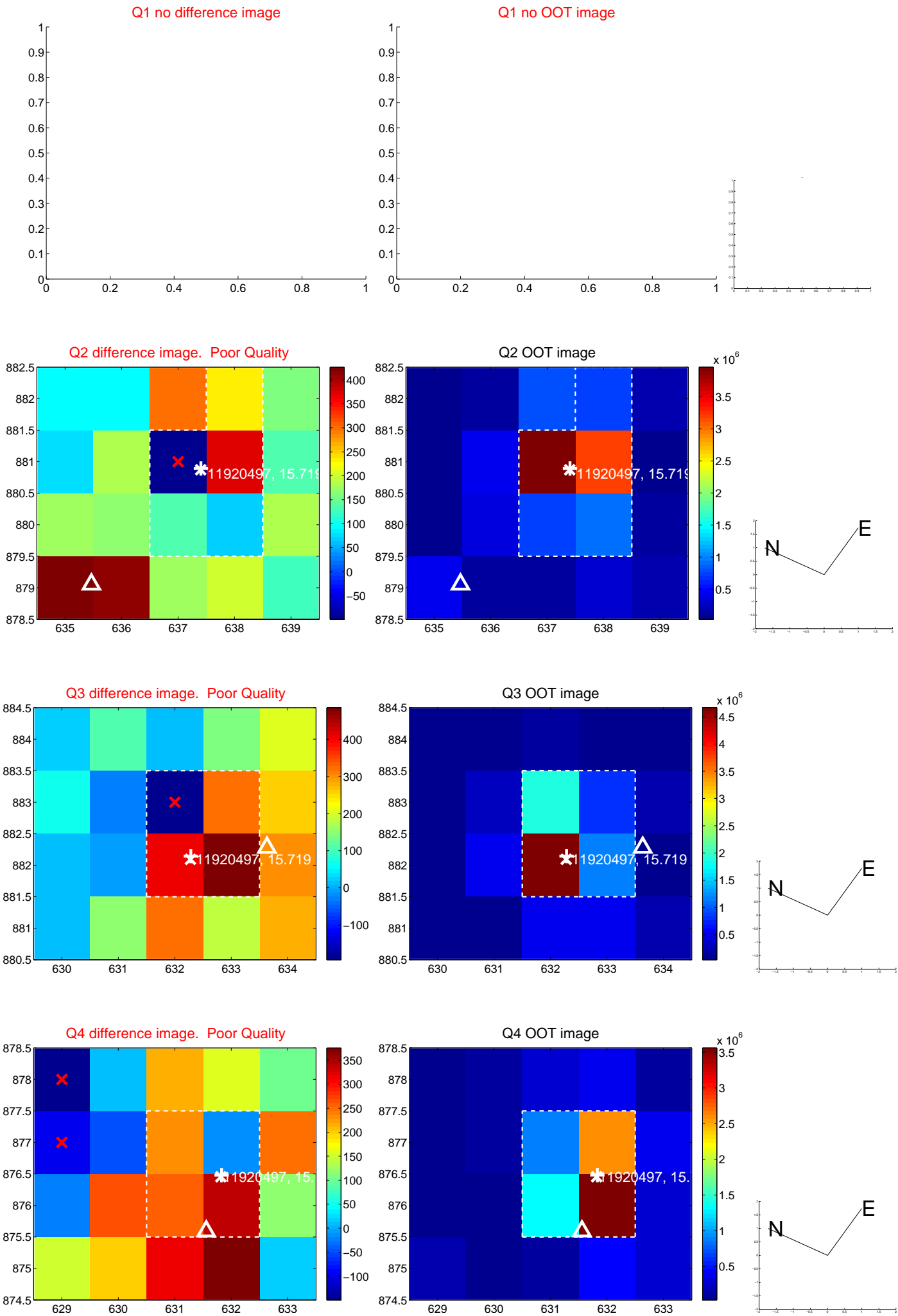
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.486 ± 0.818	1.82	-0.262 ± 1.110	-1.462 ± 0.806
PRF-fit source offset from KIC position	1.405 ± 0.805	1.75	-0.069 ± 1.118	-1.403 ± 0.804
photometric centroid source offset	4.24 ± 1.80	2.35	0.32 ± 1.61	-4.23 ± 1.80

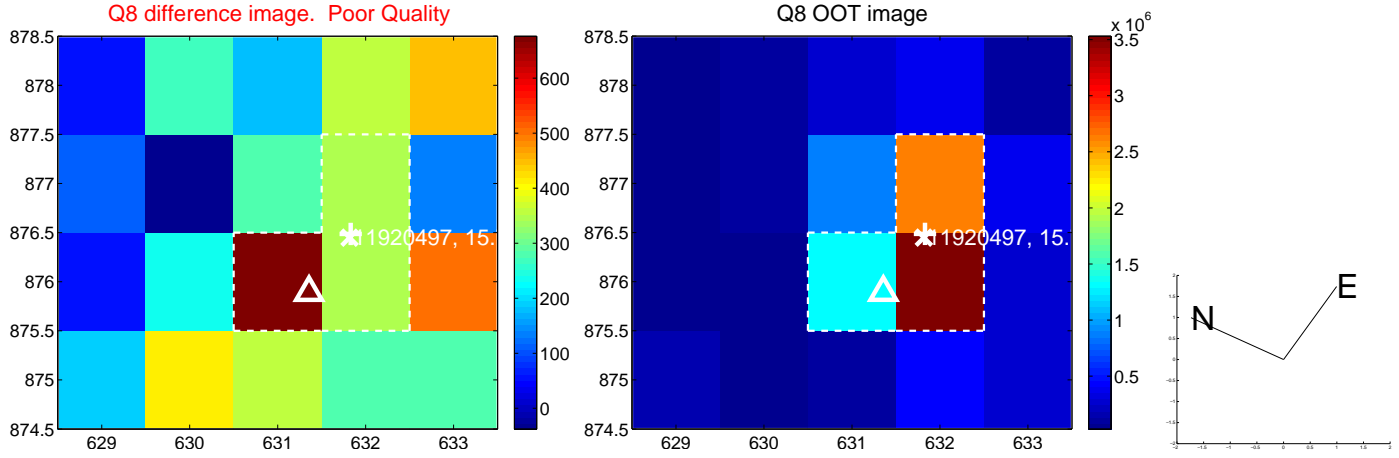
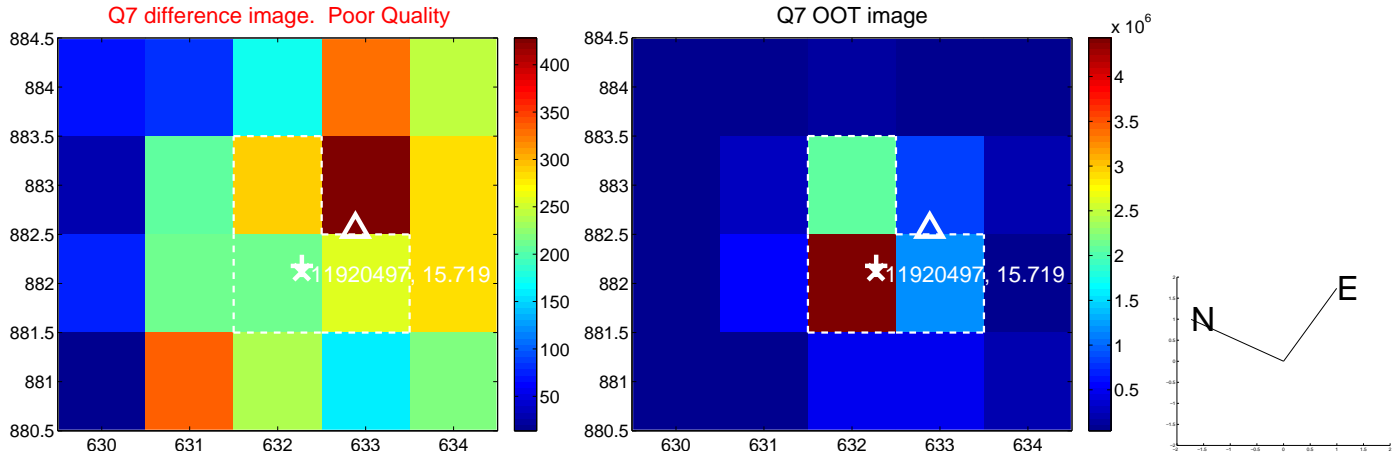
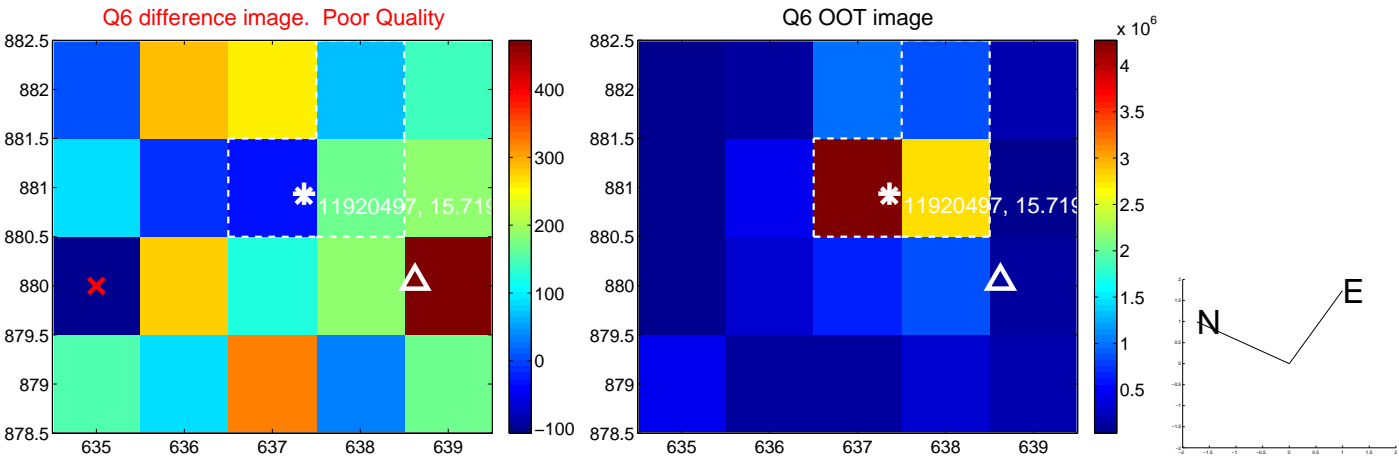
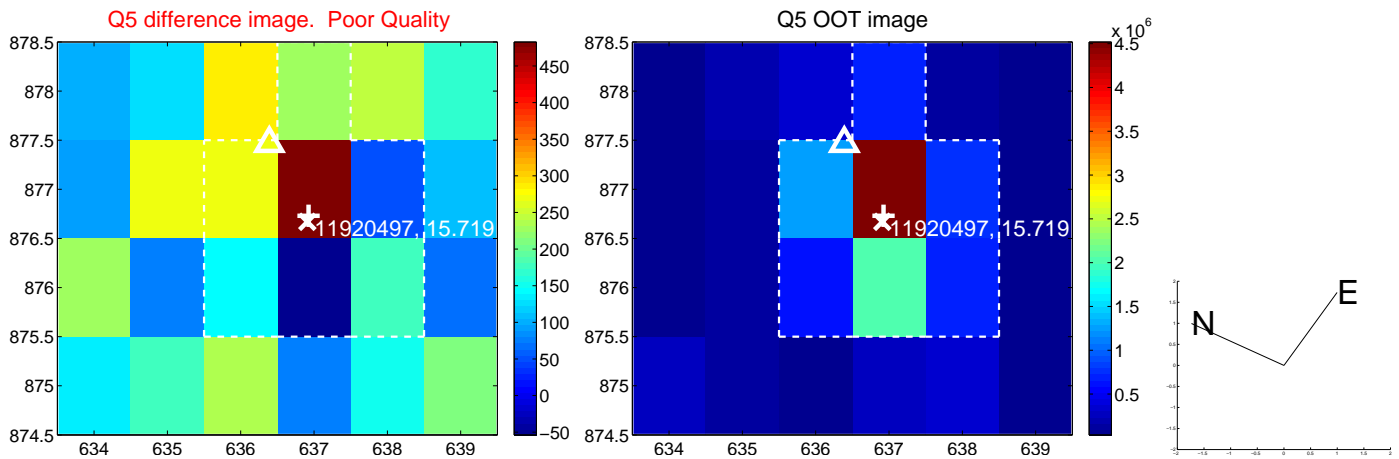


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

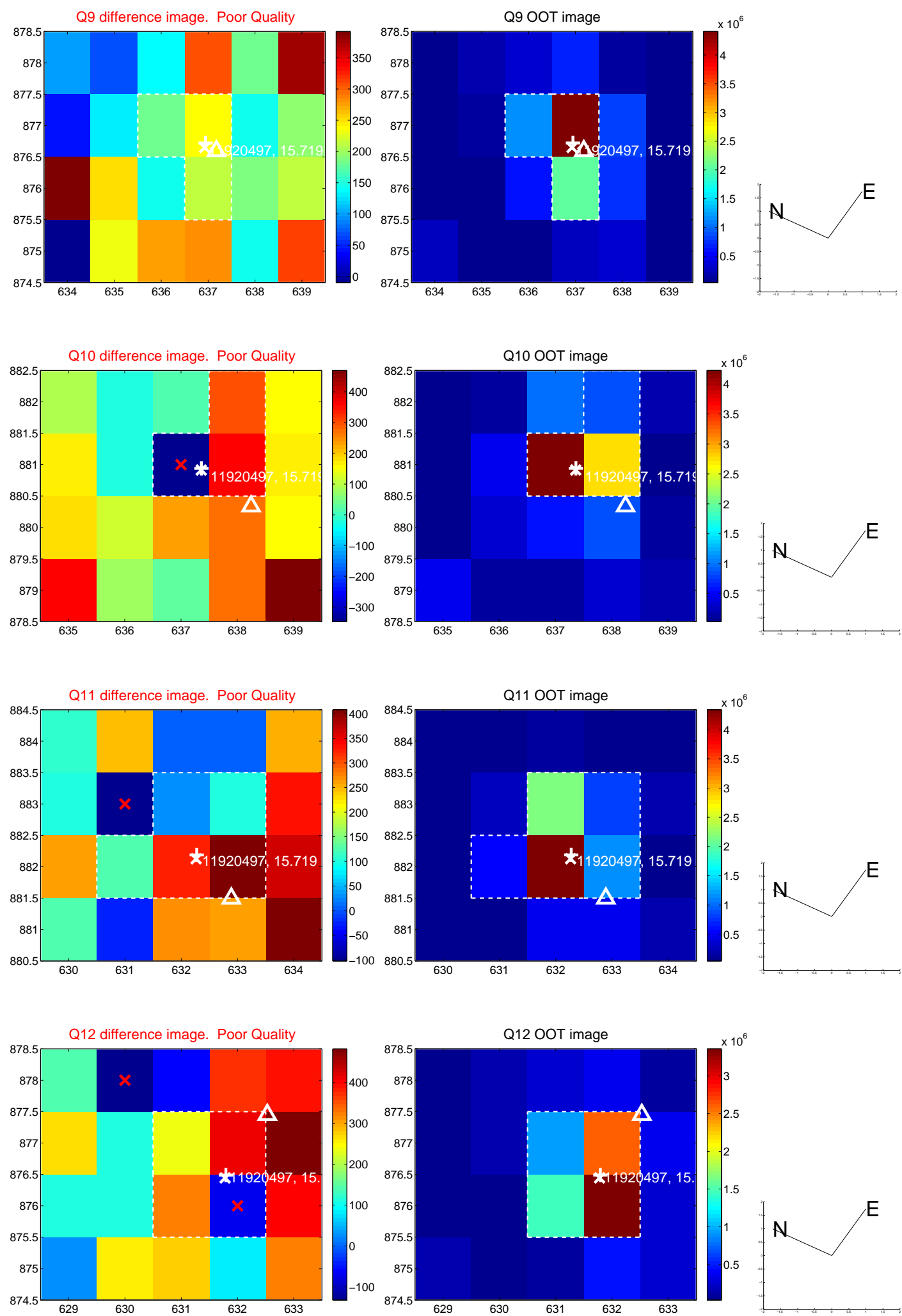
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



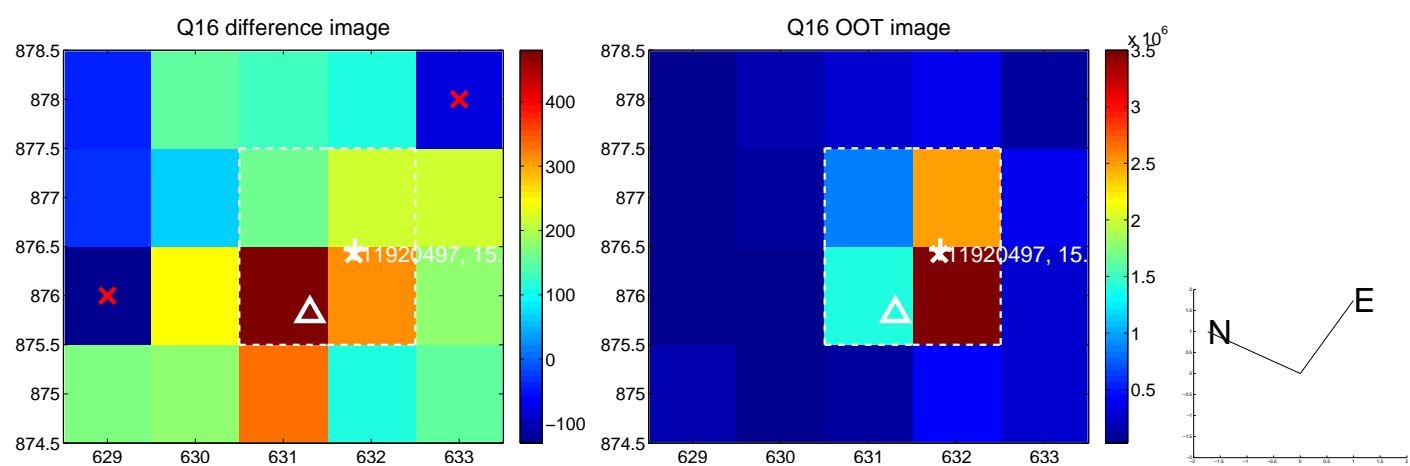
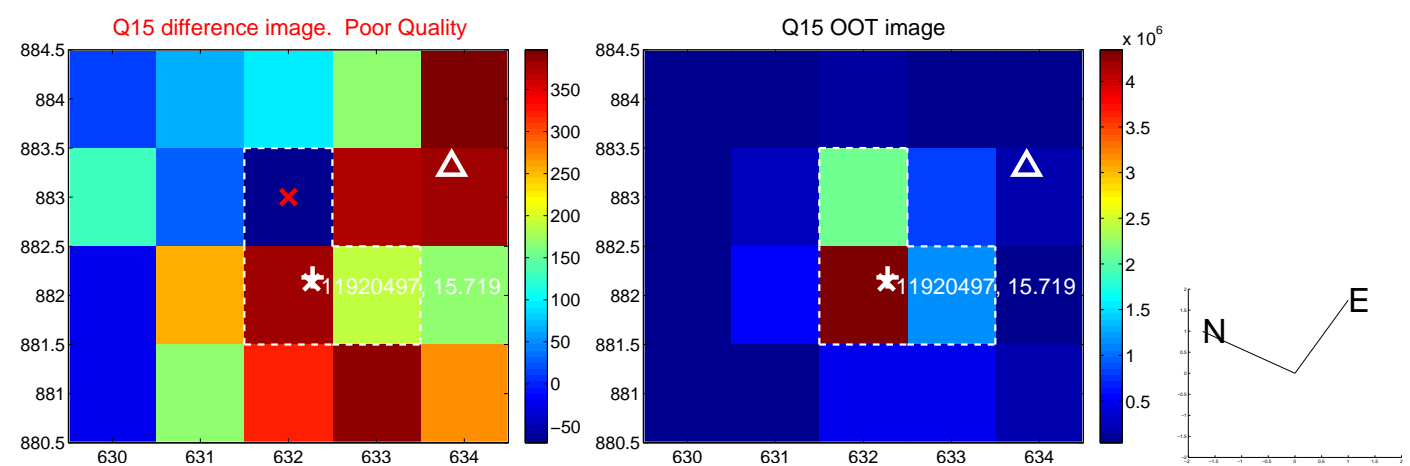
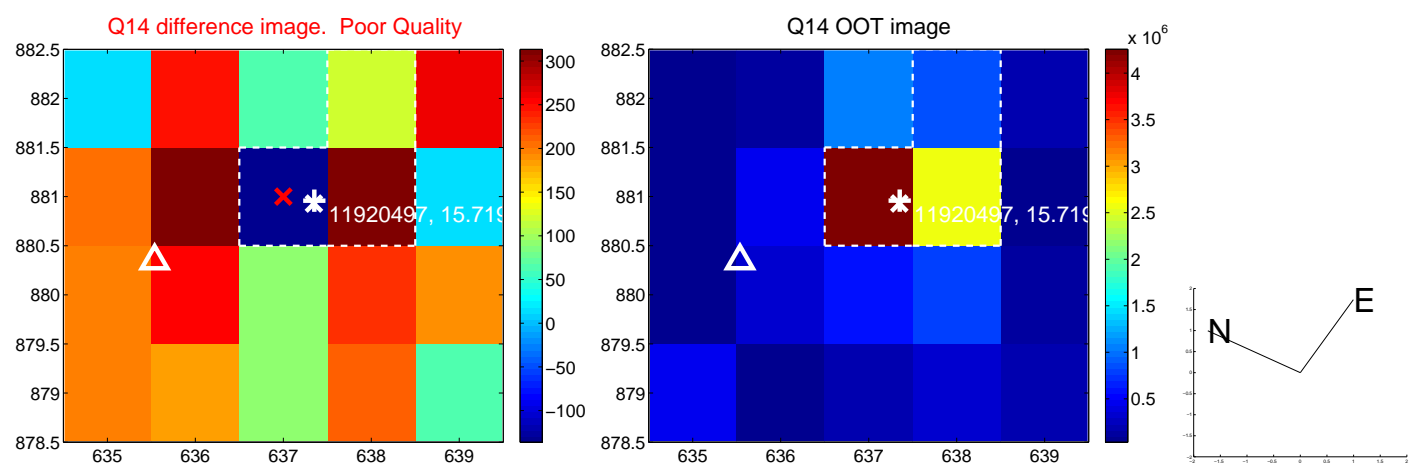
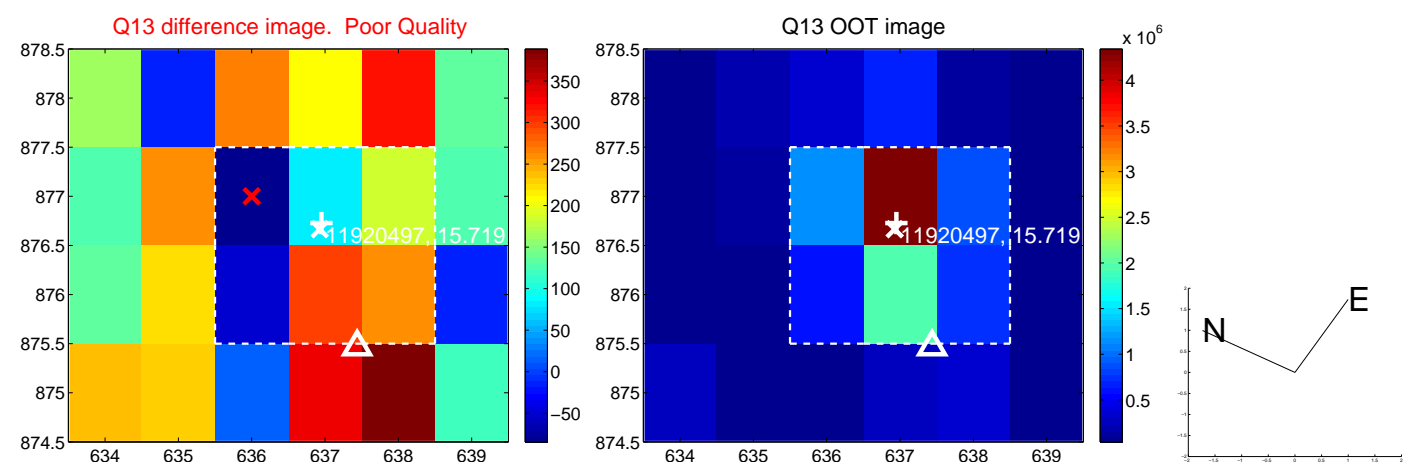
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



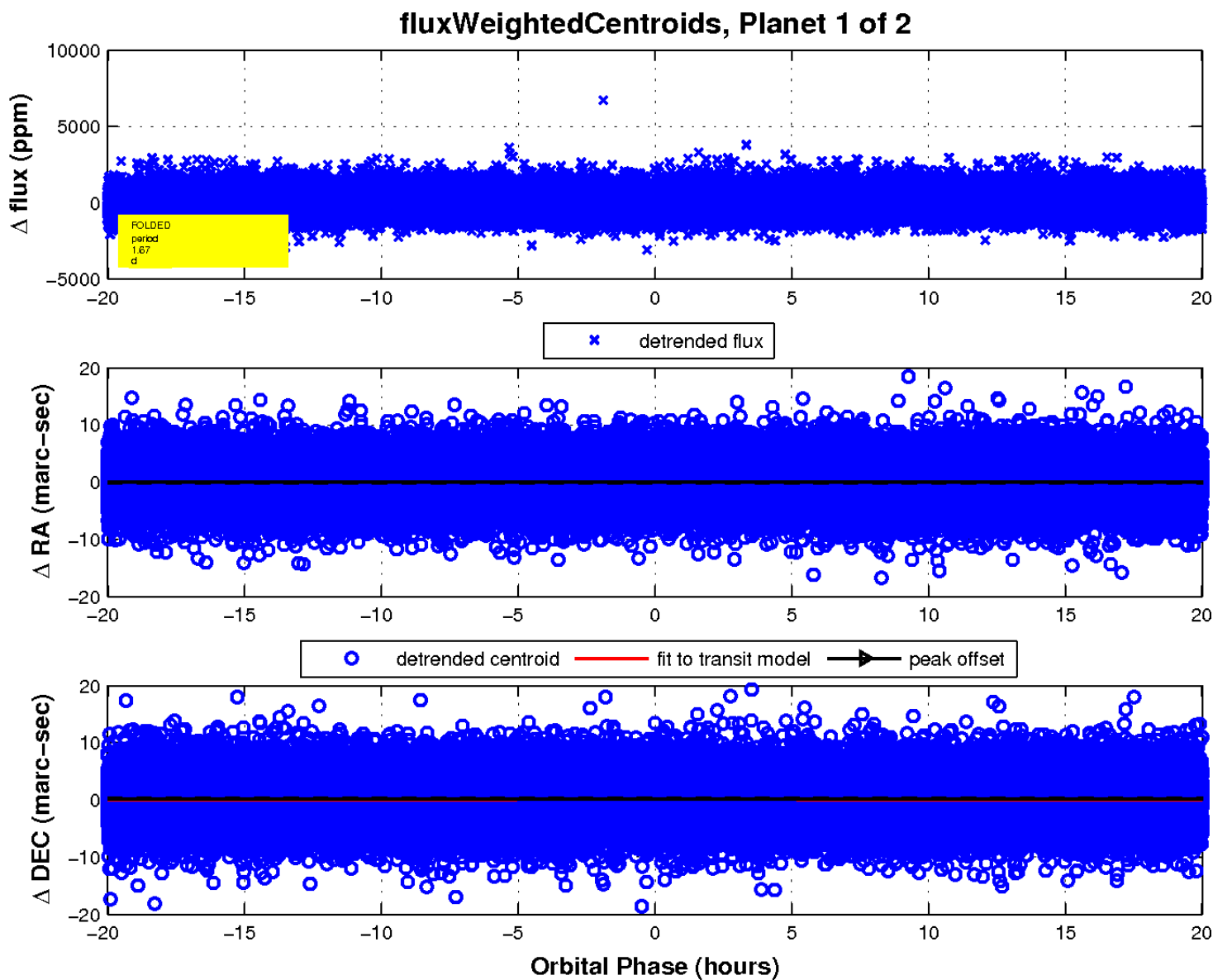
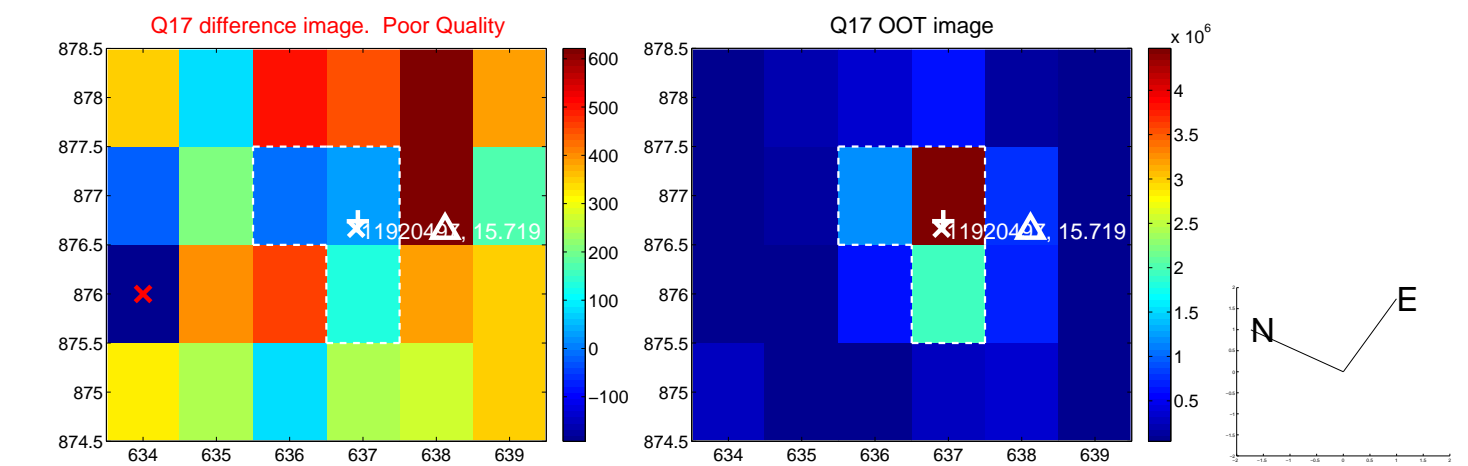
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

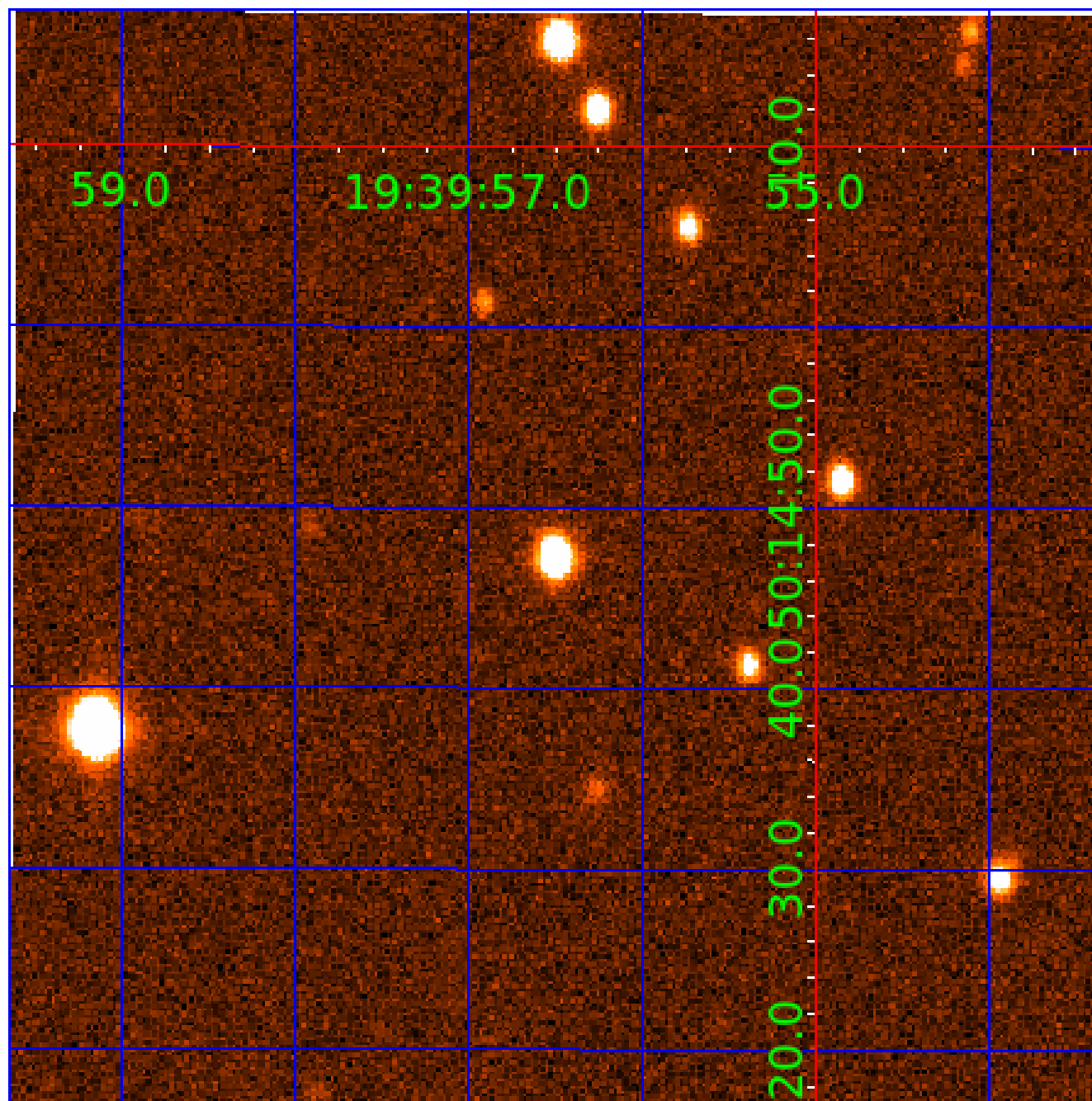


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011920497

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})
011920497-01	OBS	No	1.668294	132.291368	48.6	10.461	7.8	7.7	0.88	5508	0.61	973.82
011920497-02	OBS	No	87.936997	148.105495	632.5	6.008	7.9	6.7	0.88	5508	2.46	4.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011920497-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—HALO_GHOST
011920497-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

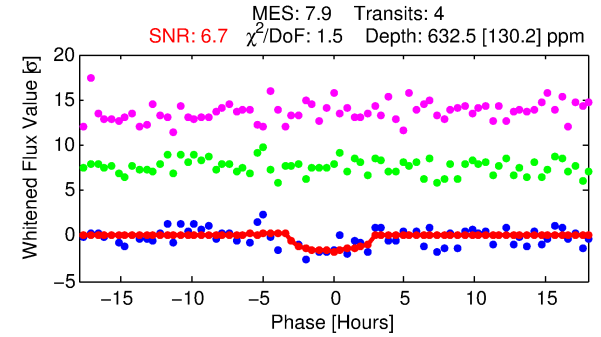
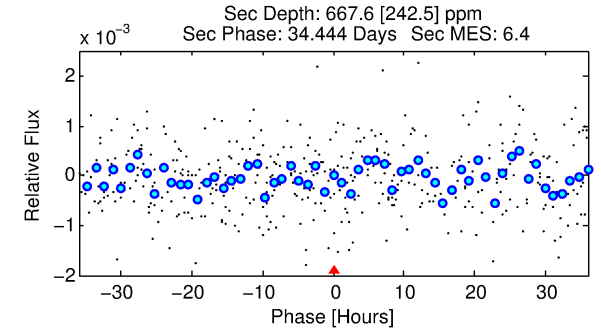
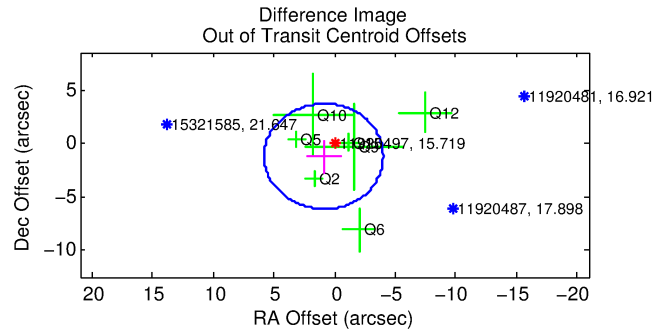
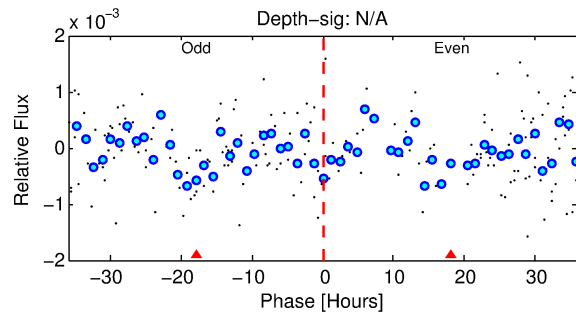
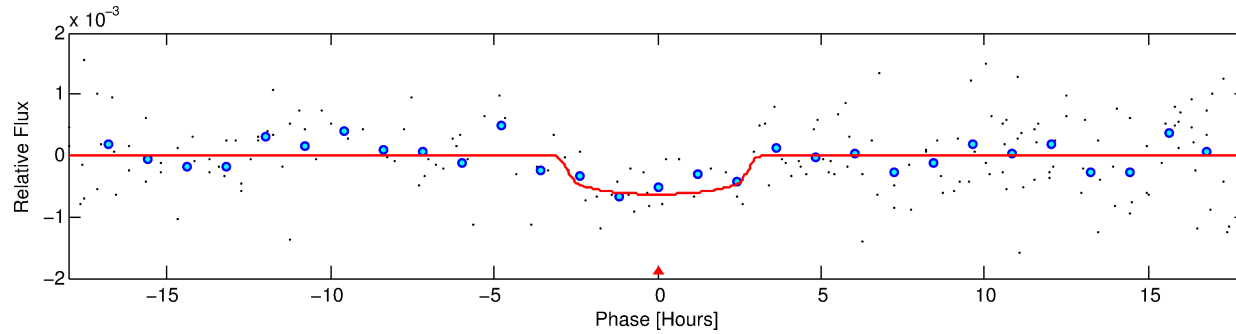
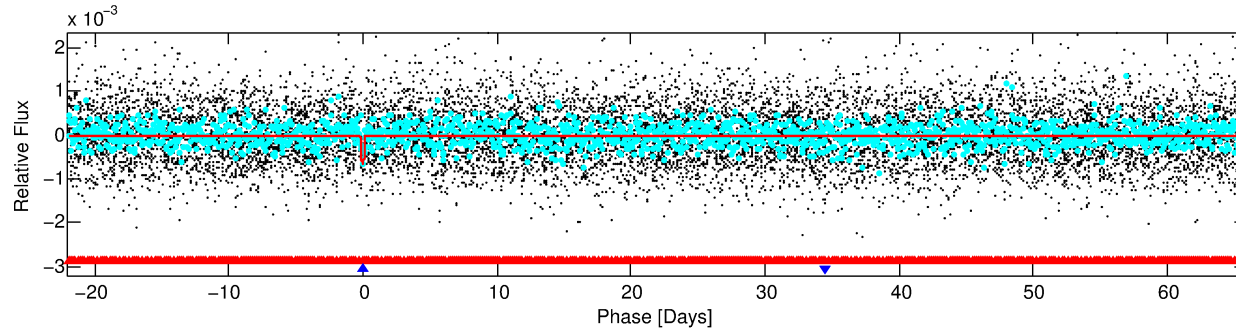
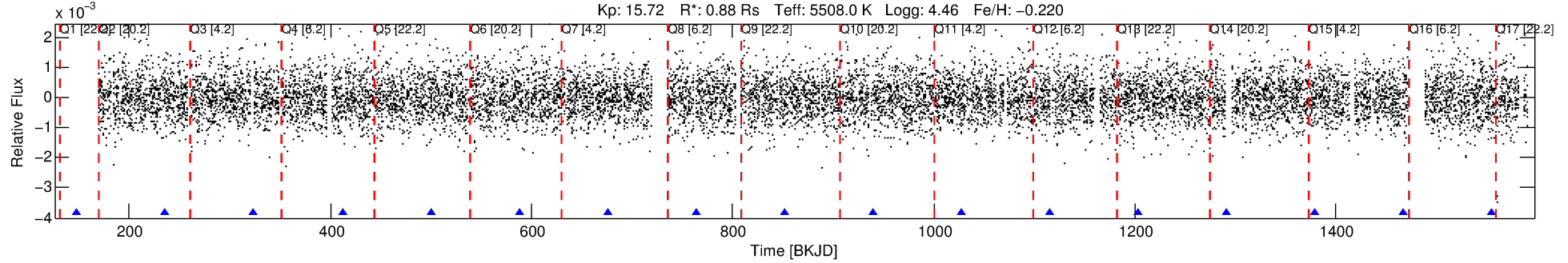
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011920497-02

No Significant Match Found

DV One-Page Summary

KIC: 11920497 Candidate: 2 of 2 Period: 87.937 d



DV Fit Results:

Period = 87.93700 [0.00371] d
Epoch = 148.1055 [0.0368] BKJD
Rp/R* = 0.0255 [0.0315]
a/R* = 72.77 [380.05]
b = 0.79 [2.49]
Seff = 4.93 [1.48]
Teq = 380 [28] K
Rp = 2.46 [3.08] Re
a = 0.3612 [0.0663] AU
Ag = 7921.36 [19897.11] [0.40σ]
Teffp = 5541 [3465] K [1.49σ]

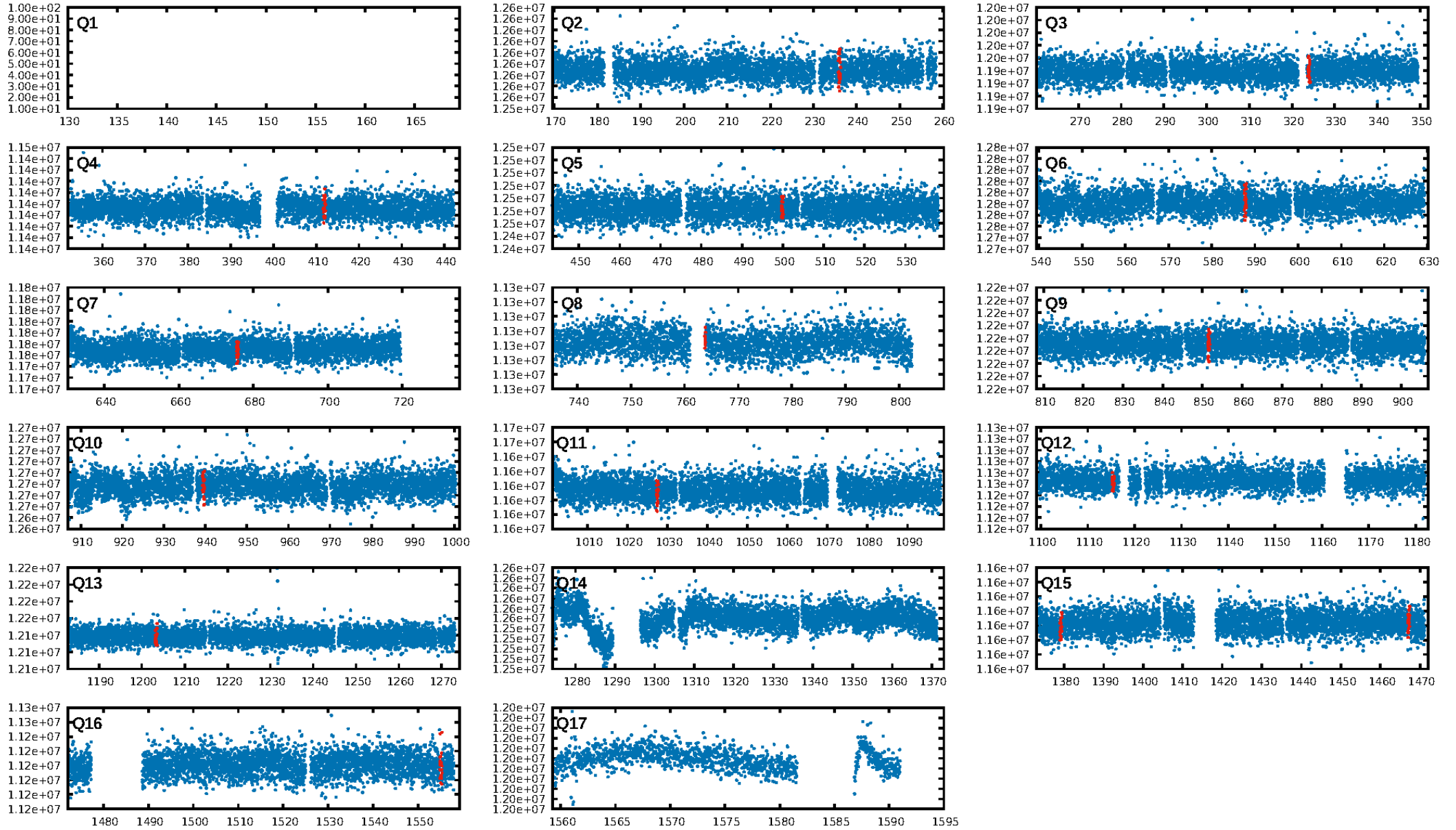
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [171.63σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 62.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.42e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.6857
Centroid-sig: 5.9%
Centroid-so: 2.053 arcsec [1.54σ]
OotOffset-rm: 1.522 arcsec [0.93σ]
KicOffset-rm: 1.566 arcsec [1.12σ]
OotOffset-st: 3/1/1/2 [7]
KicOffset-st: 3/1/1/2 [7]
DiffImageQuality-fgm: 0.14 [1/7]
DiffImageOverlap-fno: 0.00 [0/11]

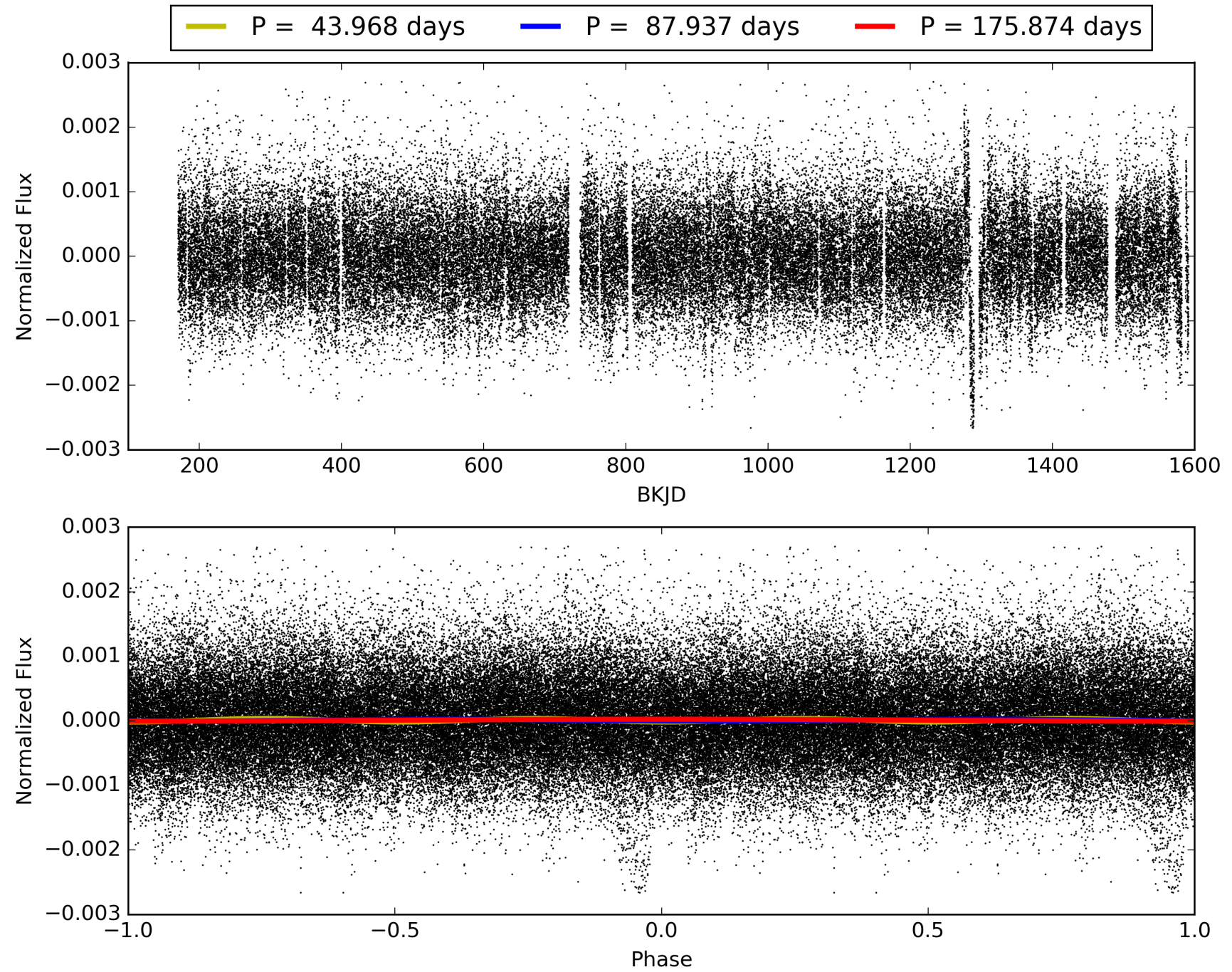
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:19:09 Z

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

TCE 011920497-02, PDC Light Curves

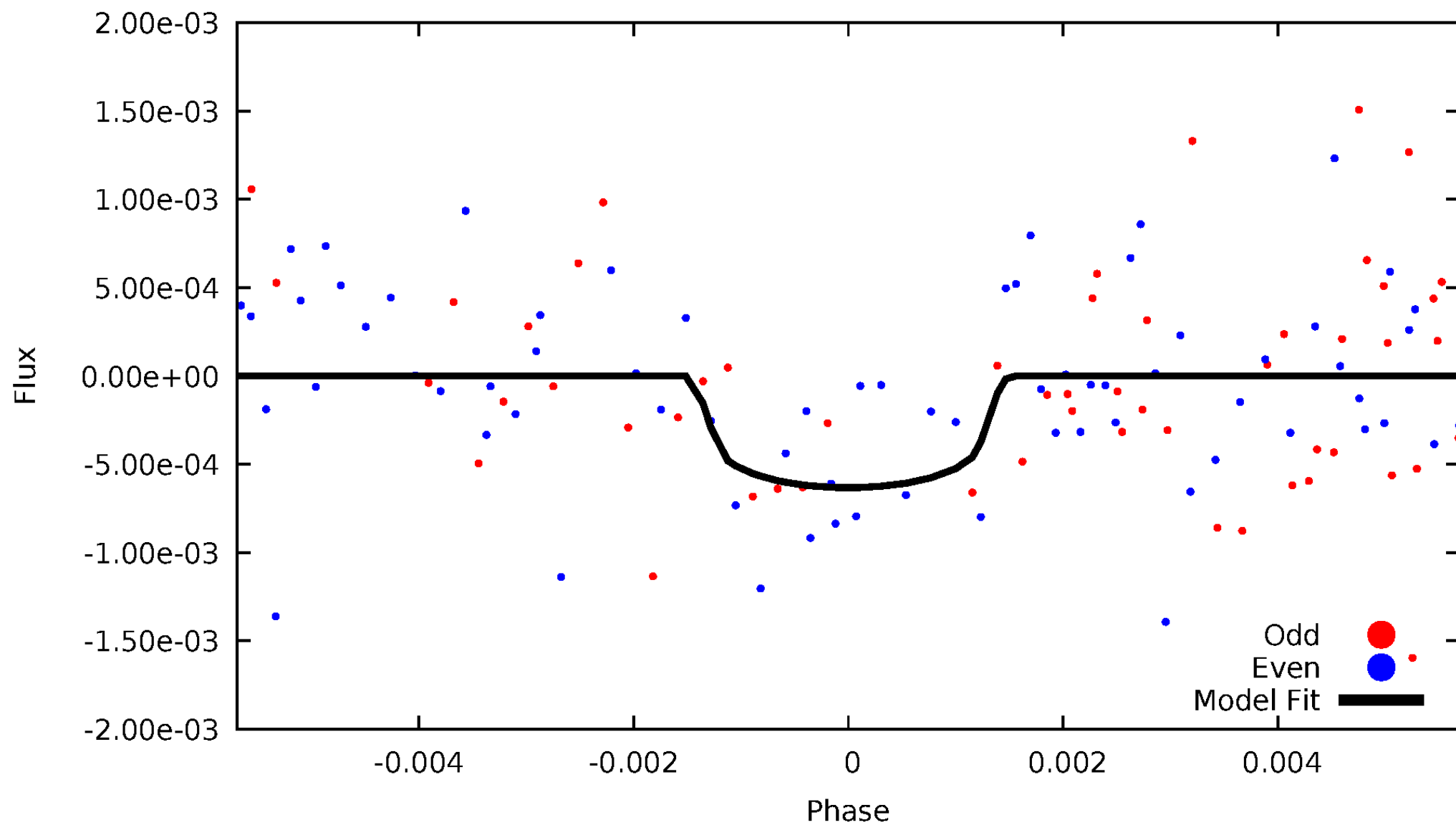


TCE 011920497-02



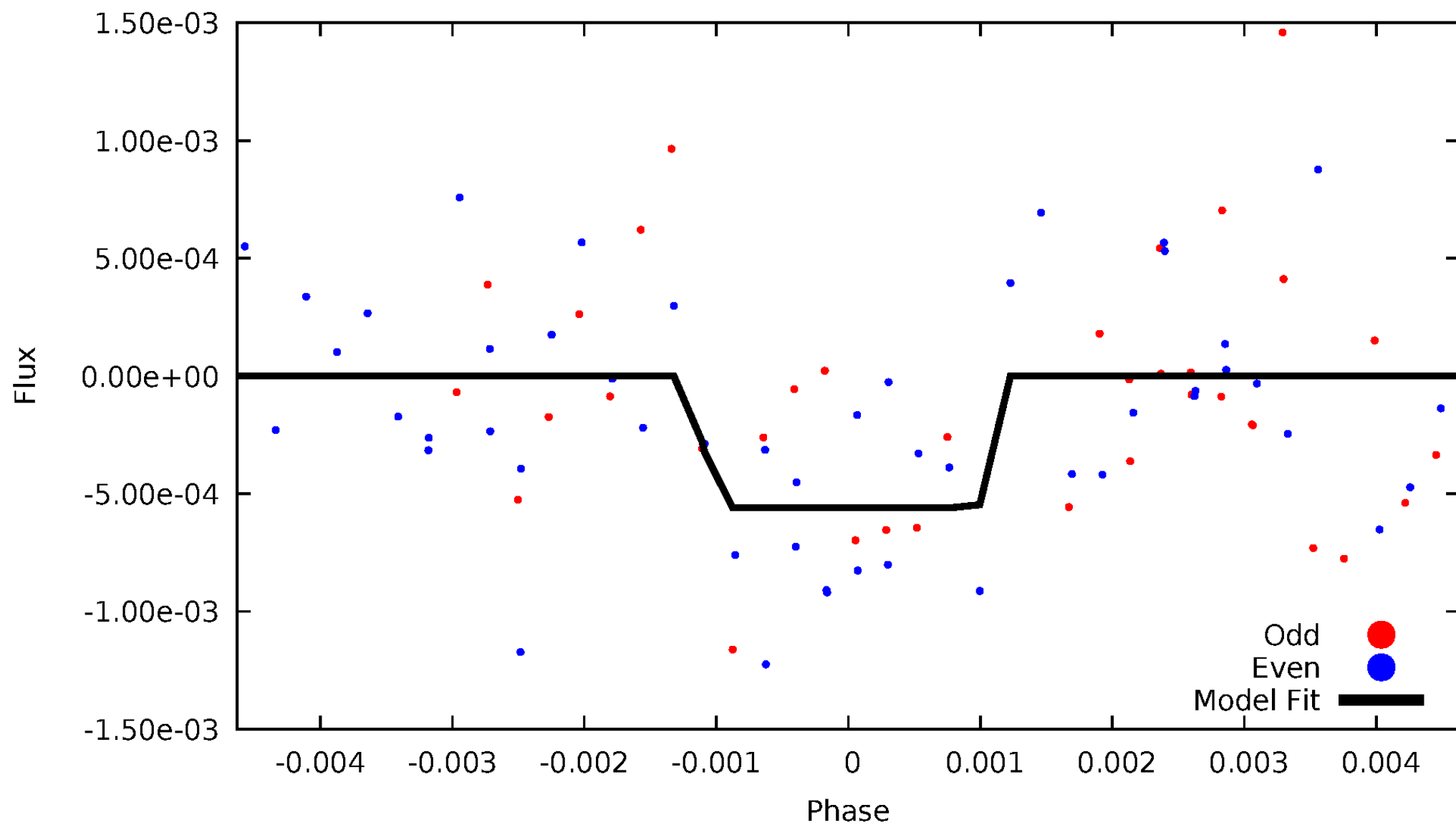
DV Odd/Even

TCE 011920497-02



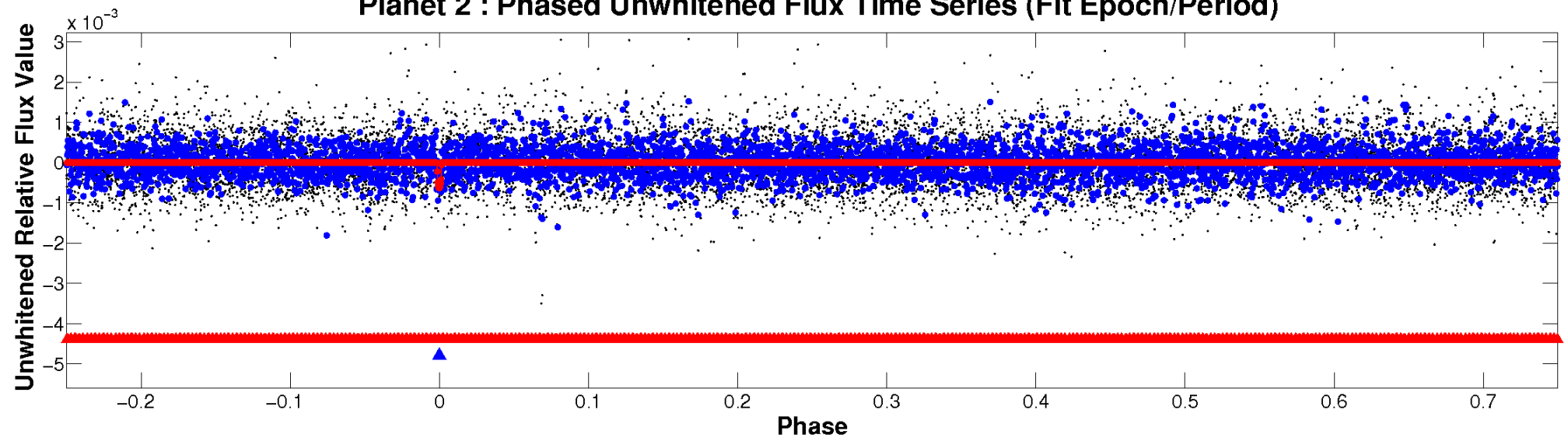
ALT Odd/Even

TCE 011920497-02

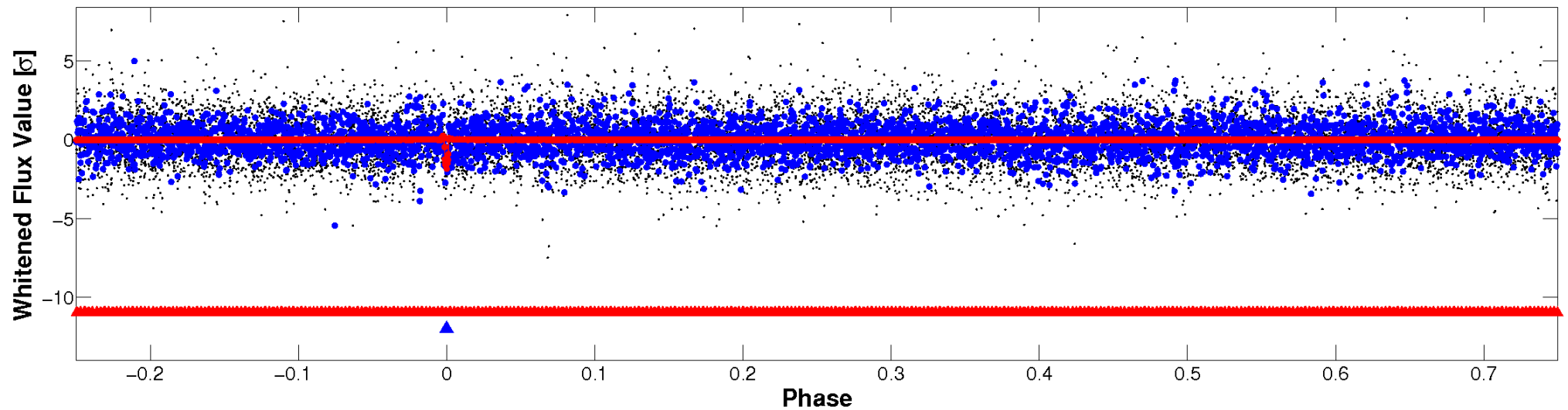


Non-Whitened Vs. Whitened Light Curve

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

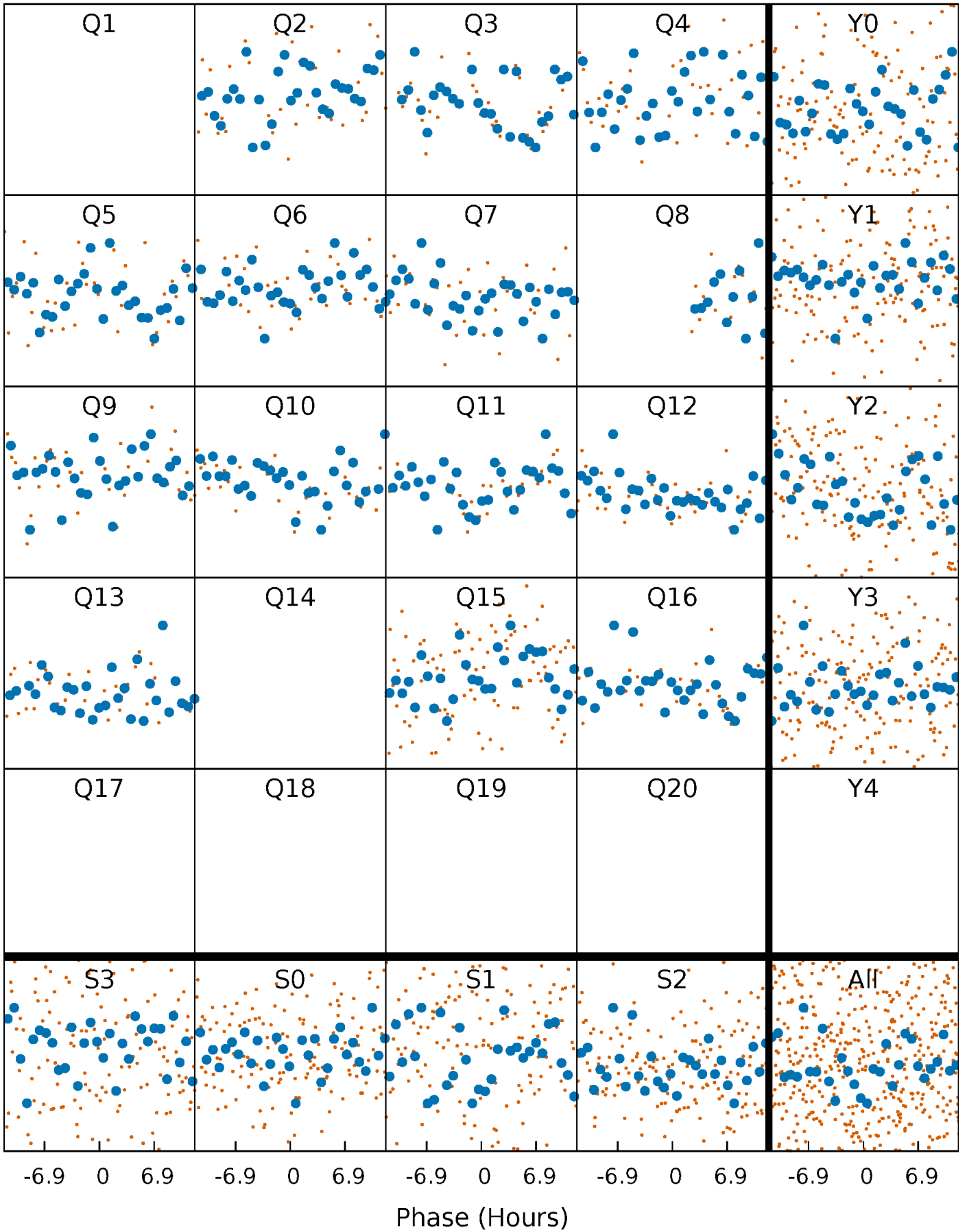


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



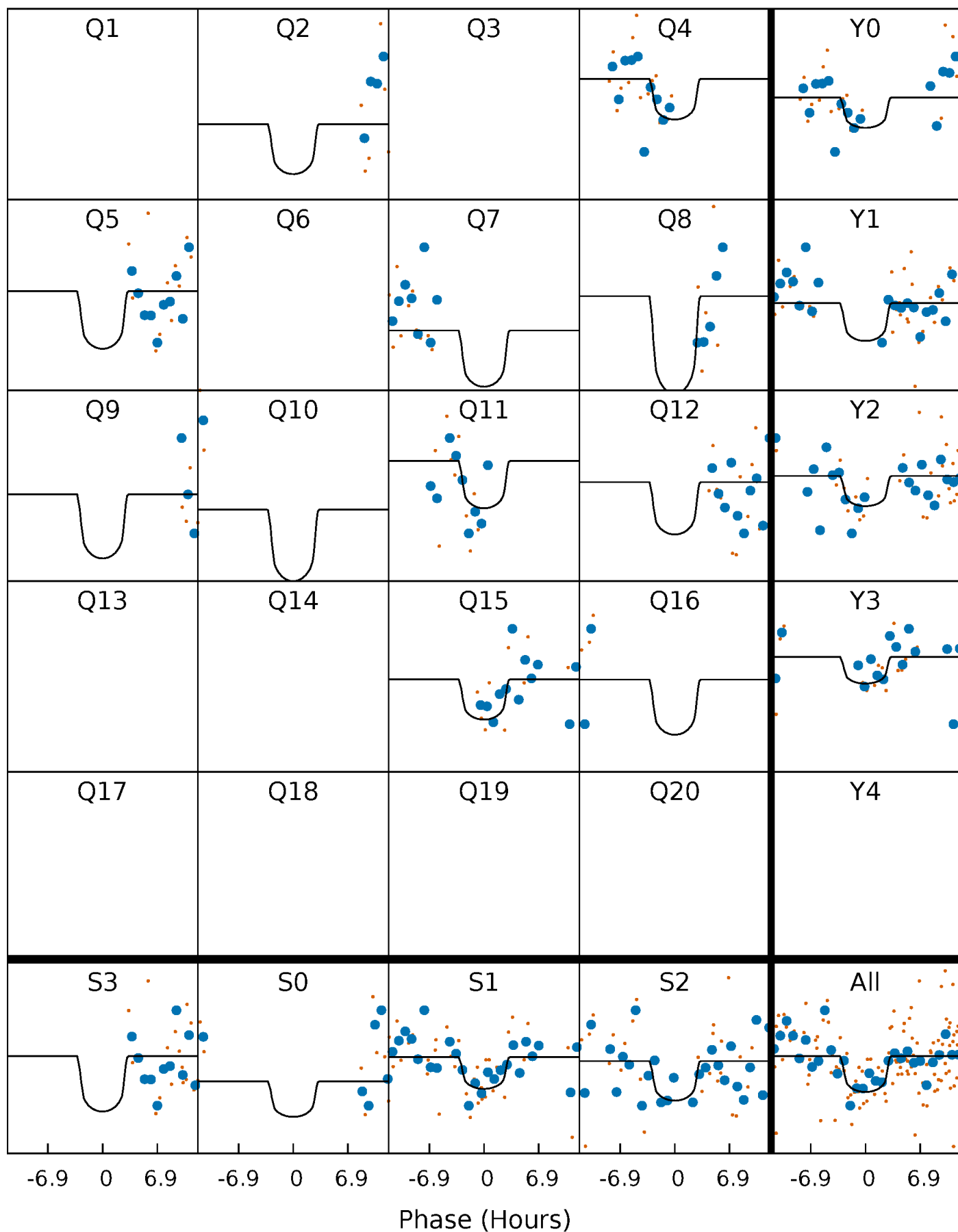
PDC Quarter-Phased Transit Curves

TCE 011920497-02 P= 87.936997 Days $T_0=148.105495$ (BKJD)



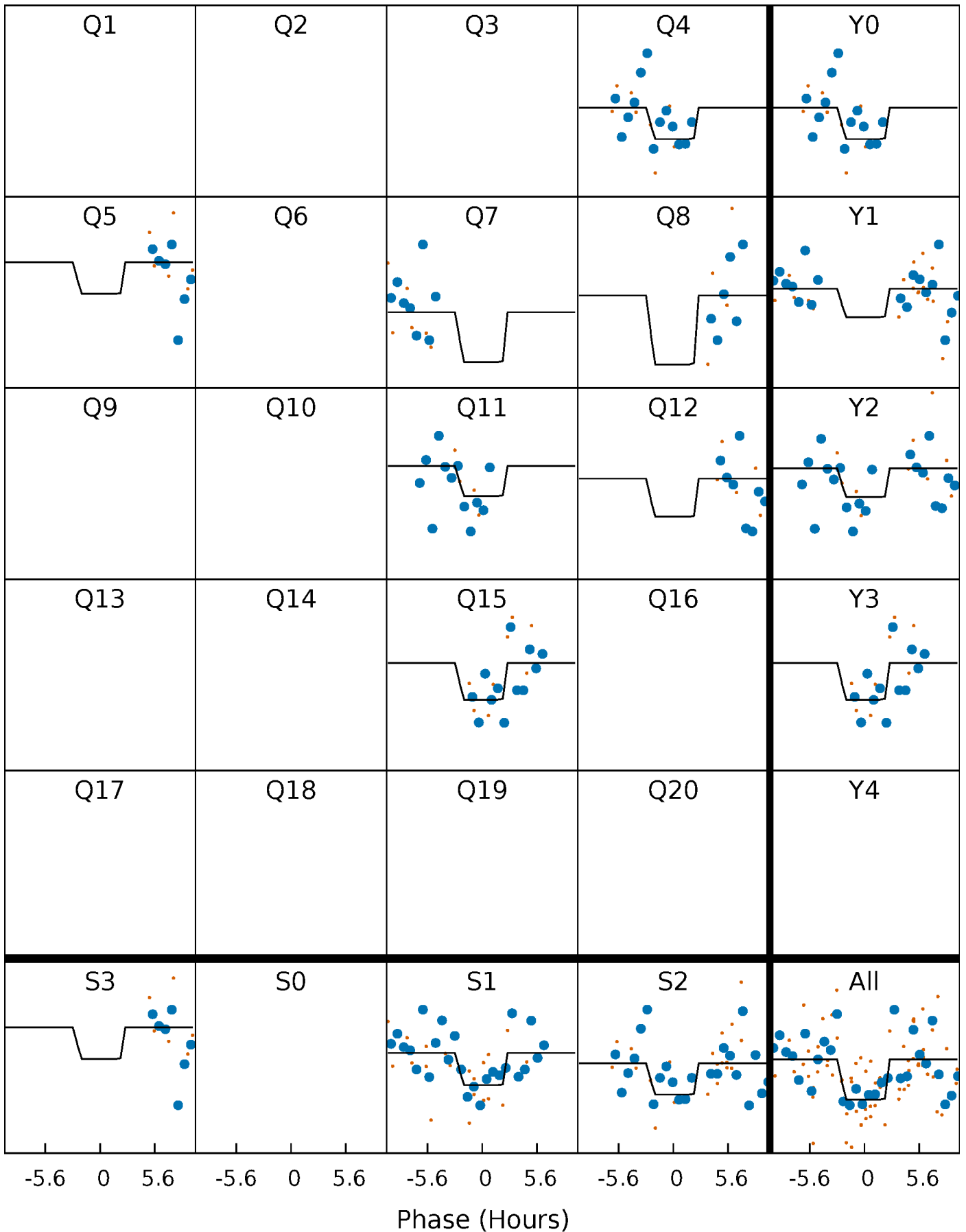
DV Quarter-Phased Transit Curves

TCE 011920497-02 P= 87.936997 Days $T_0=148.105495$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

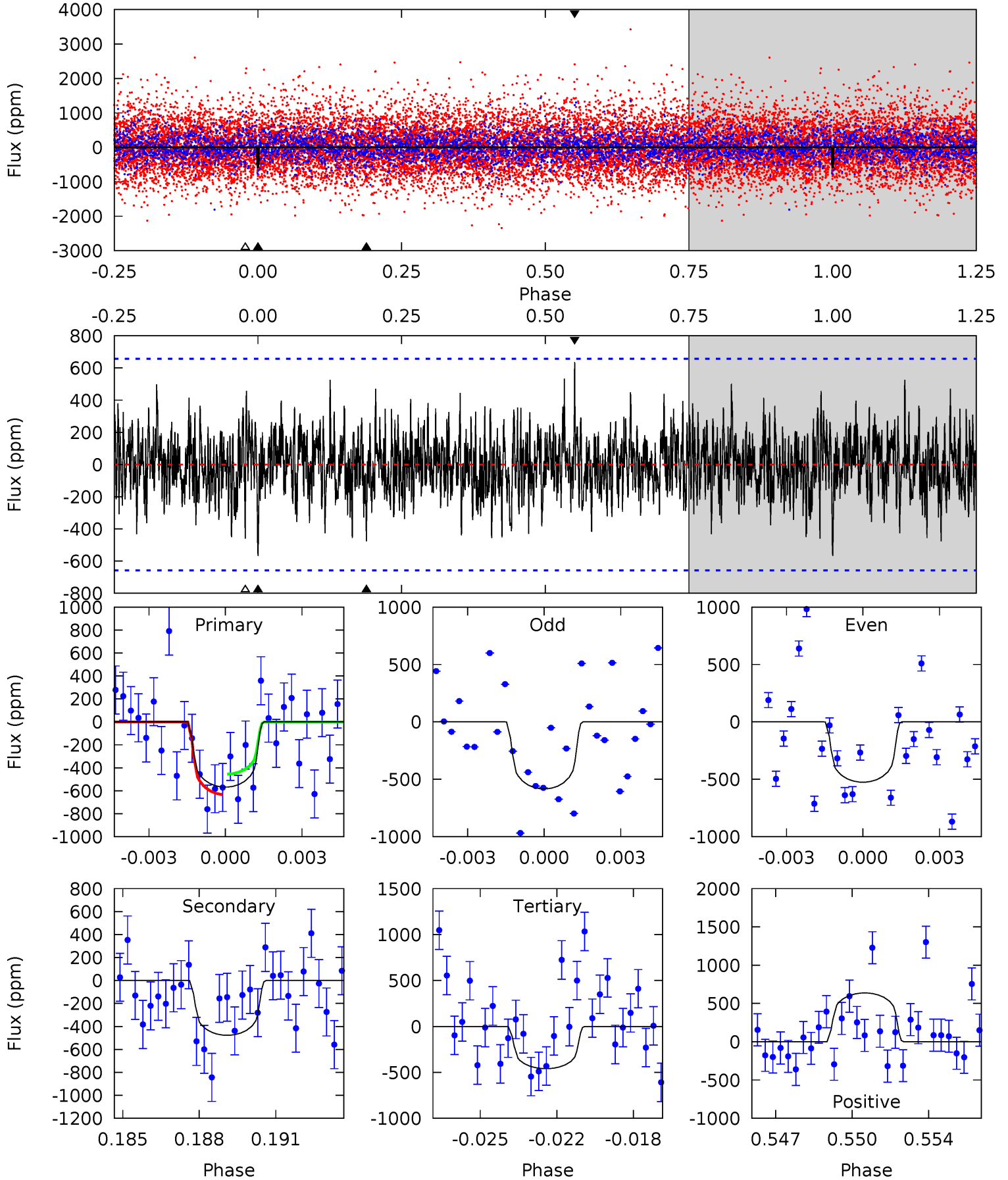
TCE 011920497-02 $P = 87.946445$ Days $T_0 = 147.994151$ (BKJD)



DV Model-Shift Uniqueness Test

011920497-02, P = 87.936997 Days, E = 148.105495 Days

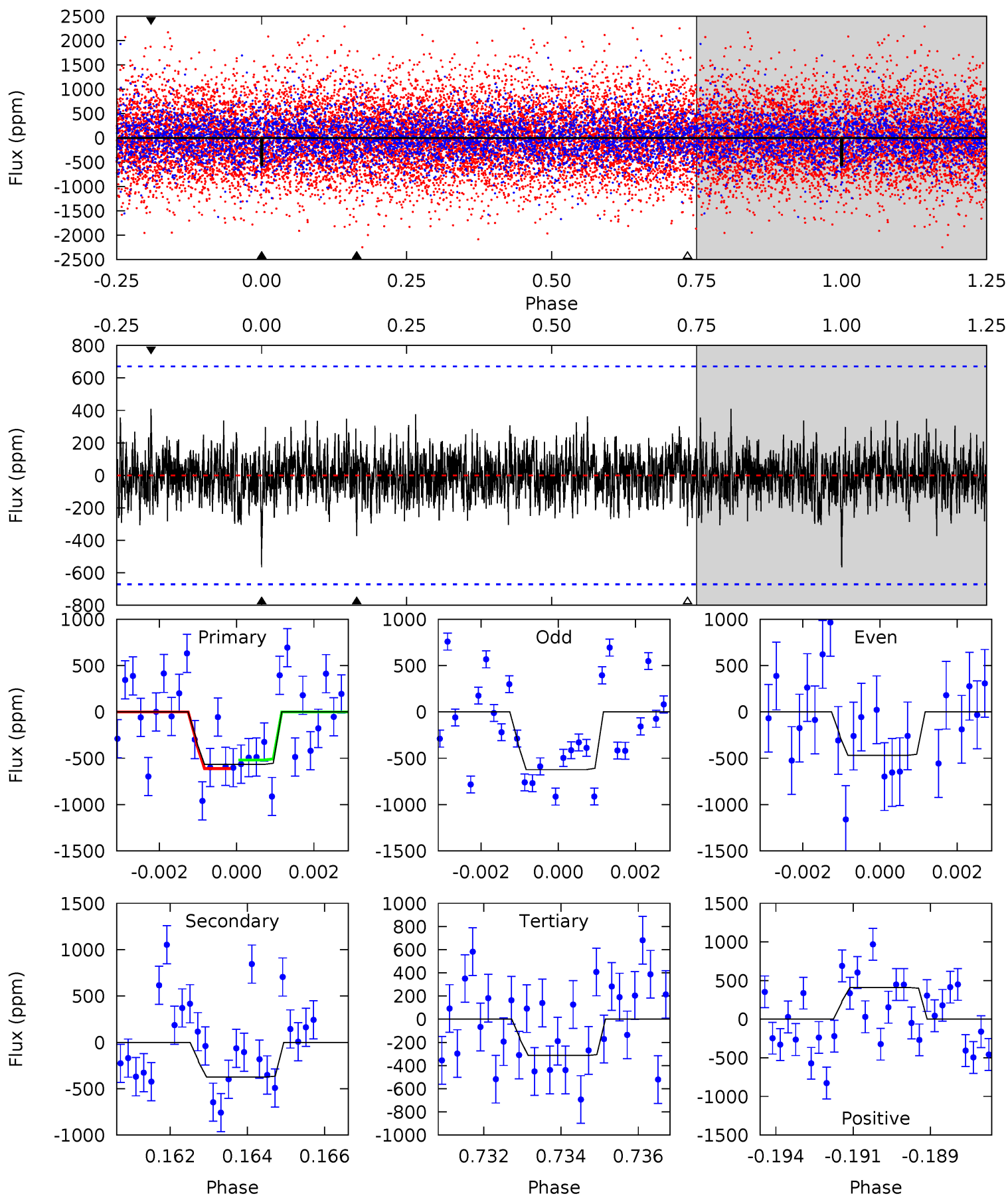
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.53	3.81	3.67	5.08	5.25	2.96	1.23	0.86	-0.55	0.14	-1.27	0.22	1.05	0.53	0.70



Alt Model-Shift Uniqueness Test

011920497-02, P = 87.946445 Days, E = 147.994151 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.49	2.96	2.48	3.25	5.32	3.08	0.85	2.01	1.24	0.47	-0.29	0.59	1.01	0.42	0.36



Stellar Parameters For KIC 011920497

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5508^{+182}_{-149}	$4.456^{+0.108}_{-0.148}$	$-0.220^{+0.300}_{-0.300}$	$0.883^{+0.191}_{-0.127}$	$0.812^{+0.116}_{-0.067}$	$1.664^{+0.776}_{-0.731}$
	+3%/-3%	+2%/-3%	+136%/-136%	+22%/-14%	+14%/-8%	+47%/-44%
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 011920497-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-477 ± 125	$3.41^{+2.58}_{-2.12}$	535^{+32}_{-27}	4536^{+2433}_{-894}	2941^{+16686}_{-2087}
Alt.	-373 ± 126	$3.20^{+2.92}_{-2.05}$	535^{+31}_{-28}	4428^{+2580}_{-934}	2654^{+17469}_{-1971}

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 $A_{obs} \gg 1.0$

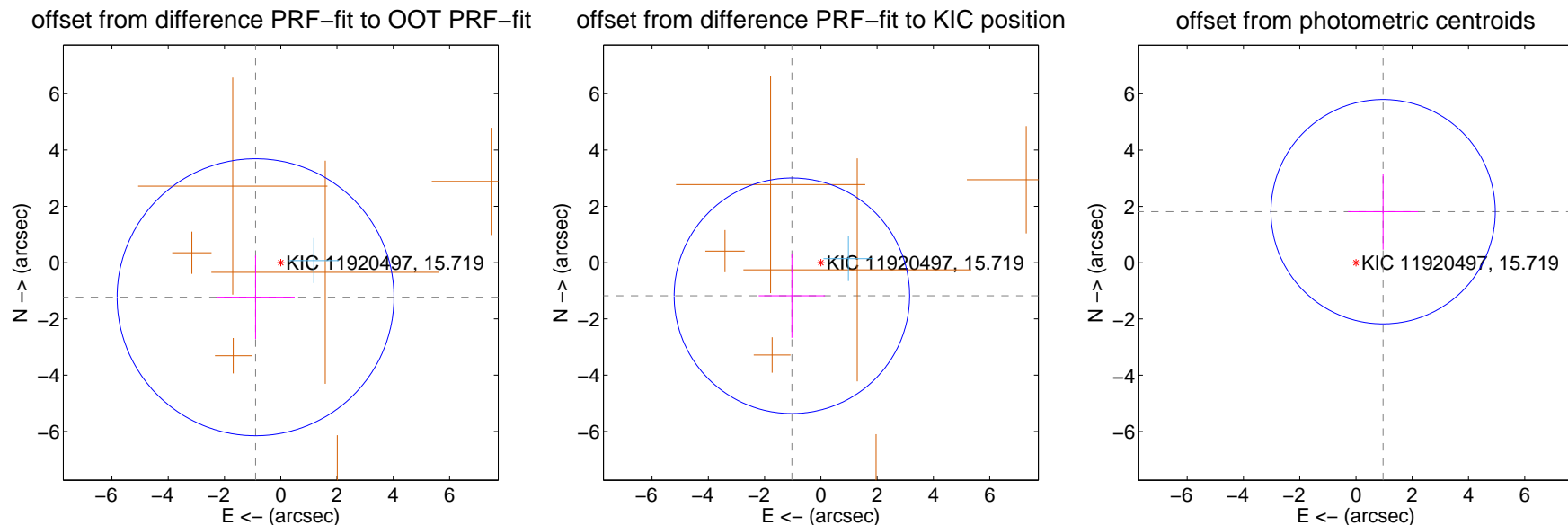
DV Centroid Data

Supplemental centroid analysis for 011920497-02. Kepler magnitude: 15.72. Transit SNR 6.73

There are 1 quarters with good PRF difference image offsets

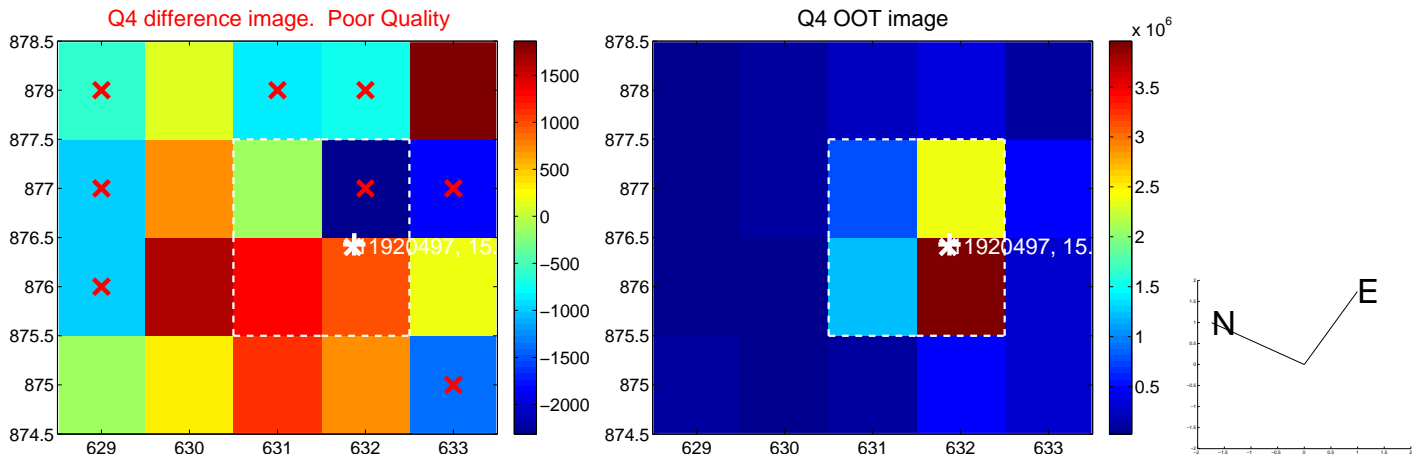
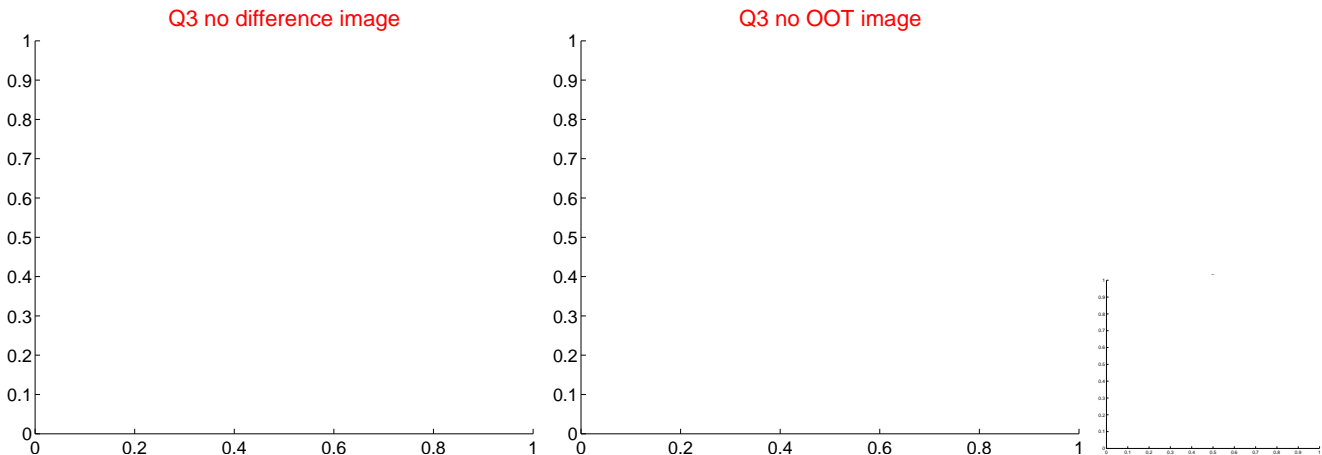
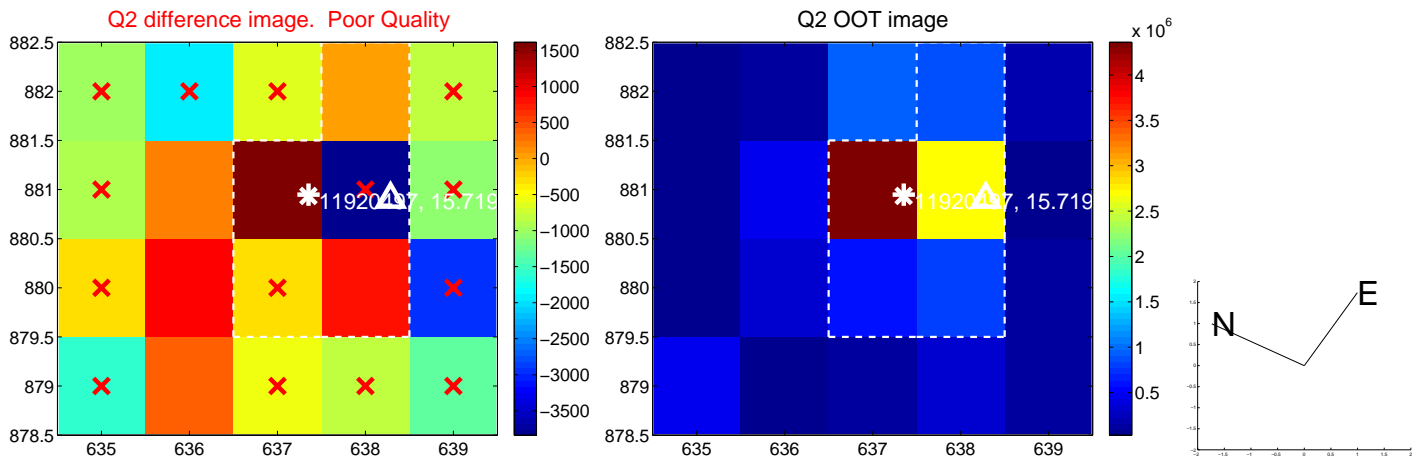
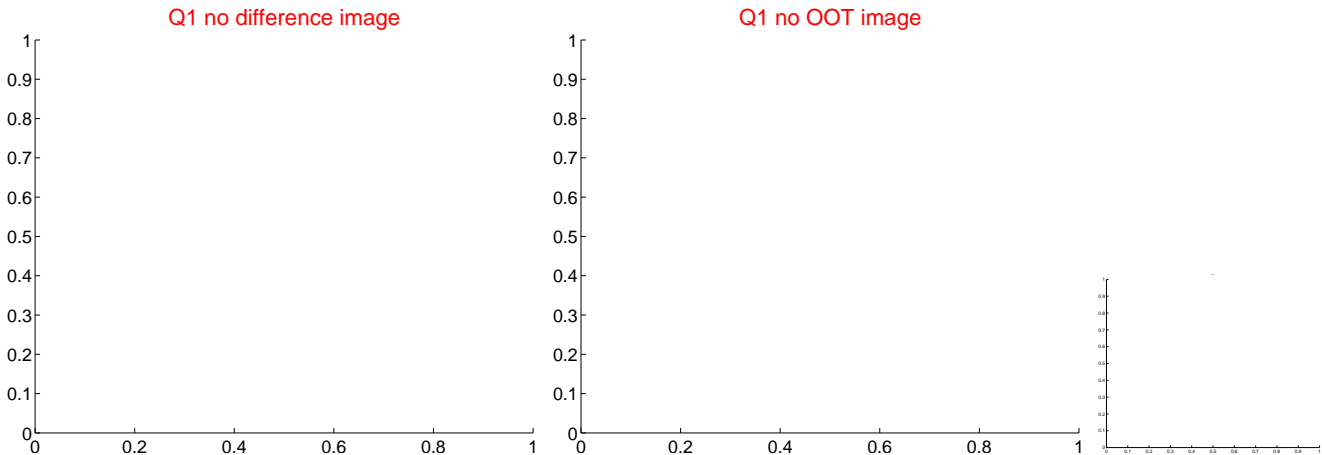
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.522 ± 1.640	0.93	0.896 ± 1.392	-1.230 ± 1.485
PRF-fit source offset from KIC position	1.566 ± 1.395	1.12	1.030 ± 1.179	-1.179 ± 1.493
photometric centroid source offset	2.05 ± 1.33	1.54	-0.96 ± 1.25	1.81 ± 1.35

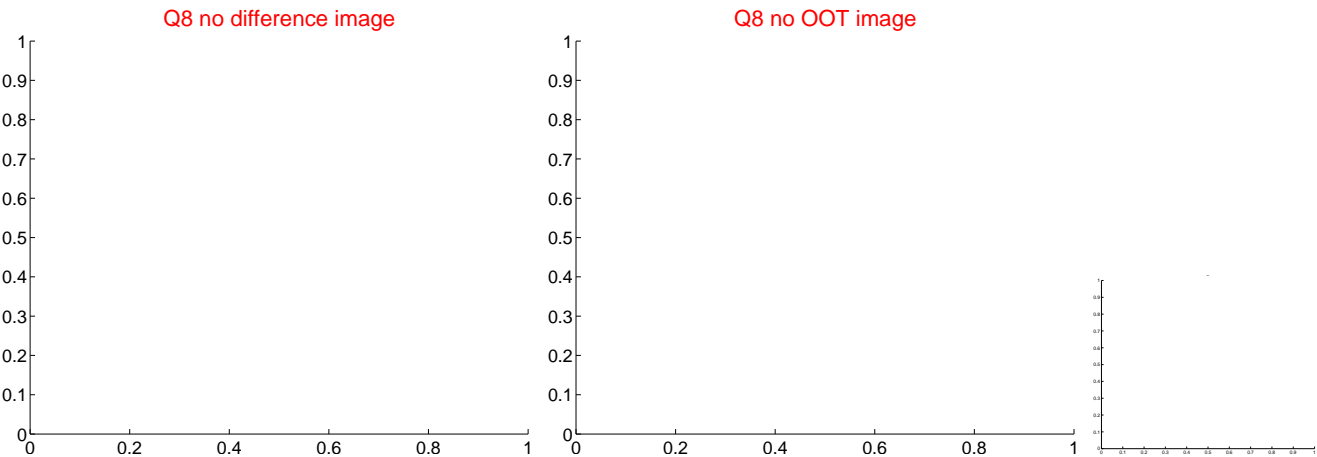
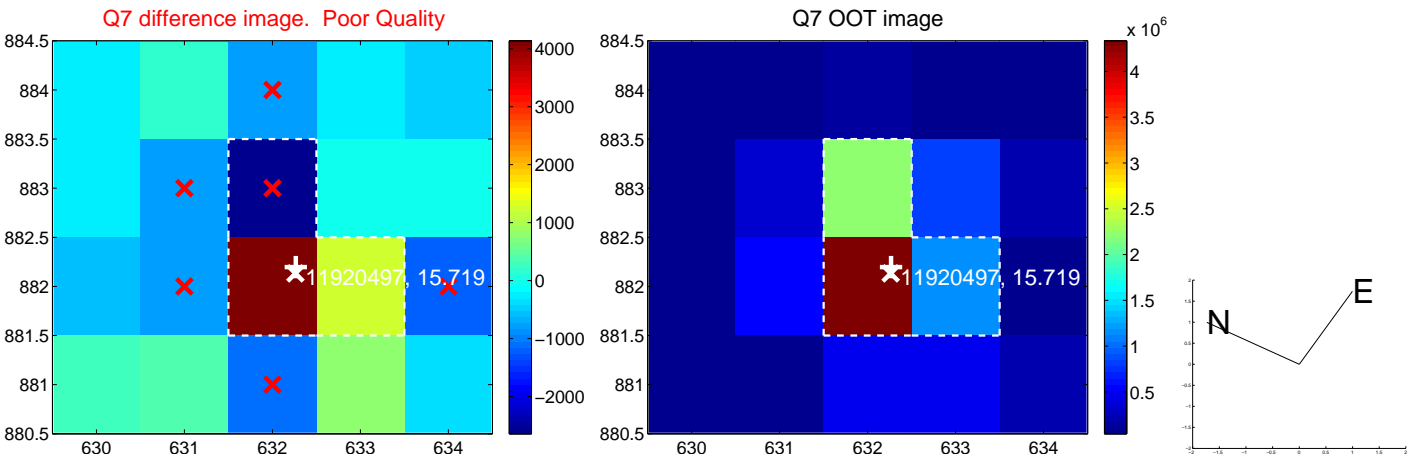
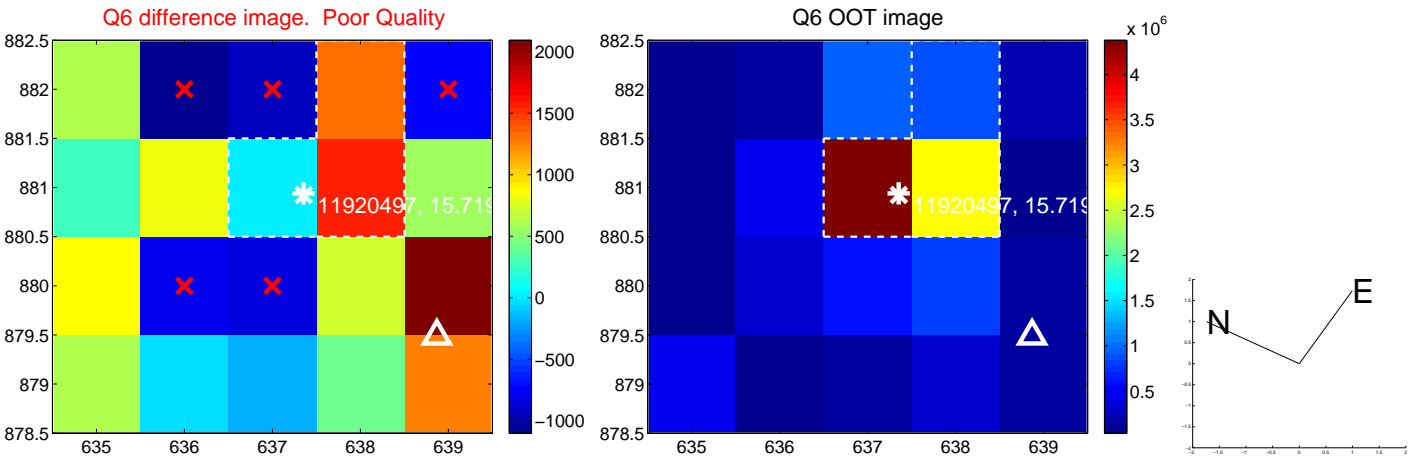
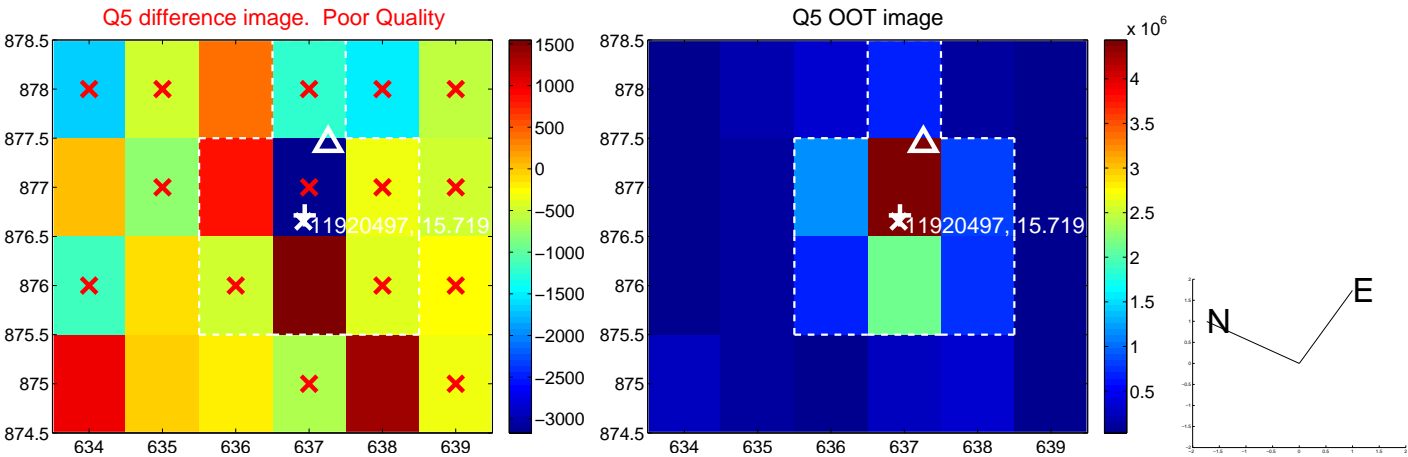


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

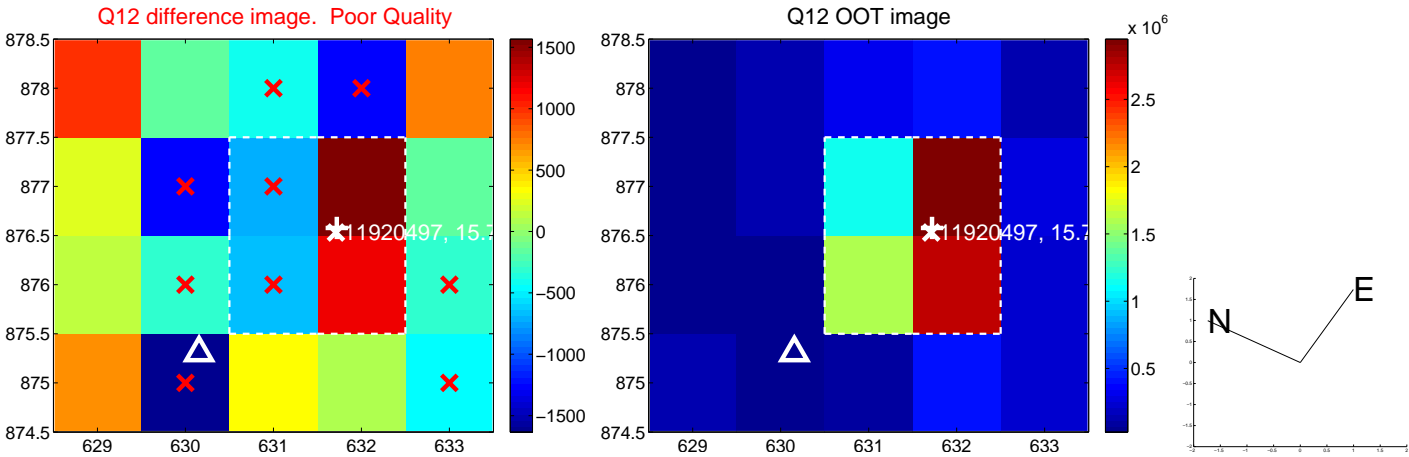
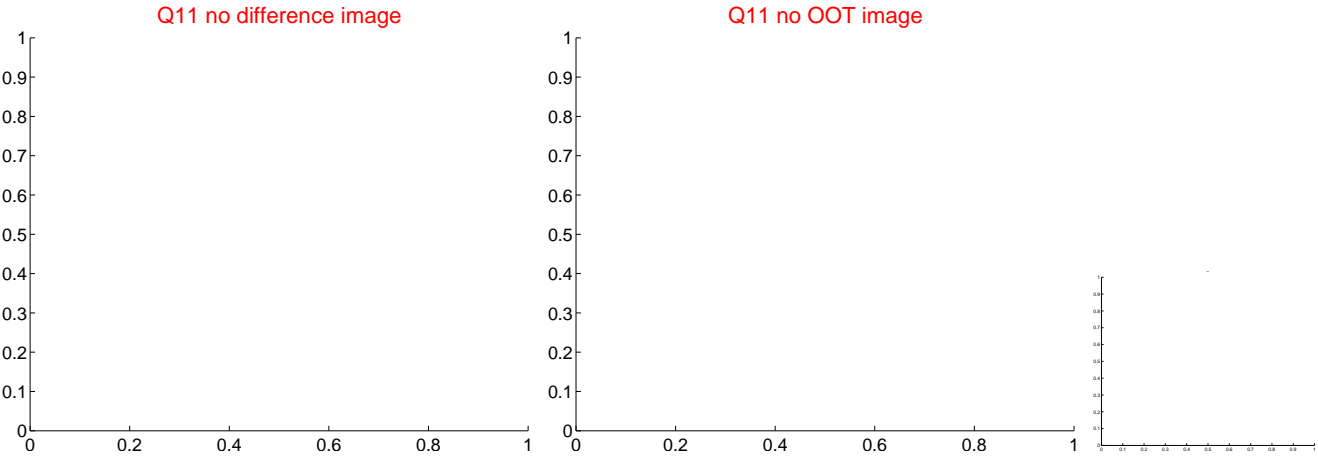
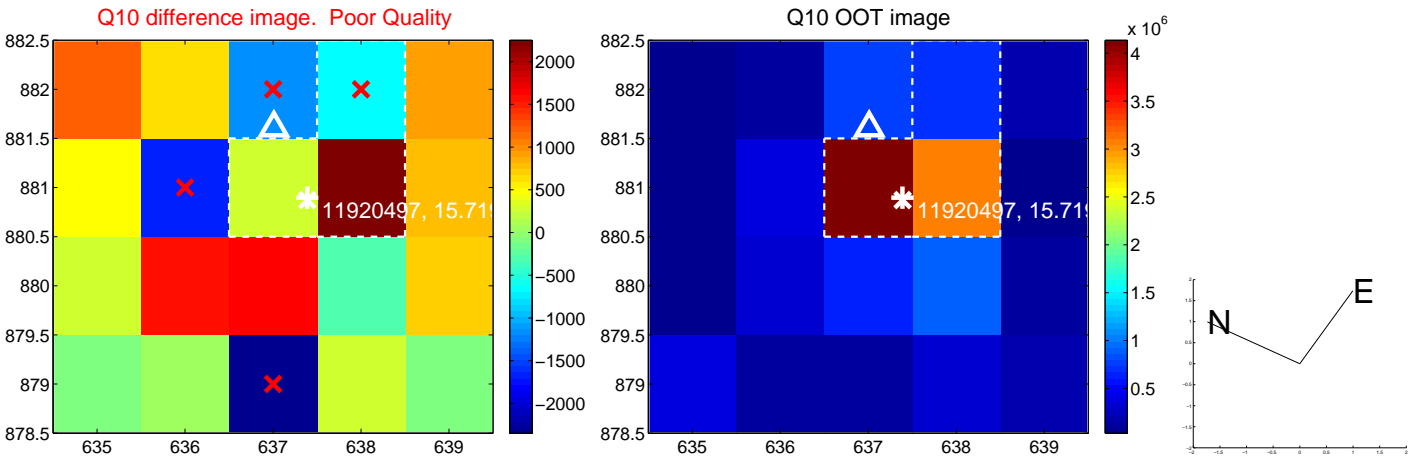
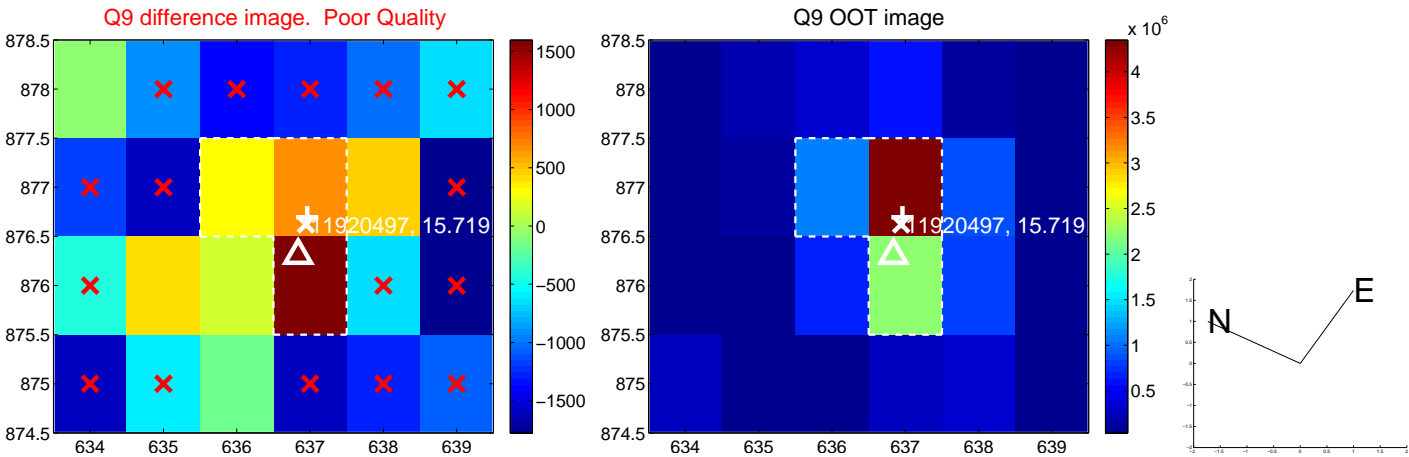
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



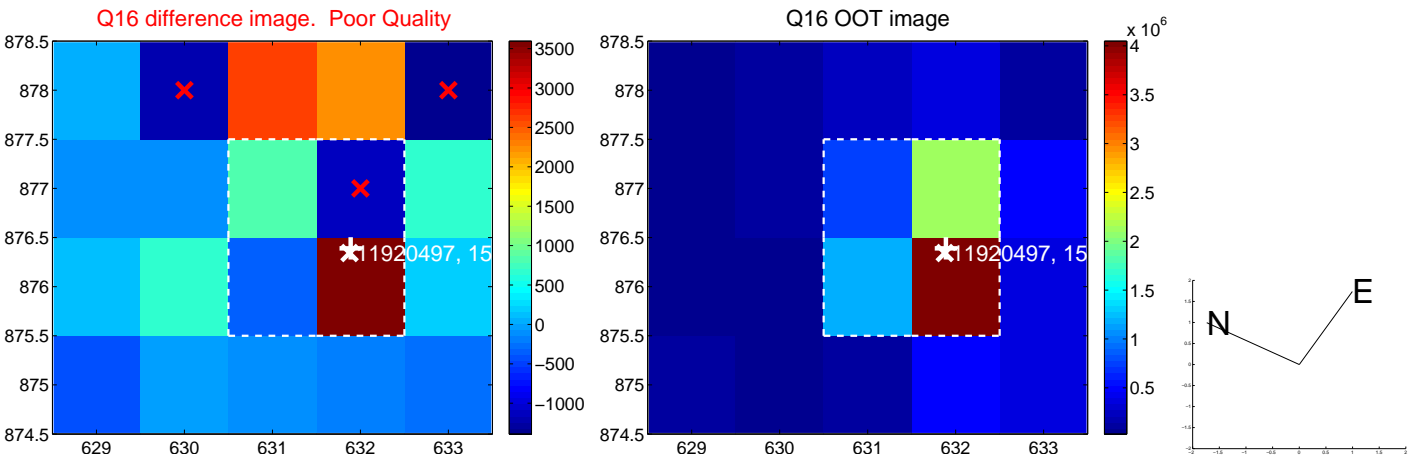
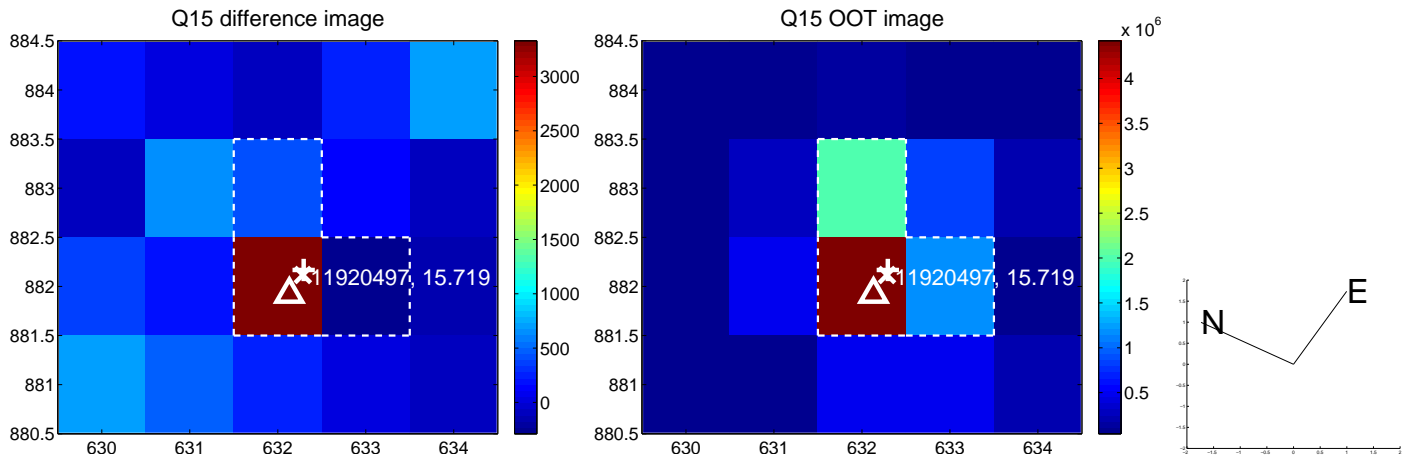
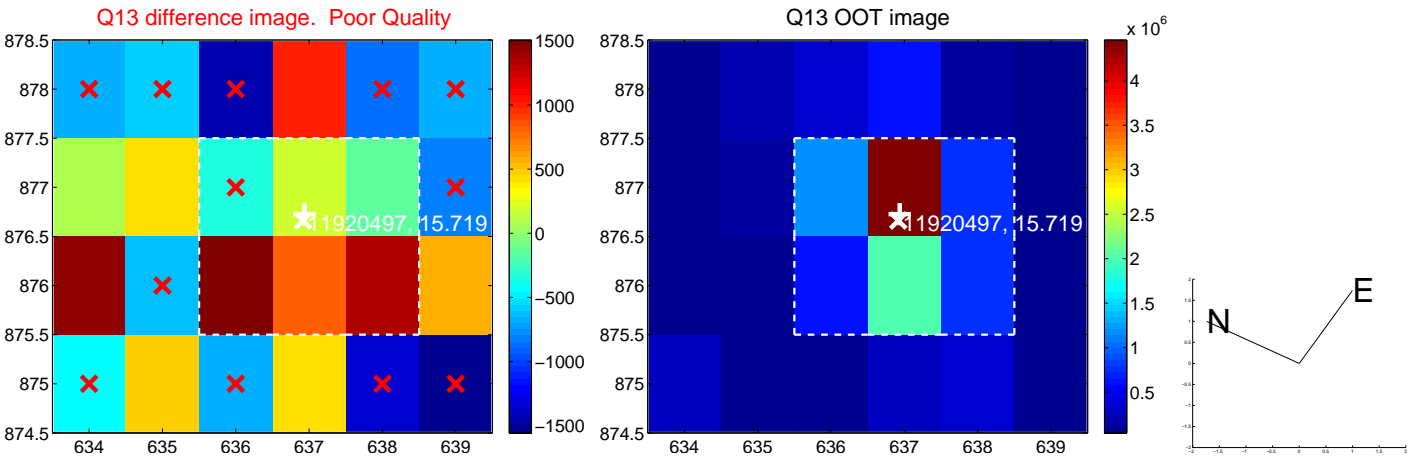
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



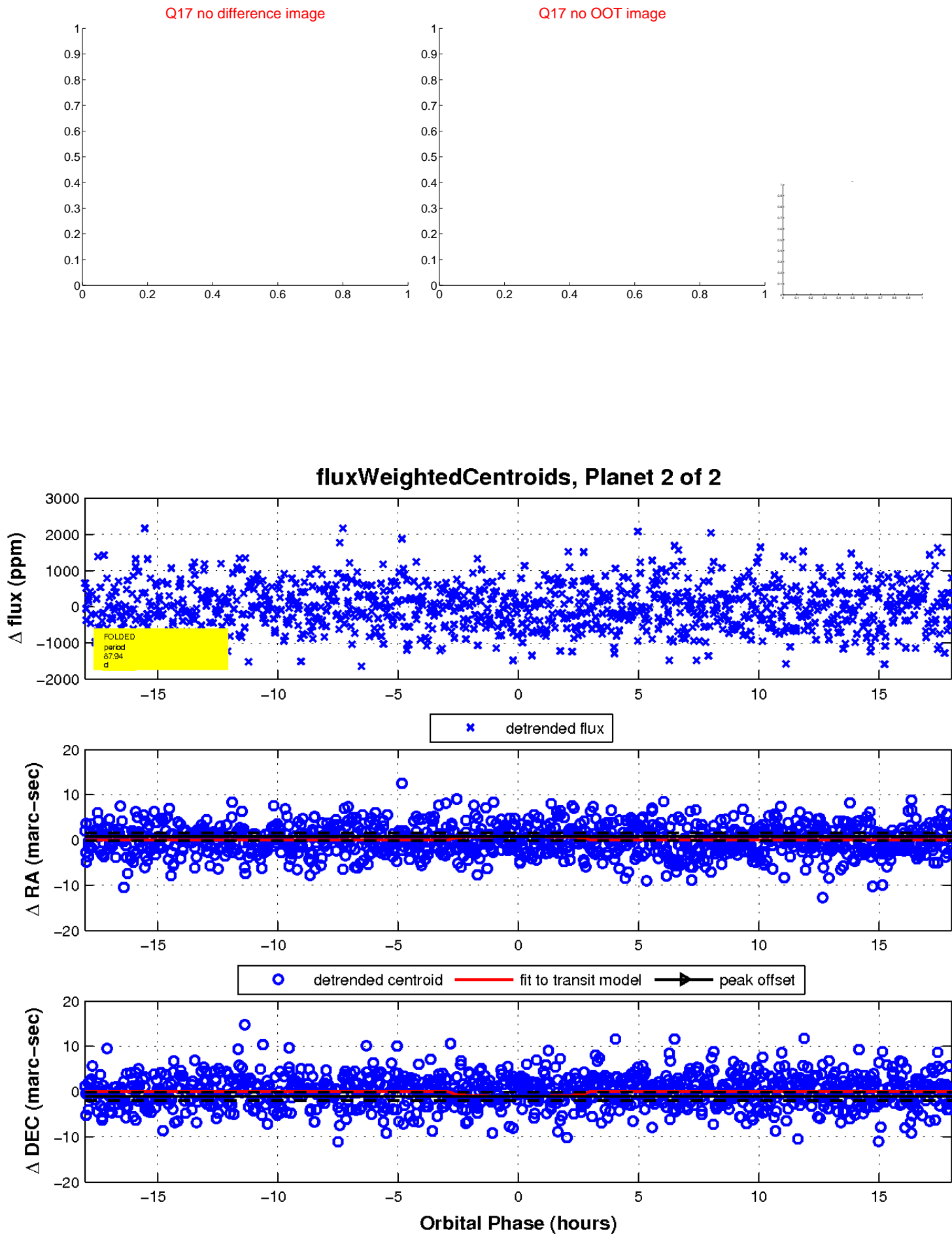
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UKIRT Image

Declination

