

KIC 011032573

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})
011032573-01	OBS	No	2.295356	133.591202	62.6	10.353	8.5	6.2	0.74	4564	0.56	221.78
011032573-02	OBS	No	310.325568	136.268664	1318.4	86.251	11.4	5.3	0.74	4564	5.57	0.32
011032573-03	OBS	No	439.900293	251.815908	715.4	2.099	9.6	3.2	0.74	4564	2.21	0.20
011032573-04	OBS	No	440.229754	250.773725	1764.0	15.171	10.1	7.4	0.74	4564	2.98	0.20
011032573-05	OBS	No	452.478269	329.545067	839.6	7.001	8.1	8.0	0.74	4564	2.39	0.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011032573-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011032573-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011032573-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011032573-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011032573-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_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.

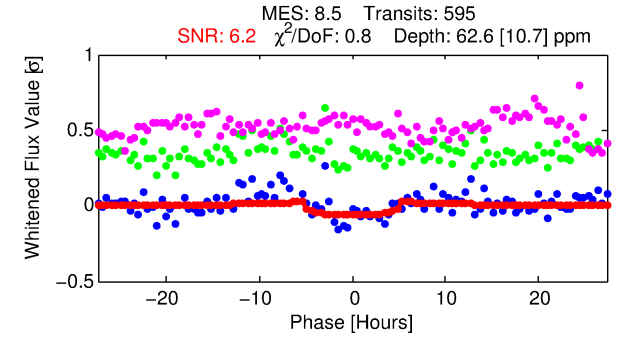
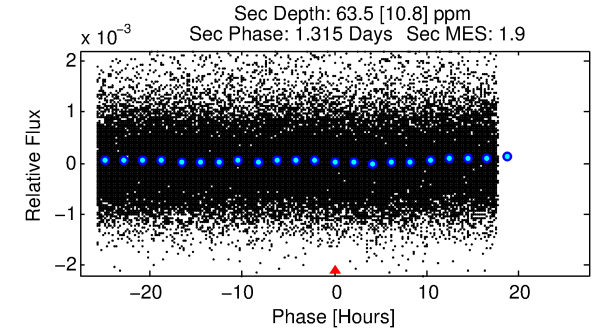
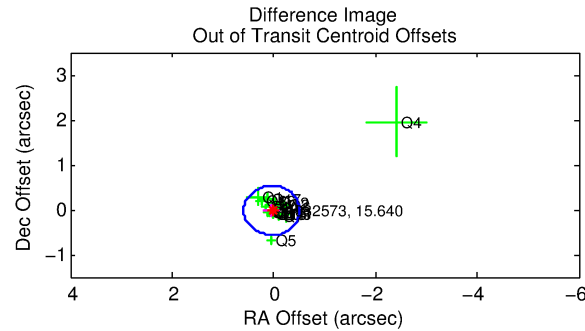
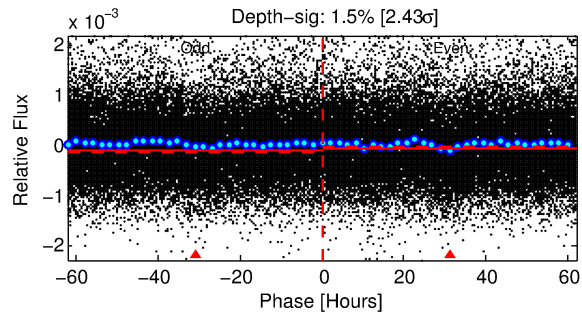
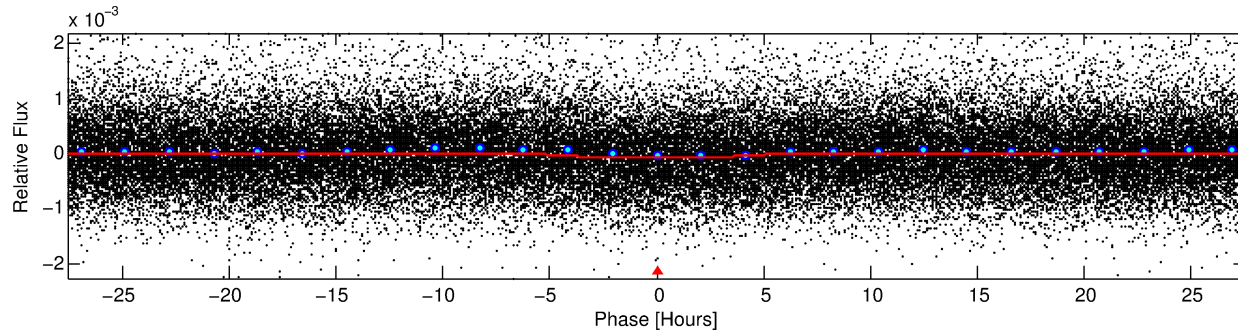
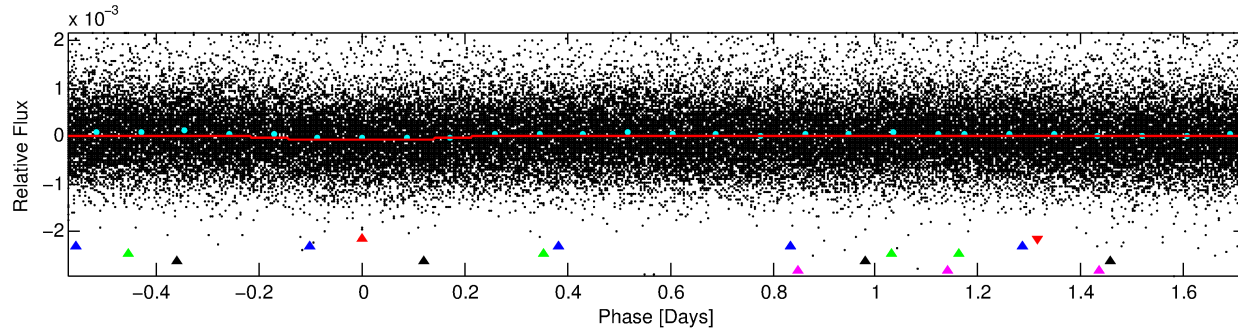
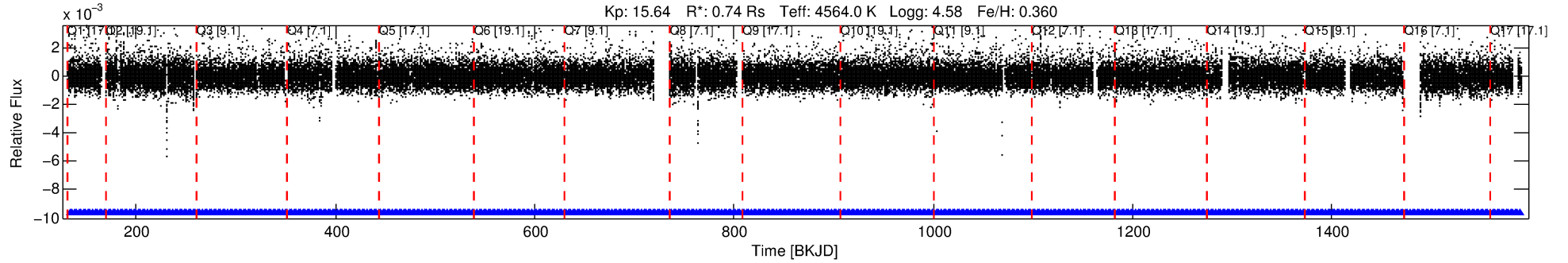
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011032573-01

No Significant Match Found

DV One-Page Summary

KIC: 11032573 Candidate: 1 of 5 Period: 2.295 d



DV Fit Results:

Period = 2.29536 [0.00005] d
Epoch = 133.5912 [0.0133] BKJD
Rp/R* = 0.0069 [0.0070]
a/R* = 1.81 [3.65]
b = 0.00 [4308.24]
Seff = 221.78 [32.00]
Teq = 984 [35] K
Rp = 0.56 [0.57] Re
a = 0.0312 [0.0018] AU
Ag = 108.13 [221.65] [0.48 σ]
Teffp = 4906 [2516] K [1.56 σ]

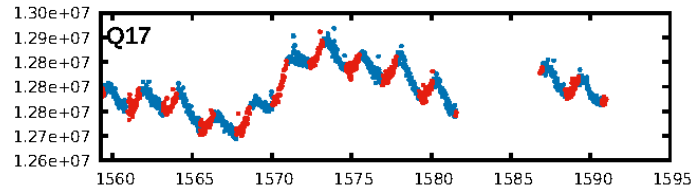
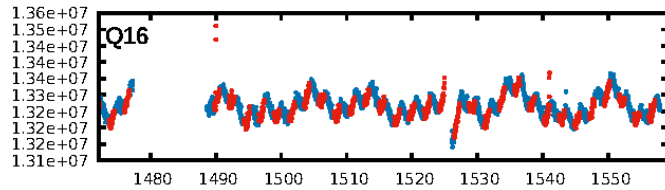
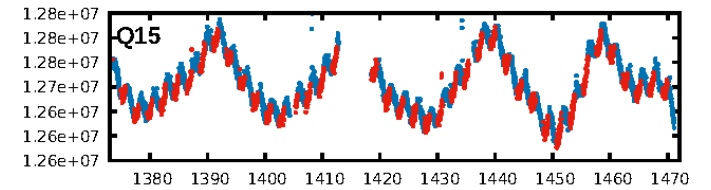
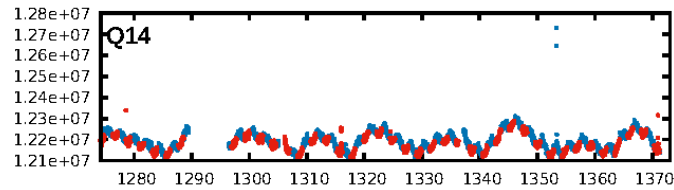
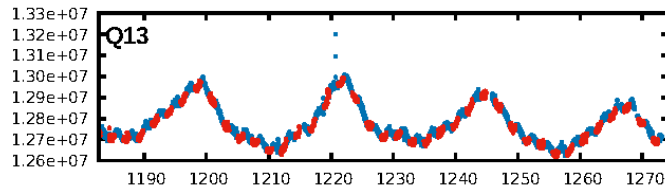
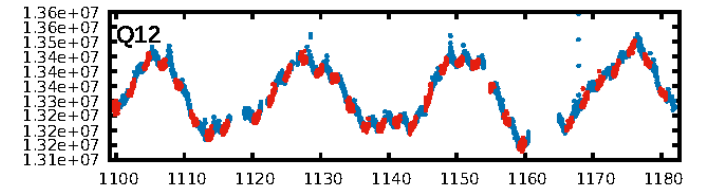
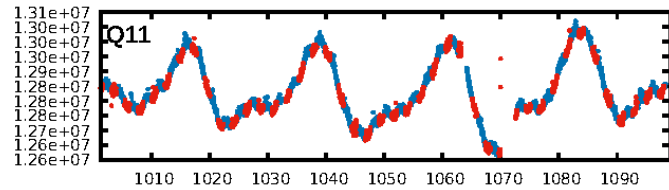
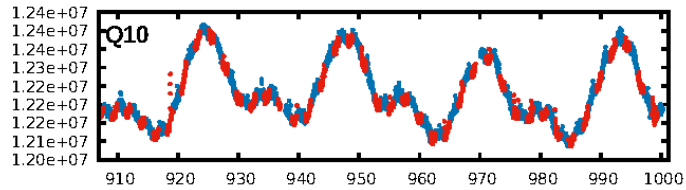
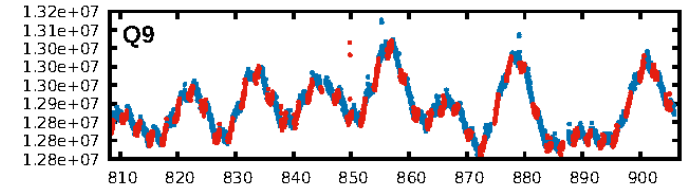
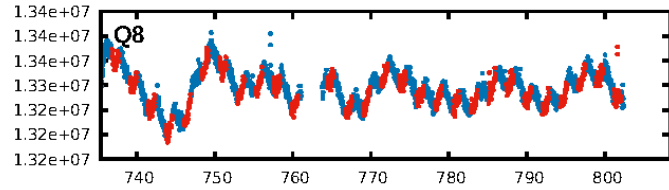
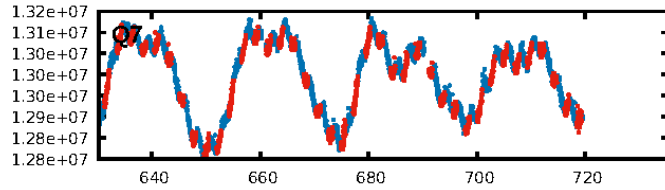
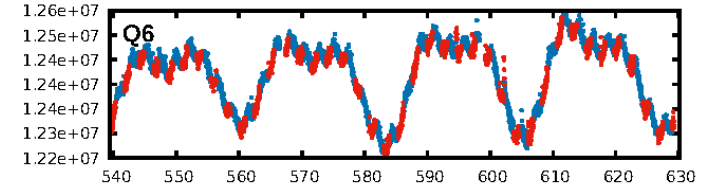
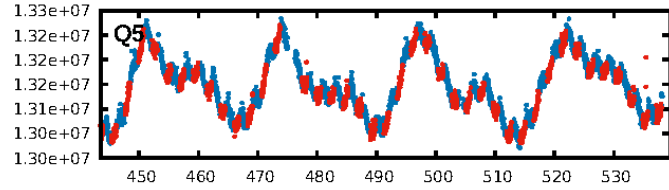
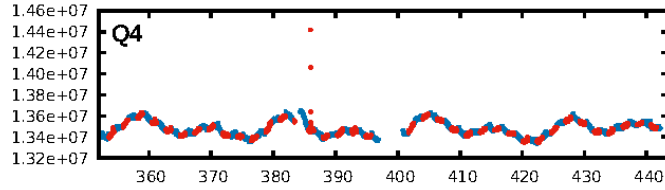
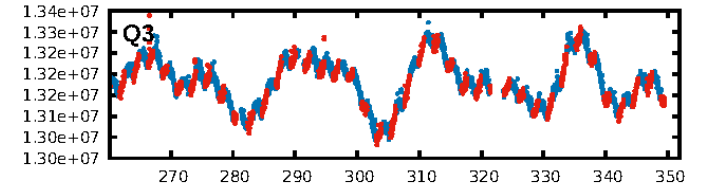
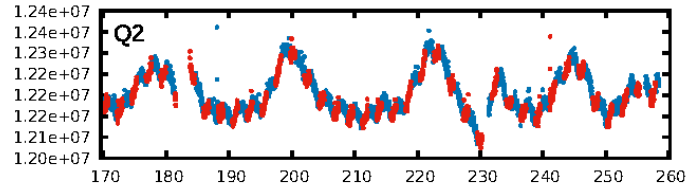
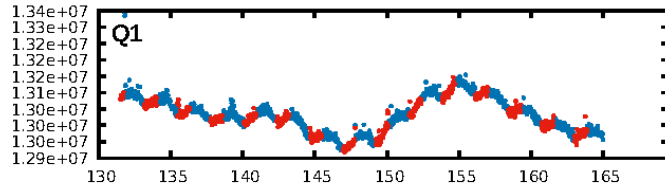
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [85.10 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.15e-15
RollingBand-fgt: 1.00 [569/569]
GhostDiagnostic-chr: 0.872
Centroid-sig: 0.1%
Centroid-so: 2.665 arcsec [1.91 σ]
OotOffset-rm: 0.047 arcsec [0.26 σ]
KicOffset-rm: 0.149 arcsec [0.82 σ]
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]

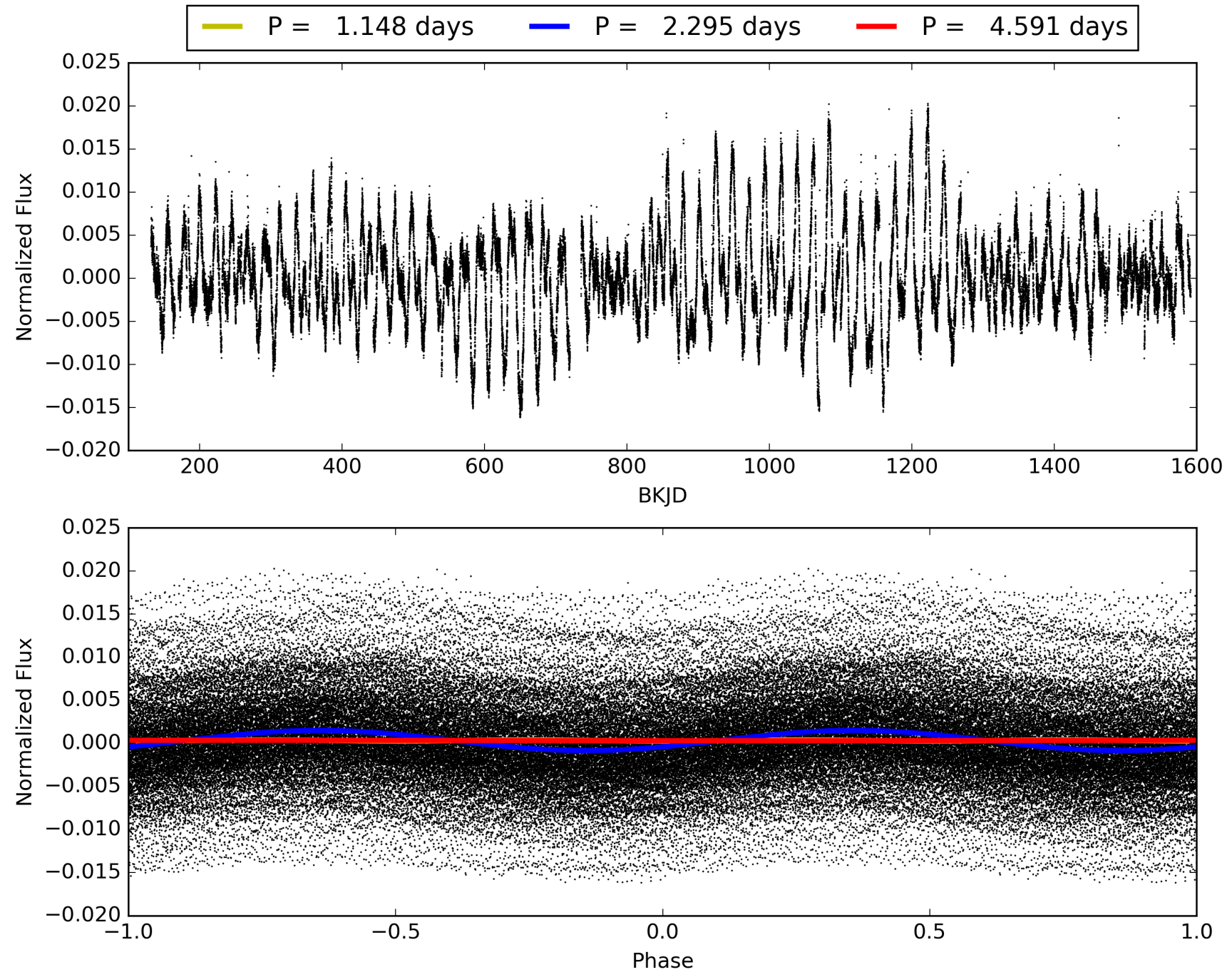
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011032573-01, PDC Light Curves

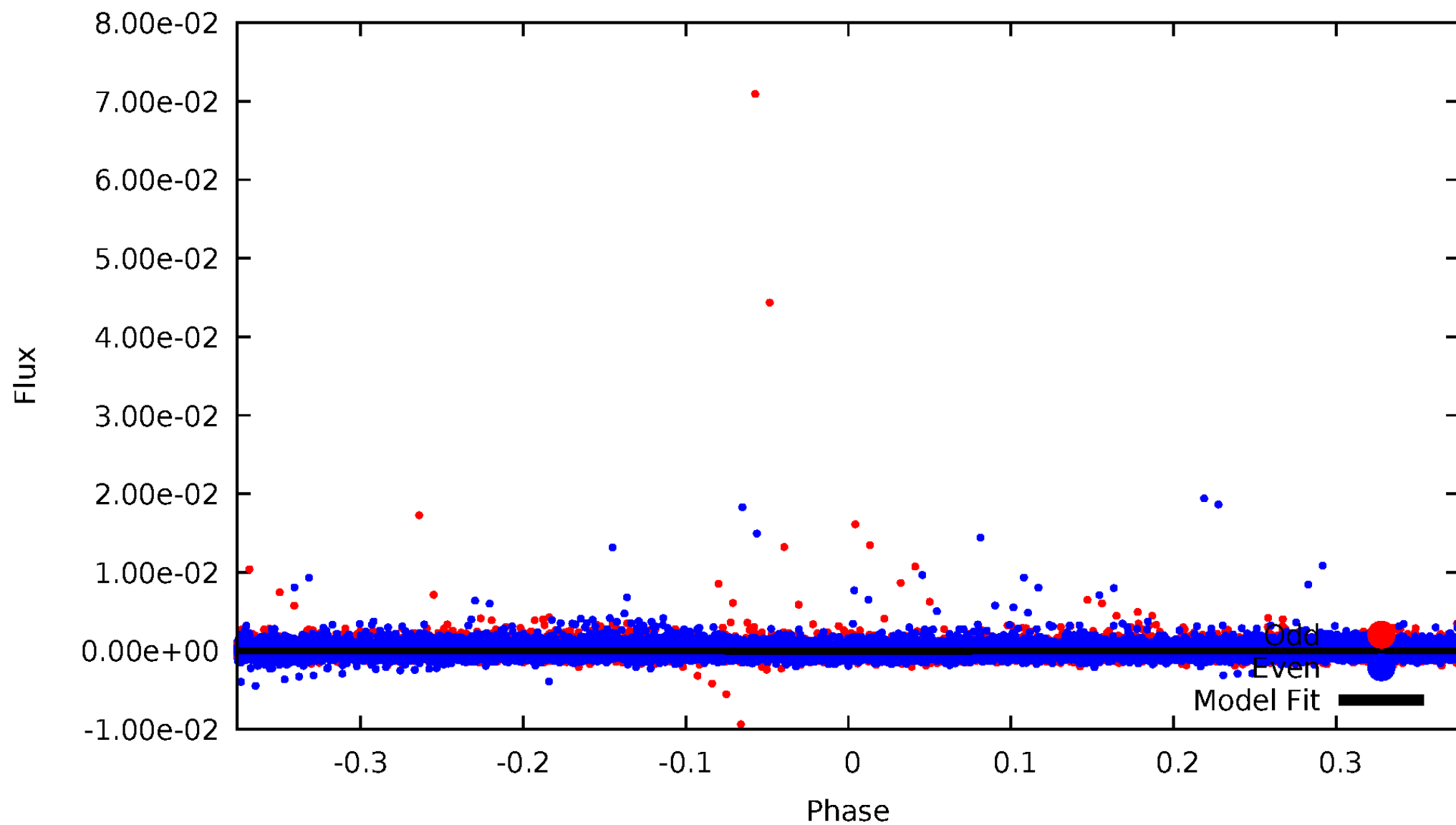


TCE 011032573-01



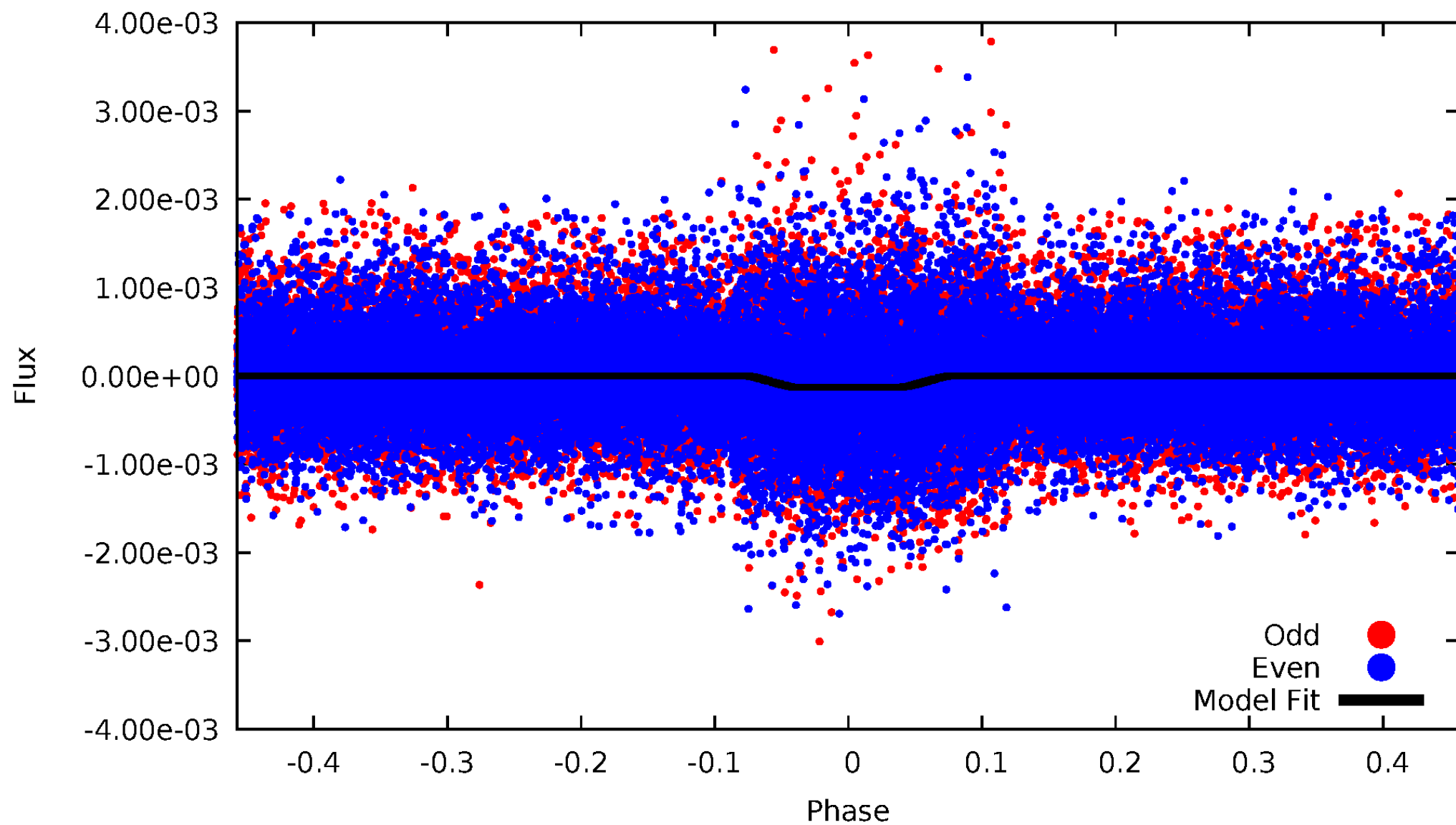
DV Odd/Even

TCE 011032573-01



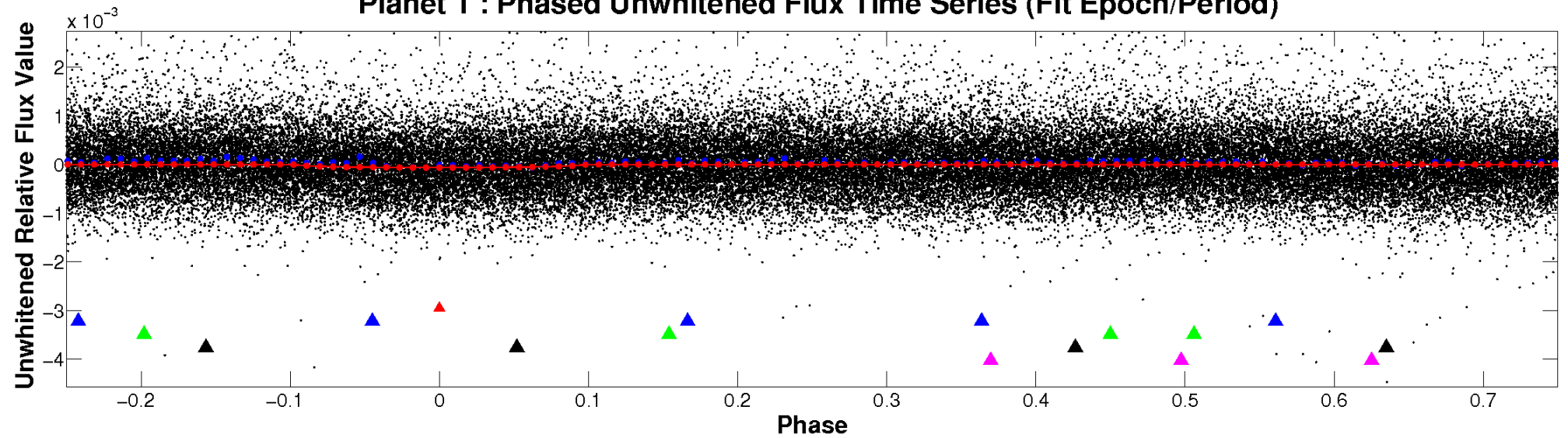
ALT Odd/Even

TCE 011032573-01

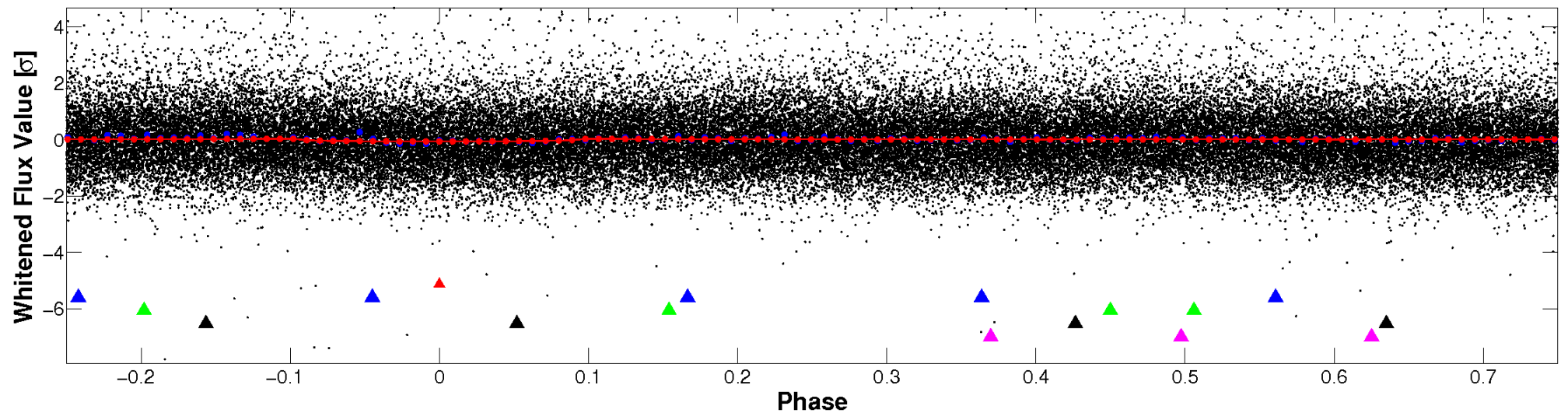


Non-Whitened Vs. Whitened Light Curve

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

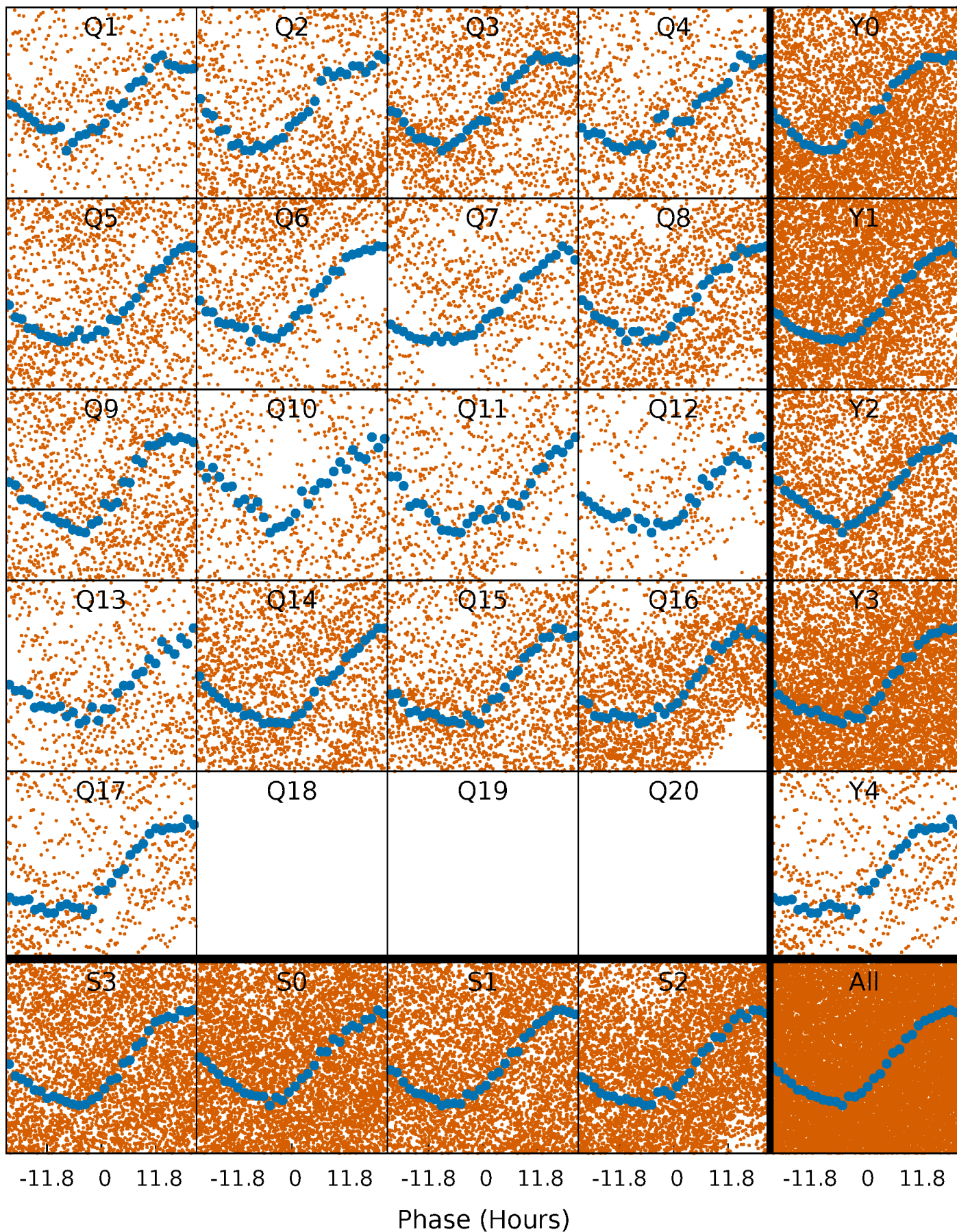


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



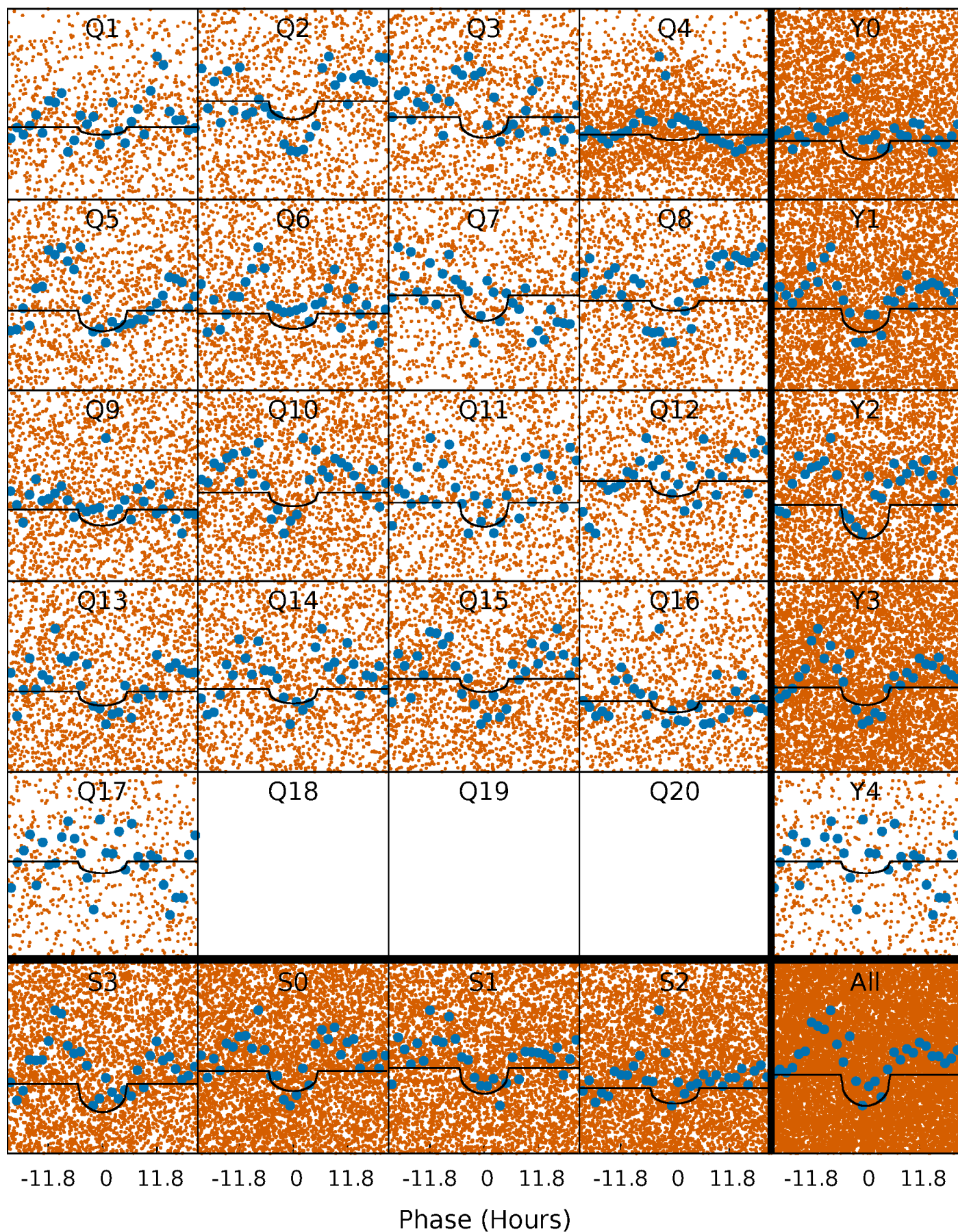
PDC Quarter-Phased Transit Curves

TCE 011032573-01 P= 2.295356 Days $T_0=133.591202$ (BKJD)



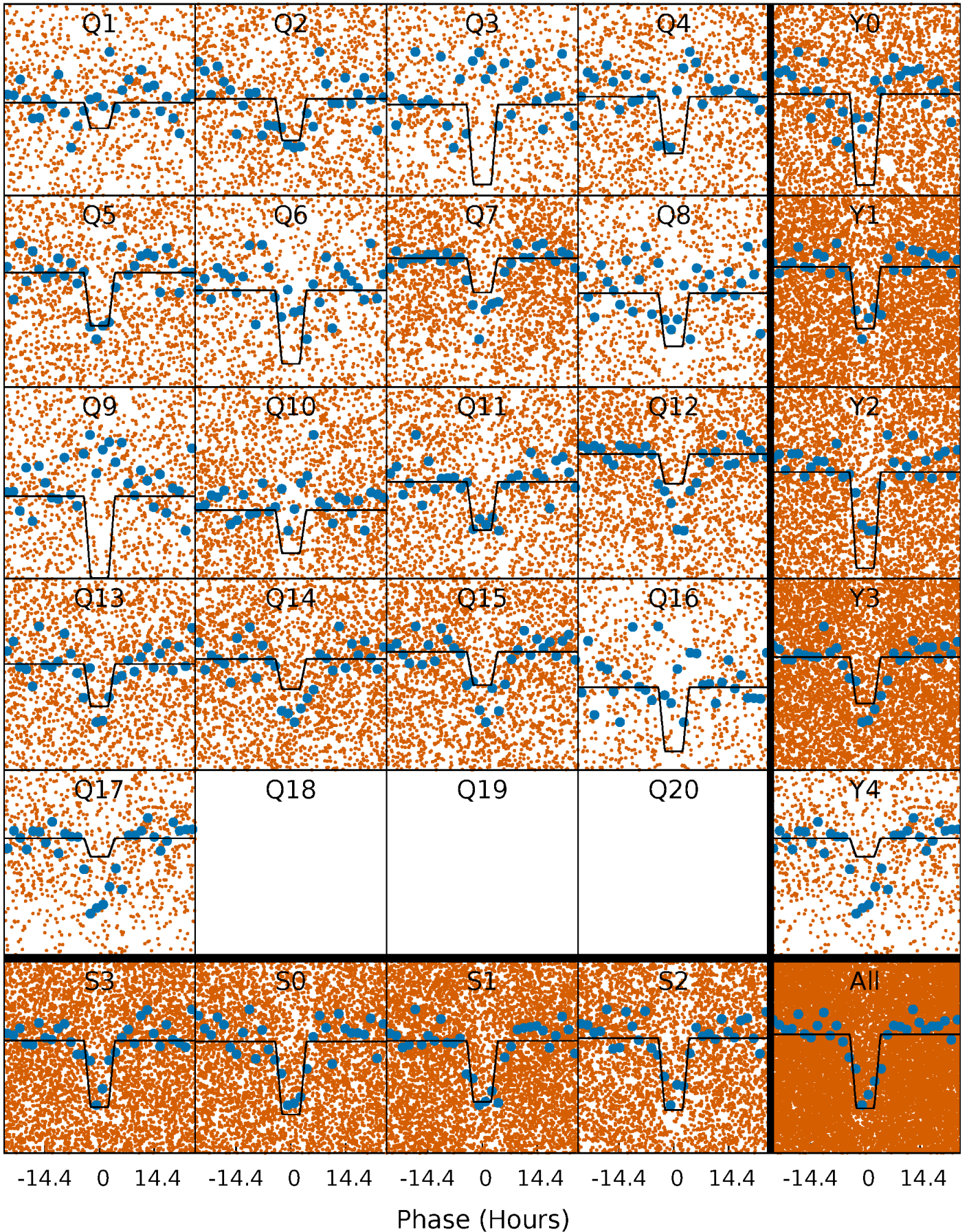
DV Quarter-Phased Transit Curves

TCE 011032573-01 P= 2.295356 Days $T_0=133.591202$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

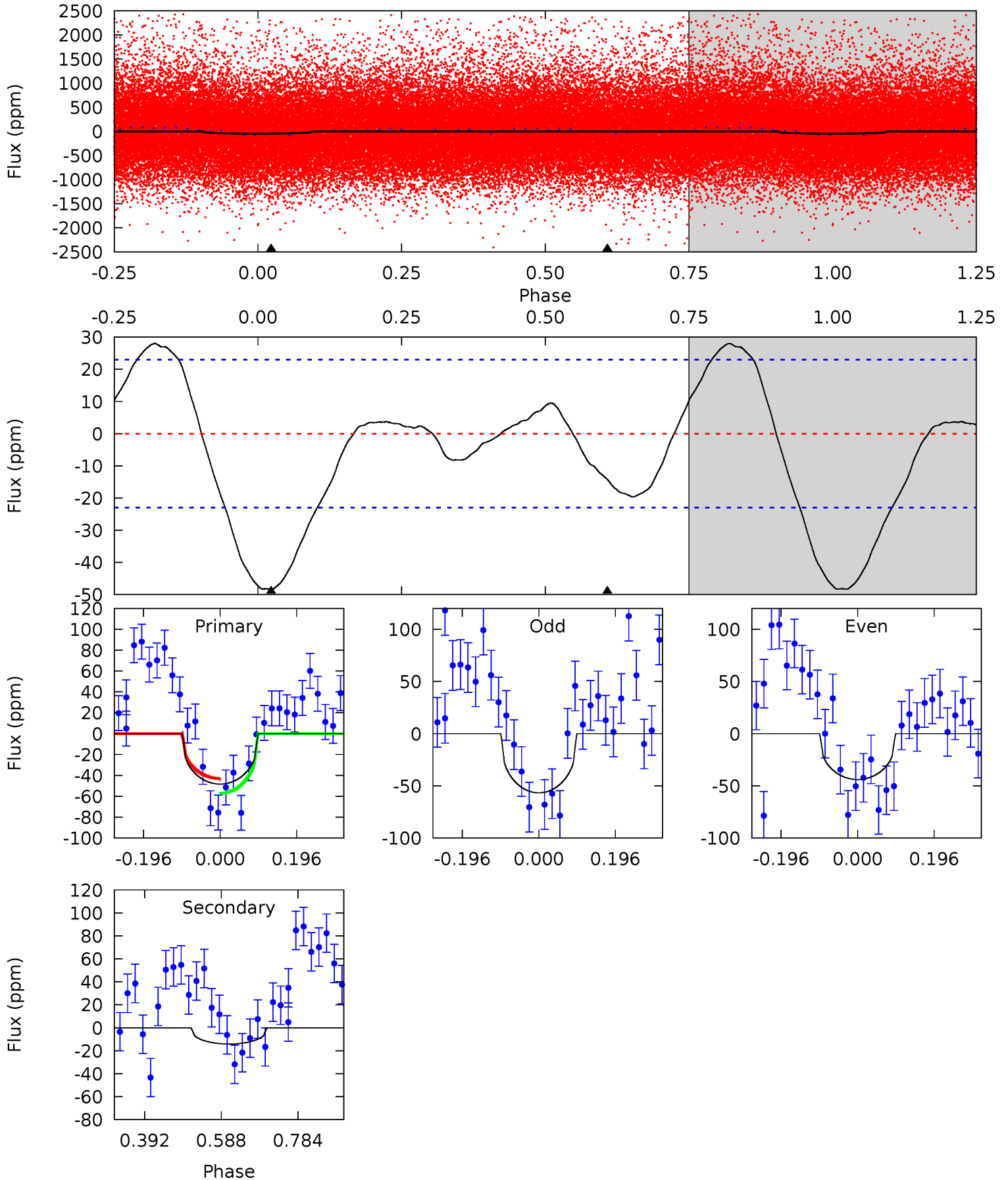
TCE 011032573-01 P= 2.295337 Days $T_0=133.578188$ (BKJD)



DV Model-Shift Uniqueness Test

011032573-01, P = 2.295356 Days, E = 131.295846 Days

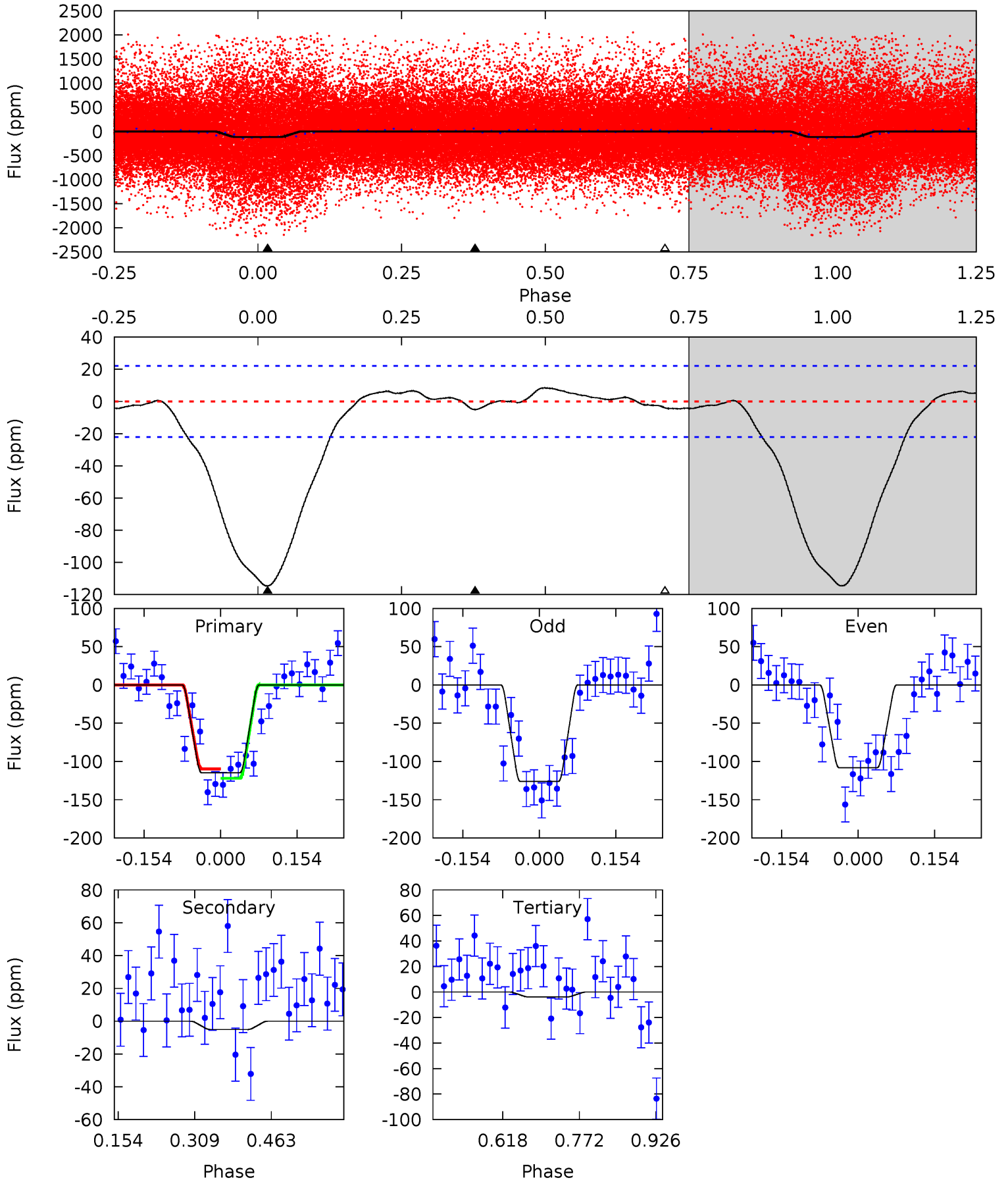
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.30	2.73	0	0	4.42	1.29	1.90	9.30	9.30	2.73	2.73	1.23	0.53	0.37	1.36



Alt Model-Shift Uniqueness Test

011032573-01, P = 2.295337 Days, E = 131.282851 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.2	1.02	0.78	0	4.47	1.42	0.75	22.4	23.2	0.24	1.02	1.83	1.02	0.07	1.24



Stellar Parameters For KIC 011032573

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4564^{+137}_{-137}	$4.579^{+0.042}_{-0.025}$	$0.360^{+0.100}_{-0.300}$	$0.745^{+0.031}_{-0.053}$	$0.767^{+0.032}_{-0.056}$	$2.614^{+0.506}_{-0.222}$
	+3%/-3%	+1%/-1%	+28%/-83%	+4%/-7%	+4%/-7%	+19%/-8%
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 011032573-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-14 ± 5	$0.69^{+0.54}_{-0.43}$	1370^{+49}_{-49}	3424^{+1428}_{-631}	16^{+97}_{-12}
Alt.	-5 ± 5	$0.95^{+0.56}_{-0.53}$	1371^{+41}_{-46}	2597^{+766}_{-4698}	$2.531^{+11.526}_{-2.603}$

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

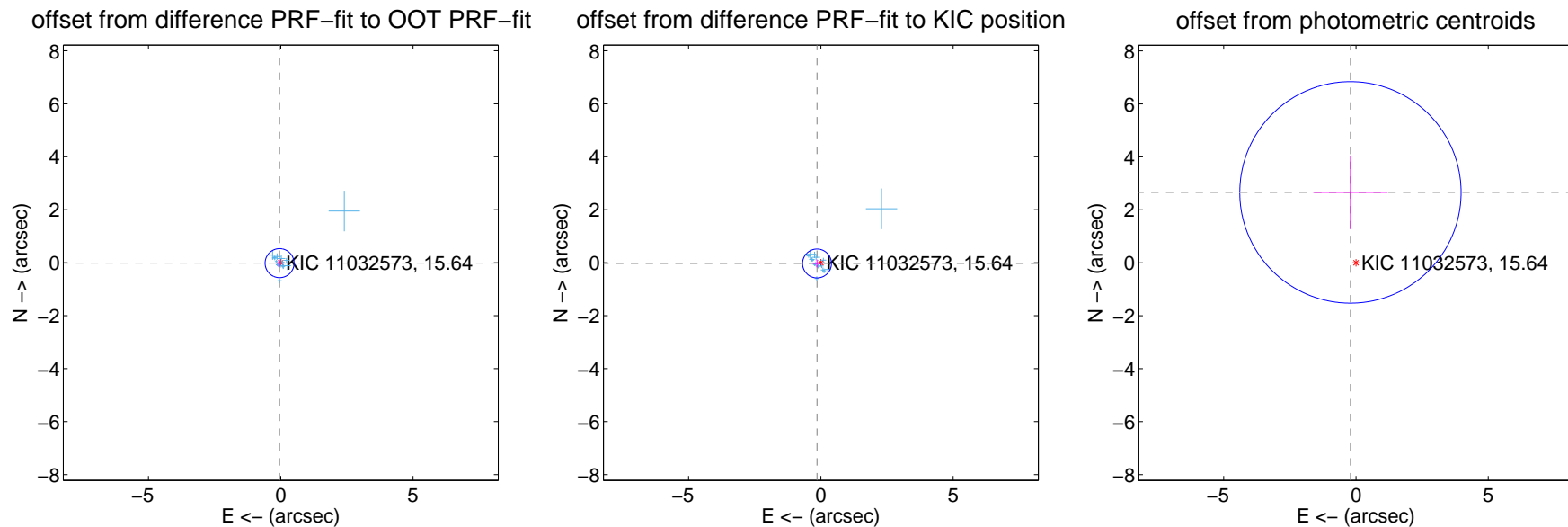
DV Centroid Data

Supplemental centroid analysis for 011032573-01. Kepler magnitude: 15.64. Transit SNR 6.19

There are 17 quarters with good PRF difference image offsets

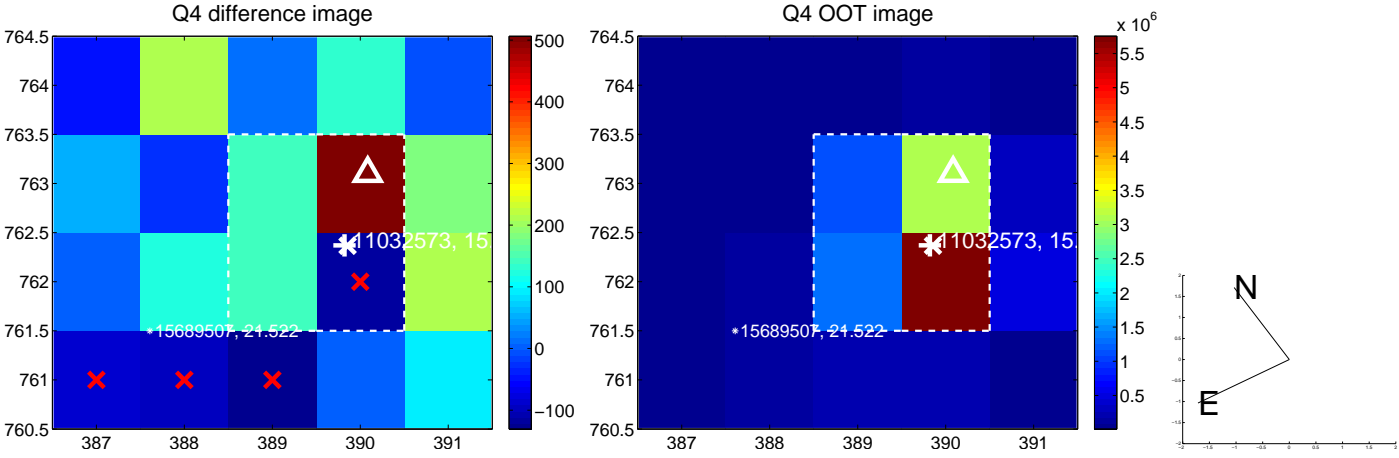
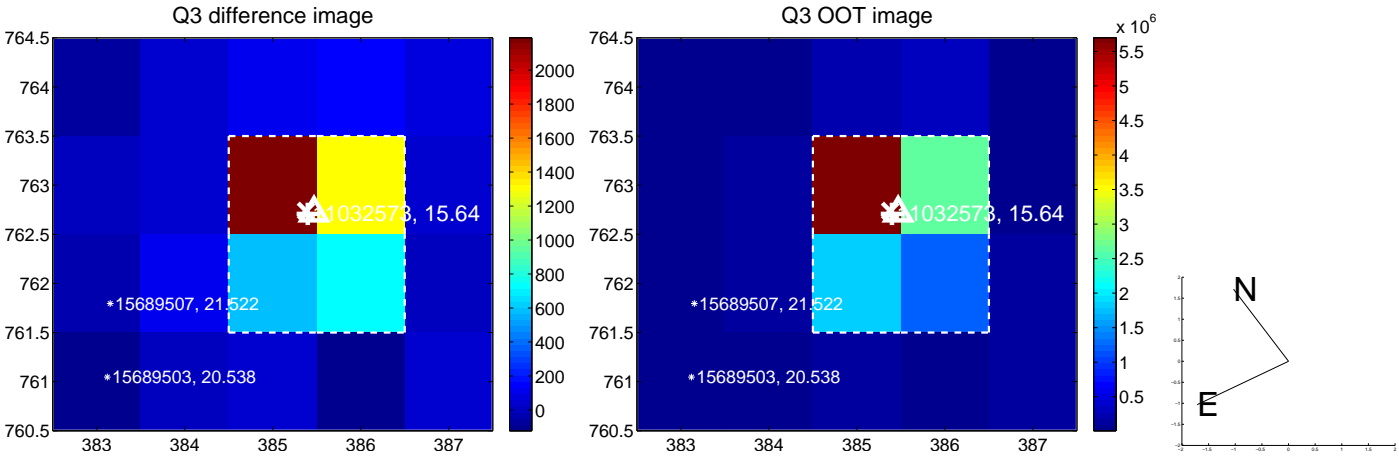
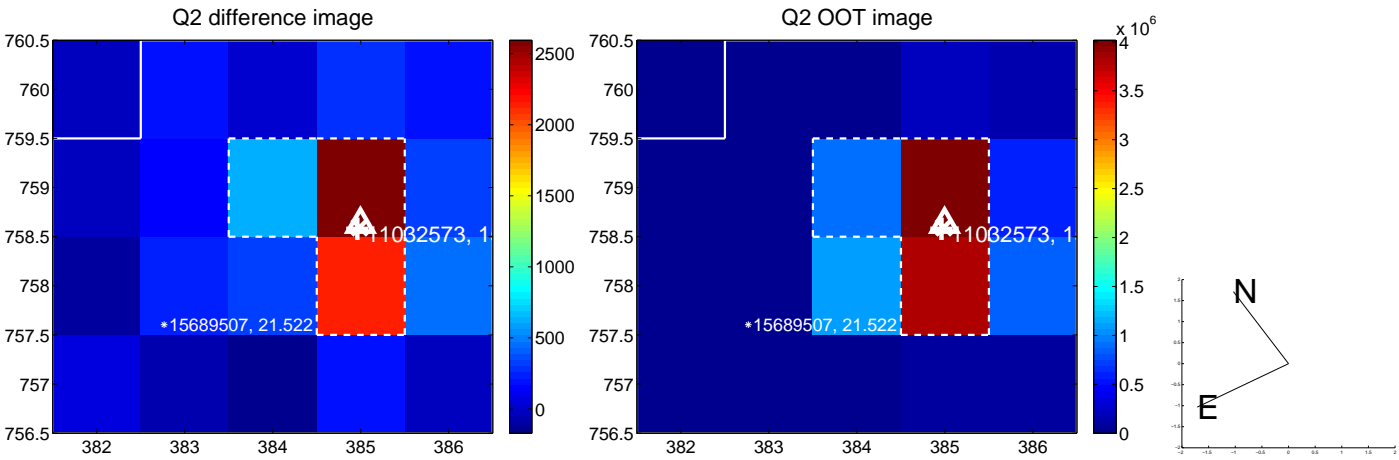
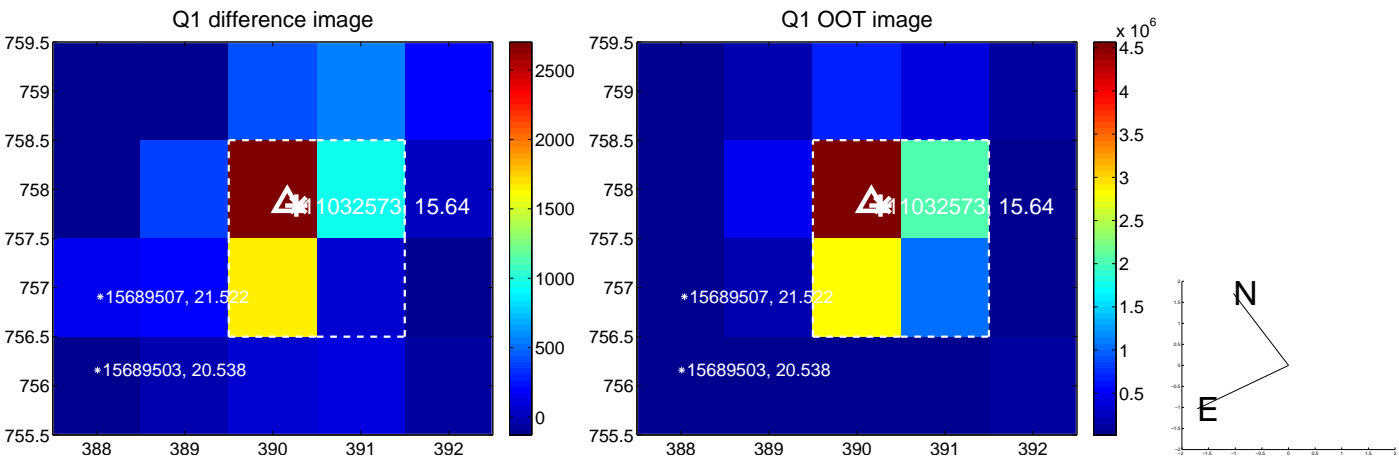
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.047 ± 0.183	0.26	0.044 ± 0.154	-0.018 ± 0.142
PRF-fit source offset from KIC position	0.149 ± 0.182	0.82	0.146 ± 0.165	-0.030 ± 0.149
photometric centroid source offset	2.67 ± 1.39	1.91	0.21 ± 1.40	2.66 ± 1.39

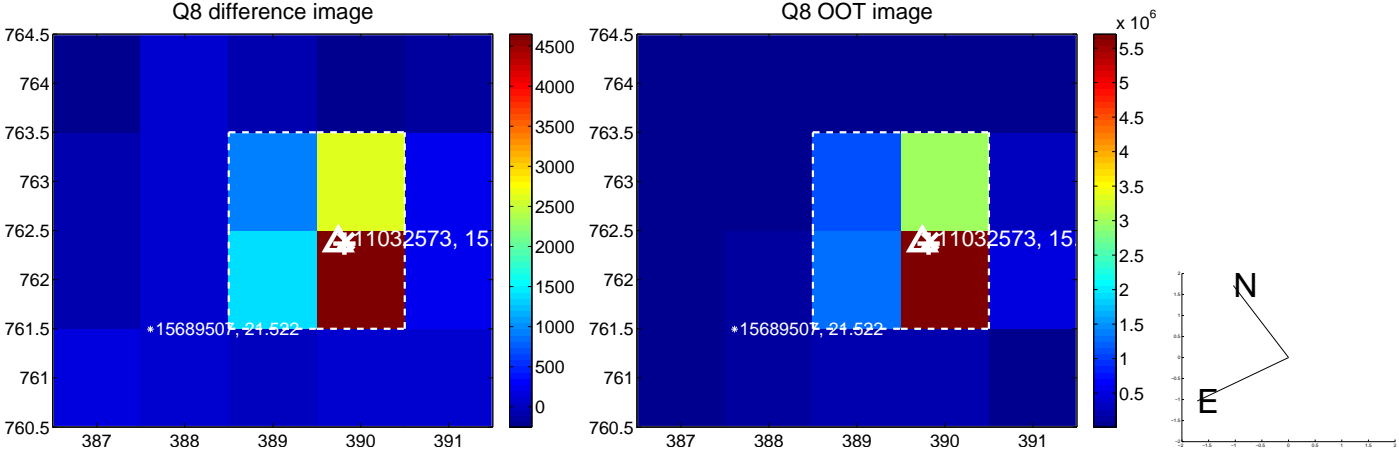
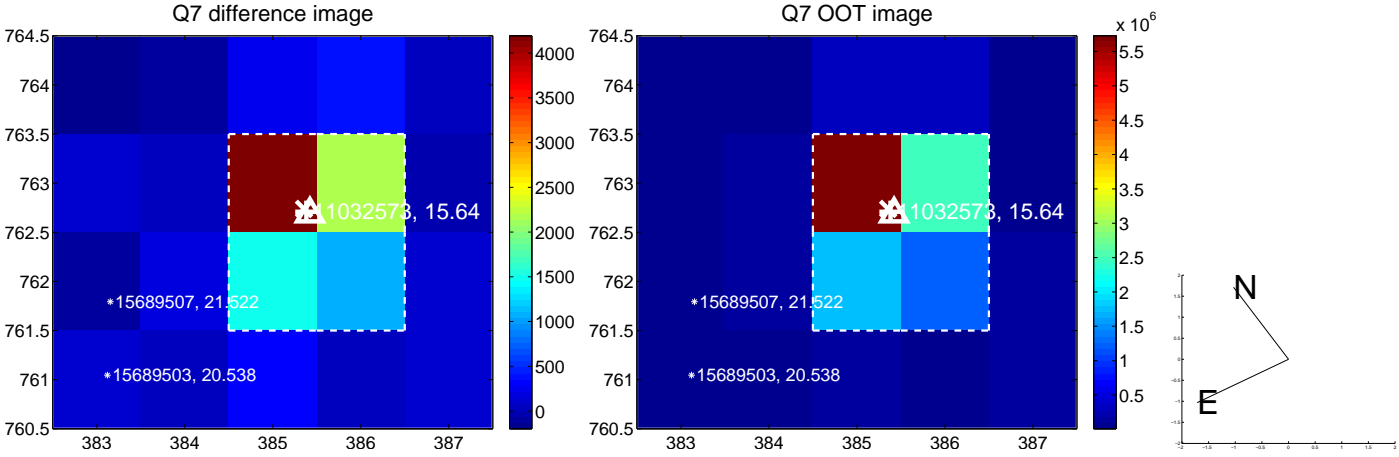
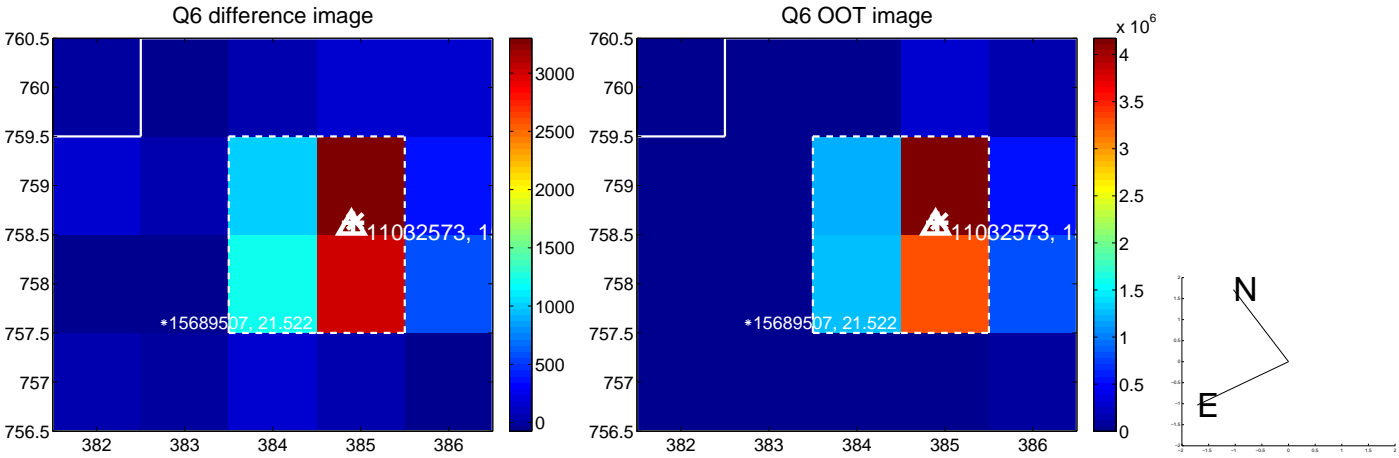
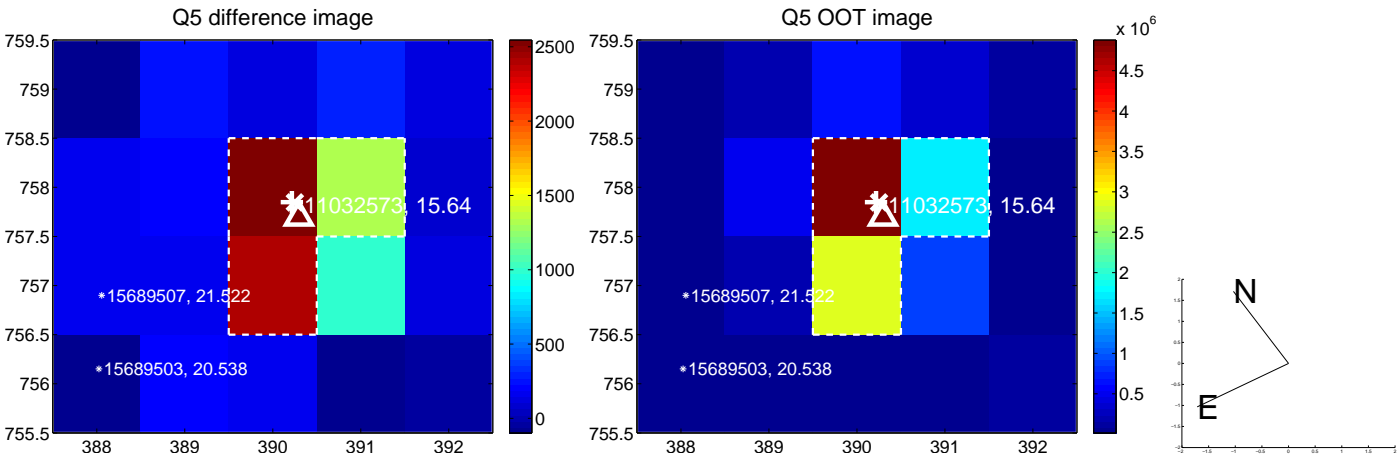


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

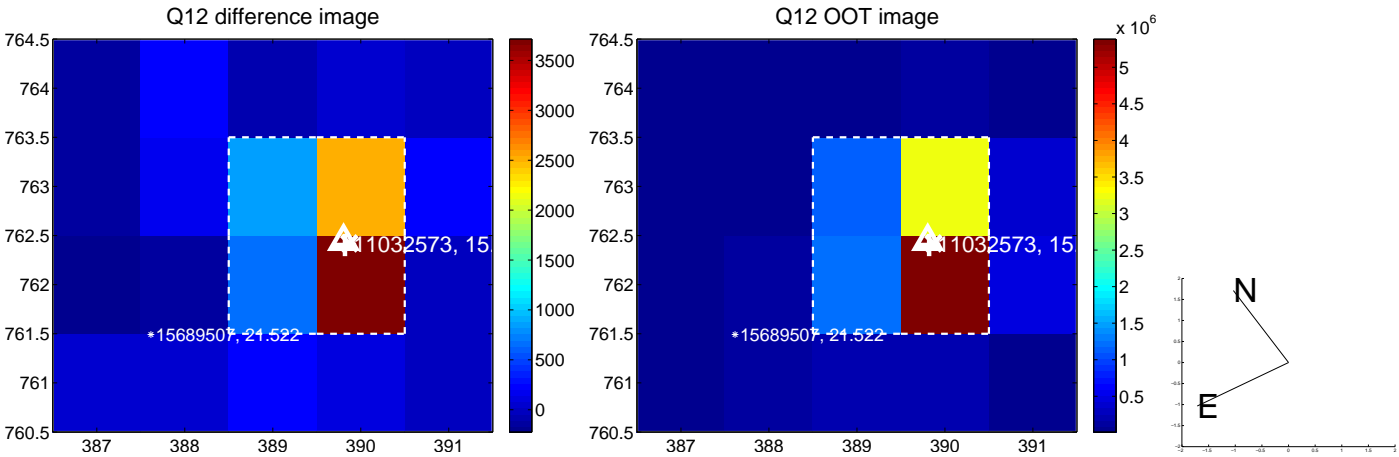
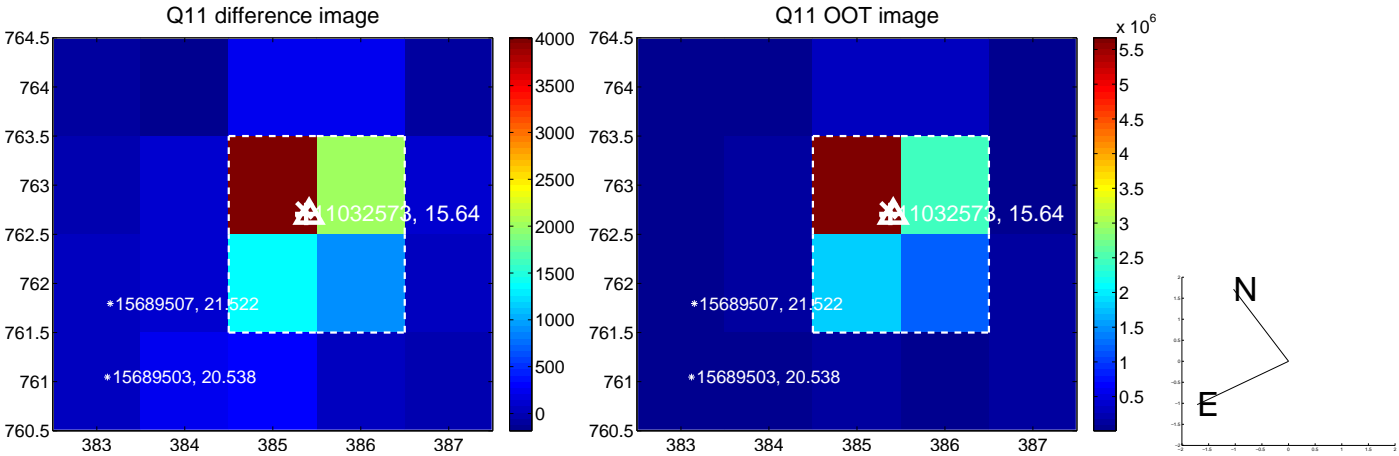
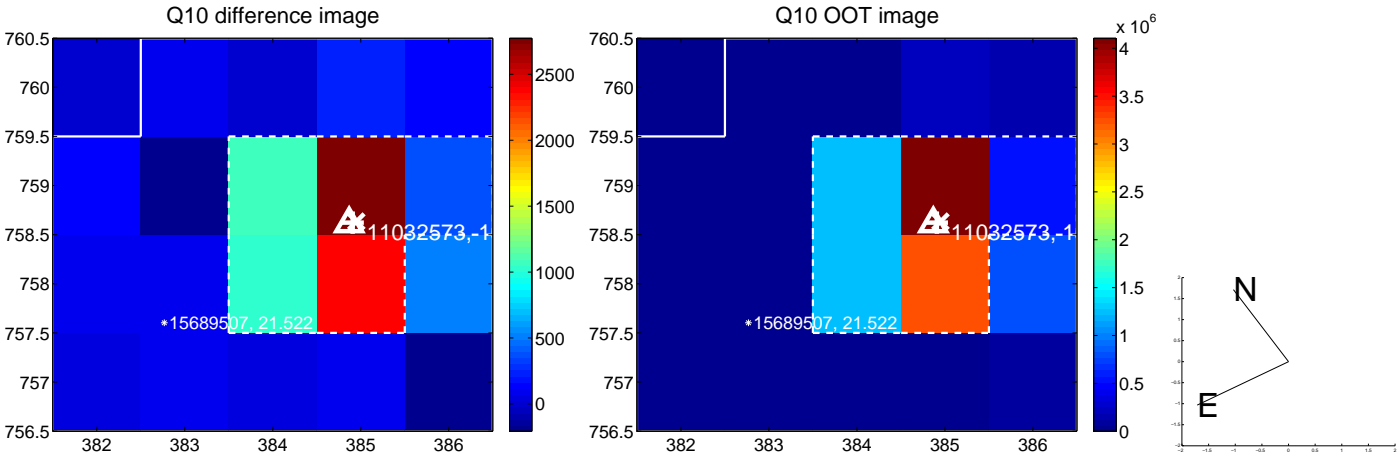
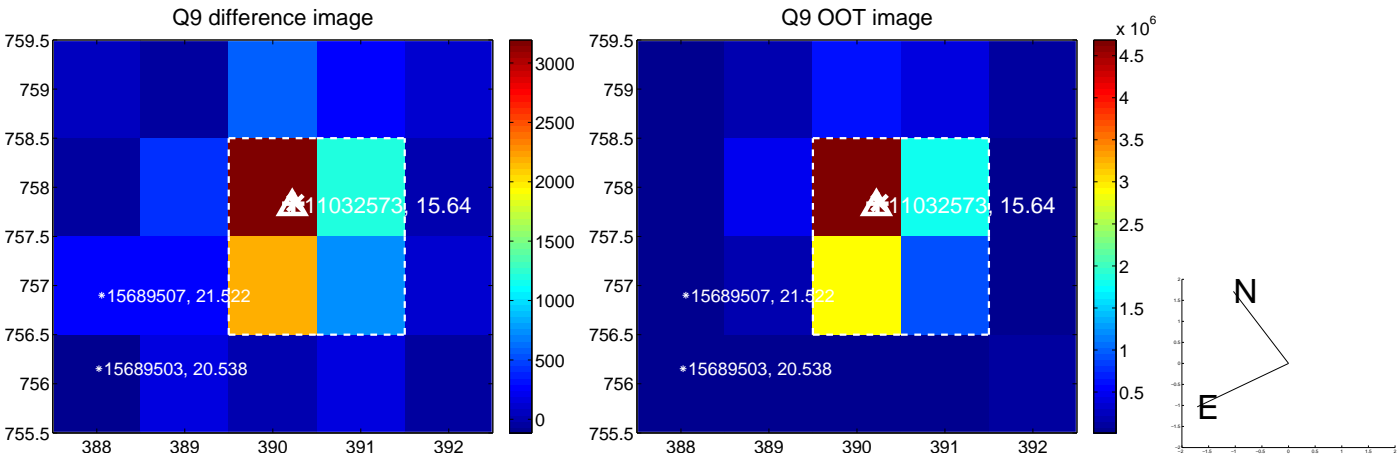
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



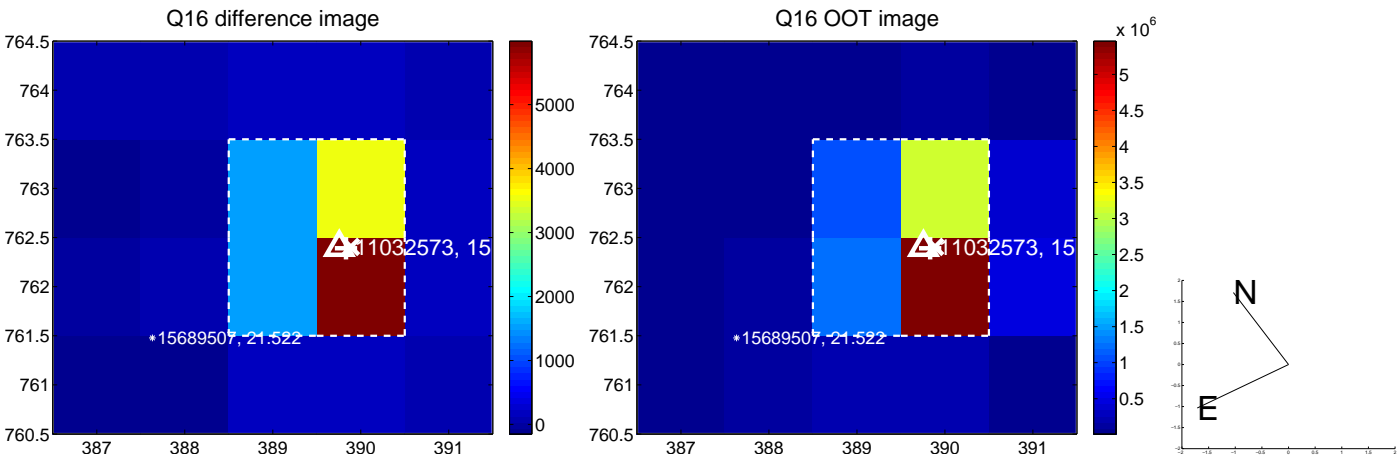
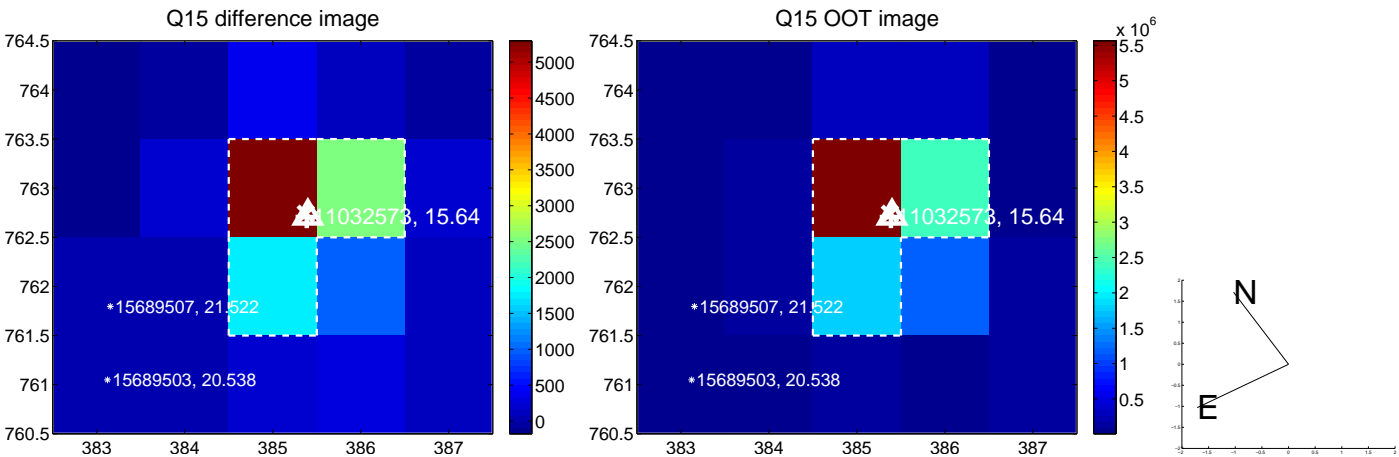
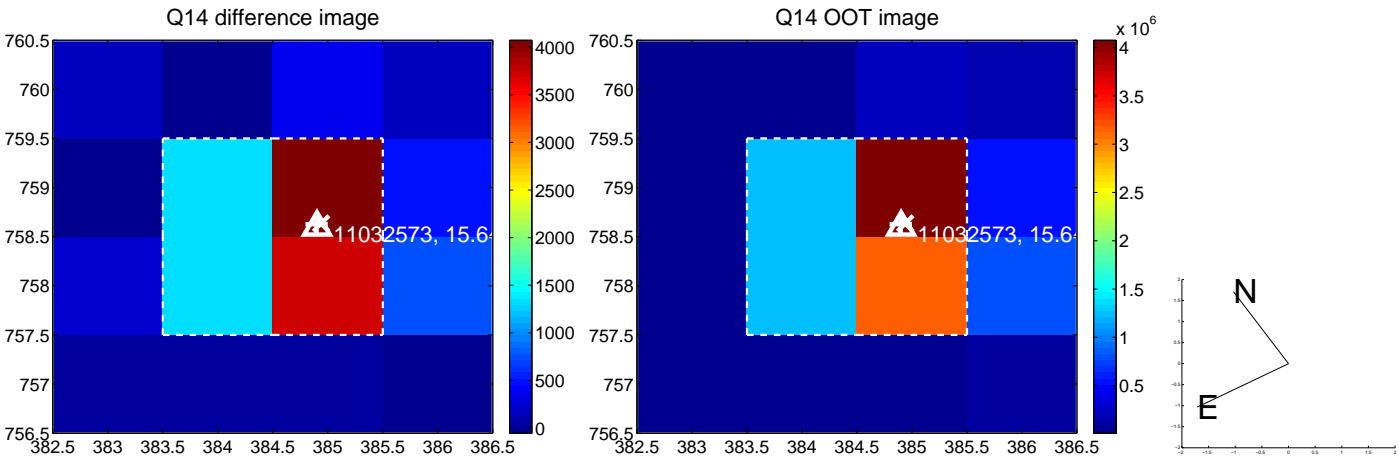
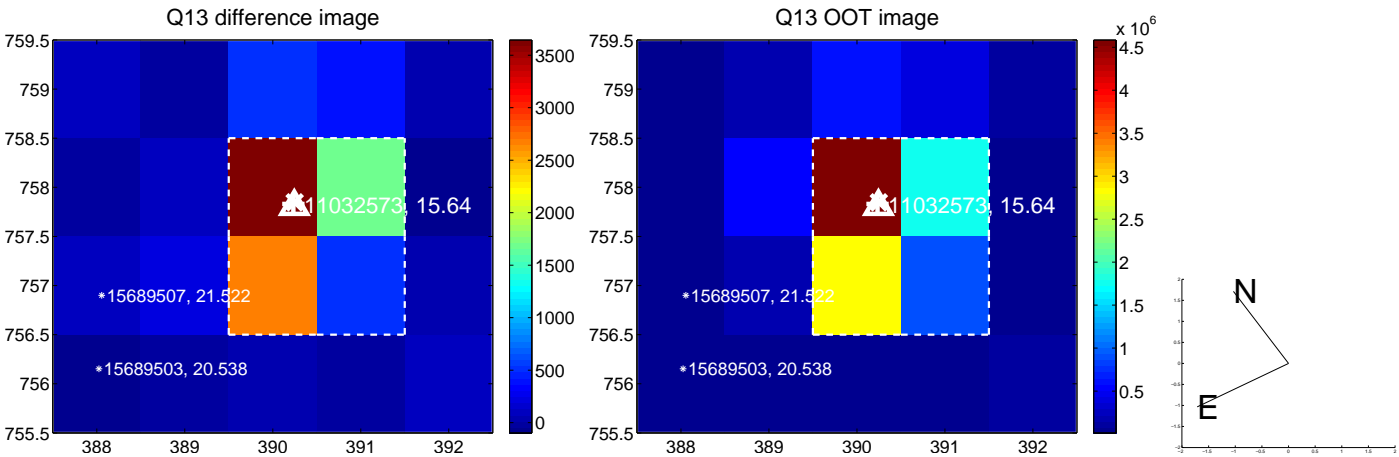
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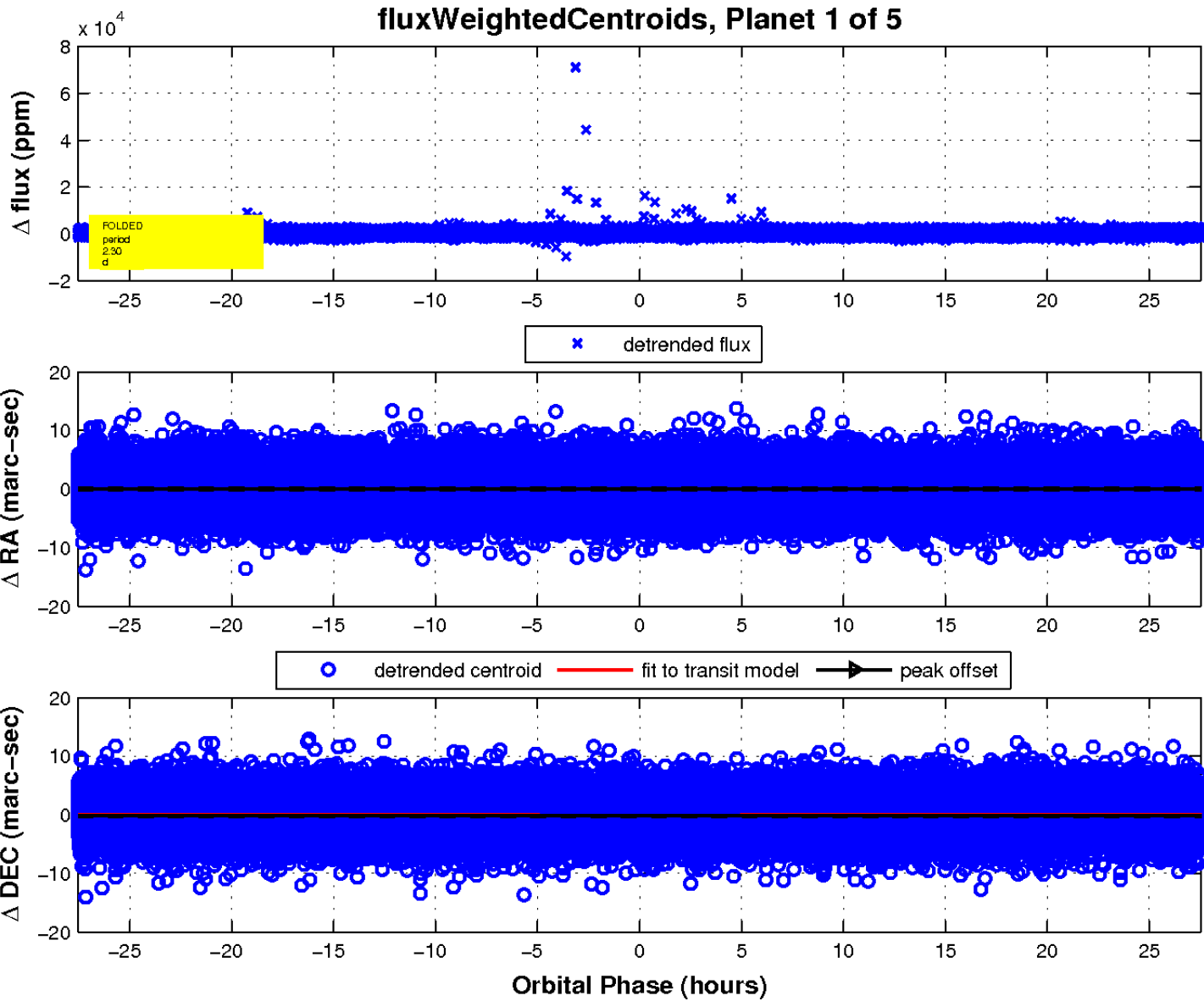
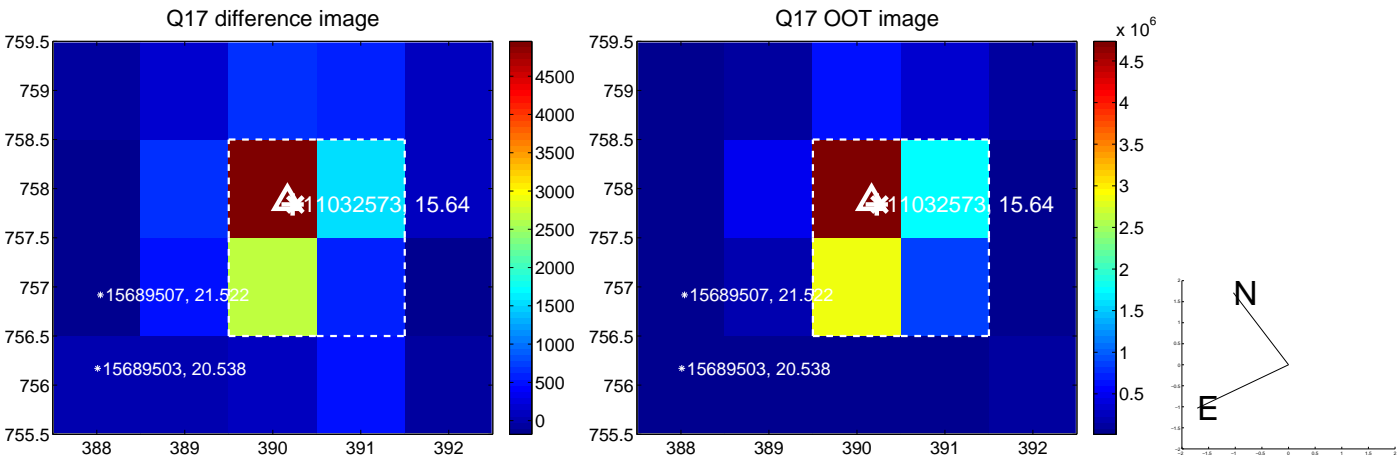
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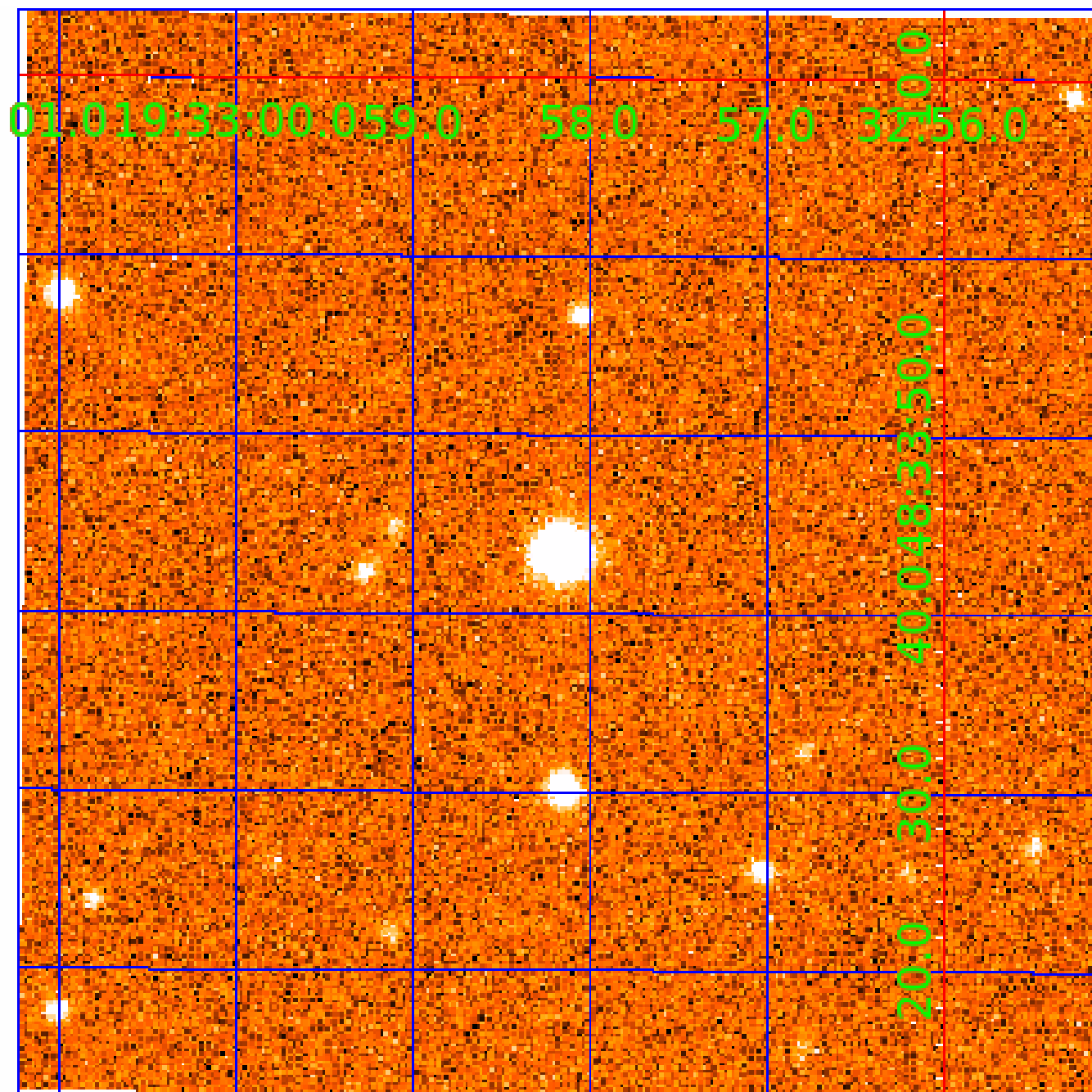


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011032573

Q1-17 DR25 TCE Parameters

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Robovetter Results

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011032573-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011032573-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011032573-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011032573-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_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.

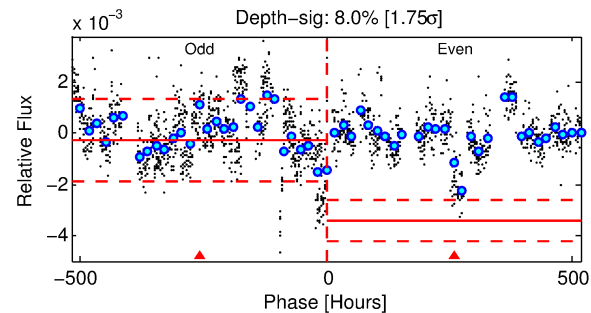
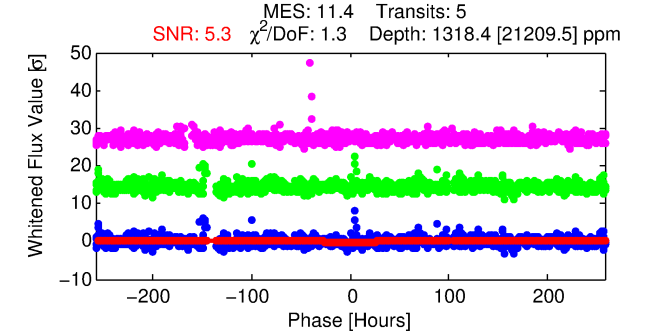
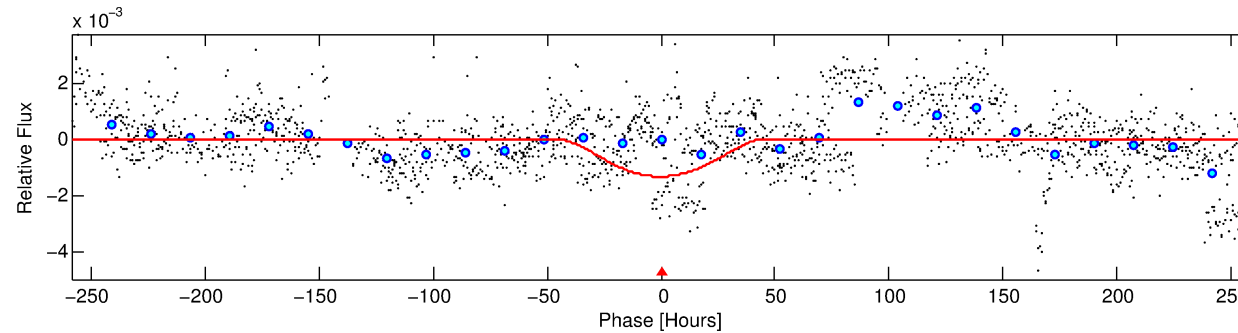
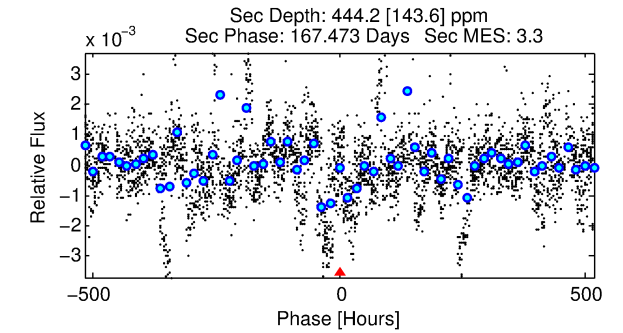
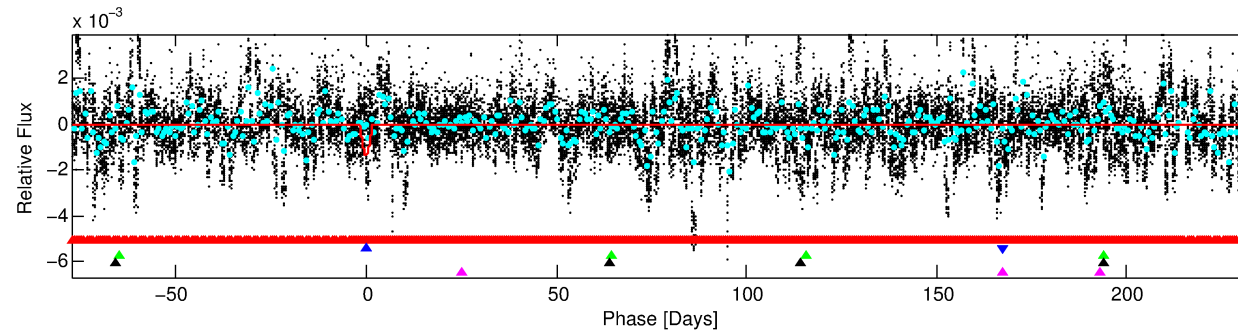
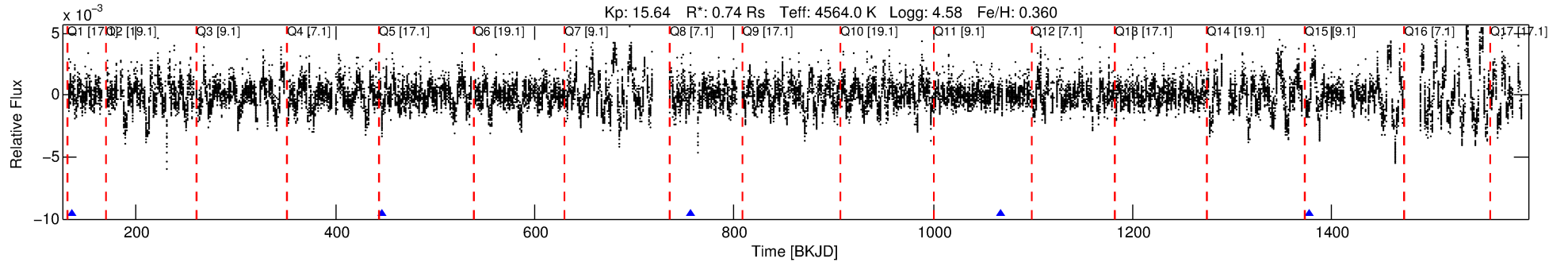
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011032573-02

No Significant Match Found

DV One-Page Summary

KIC: 11032573 Candidate: 2 of 5 Period: 310.326 d



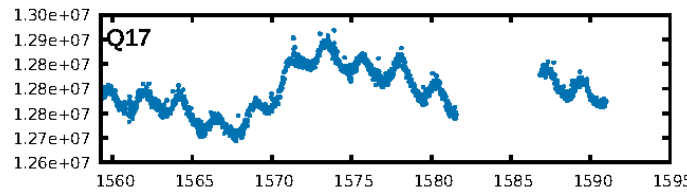
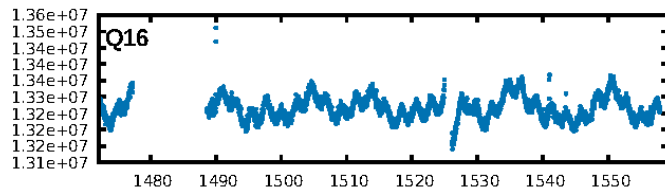
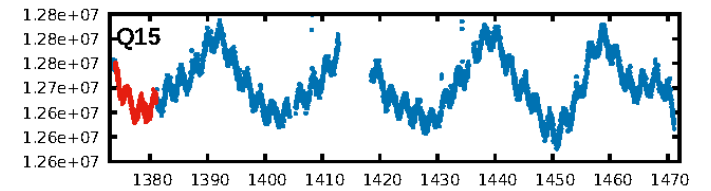
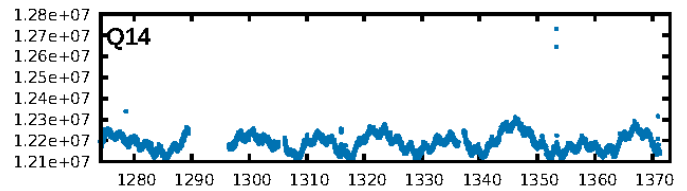
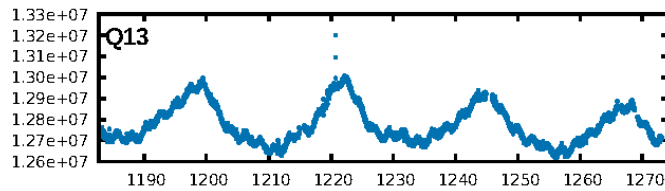
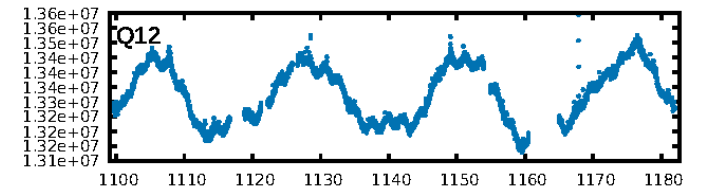
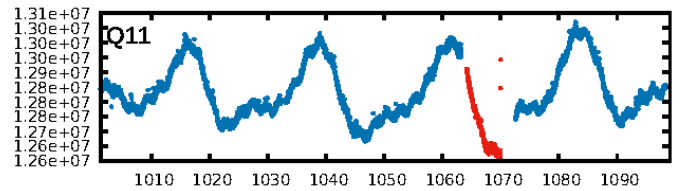
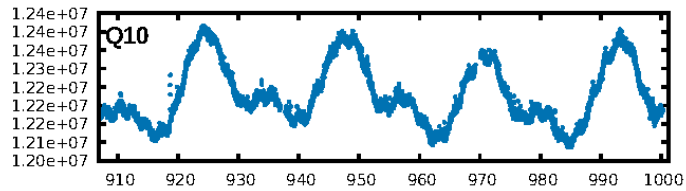
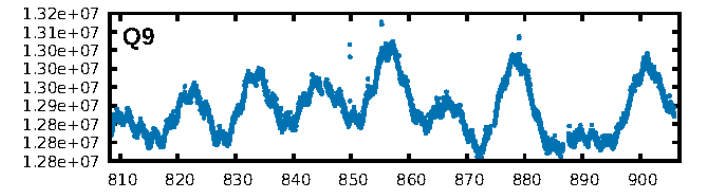
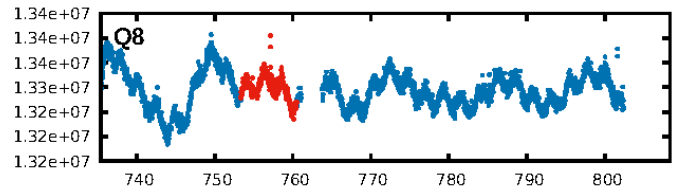
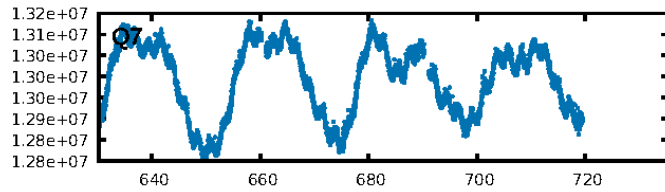
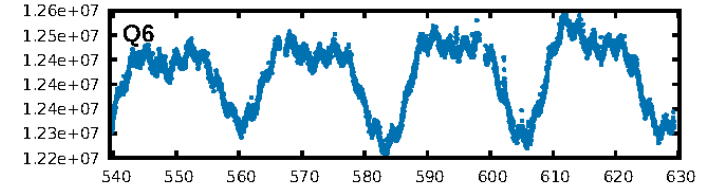
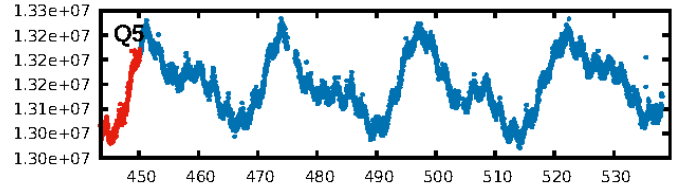
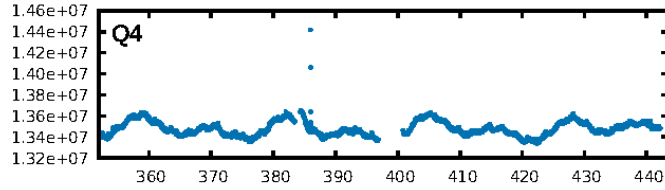
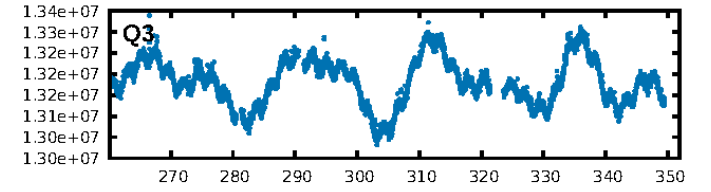
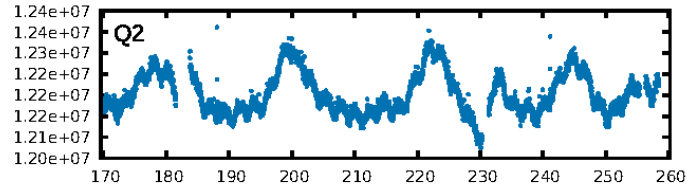
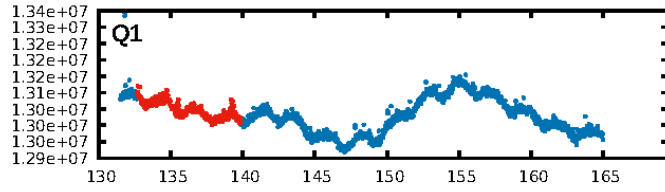
DV Fit Results:

Period = 310.32557 [0.09374] d
Epoch = 136.2687 [0.2273] BKJD
Rp/R* = 0.0686 [0.1928]
a/R* = 10.40 [6.16]
b = 1.00 [0.45]
Seff = 0.32 [0.05]
Teq = 192 [7] K
Rp = 5.57 [15.68] Re
a = 0.8216 [0.0471] AU
Ag = 5308.54 [29910.68] [0.18σ]
Teffp = 2530 [3565] K [0.66σ]

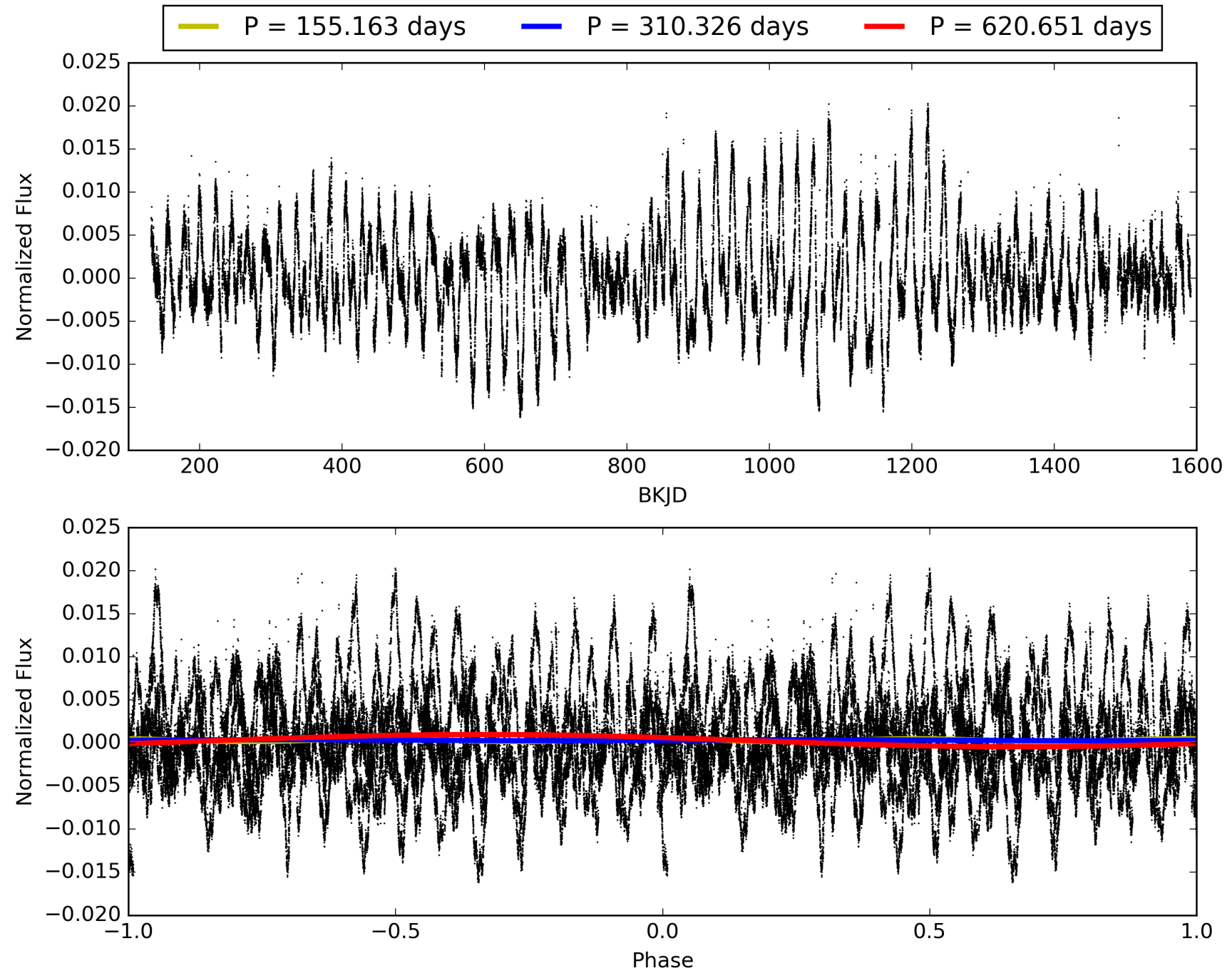
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [85.10σ]
LongPeriod-sig: 100.0% [36.04σ]
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.01e-17
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.316
Centroid-sig: 2.4%
Centroid-so: 0.562 arcsec [1.76σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: N/A

TCE 011032573-02, PDC Light Curves

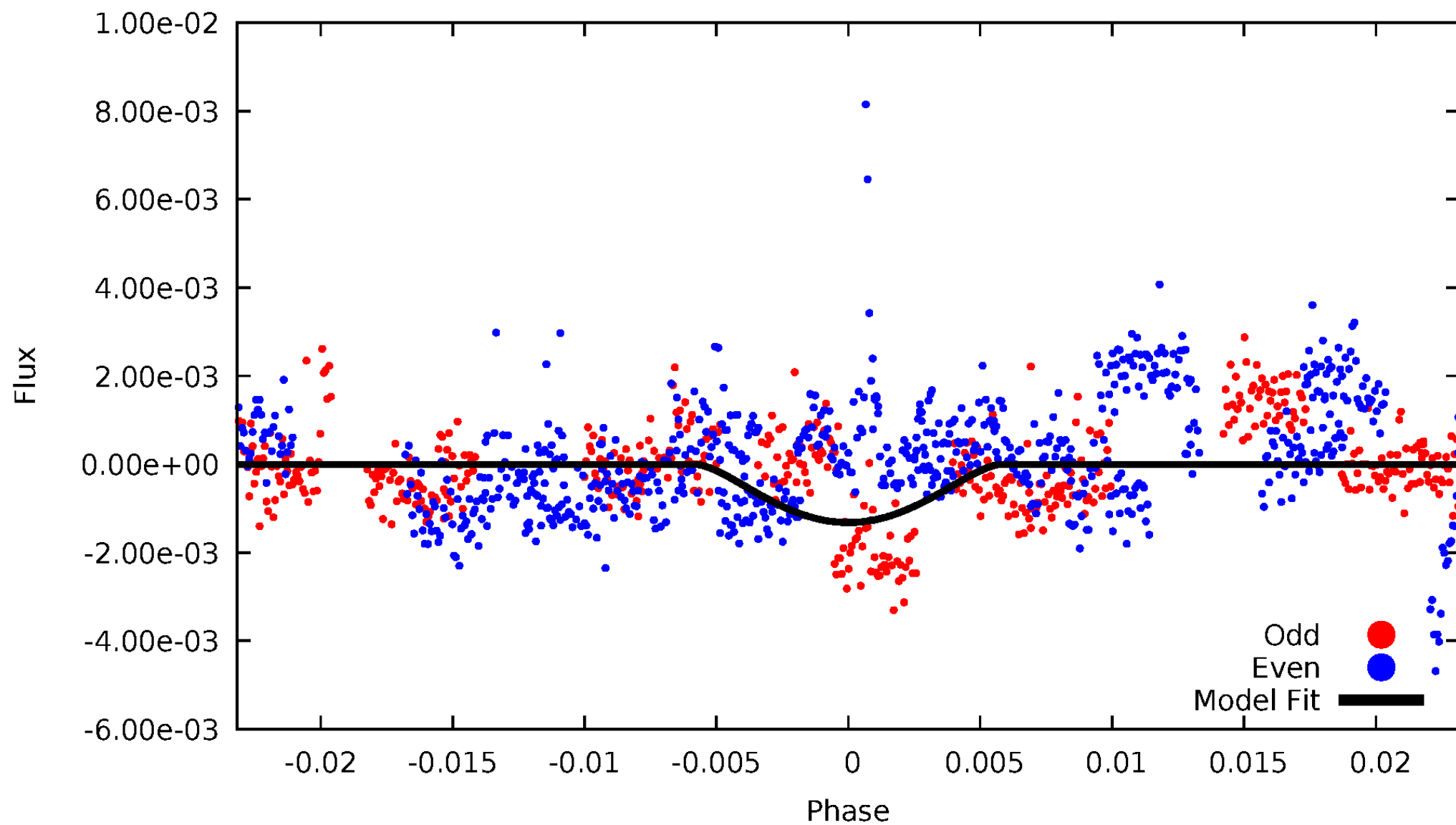


TCE 011032573-02



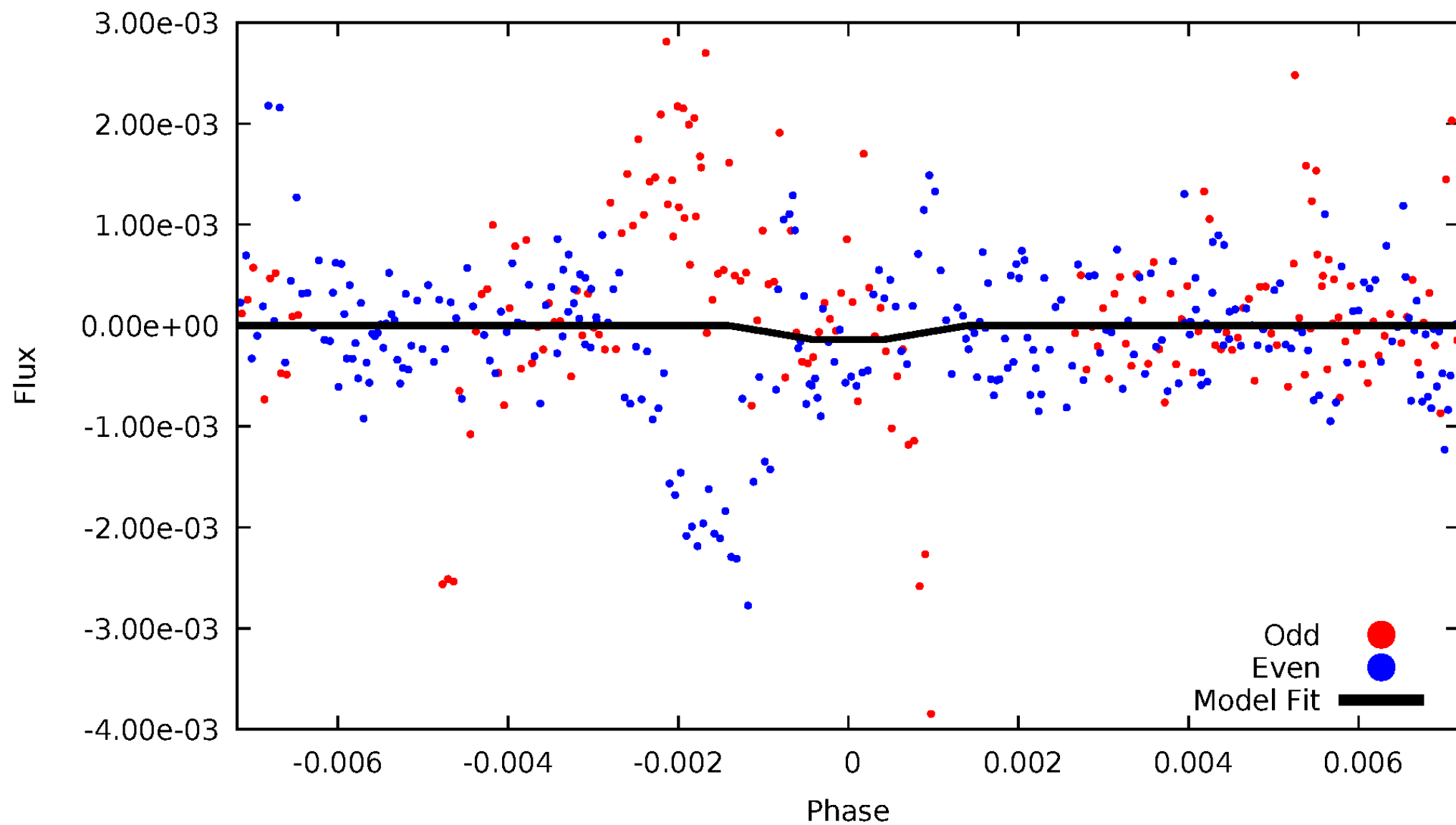
DV Odd/Even

TCE 011032573-02



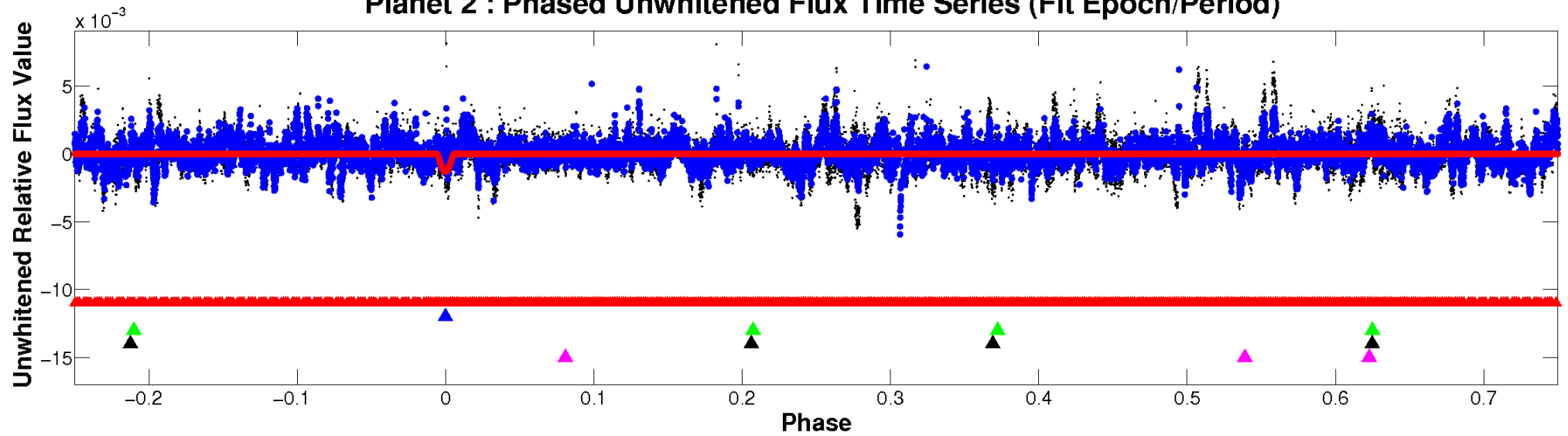
ALT Odd/Even

TCE 011032573-02

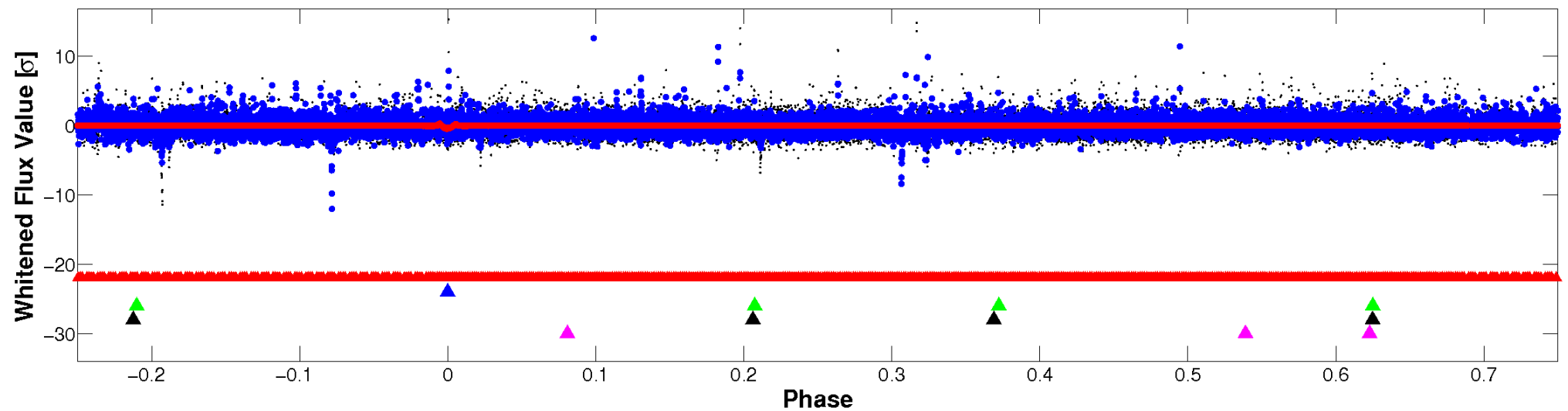


Non-Whitened Vs. Whitened Light Curve

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

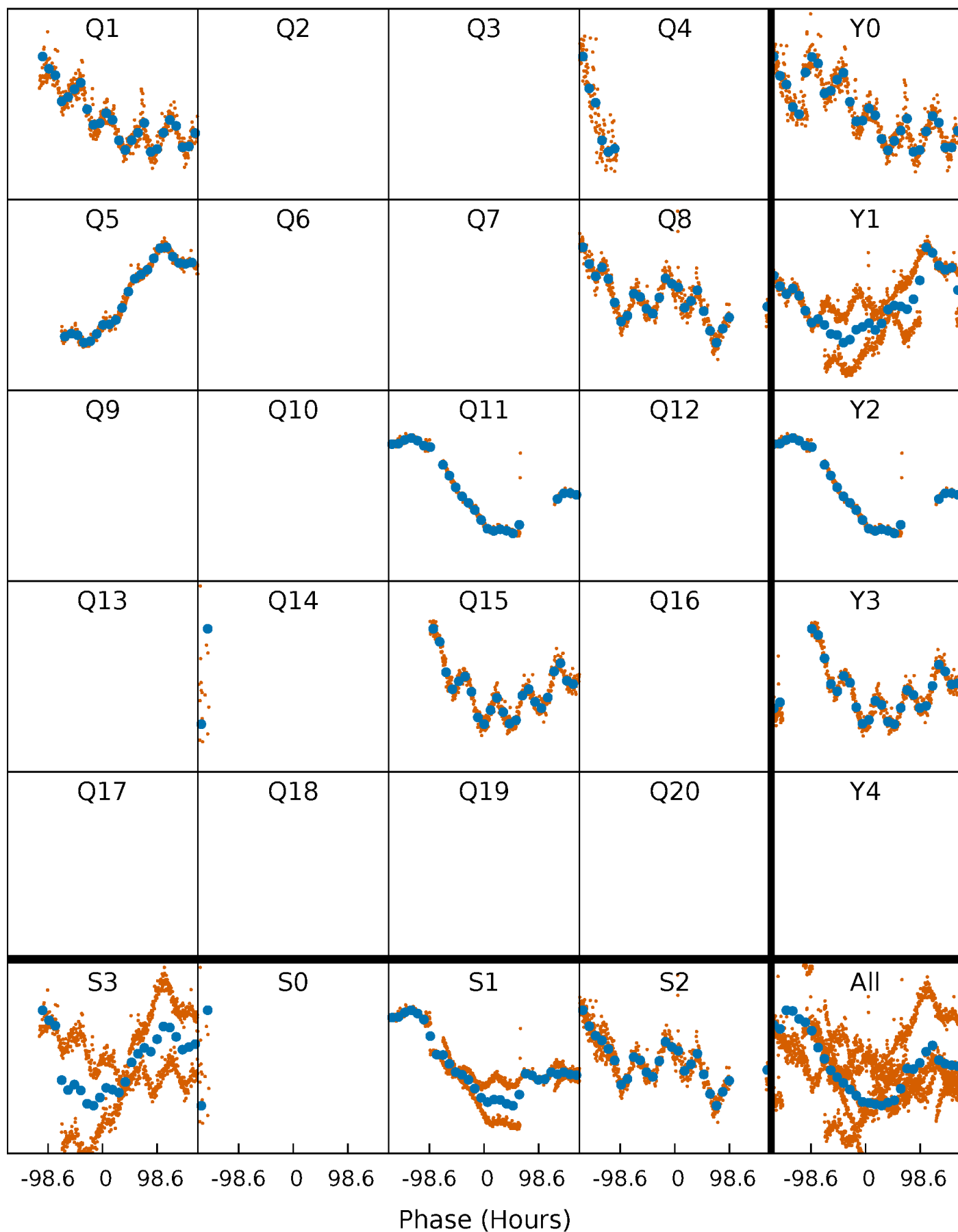


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



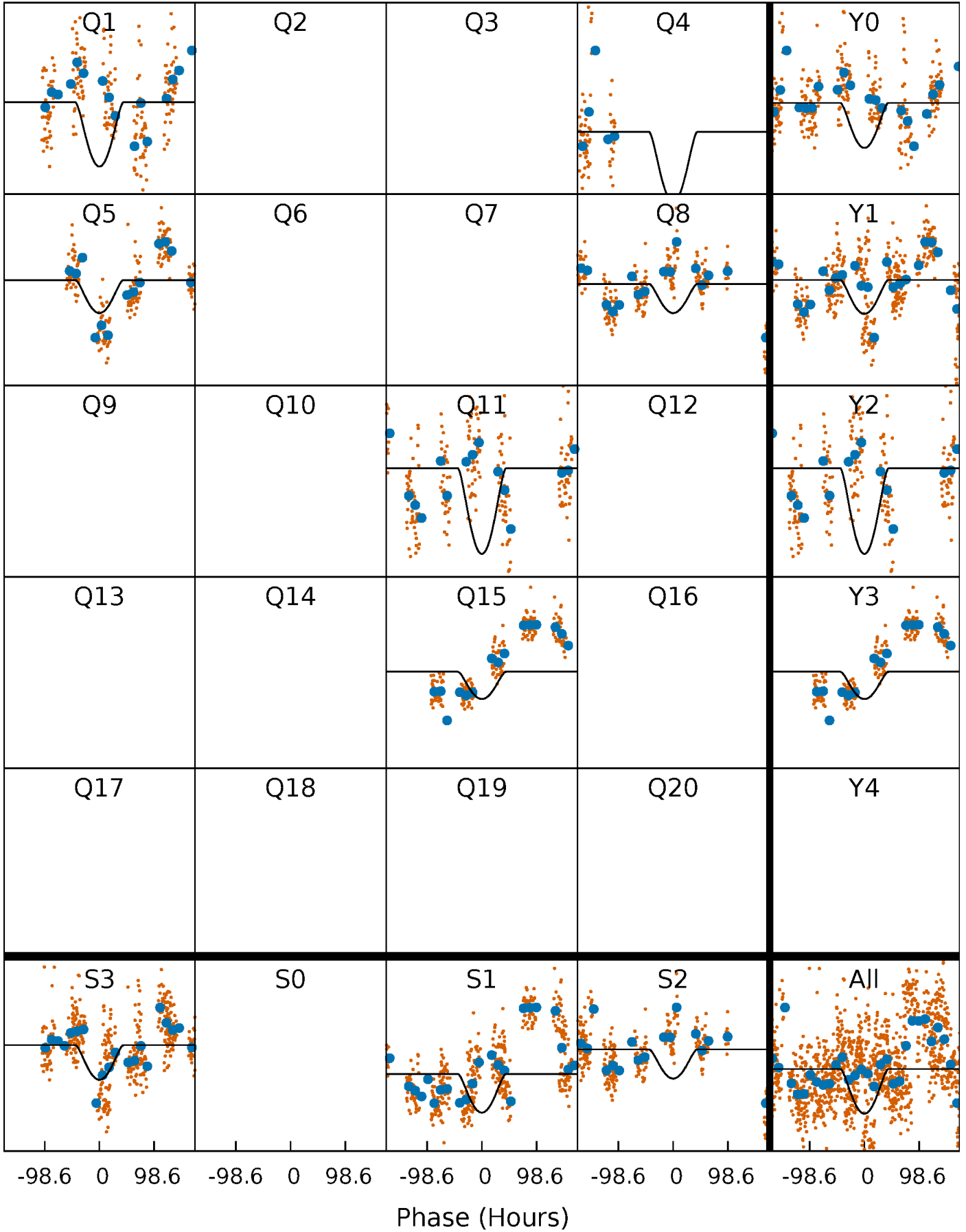
PDC Quarter-Phased Transit Curves

TCE 011032573-02 P=310.325568 Days $T_0=136.268664$ (BKJD)



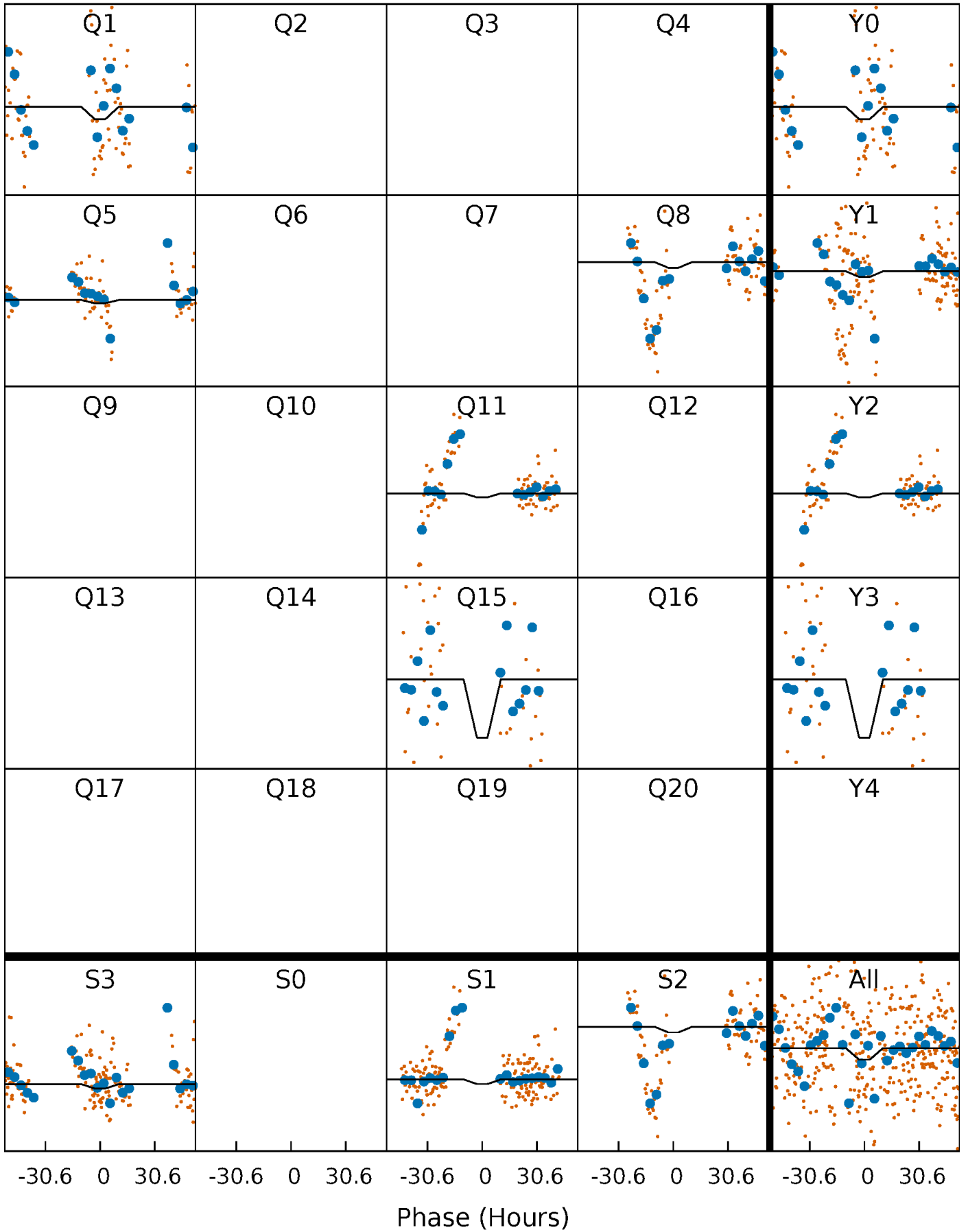
DV Quarter-Phased Transit Curves

TCE 011032573-02 P=310.325568 Days $T_0=136.268664$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

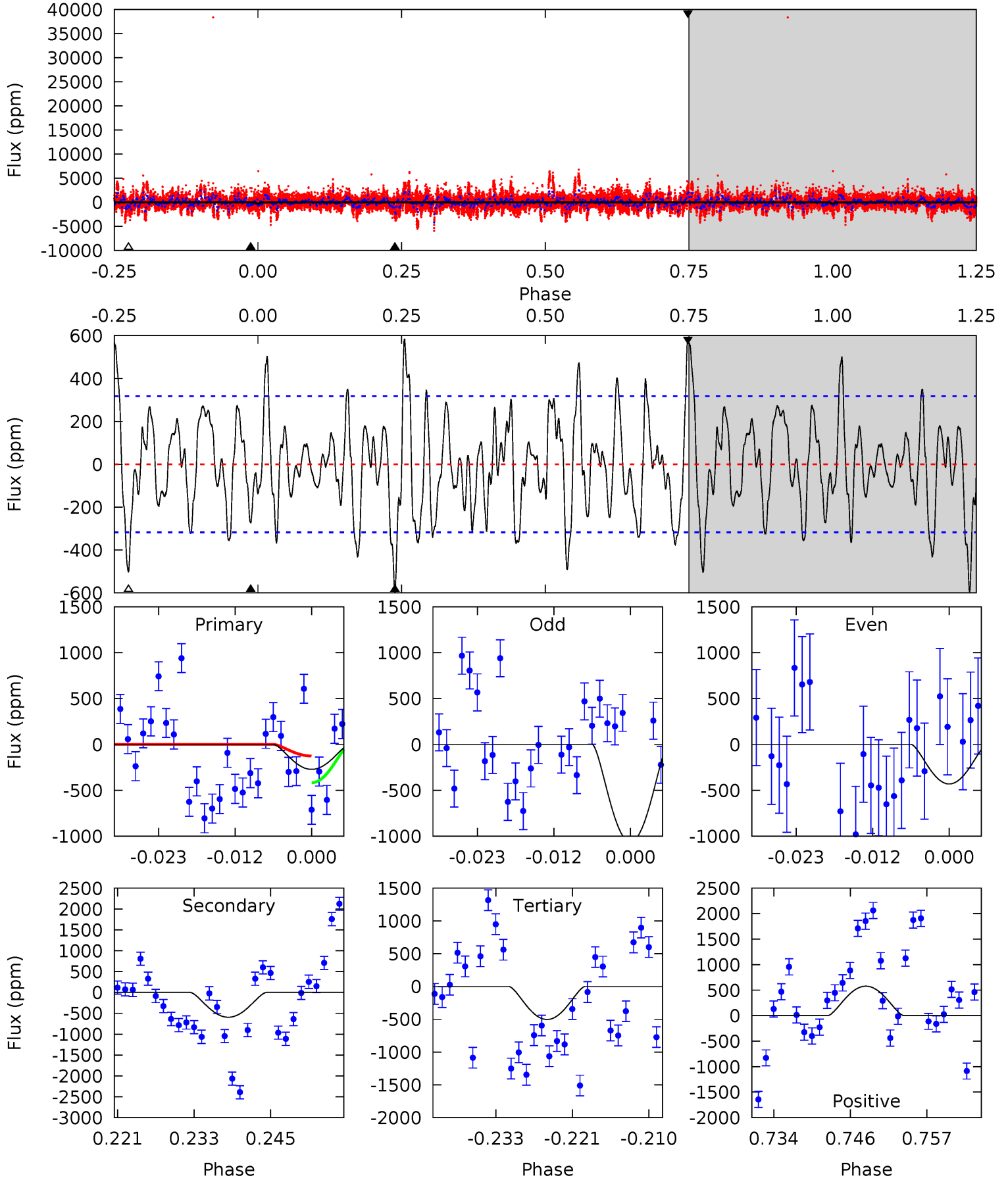
TCE 011032573-02 P=310.276797 Days $T_0=136.815224$ (BKJD)



DV Model-Shift Uniqueness Test

011032573-02, P = 310.325568 Days, E = 136.268664 Days

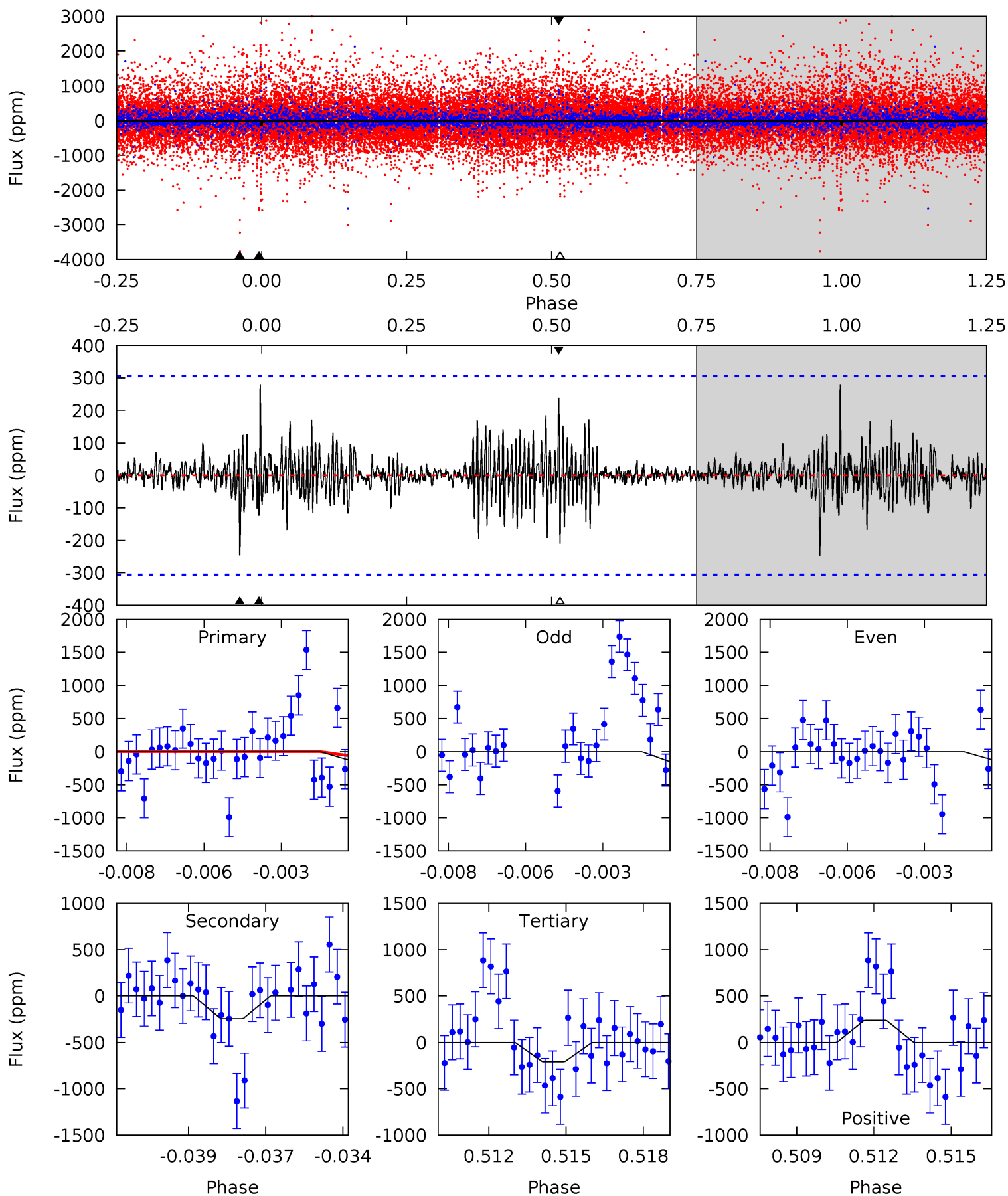
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.28	9.36	7.93	9.09	5.00	2.52	3.21	-3.65	-4.81	1.43	0.27	4.94	-0.73	0.49	2.29



Alt Model-Shift Uniqueness Test

011032573-02, P = 310.276797 Days, E = 136.815224 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.12	4.25	3.60	4.11	5.26	2.99	0.81	-1.48	-1.99	0.65	0.14	0.27	1.82	0.53	1.28



Stellar Parameters For KIC 011032573

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4564^{+137}_{-137}	$4.579^{+0.042}_{-0.025}$	$0.360^{+0.100}_{-0.300}$	$0.745^{+0.031}_{-0.053}$	$0.767^{+0.032}_{-0.056}$	$2.614^{+0.506}_{-0.222}$
	+3%/-3%	+1%/-1%	+28%/-83%	+4%/-7%	+4%/-7%	+19%/-8%
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 011032573-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-594 ± 64	$11.98^{+12.80}_{-8.16}$	267^{+9}_{-8}	2604^{+1009}_{-414}	1507^{+13075}_{-1140}
Alt.	-247 ± 58	$10.37^{+11.68}_{-7.16}$	268^{+9}_{-9}	2434^{+918}_{-403}	871^{+8677}_{-691}

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 $A_{obs} \gg 1.0$

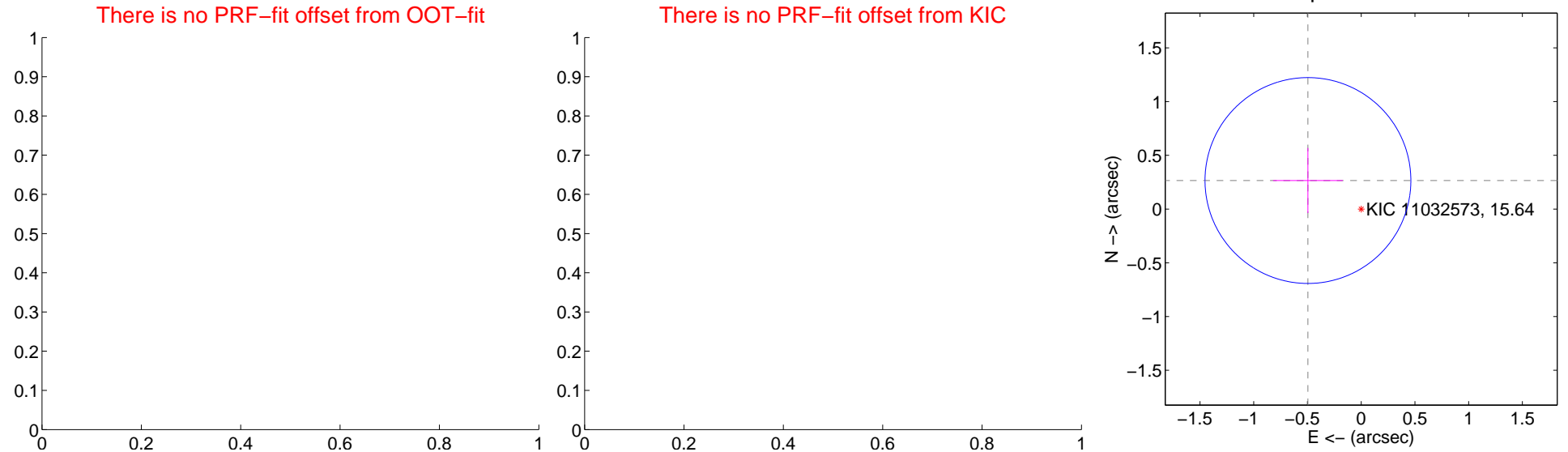
DV Centroid Data

Supplemental centroid analysis for 011032573-02. Kepler magnitude: 15.64. Transit SNR 5.28

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	0.56 ± 0.32	1.76	0.50 ± 0.32	0.27 ± 0.30



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.



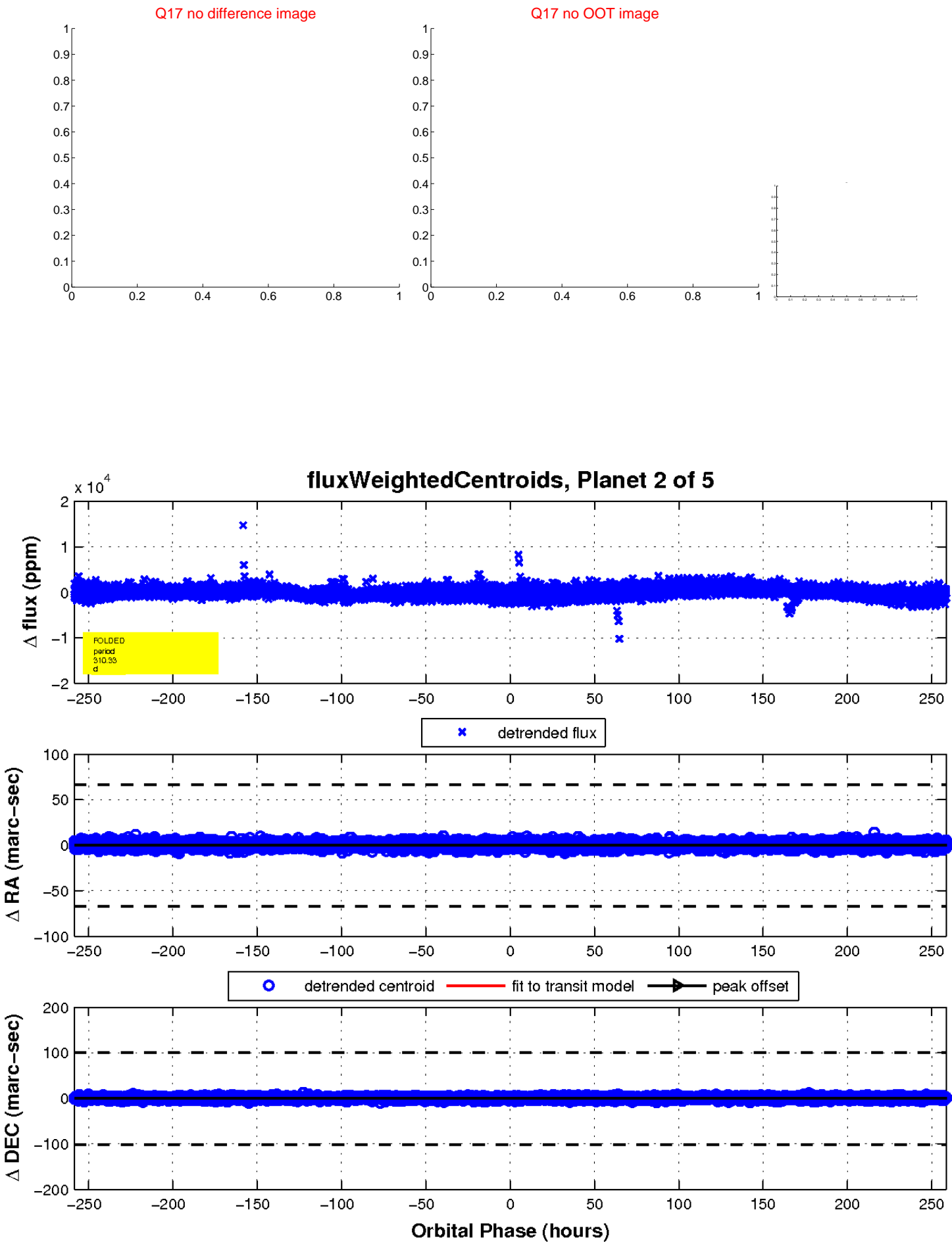
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

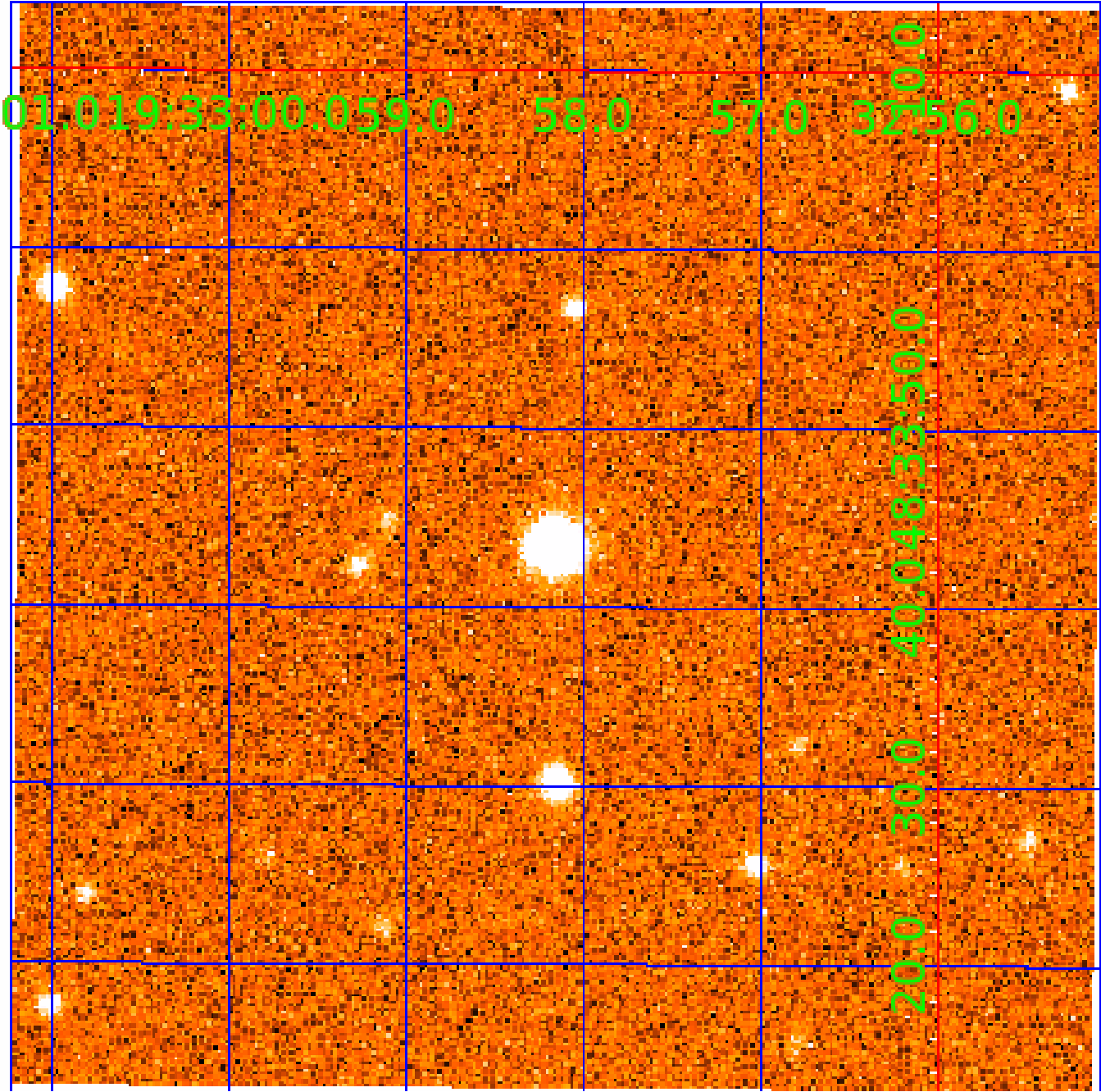


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011032573

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})
011032573-01	OBS	No	2.295356	133.591202	62.6	10.353	8.5	6.2	0.74	4564	0.56	221.78
011032573-02	OBS	No	310.325568	136.268664	1318.4	86.251	11.4	5.3	0.74	4564	5.57	0.32
011032573-03	OBS	No	439.900293	251.815908	715.4	2.099	9.6	3.2	0.74	4564	2.21	0.20
011032573-04	OBS	No	440.229754	250.773725	1764.0	15.171	10.1	7.4	0.74	4564	2.98	0.20
011032573-05	OBS	No	452.478269	329.545067	839.6	7.001	8.1	8.0	0.74	4564	2.39	0.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011032573-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011032573-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011032573-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011032573-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011032573-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_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.

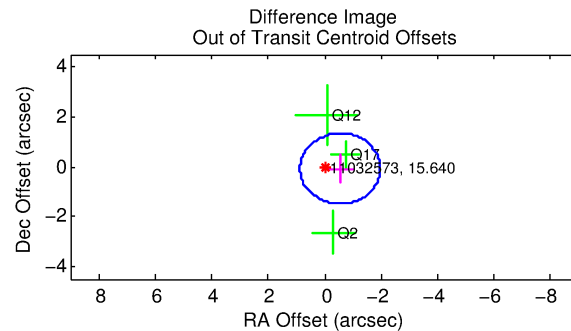
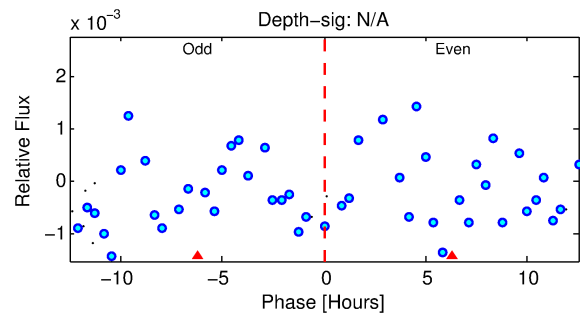
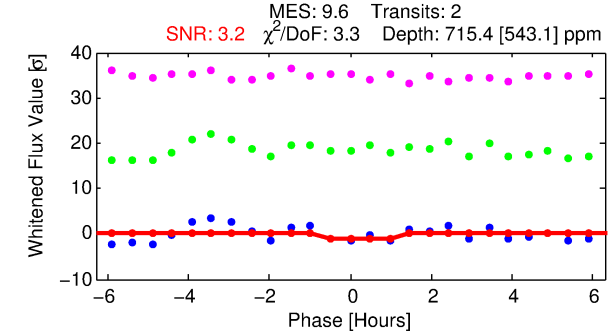
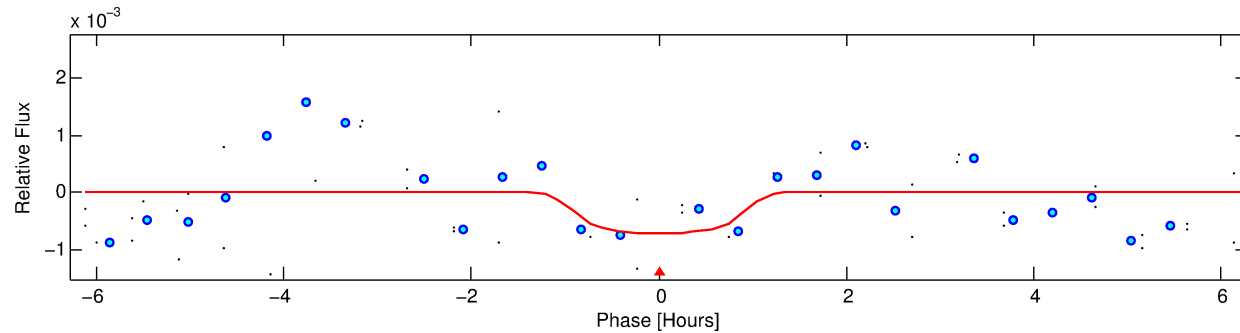
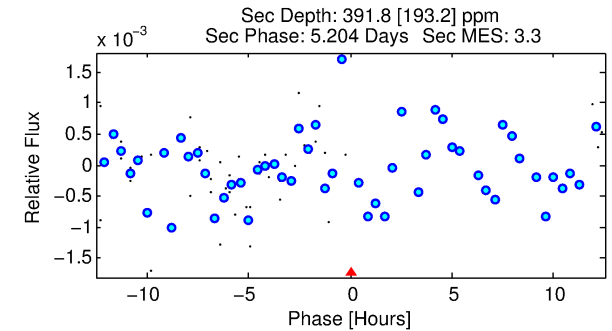
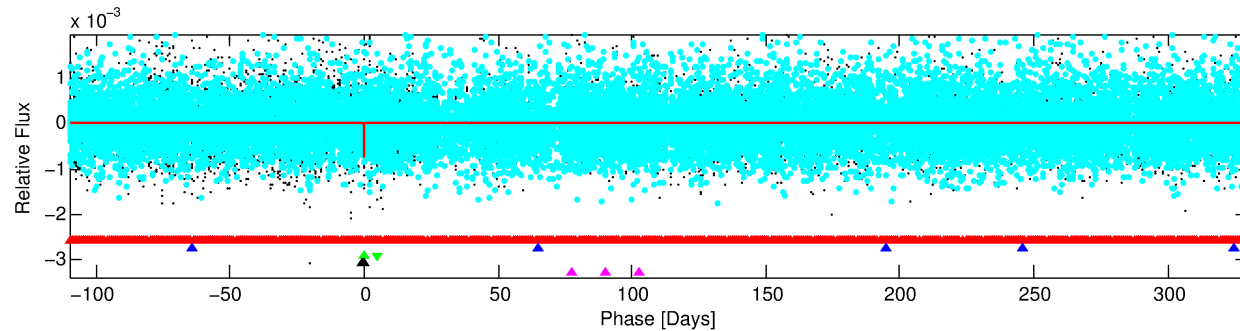
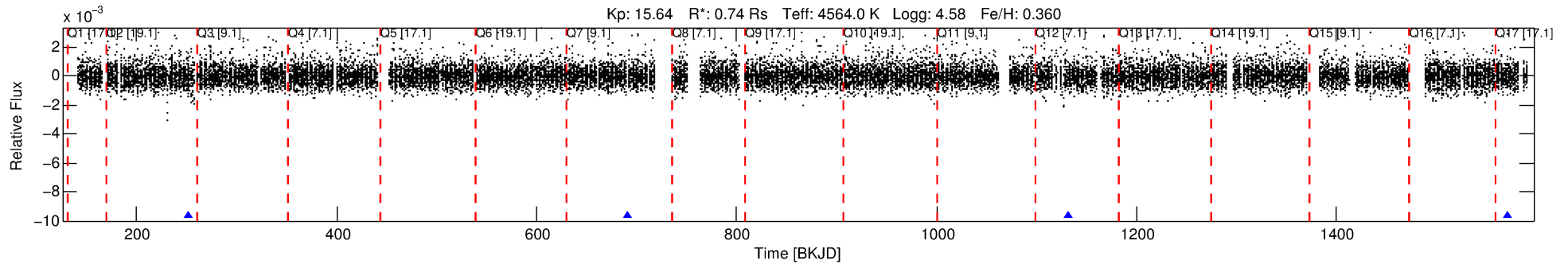
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011032573-03

No Significant Match Found

DV One-Page Summary

KIC: 11032573 Candidate: 3 of 5 Period: 439.900 d



DV Fit Results:

Period = 439.90029 [0.01489] d
Epoch = 251.8159 [0.0317] BKJD
Rp/R* = 0.0271 [0.2729]
a/R* = 1097.97 [33635.72]
b = 0.76 [17.28]
Seff = 0.20 [0.03]
Teq = 171 [6] K
Rp = 2.21 [22.18] Re
a = 1.0368 [0.0595] AU
Ag = 47627.01 [958182.44] [0.05%]
Teffp = 3898 [19607] K [0.19%]

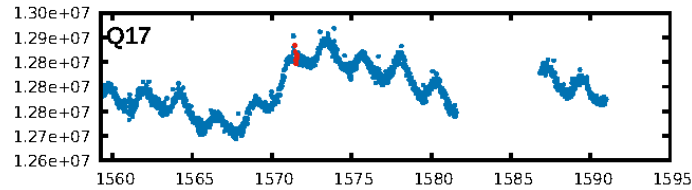
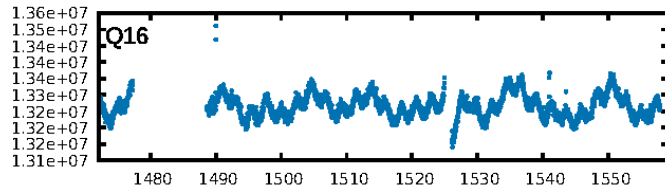
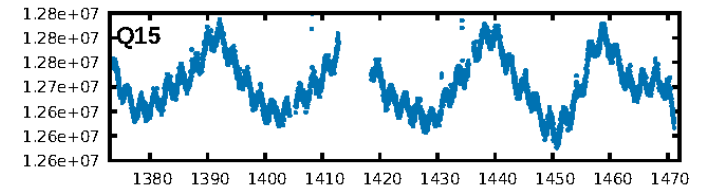
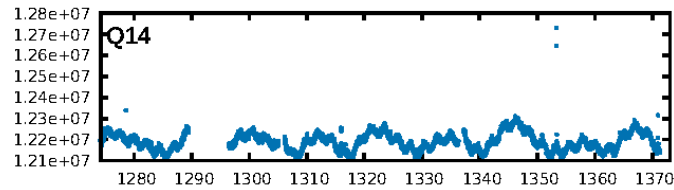
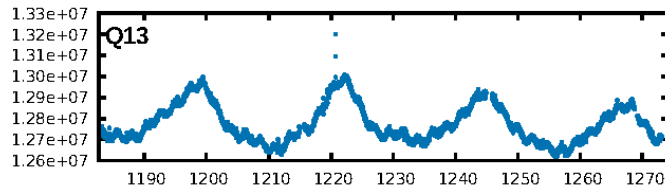
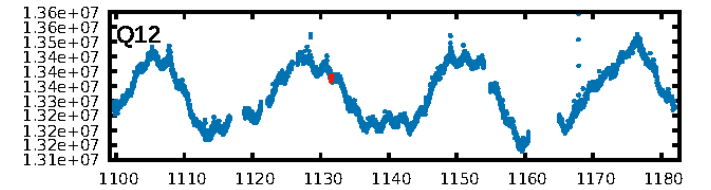
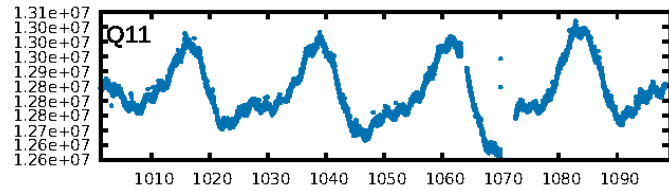
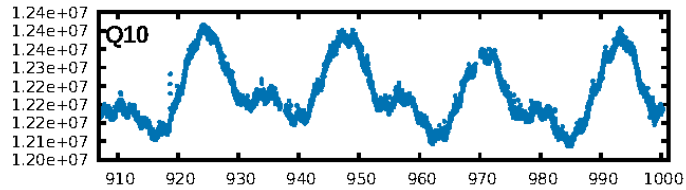
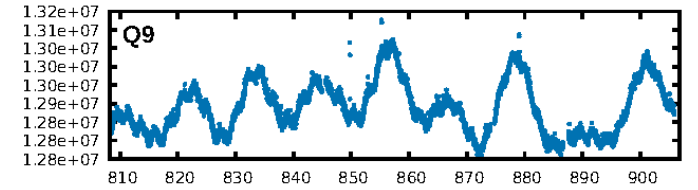
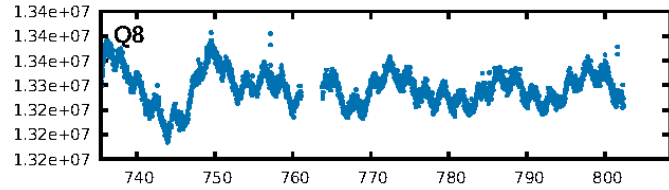
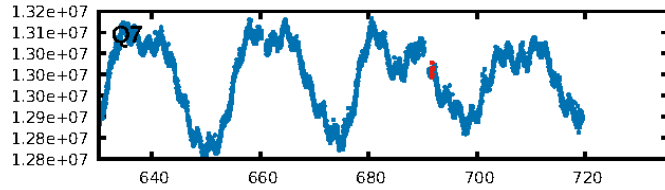
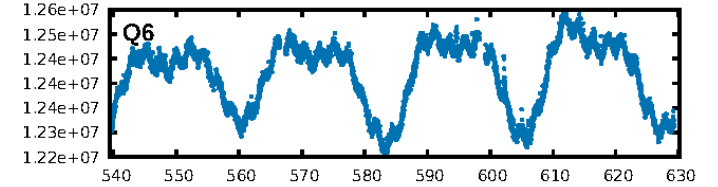
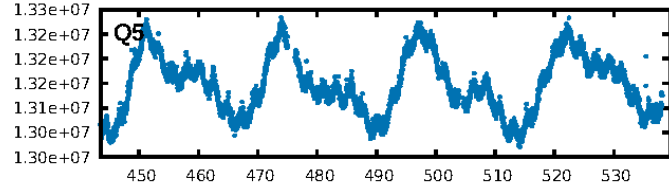
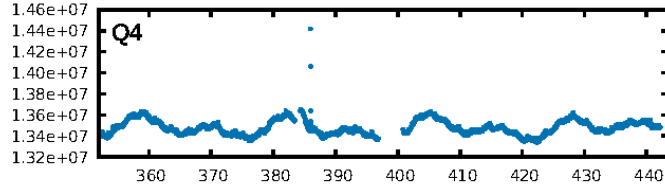
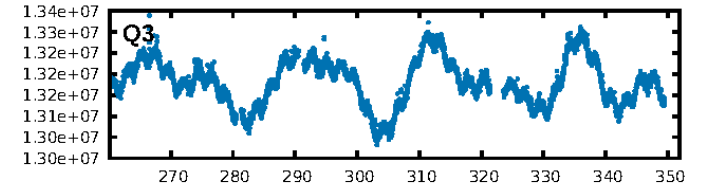
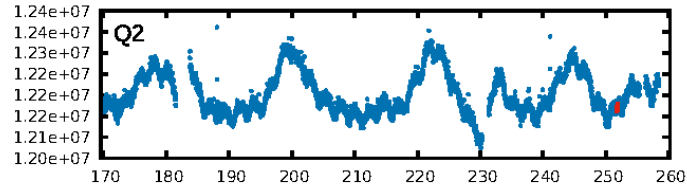
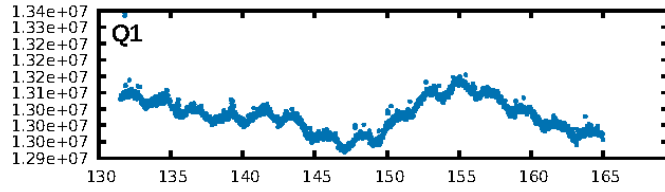
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [36.04%]
LongPeriod-sig: 39.4% [0.52%]
ModelChiSquare2-sig: 33.3%
ModelChiSquareGof-sig: 71.3%
Bootstrap-pfa: 8.51e-14
RollingBand-fgt: 1.00 [1/1]
GhostDiagnostic-chr: -5.247
Centroid-sig: 44.1%
Centroid-so: 2.484 arcsec [0.76%]
OotOffset-rm: 0.552 arcsec [1.17%]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.424 arcsec [0.90%]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.33 [1/3]

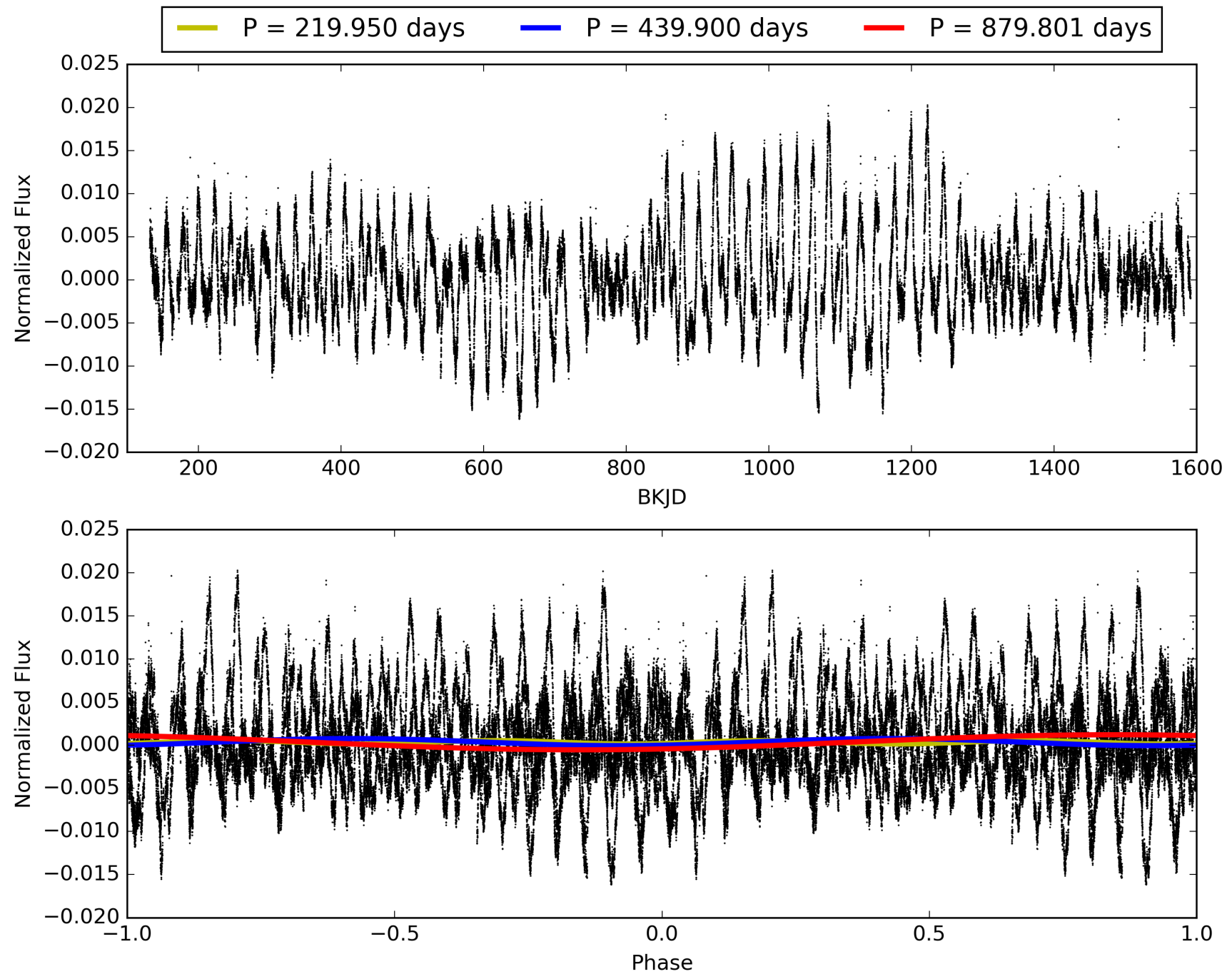
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:08:01 Z

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

TCE 011032573-03, PDC Light Curves

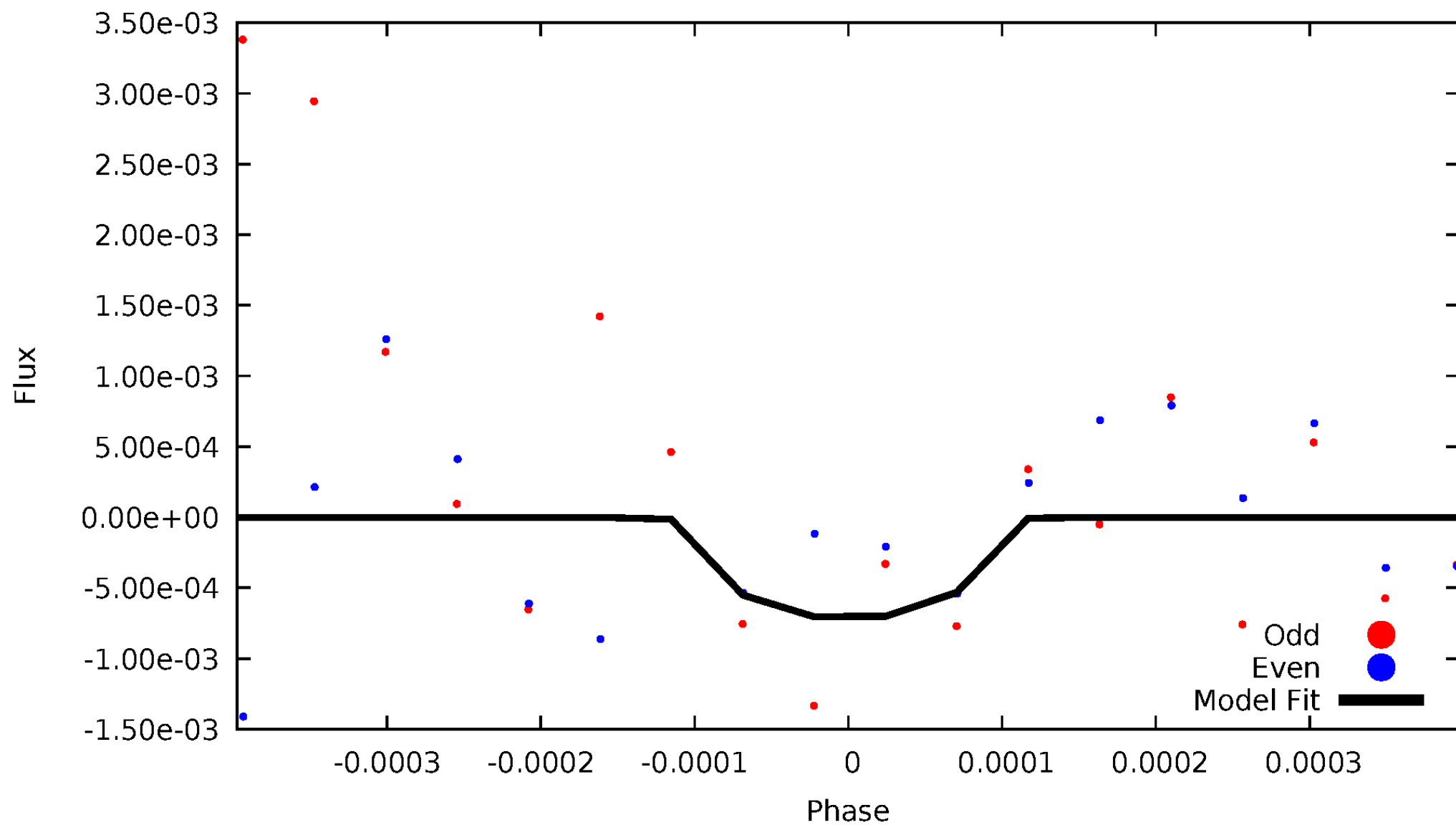


TCE 011032573-03



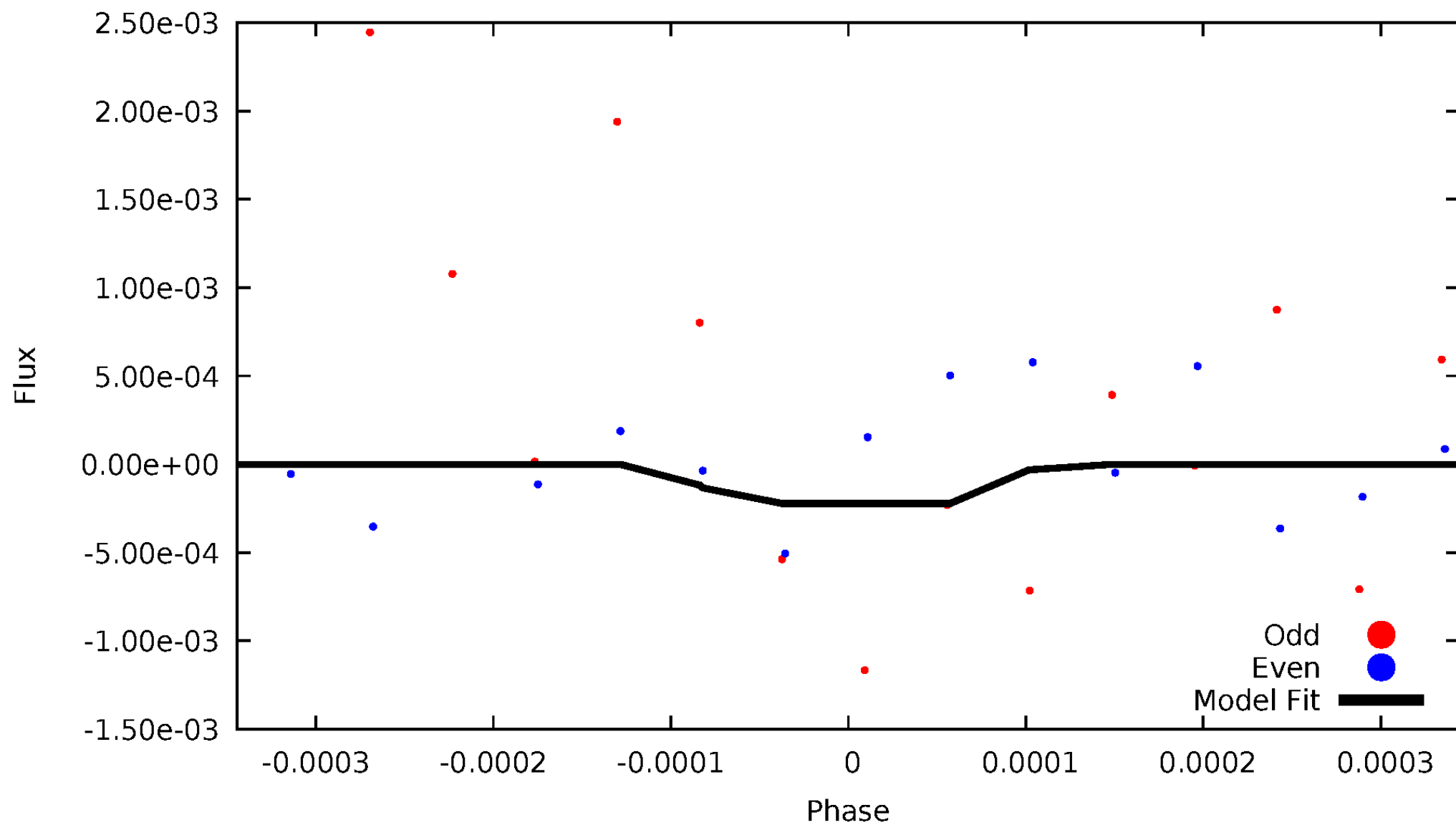
DV Odd/Even

TCE 011032573-03



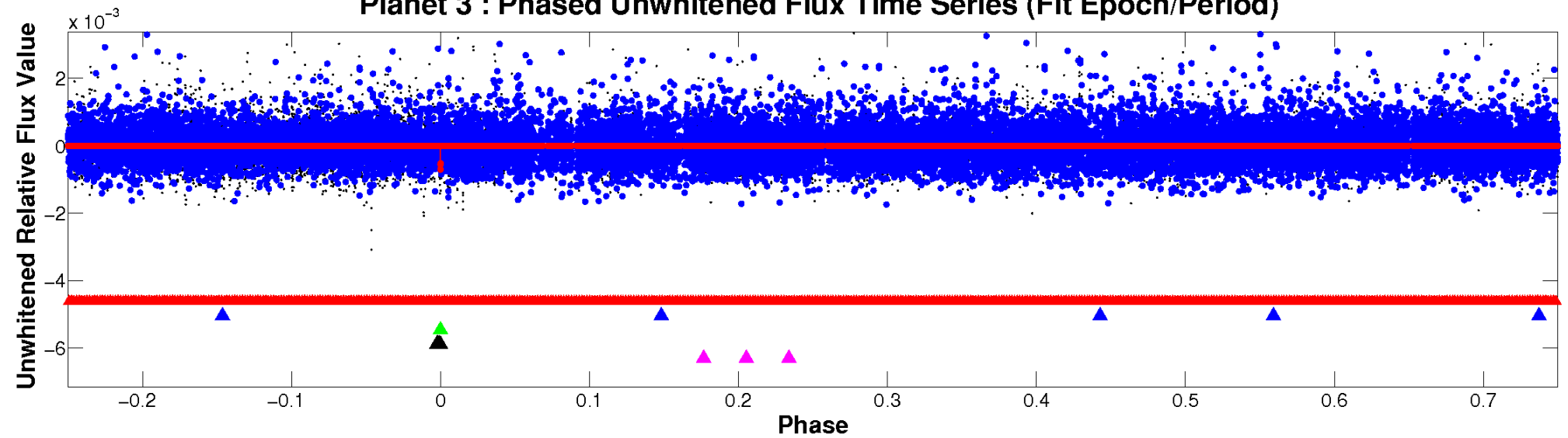
ALT Odd/Even

TCE 011032573-03

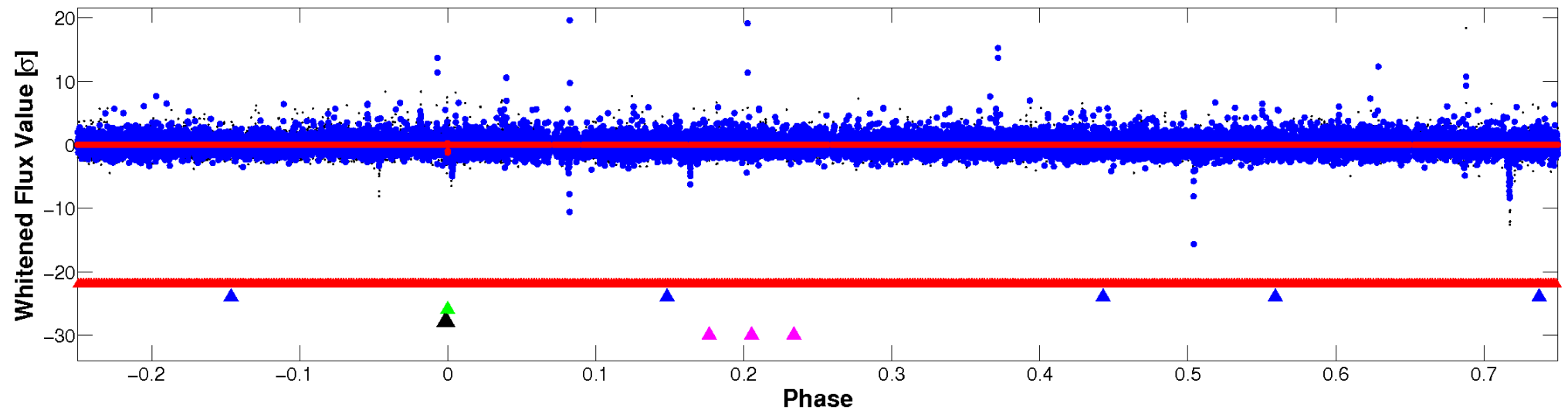


Non-Whitened Vs. Whitened Light Curve

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

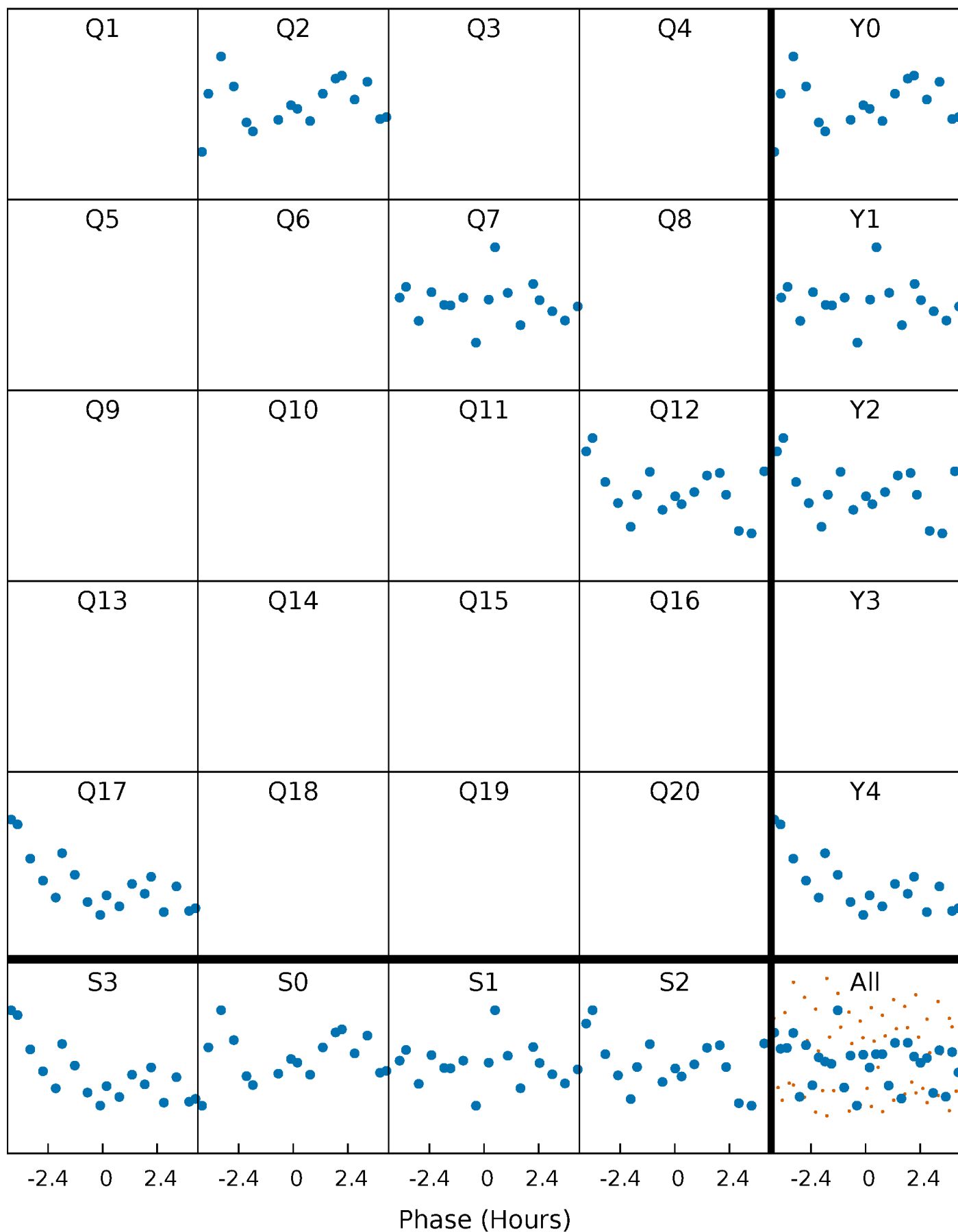


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



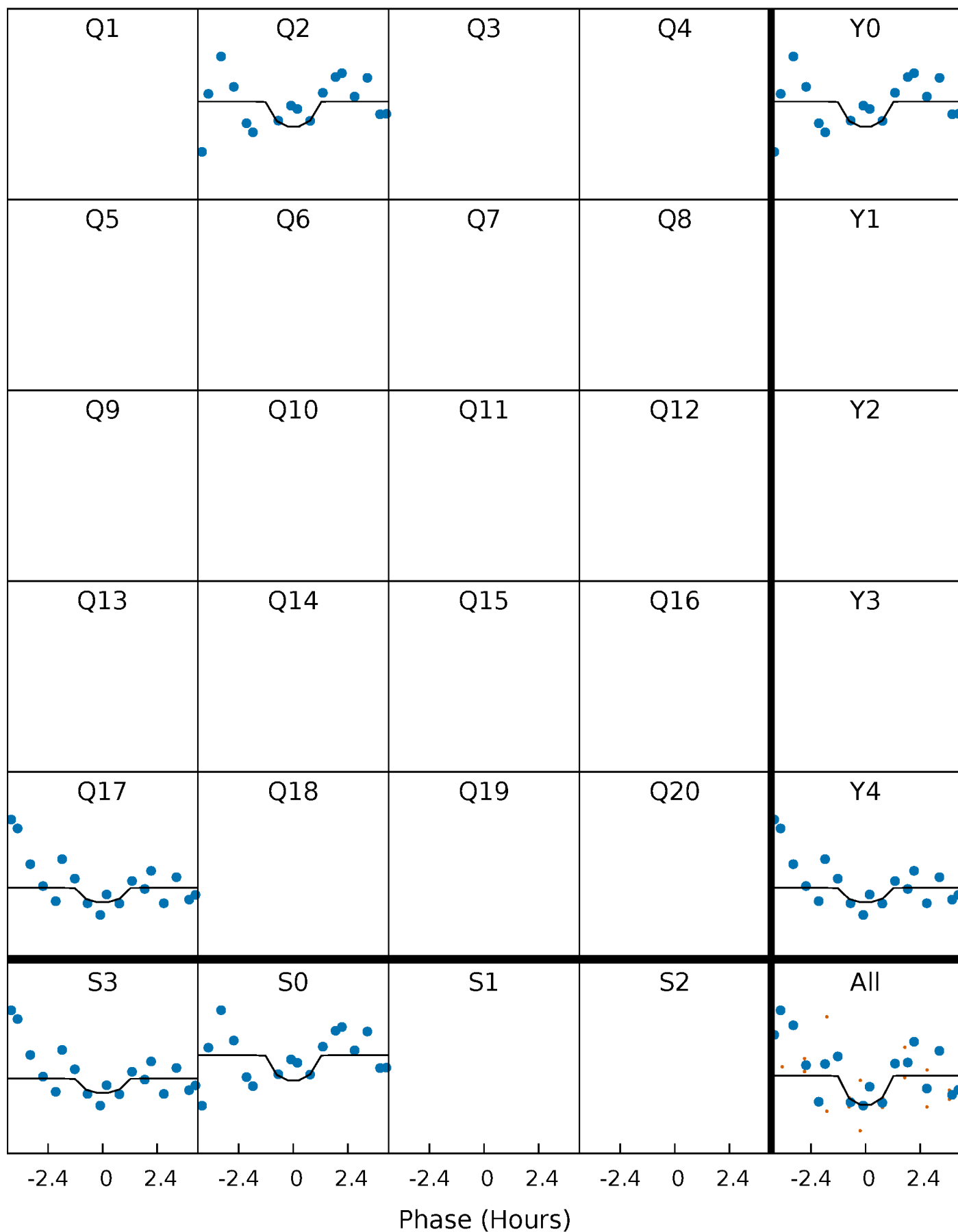
PDC Quarter-Phased Transit Curves

TCE 011032573-03 $P=439.900293$ Days $T_0=251.815908$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 011032573-03 P=439.900293 Days $T_0=251.815908$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

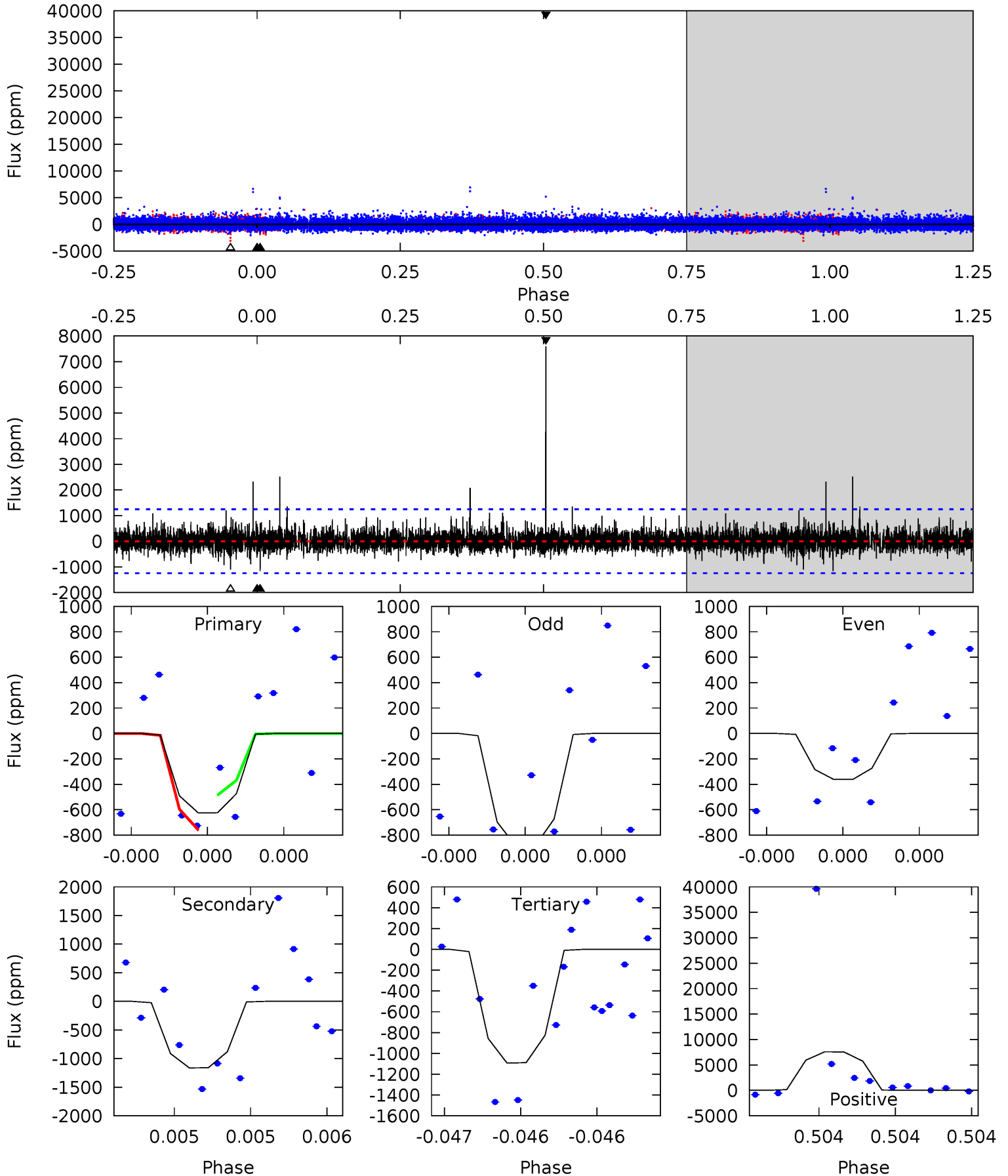
TCE 011032573-03 P=439.880057 Days $T_0=251.862719$ (BKJD)



DV Model-Shift Uniqueness Test

011032573-03, P = 439.900293 Days, E = 251.815908 Days

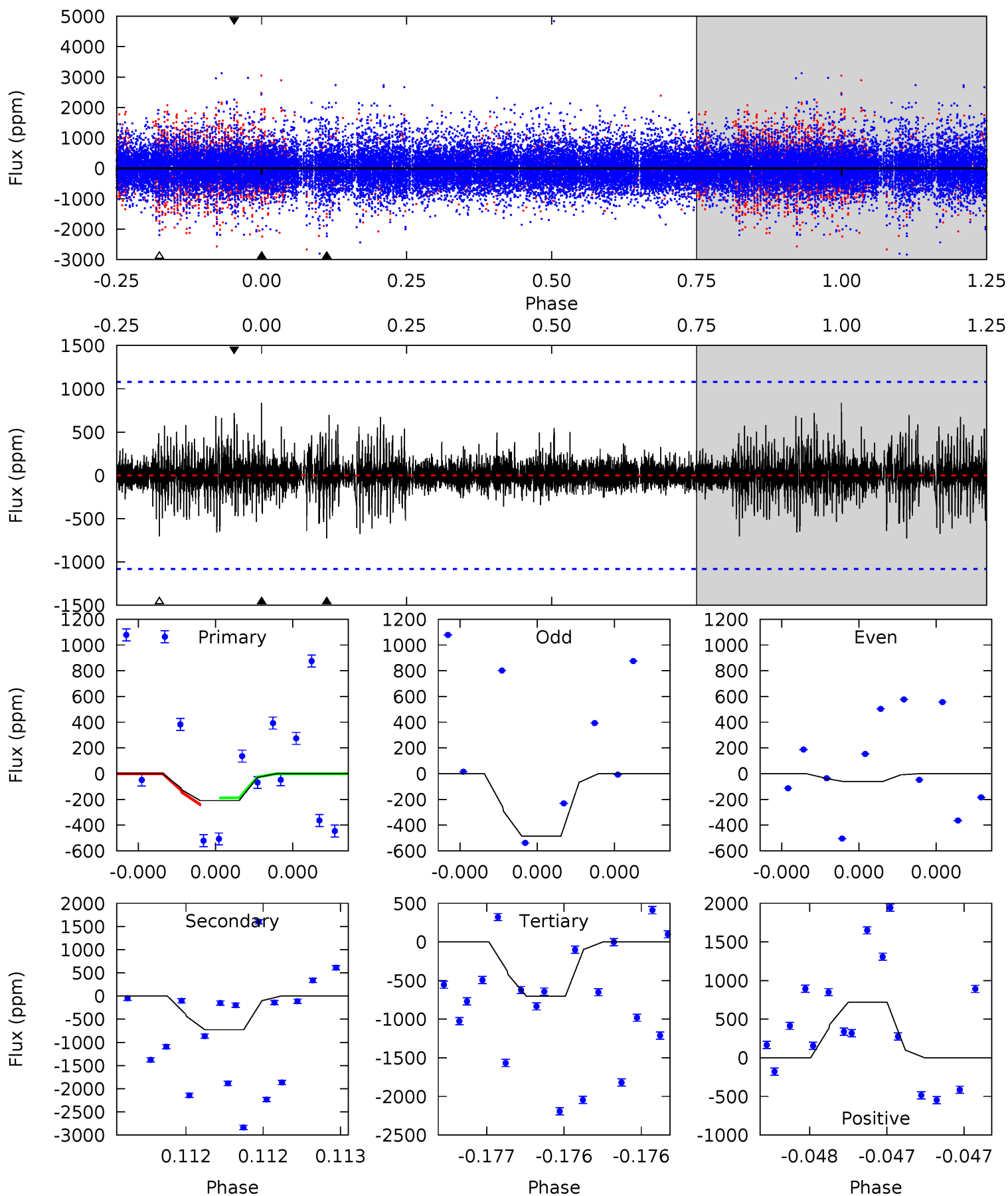
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.88	5.36	5.04	35.0	5.74	3.74	1.22	-2.15	-32.1	0.32	-29.6	1.20	1.00	0.87	0.61



Alt Model-Shift Uniqueness Test

011032573-03, P = 439.880057 Days, E = 251.862719 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.11	3.86	3.73	3.82	5.74	3.74	0.68	-2.62	-2.71	0.13	0.04	1.16	1.00	0.54	0.13



Stellar Parameters For KIC 011032573

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4564^{+137}_{-137}	$4.579^{+0.042}_{-0.025}$	$0.360^{+0.100}_{-0.300}$	$0.745^{+0.031}_{-0.053}$	$0.767^{+0.032}_{-0.056}$	$2.614^{+0.506}_{-0.222}$
	+3%/-3%	+1%/-1%	+28%/-83%	+4%/-7%	+4%/-7%	+19%/-8%
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 011032573-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1163 ± 217	$16.16^{+15.88}_{-11.78}$	238^{+7}_{-8}	2648^{+1159}_{-440}	2756^{+30635}_{-2114}
Alt.	-727 ± 188	$15.46^{+16.03}_{-10.92}$	238^{+7}_{-8}	2503^{+1002}_{-390}	1842^{+18562}_{-1431}

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 $A_{obs} \gg 1.0$

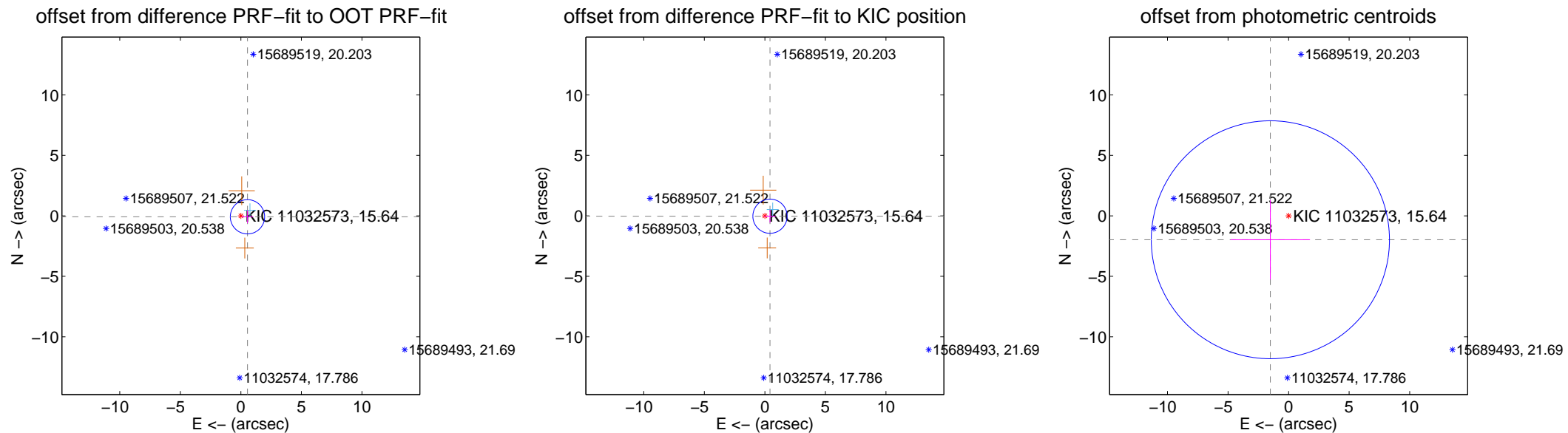
DV Centroid Data

Supplemental centroid analysis for 011032573-03. Kepler magnitude: 15.64. Transit SNR 3.18

There are 1 quarters with good PRF difference image offsets

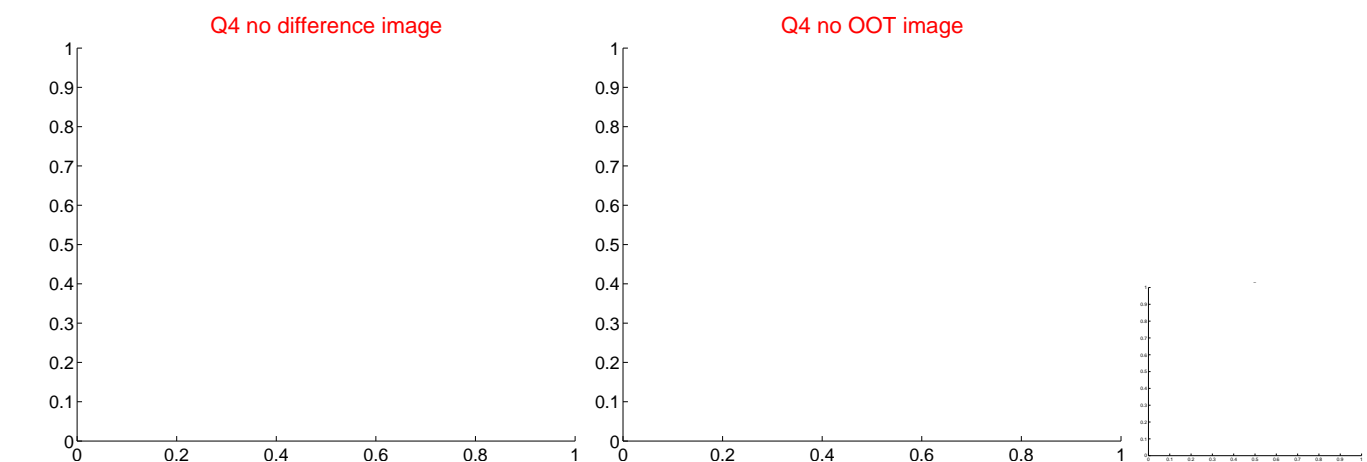
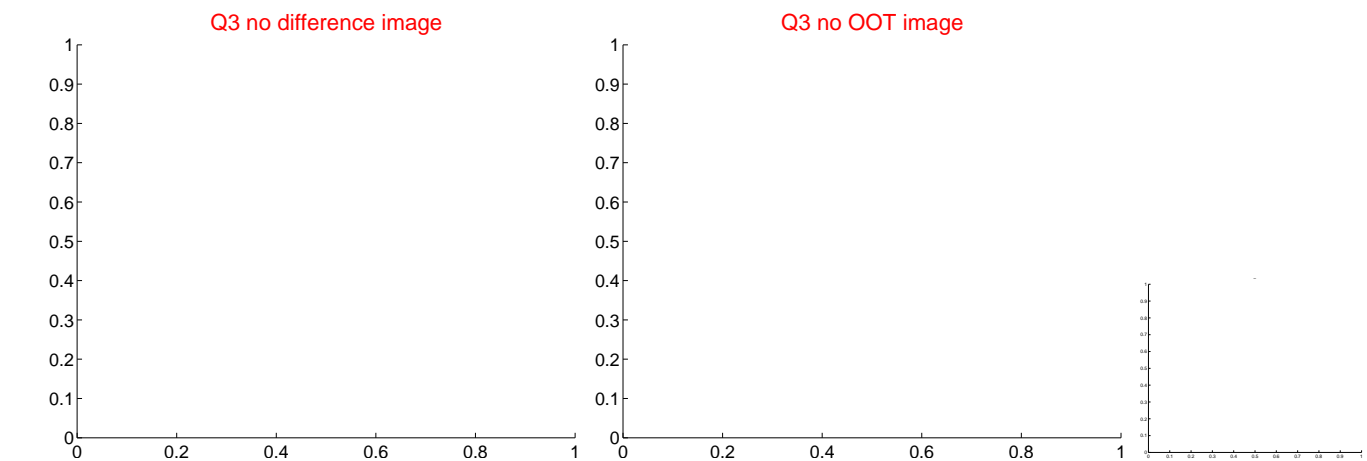
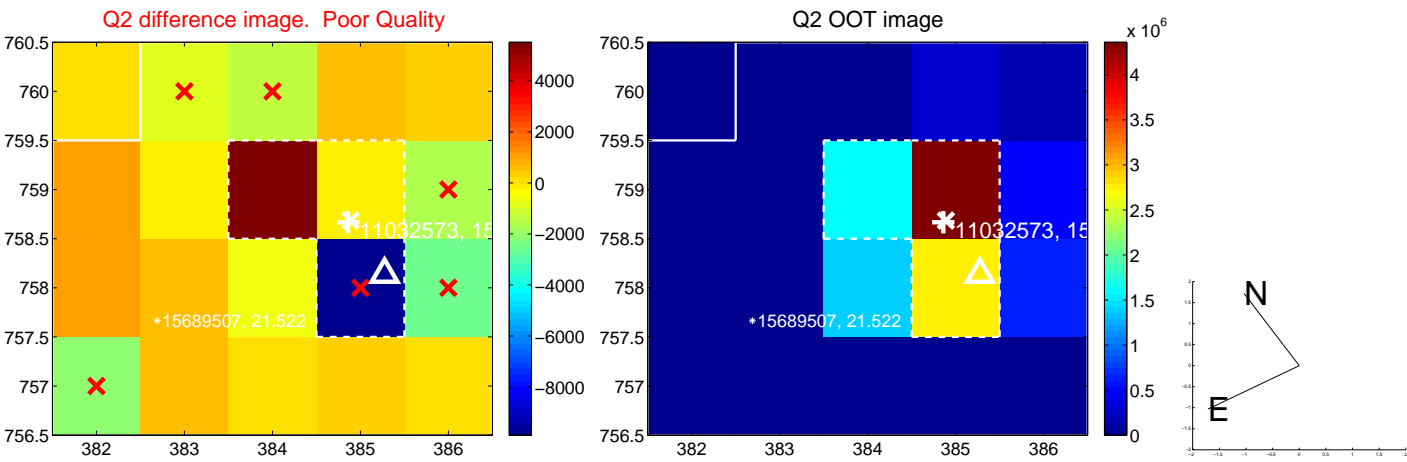
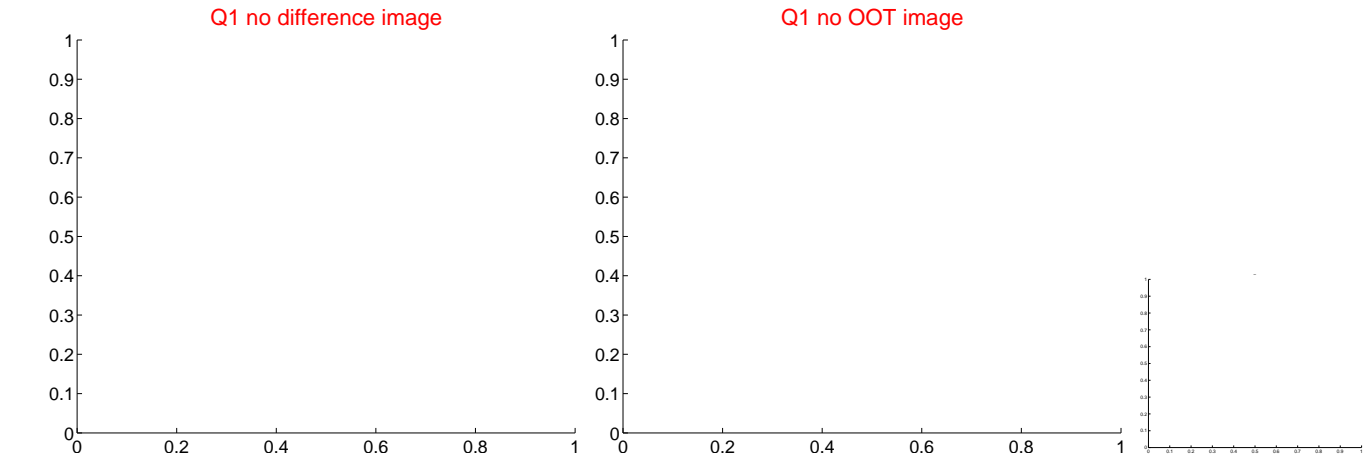
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.552 ± 0.472	1.17	-0.546 ± 0.471	-0.079 ± 0.530
PRF-fit source offset from KIC position	0.424 ± 0.471	0.90	-0.423 ± 0.471	-0.030 ± 0.530
photometric centroid source offset	2.48 ± 3.28	0.76	1.50 ± 3.27	-1.98 ± 3.28



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.

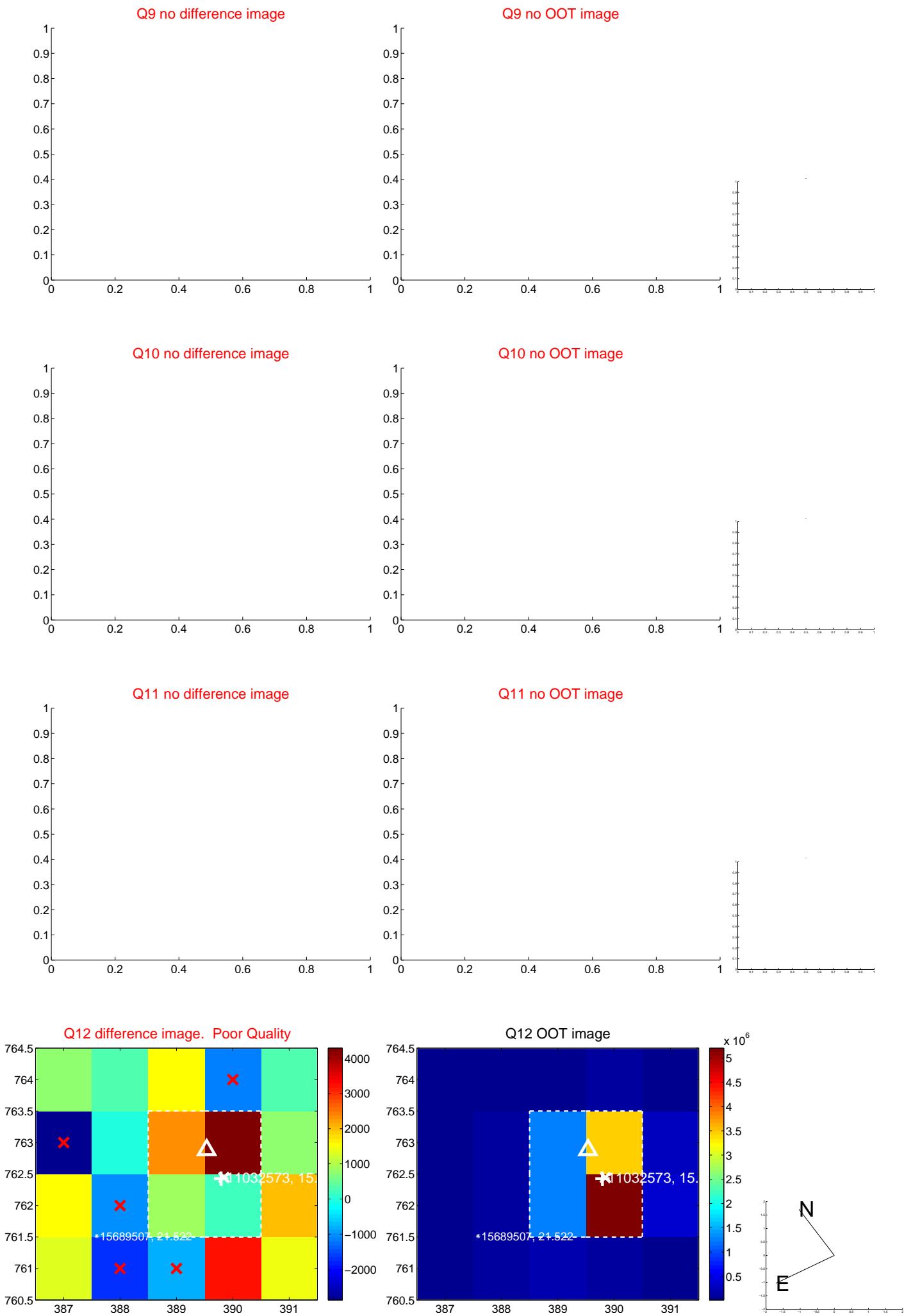
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



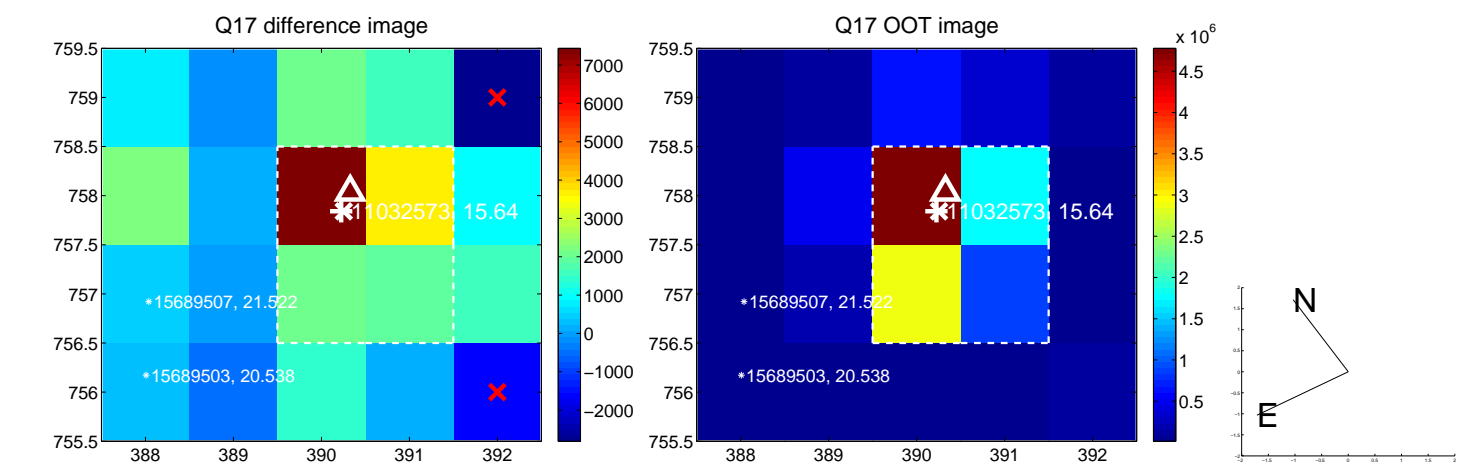
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



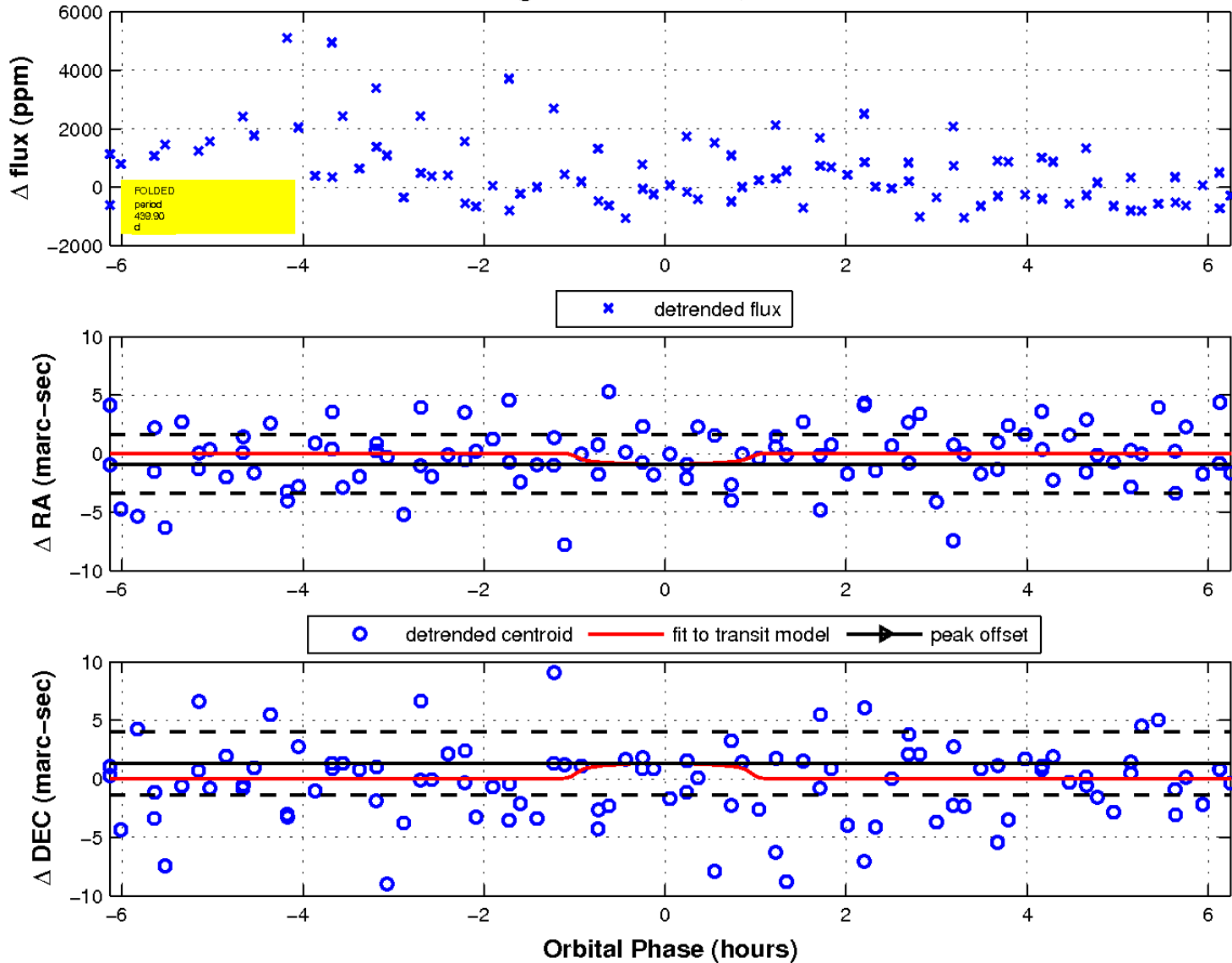
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

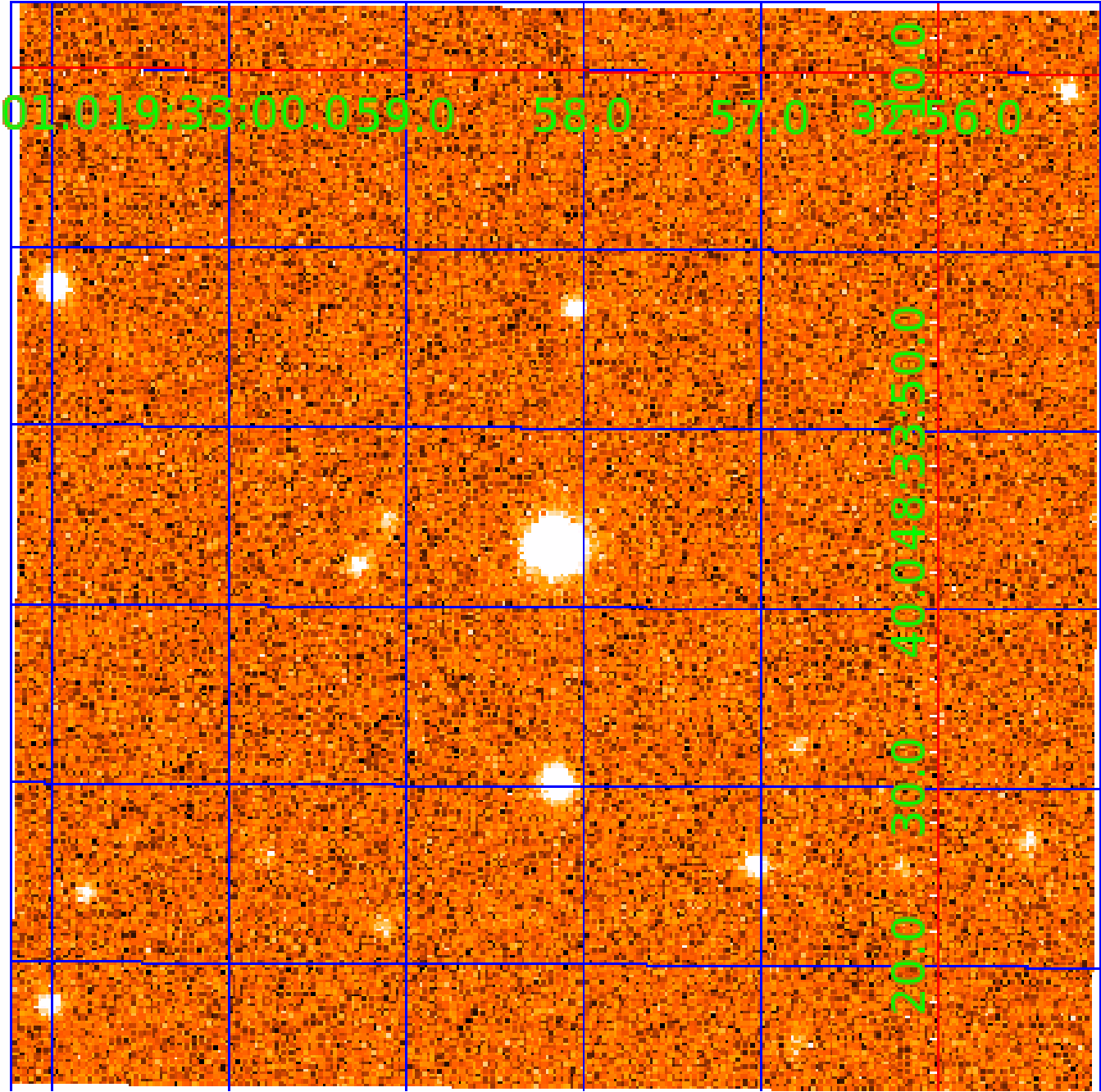


fluxWeightedCentroids, Planet 3 of 5



UKIRT Image

Declination



KIC 011032573

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})
011032573-01	OBS	No	2.295356	133.591202	62.6	10.353	8.5	6.2	0.74	4564	0.56	221.78
011032573-02	OBS	No	310.325568	136.268664	1318.4	86.251	11.4	5.3	0.74	4564	5.57	0.32
011032573-03	OBS	No	439.900293	251.815908	715.4	2.099	9.6	3.2	0.74	4564	2.21	0.20
011032573-04	OBS	No	440.229754	250.773725	1764.0	15.171	10.1	7.4	0.74	4564	2.98	0.20
011032573-05	OBS	No	452.478269	329.545067	839.6	7.001	8.1	8.0	0.74	4564	2.39	0.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011032573-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011032573-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011032573-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011032573-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011032573-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_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.

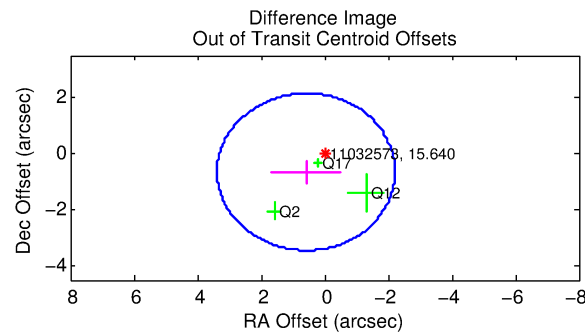
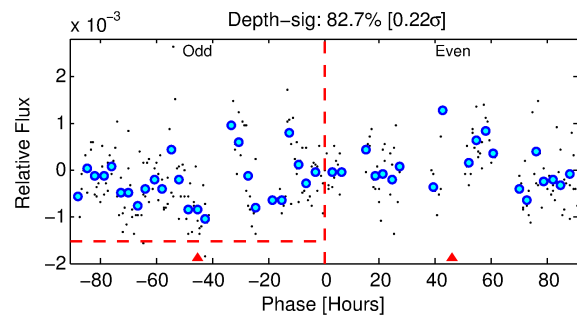
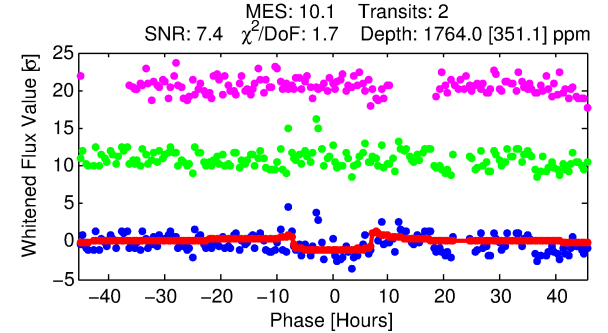
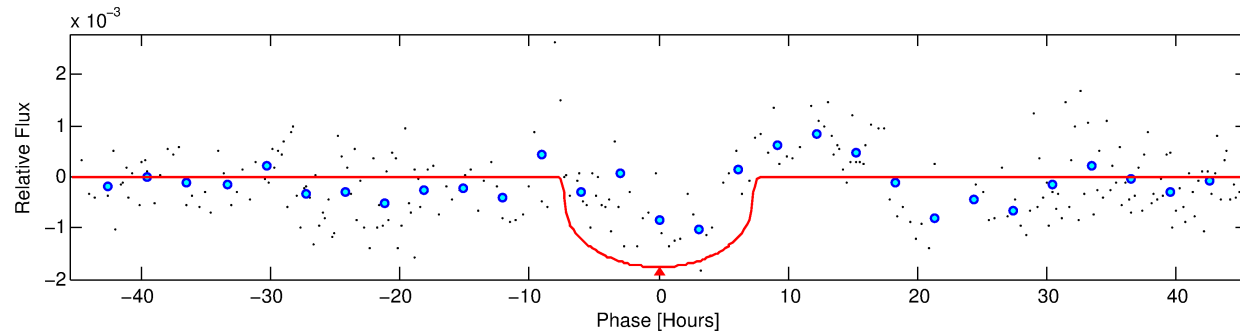
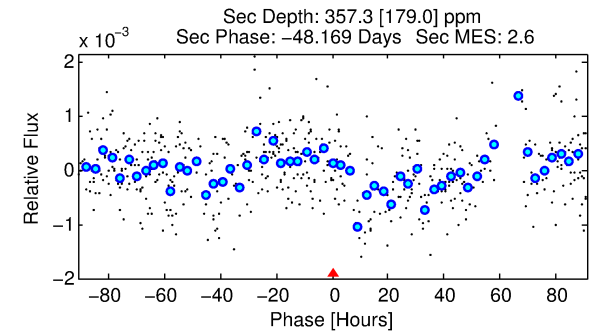
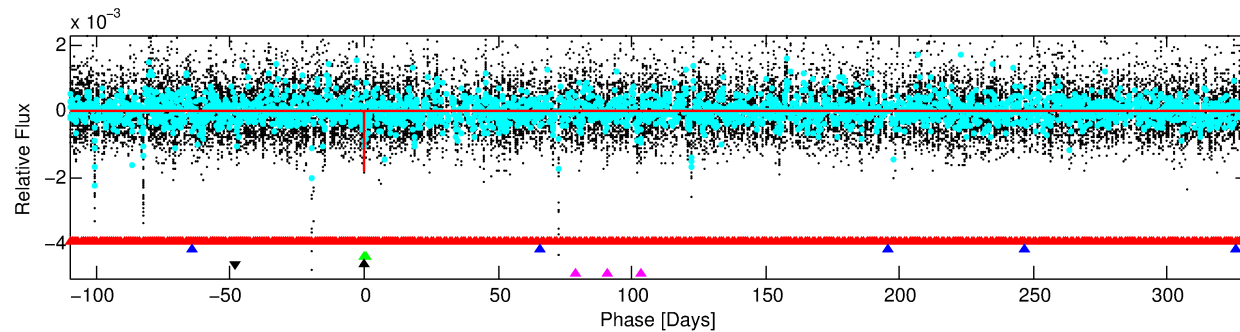
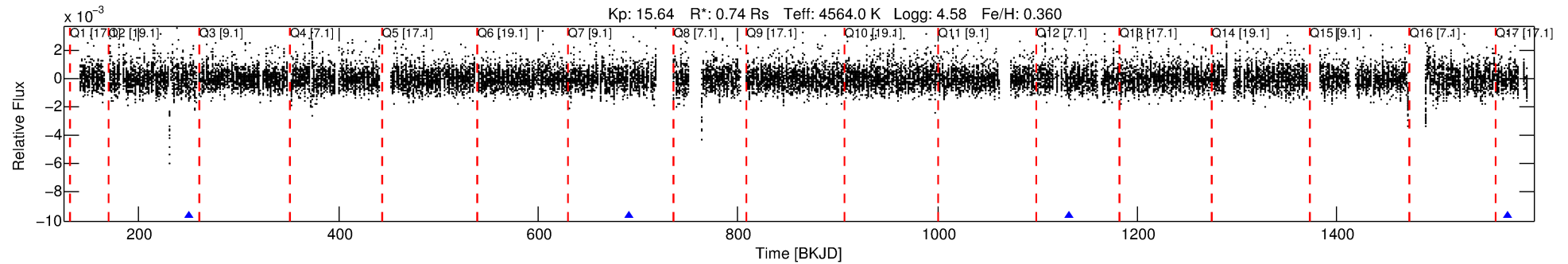
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011032573-04

No Significant Match Found

DV One-Page Summary

KIC: 11032573 Candidate: 4 of 5 Period: 440.230 d



DV Fit Results:

Period = 440.22975 [0.01880] d
Epoch = 250.7737 [0.0542] BKJD
Rp/R* = 0.0367 [0.0271]
a/R* = 227.93 [488.33]
b = 0.13 [16.16]
Seff = 0.20 [0.03]
Teq = 171 [6] K
Rp = 2.99 [2.21] Re
a = 1.0373 [0.0595] AU
Ag = 23735.81 [37072.04] [0.64 σ]
Teffp = 3275 [1281] K [2.42 σ]

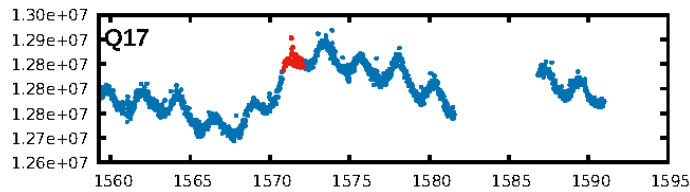
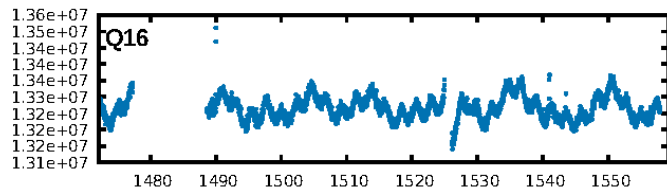
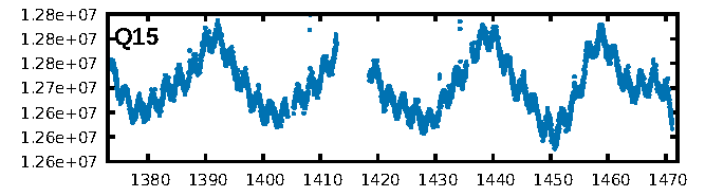
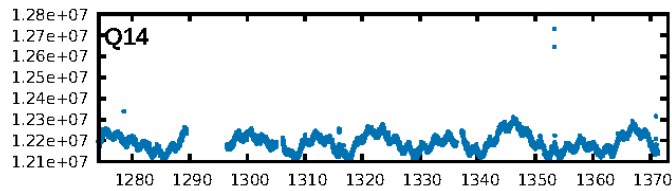
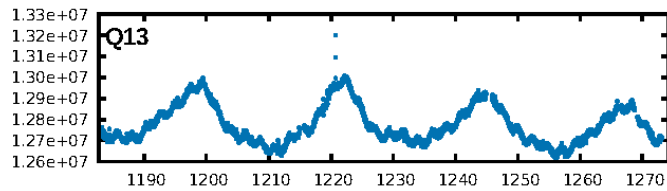
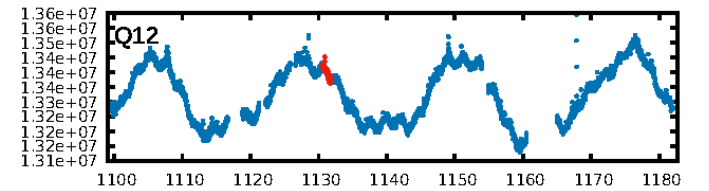
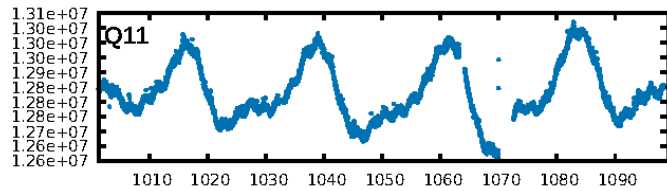
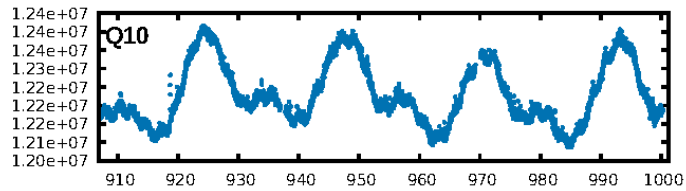
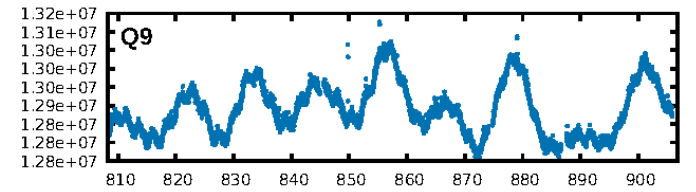
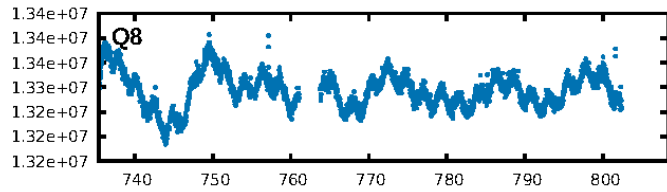
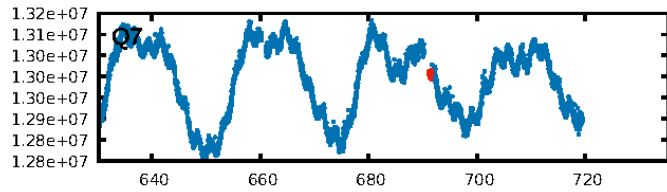
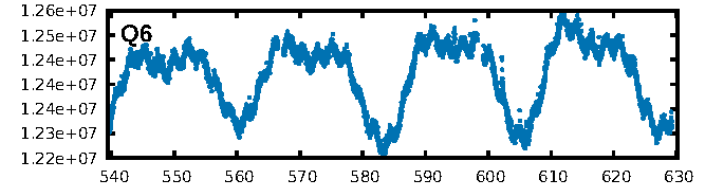
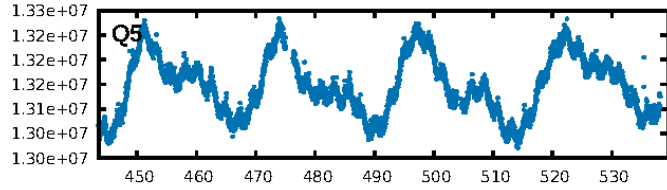
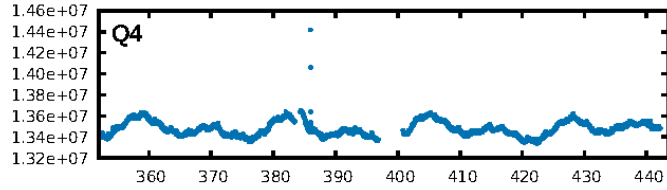
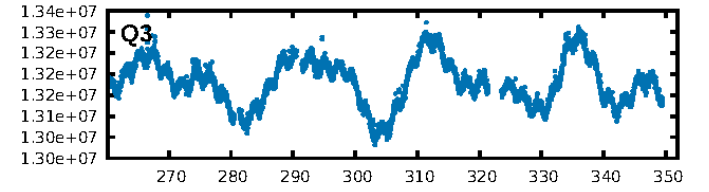
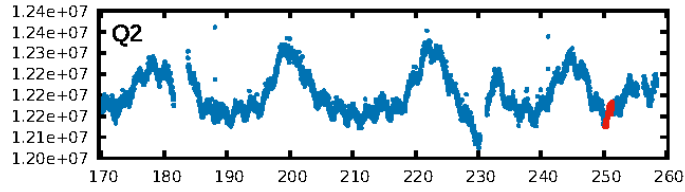
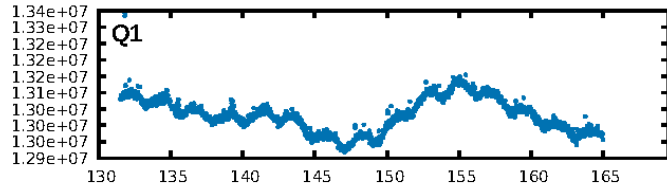
DV Diagnostic Results:

ShortPeriod-sig: 39.4% [0.52 σ]
LongPeriod-sig: 100.0% [17.59 σ]
ModelChiSquare2-sig: 21.7%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.47e-14
RollingBand-fgt: 1.00 [1/1]
GhostDiagnostic-chr: 2.647
Centroid-sig: 0.3%
Centroid-so: 1.221 arcsec [2.14 σ]
OotOffset-rm: 0.873 arcsec [0.94 σ]
KicOffset-rm: 0.922 arcsec [1.57 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/3]

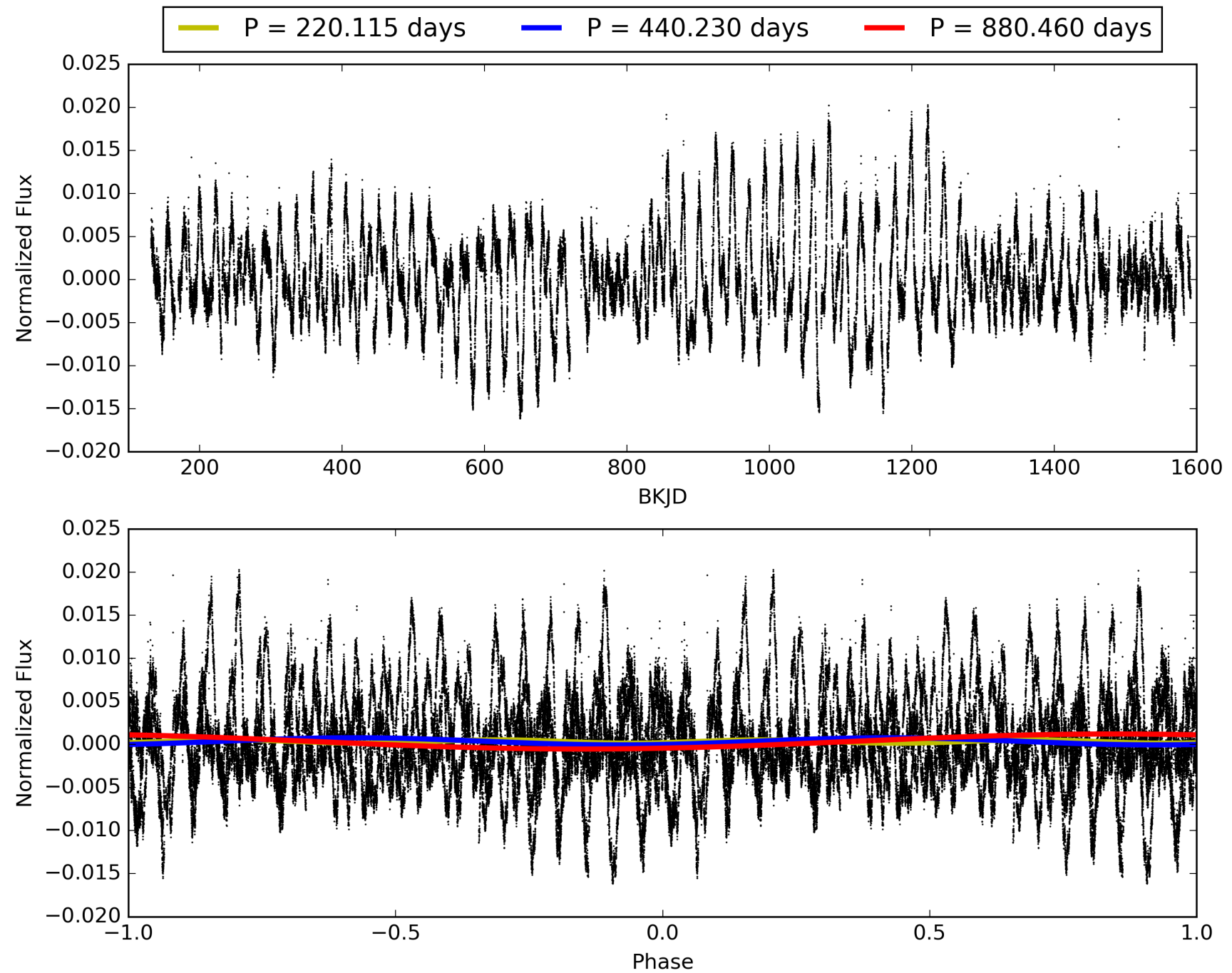
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:08:07 Z

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

TCE 011032573-04, PDC Light Curves

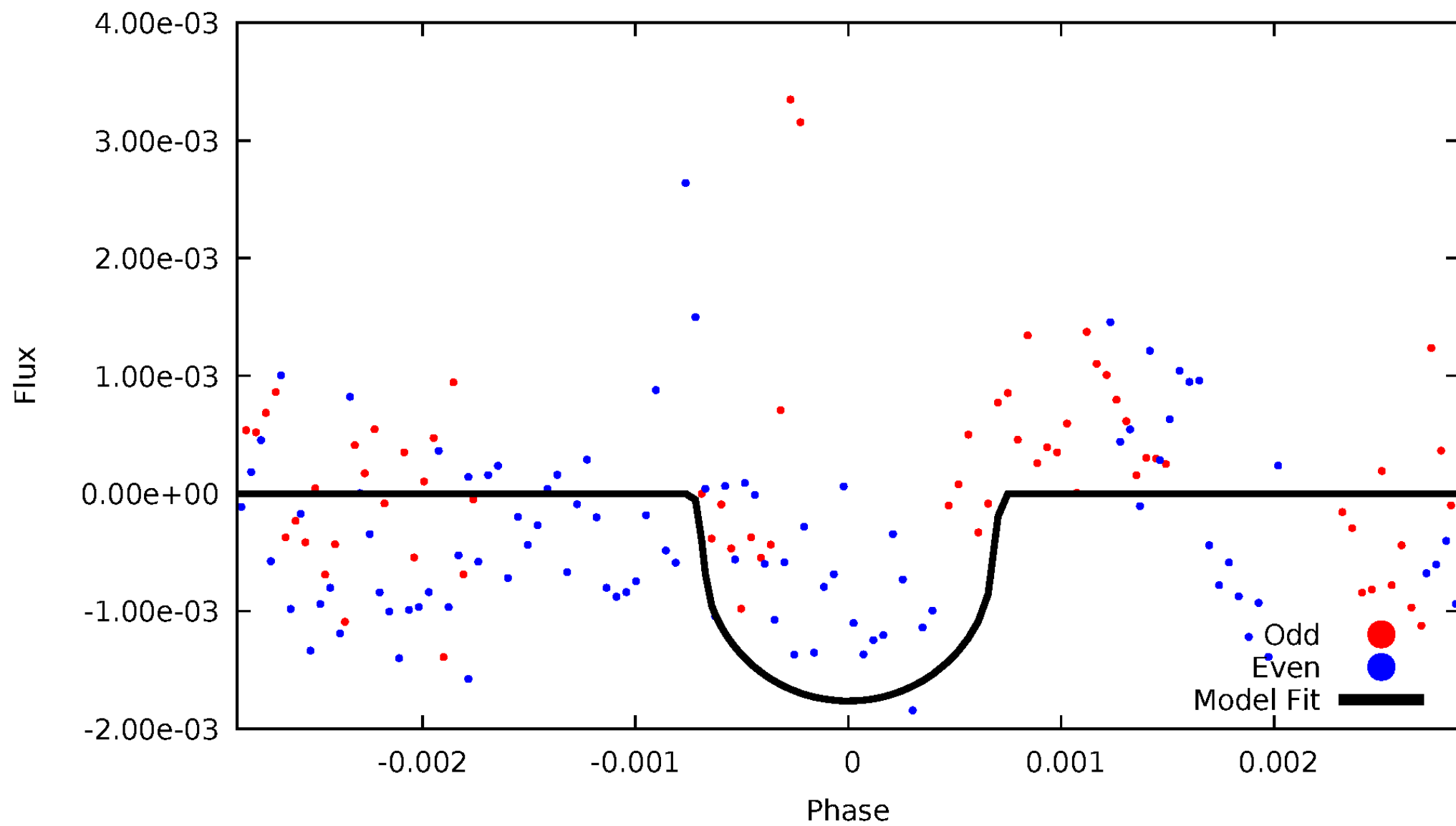


TCE 011032573-04



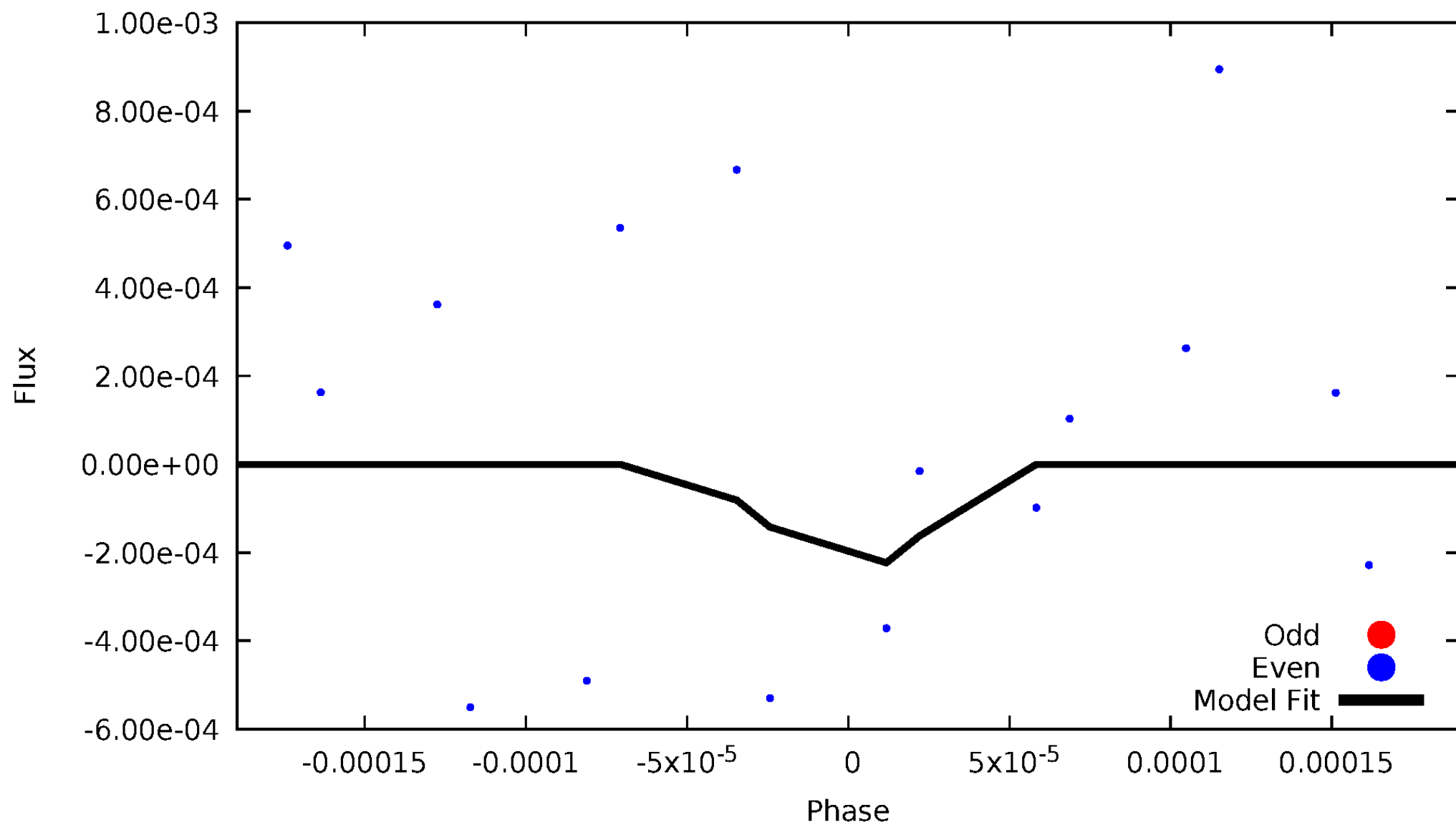
DV Odd/Even

TCE 011032573-04



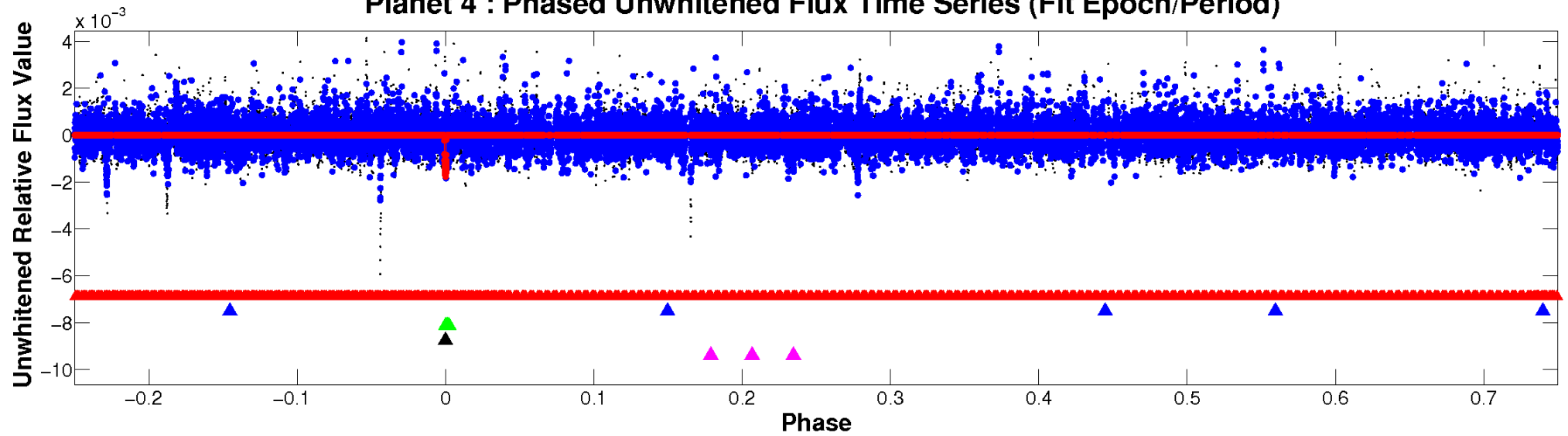
ALT Odd/Even

TCE 011032573-04

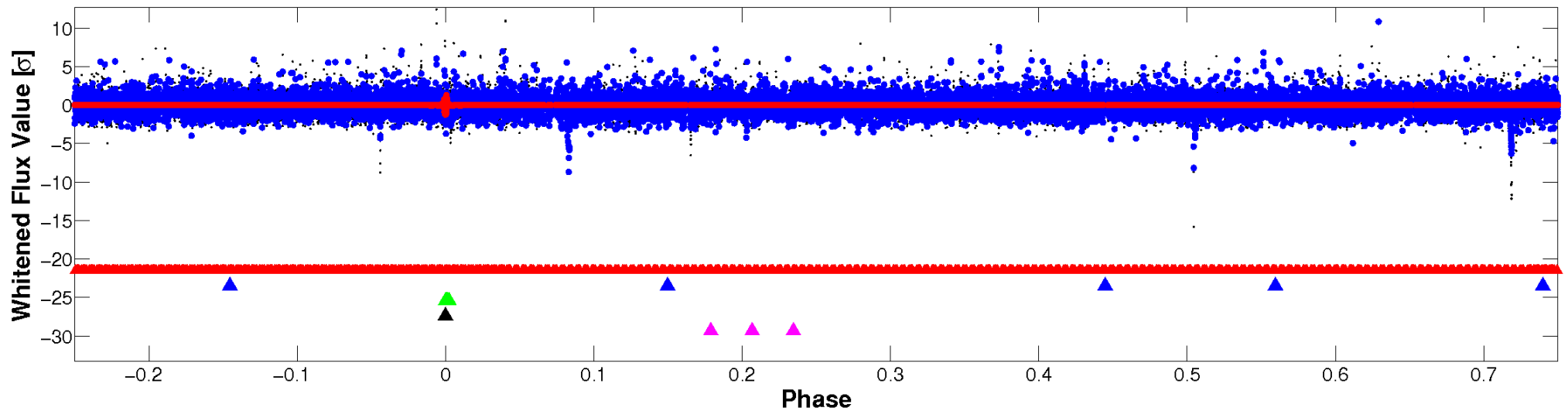


Non-Whitened Vs. Whitened Light Curve

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

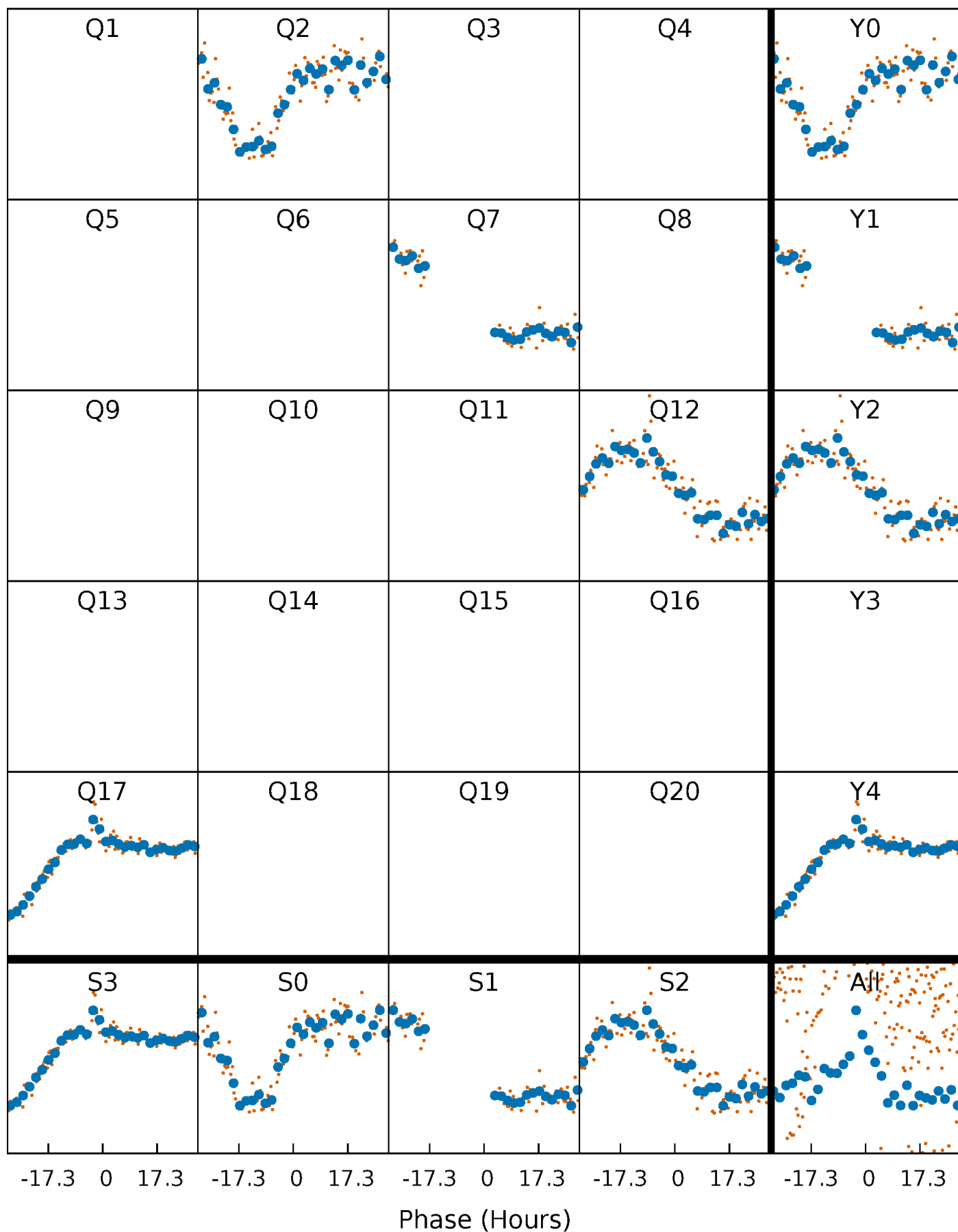


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



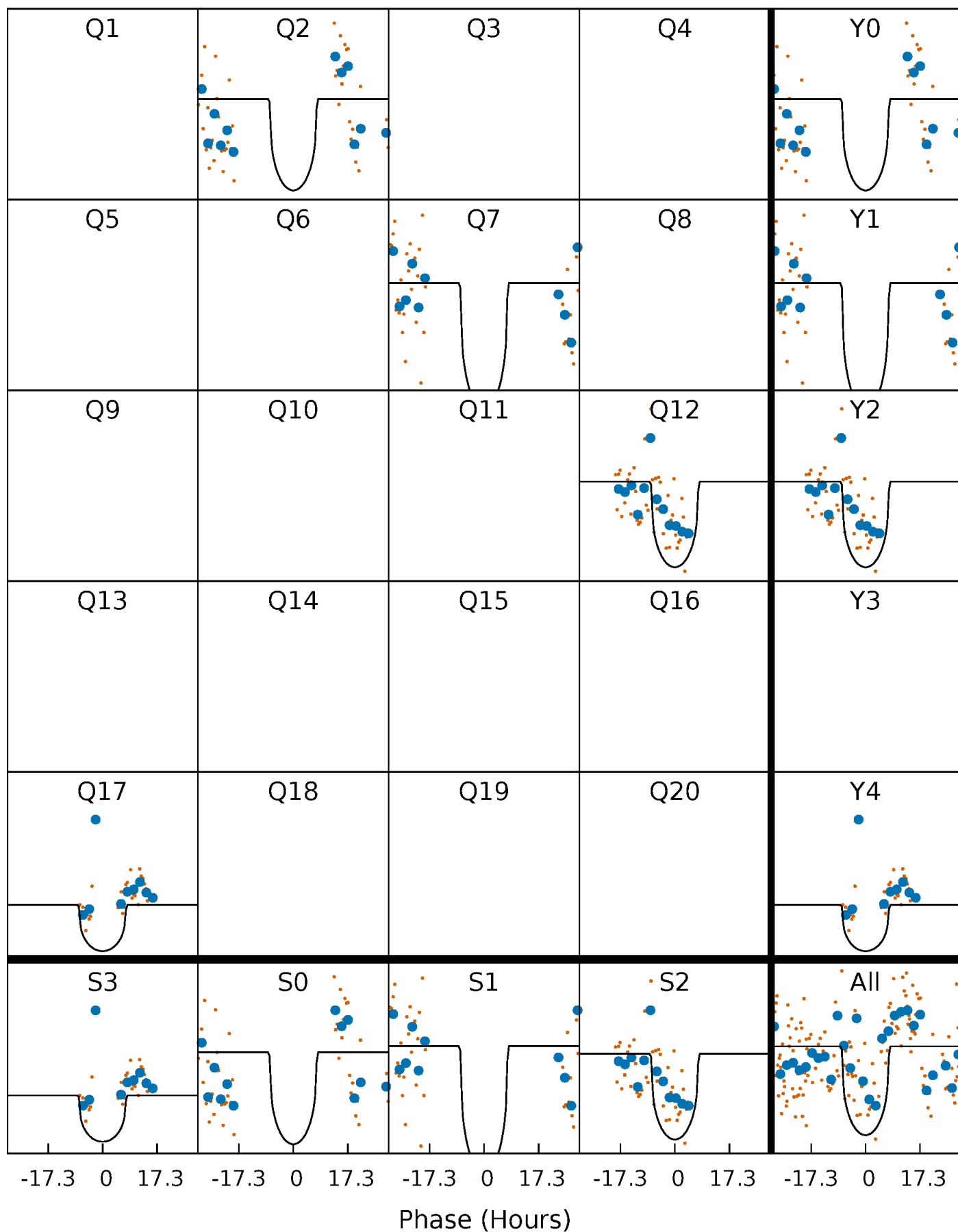
PDC Quarter-Phased Transit Curves

TCE 011032573-04 $P=440.229754$ Days $T_0=250.773725$ (BKJD)



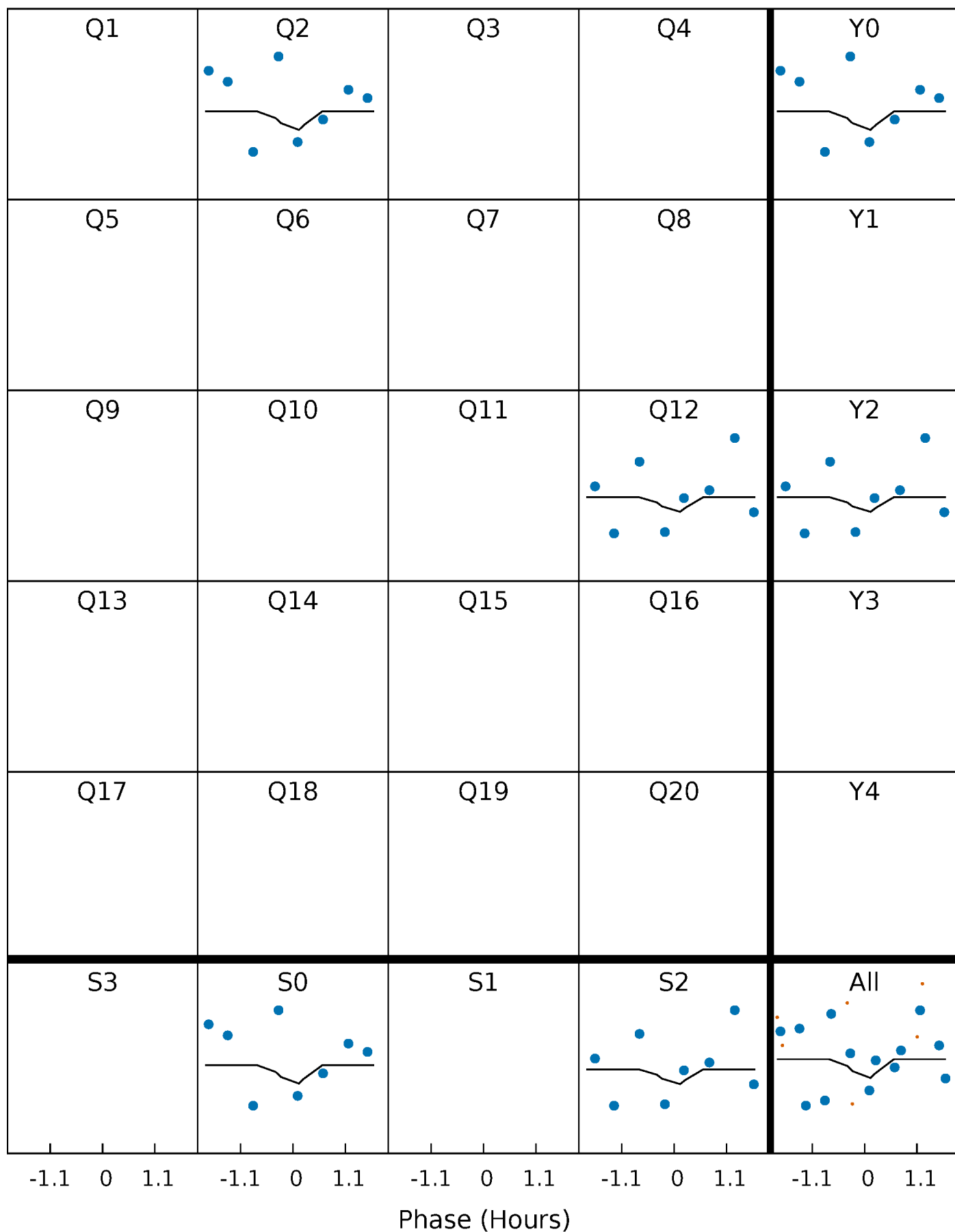
DV Quarter-Phased Transit Curves

TCE 011032573-04 $P=440.229754$ Days $T_0=250.773725$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

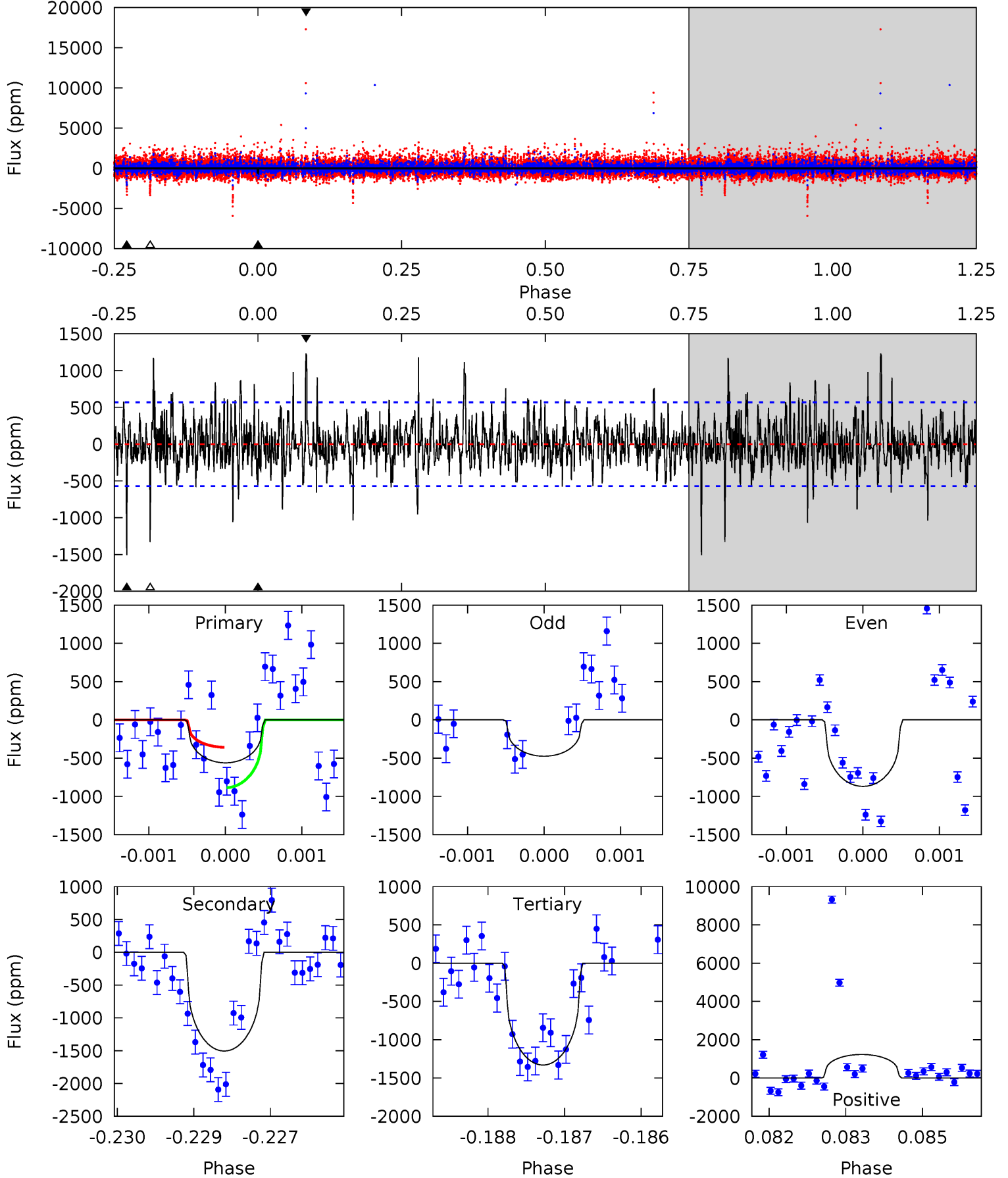
TCE 011032573-04 P=439.880057 Days $T_0=251.412796$ (BKJD)



DV Model-Shift Uniqueness Test

011032573-04, P = 440.229754 Days, E = 250.773725 Days

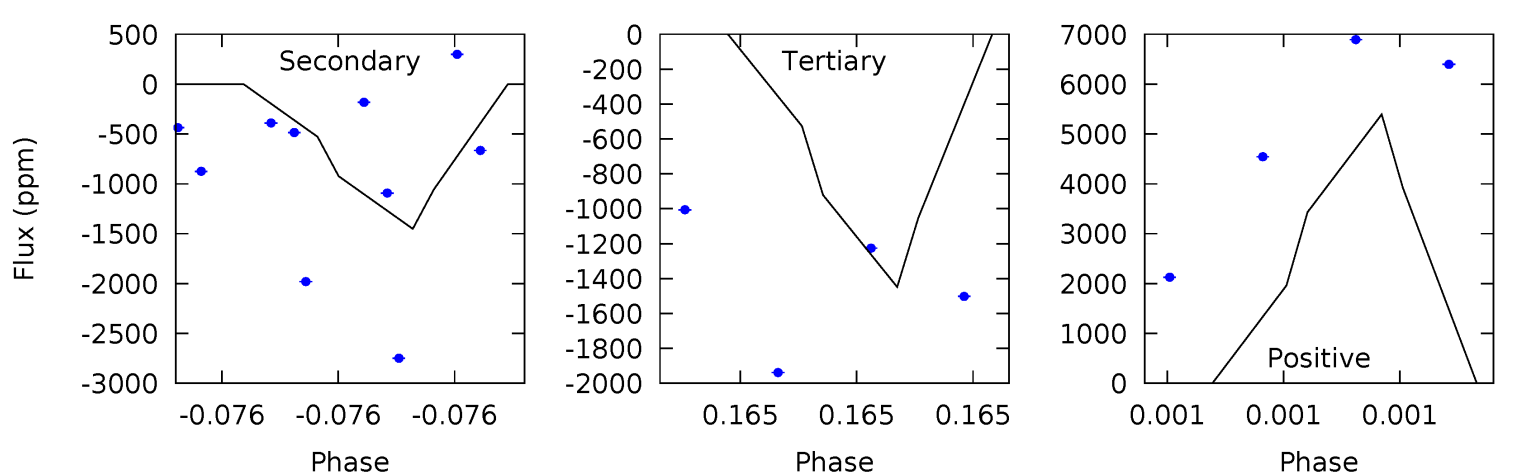
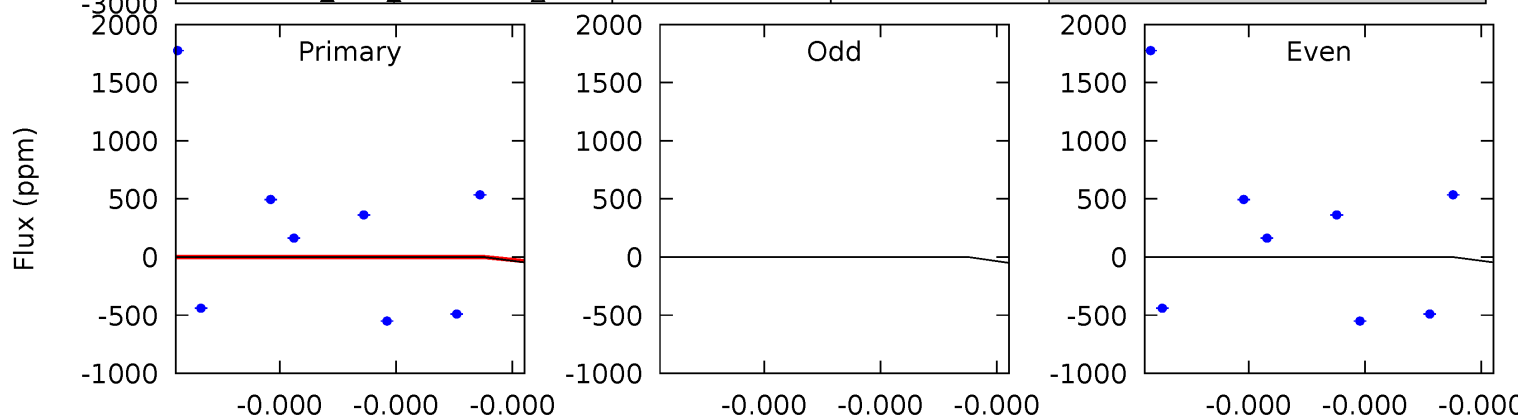
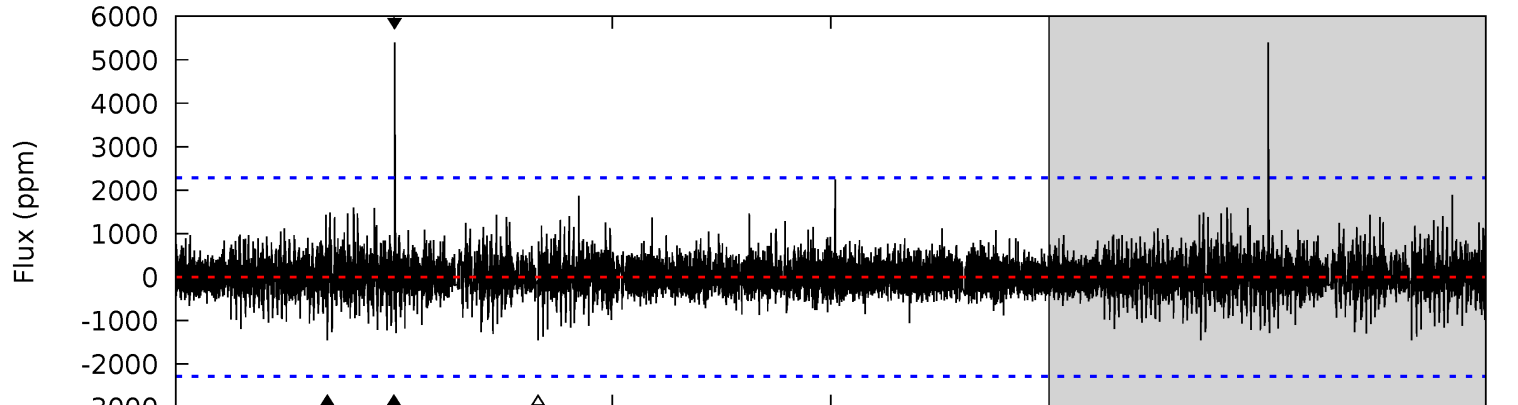
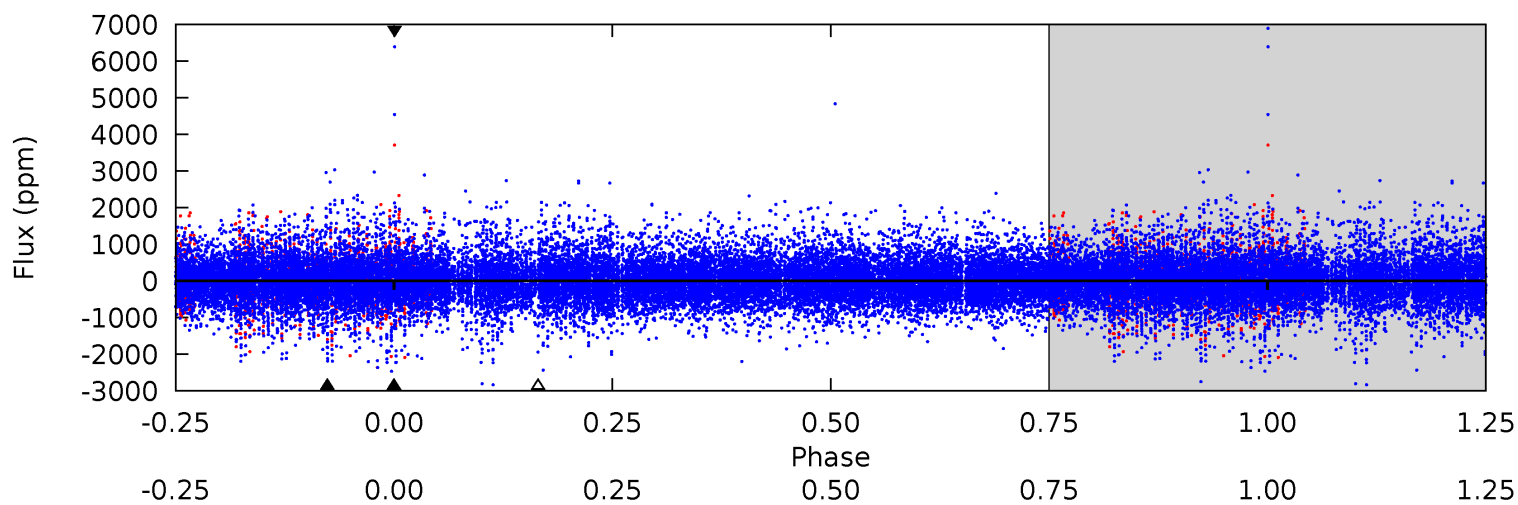
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.30	14.2	12.6	11.6	5.39	3.19	2.40	-7.28	-6.33	1.65	2.60	1.83	1.00	0.45	2.43



Alt Model-Shift Uniqueness Test

011032573-04, P = 439.880057 Days, E = 251.412796 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.60	3.78	3.77	14.0	5.94	4.03	0.78	-3.16	-13.4	0.01	-10.2	0.03	1.00	0.79	0.18



Stellar Parameters For KIC 011032573

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4564^{+137}_{-137}	$4.579^{+0.042}_{-0.025}$	$0.360^{+0.100}_{-0.300}$	$0.745^{+0.031}_{-0.053}$	$0.767^{+0.032}_{-0.056}$	$2.614^{+0.506}_{-0.222}$
	+3%/-3%	+1%/-1%	+28%/-83%	+4%/-7%	+4%/-7%	+19%/-8%
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 011032573-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1505 ± 106	$3.10^{+2.13}_{-1.81}$	238^{+8}_{-8}	4594^{+2323}_{-841}	$95715^{+453815}_{-63709}$
Alt.	-1452 ± 385	$2.17^{+1.85}_{-1.44}$	238^{+8}_{-8}	5264^{+4348}_{-1177}	$181913^{+1424055}_{-130756}$

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 $A_{obs} \gg 1.0$

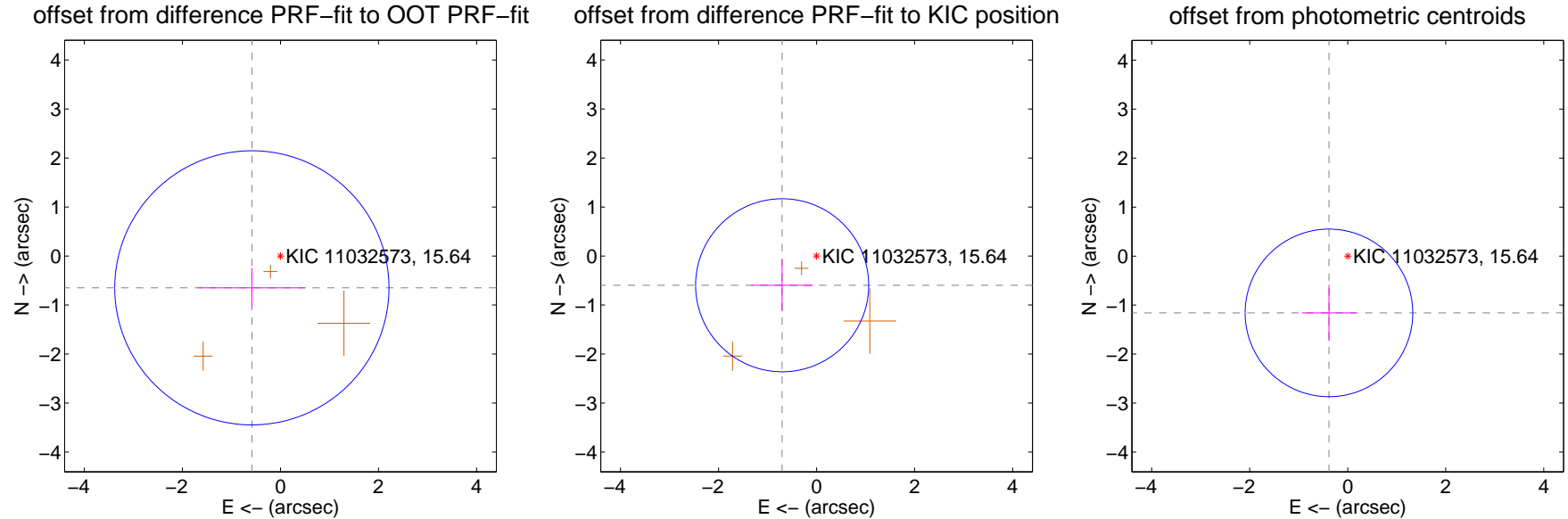
DV Centroid Data

Supplemental centroid analysis for 011032573-04. Kepler magnitude: 15.64. Transit SNR 7.37

There are 0 quarters with good PRF difference image offsets

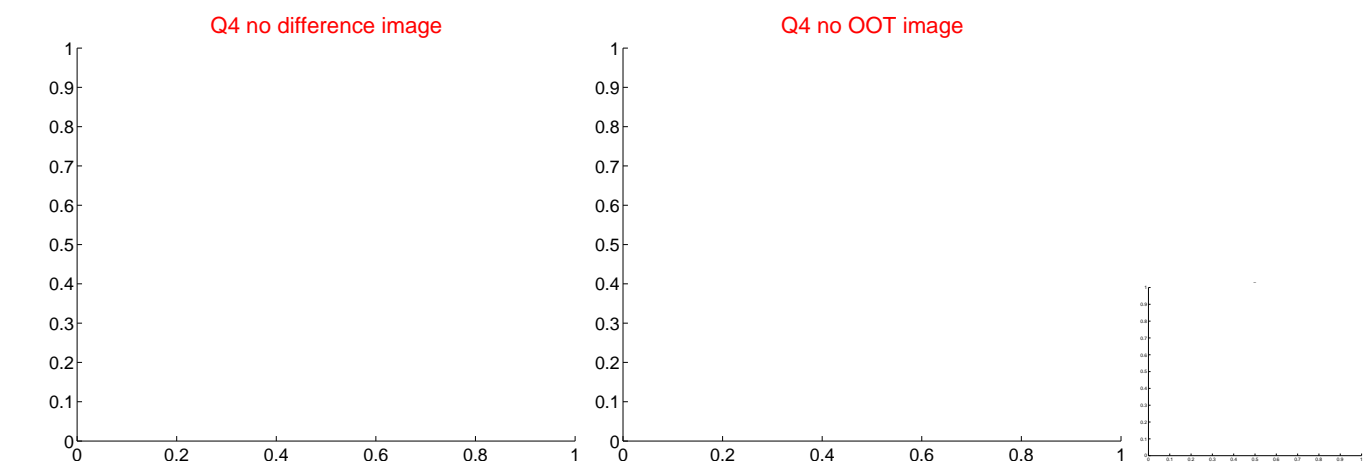
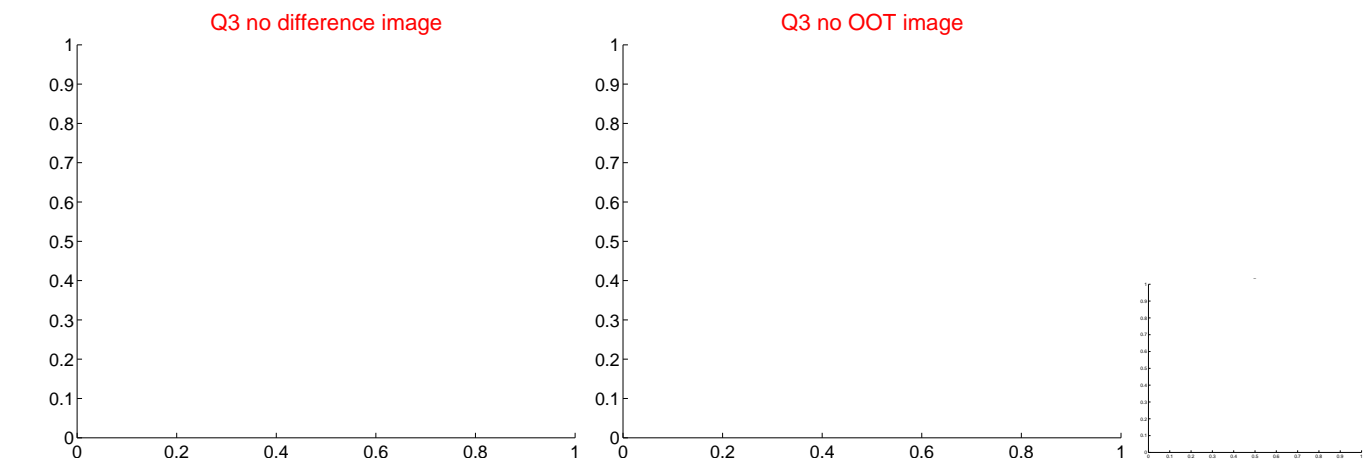
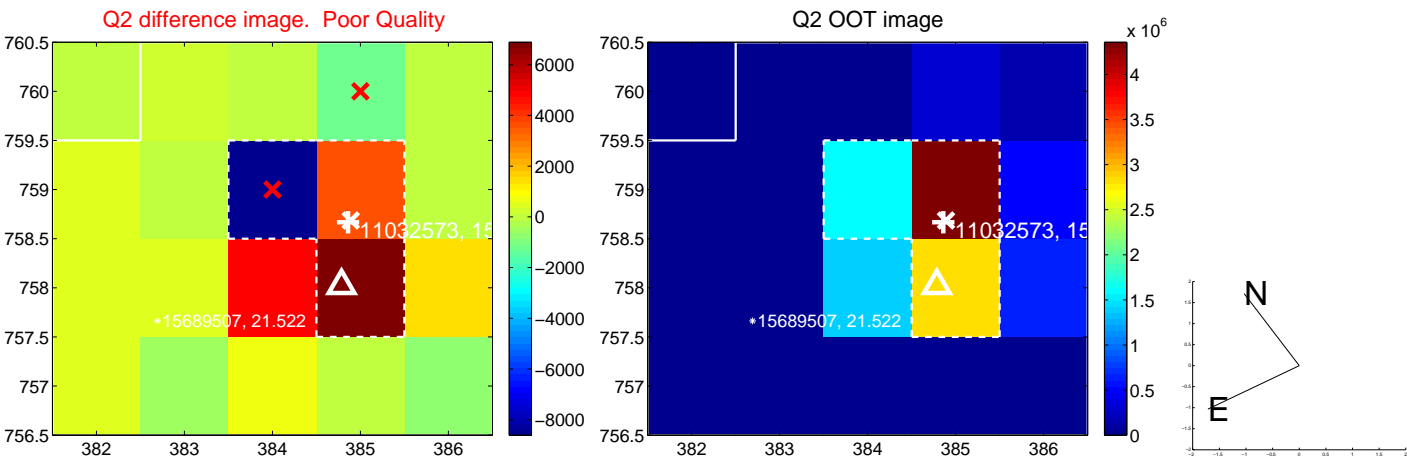
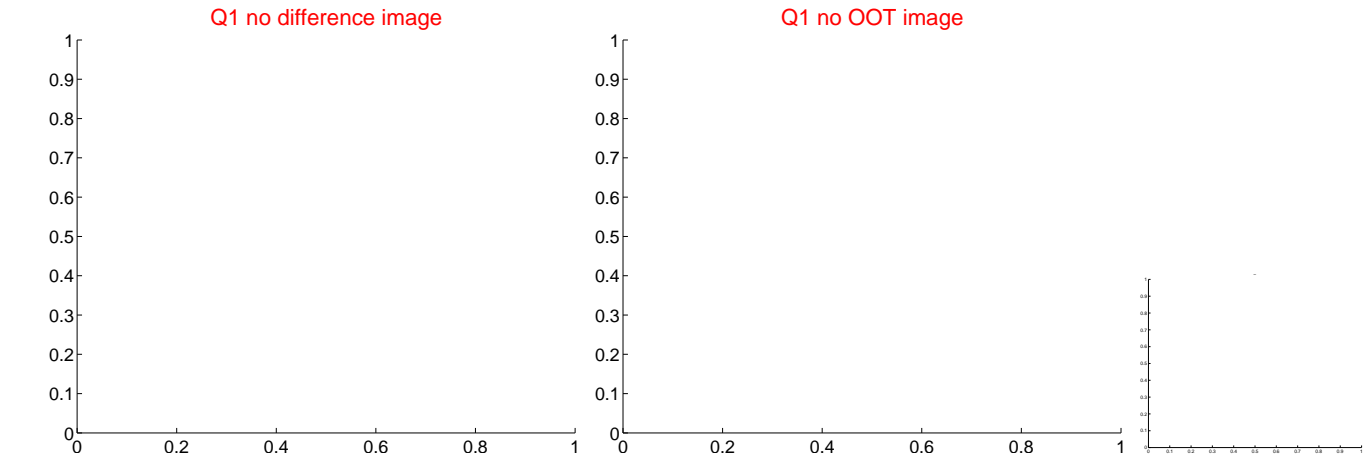
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.873 ± 0.932	0.94	0.583 ± 1.095	-0.649 ± 0.410
PRF-fit source offset from KIC position	0.922 ± 0.588	1.57	0.702 ± 0.628	-0.597 ± 0.529
photometric centroid source offset	1.22 ± 0.57	2.14	0.38 ± 0.55	-1.16 ± 0.57



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.

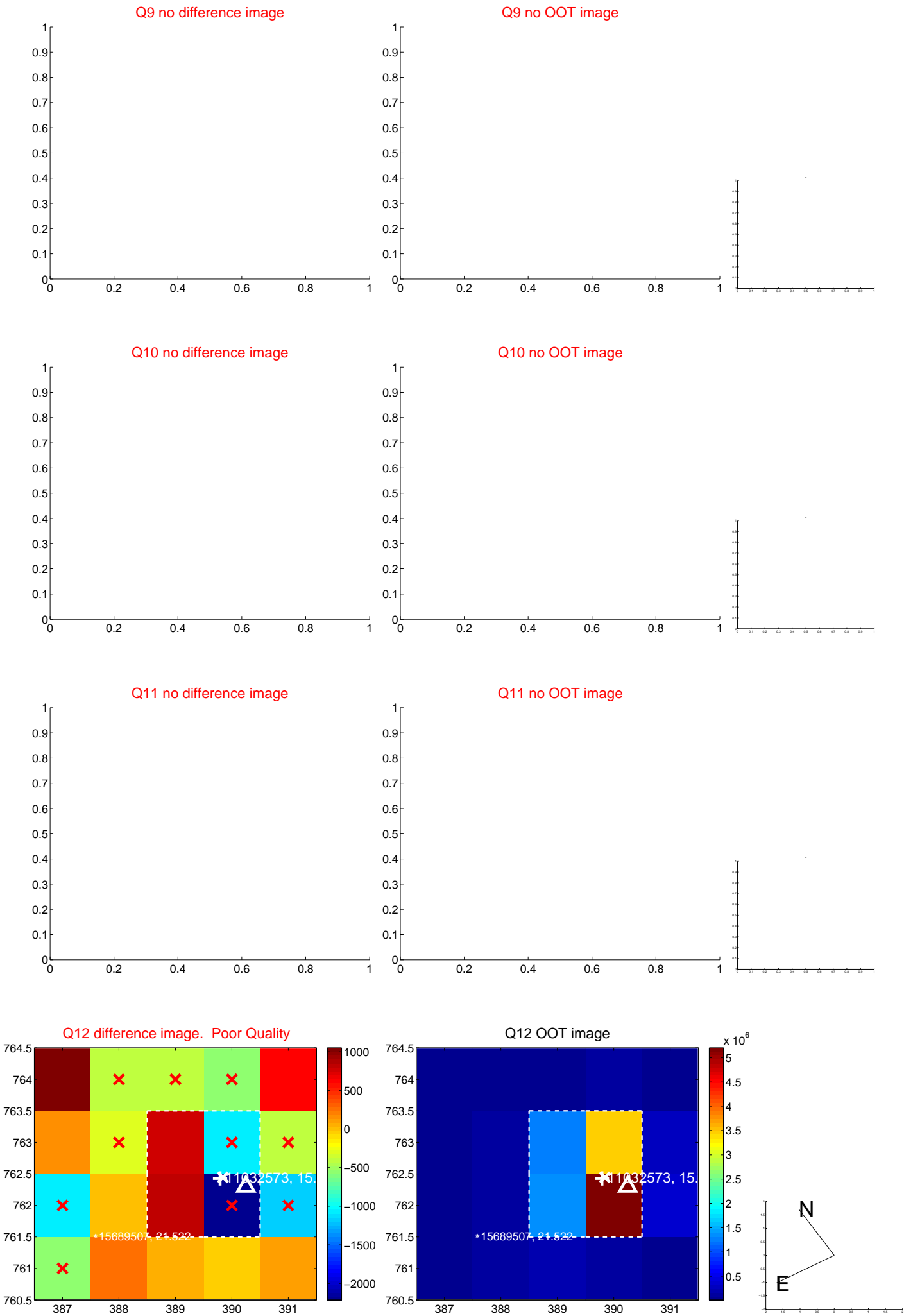
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



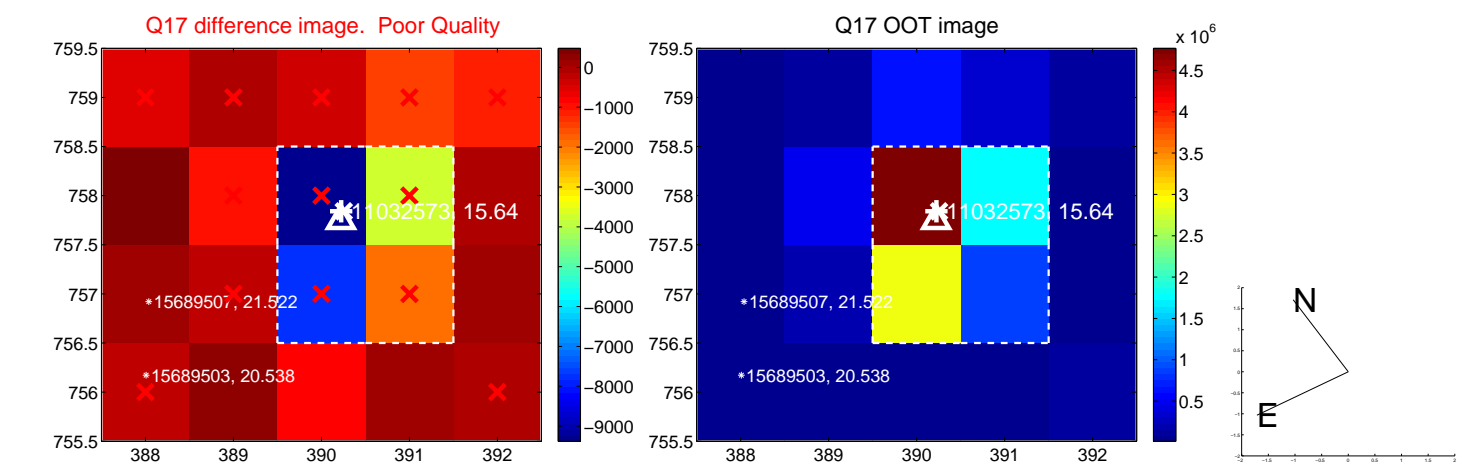
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



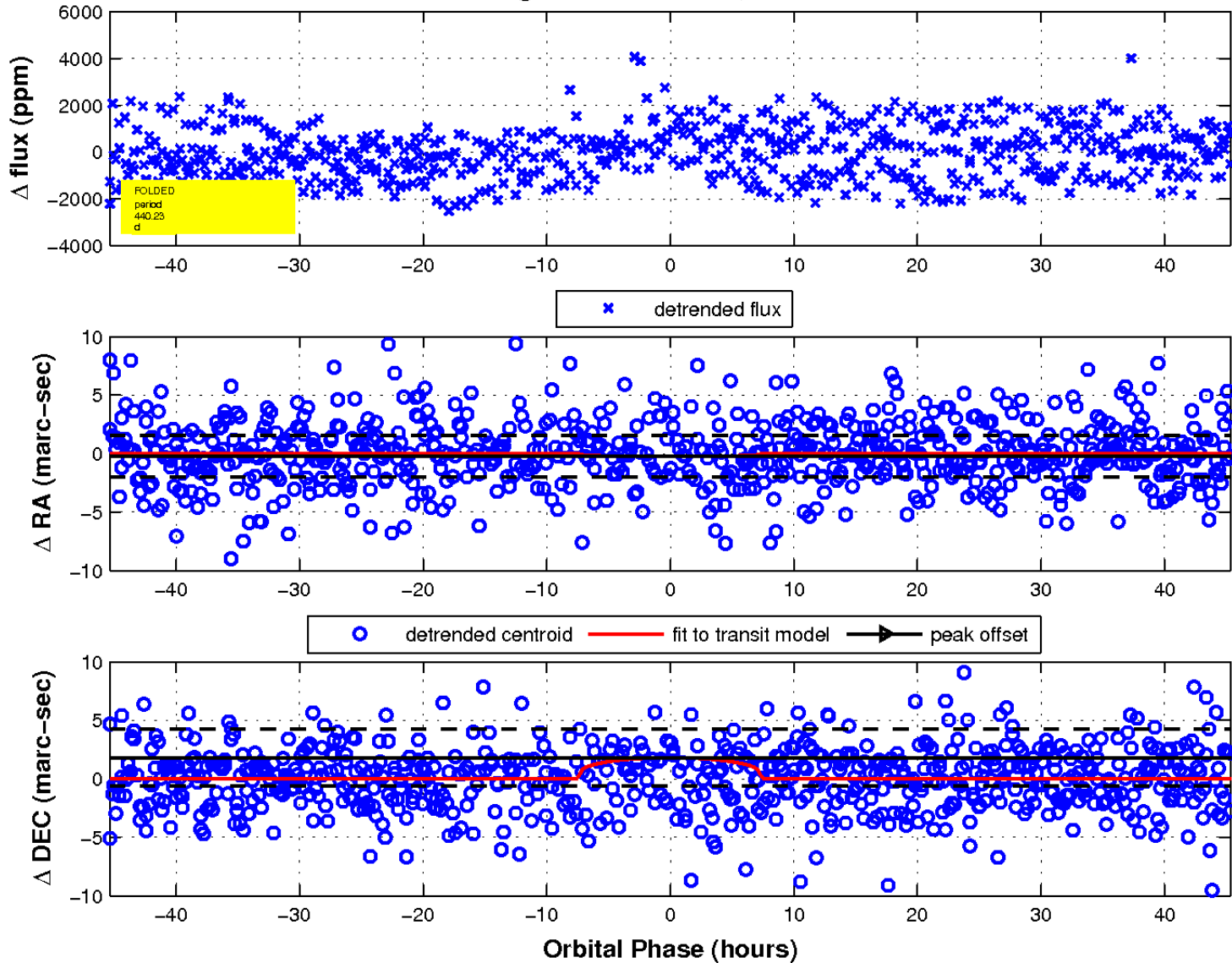
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

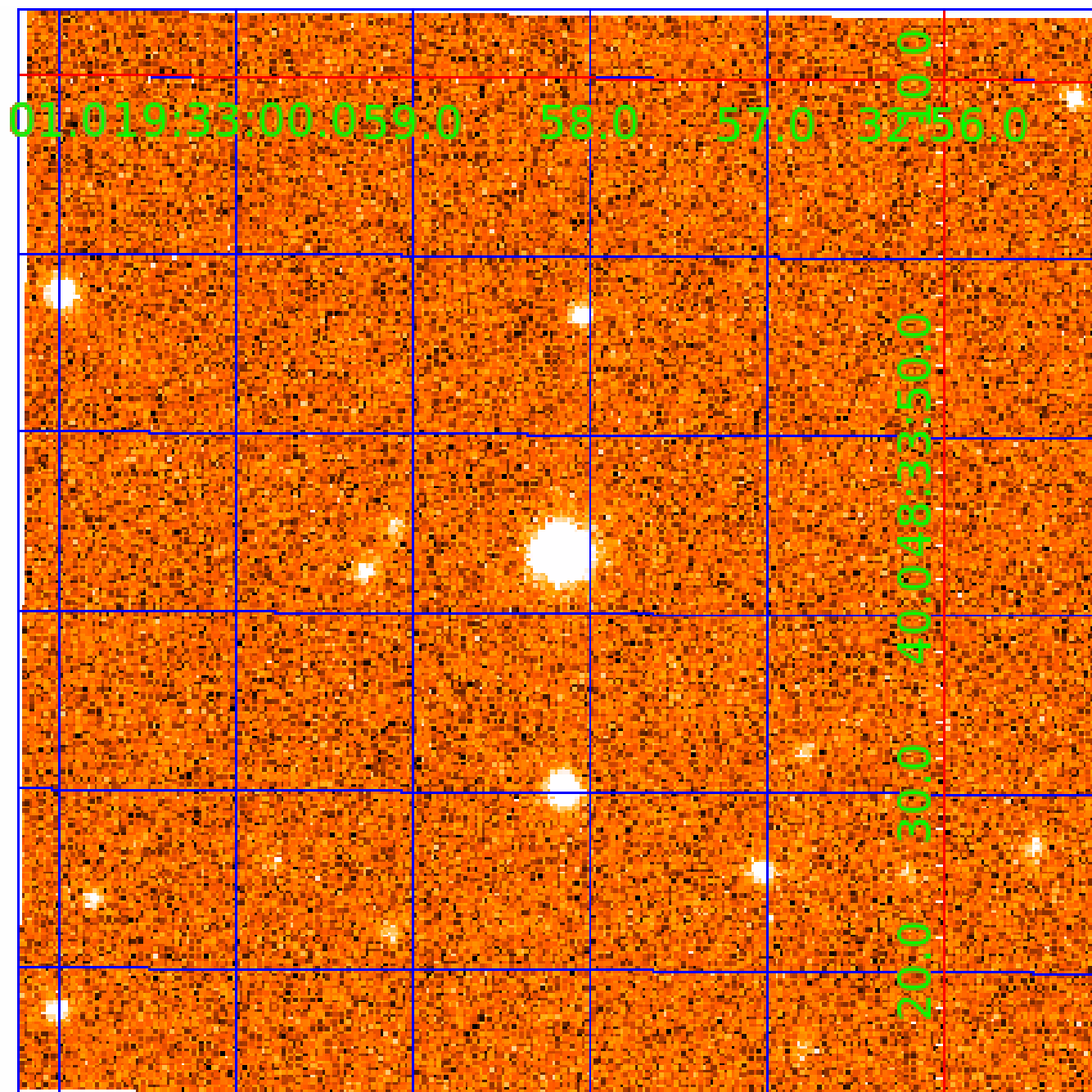


fluxWeightedCentroids, Planet 4 of 5



UKIRT Image

Declination



KIC 011032573

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})
011032573-01	OBS	No	2.295356	133.591202	62.6	10.353	8.5	6.2	0.74	4564	0.56	221.78
011032573-02	OBS	No	310.325568	136.268664	1318.4	86.251	11.4	5.3	0.74	4564	5.57	0.32
011032573-03	OBS	No	439.900293	251.815908	715.4	2.099	9.6	3.2	0.74	4564	2.21	0.20
011032573-04	OBS	No	440.229754	250.773725	1764.0	15.171	10.1	7.4	0.74	4564	2.98	0.20
011032573-05	OBS	No	452.478269	329.545067	839.6	7.001	8.1	8.0	0.74	4564	2.39	0.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011032573-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011032573-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011032573-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011032573-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011032573-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_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.

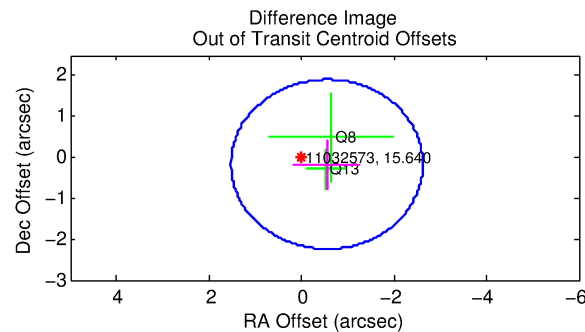
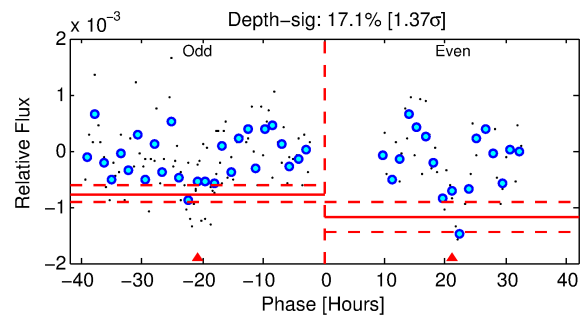
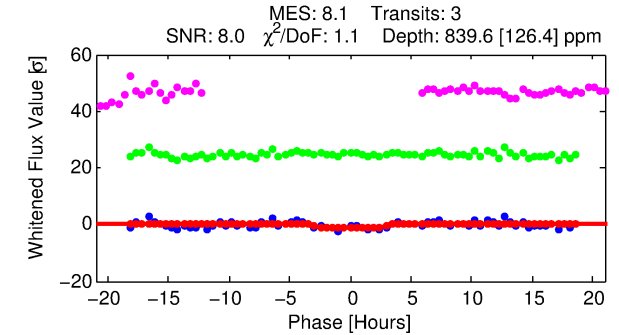
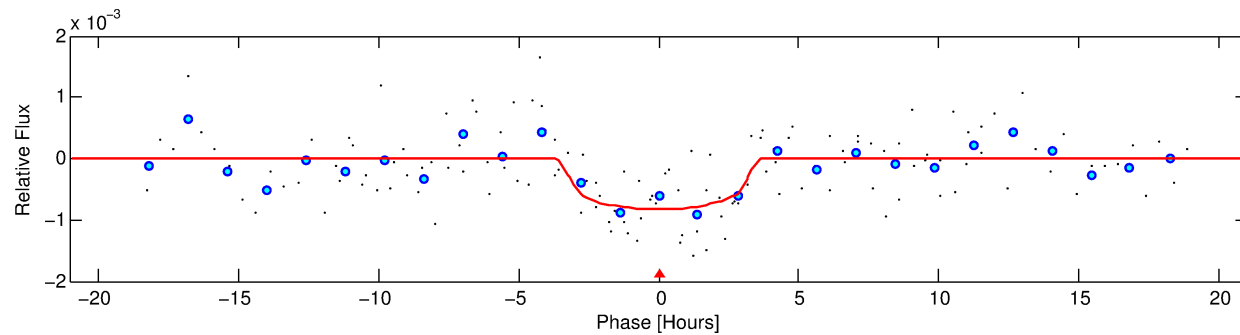
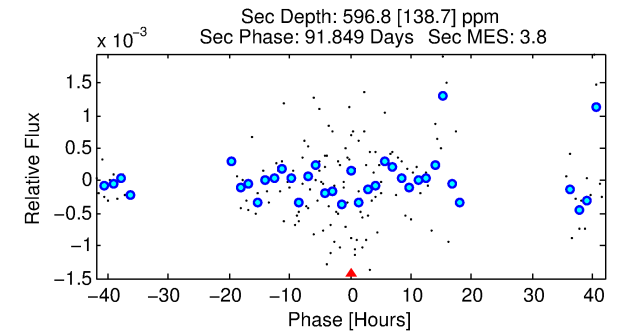
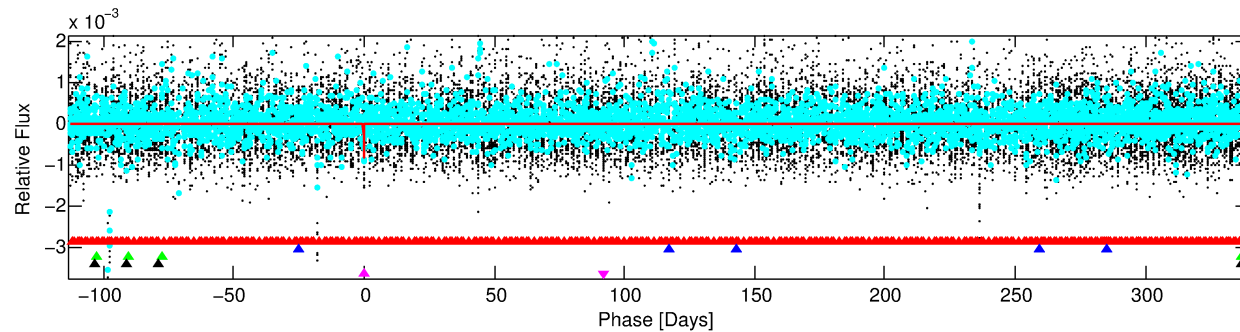
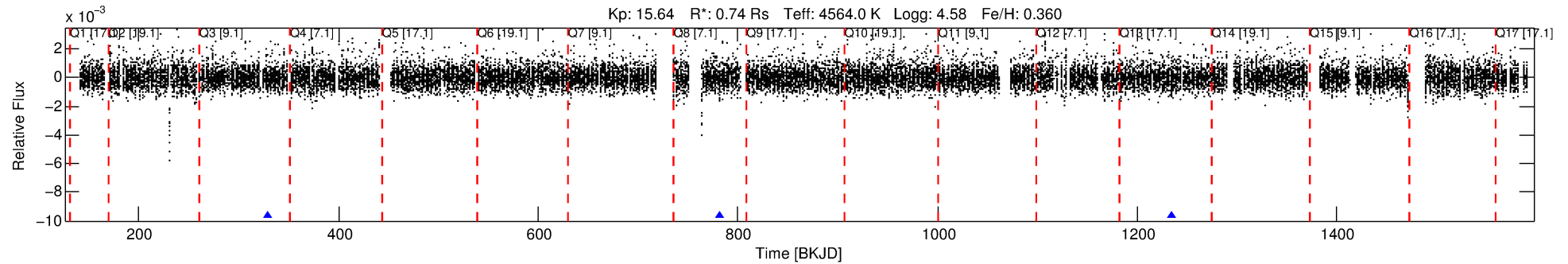
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011032573-05

No Significant Match Found

DV One-Page Summary

KIC: 11032573 Candidate: 5 of 5 Period: 452.478 d



DV Fit Results:

Period = 452.47827 [0.01168] d
Epoch = 329.5451 [0.0138] BKJD
Rp/R* = 0.0294 [0.0273]
a/R* = 336.26 [1002.54]
b = 0.77 [1.59]
Seff = 0.19 [0.03]
Teq = 169 [6] K
Rp = 2.39 [2.23] Re
a = 1.0565 [0.0606] AU
Ag = 64092.83 [120159.25] [0.53 σ]
Teffp = 4159 [1952] K [2.04 σ]

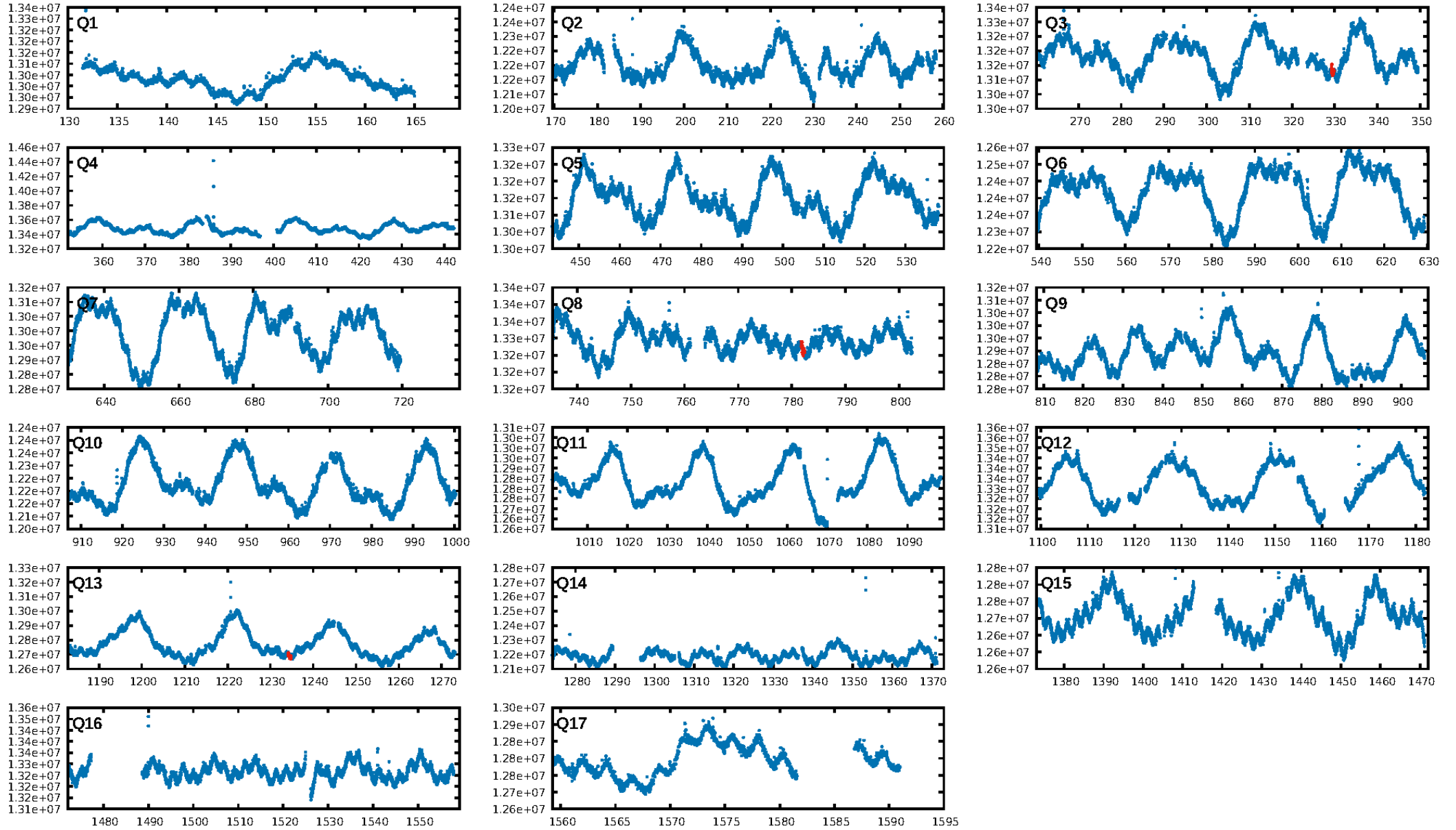
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.59 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 11.7%
ModelChiSquareGof-sig: 97.4%
Bootstrap-pfa: 4.06e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.662
Centroid-sig: 21.4%
Centroid-so: 2.203 arcsec [1.23 σ]
OotOffset-rm: 0.573 arcsec [0.83 σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 0.493 arcsec [0.72 σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

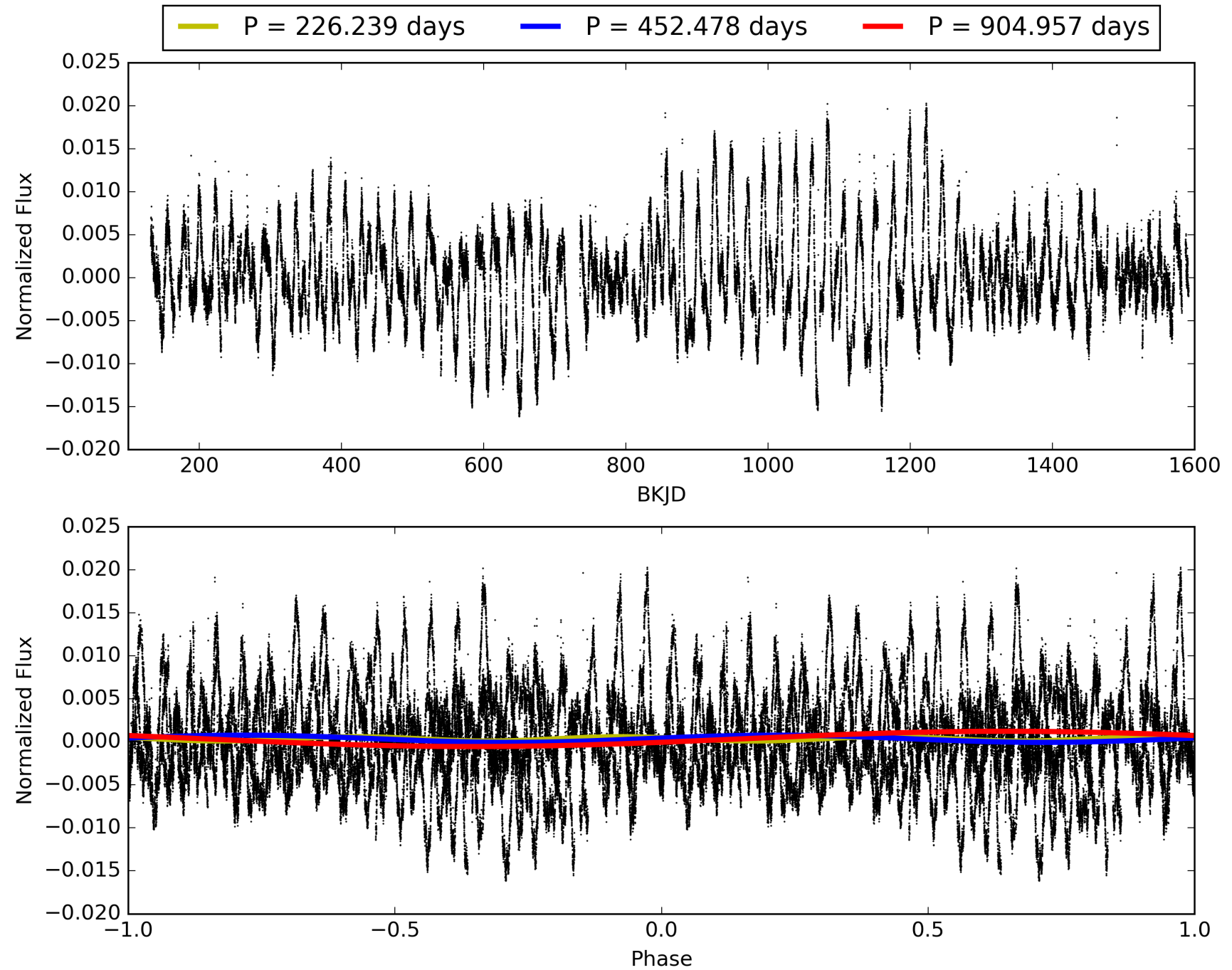
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:08:14 Z

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

TCE 011032573-05, PDC Light Curves

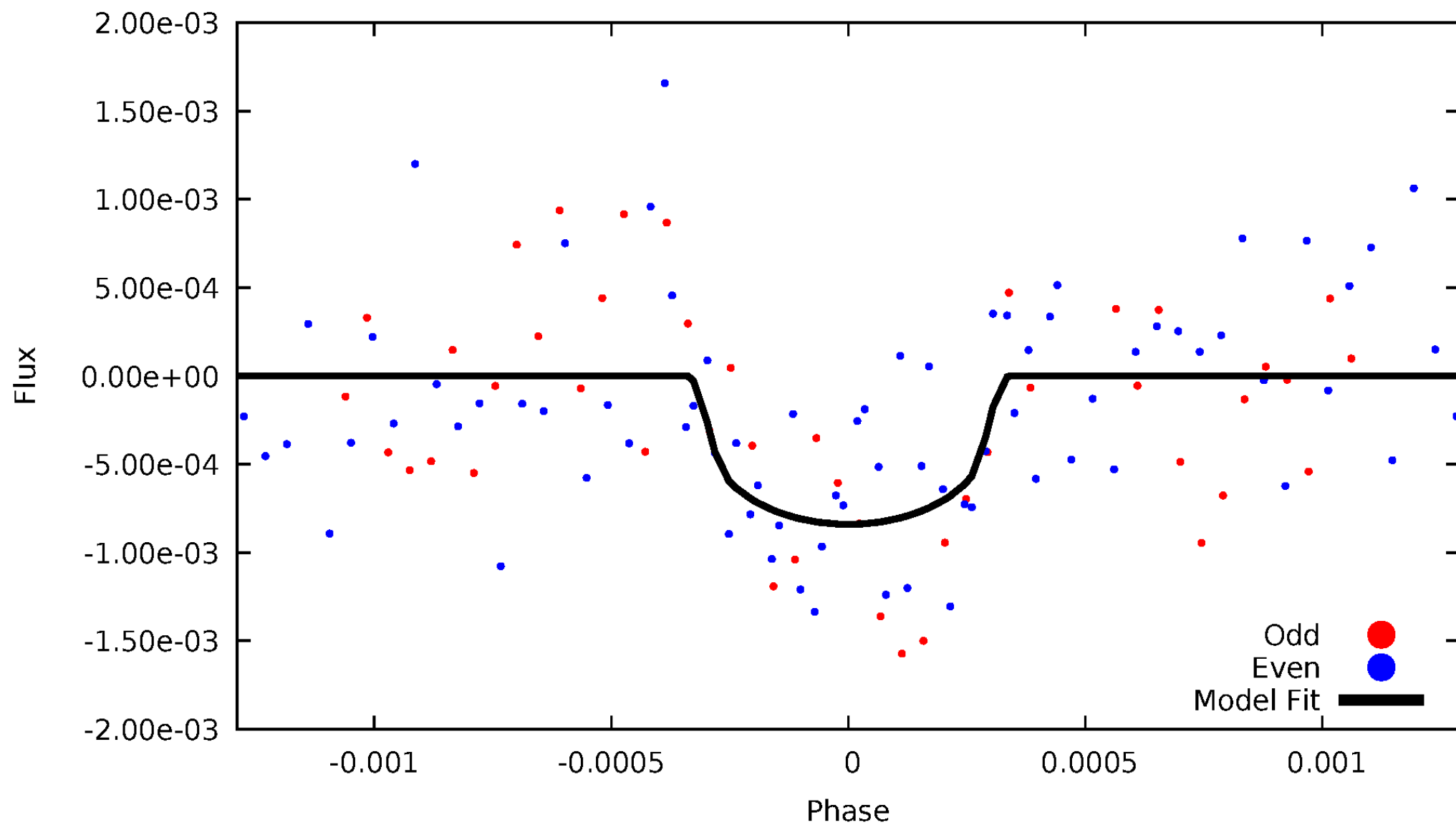


TCE 011032573-05



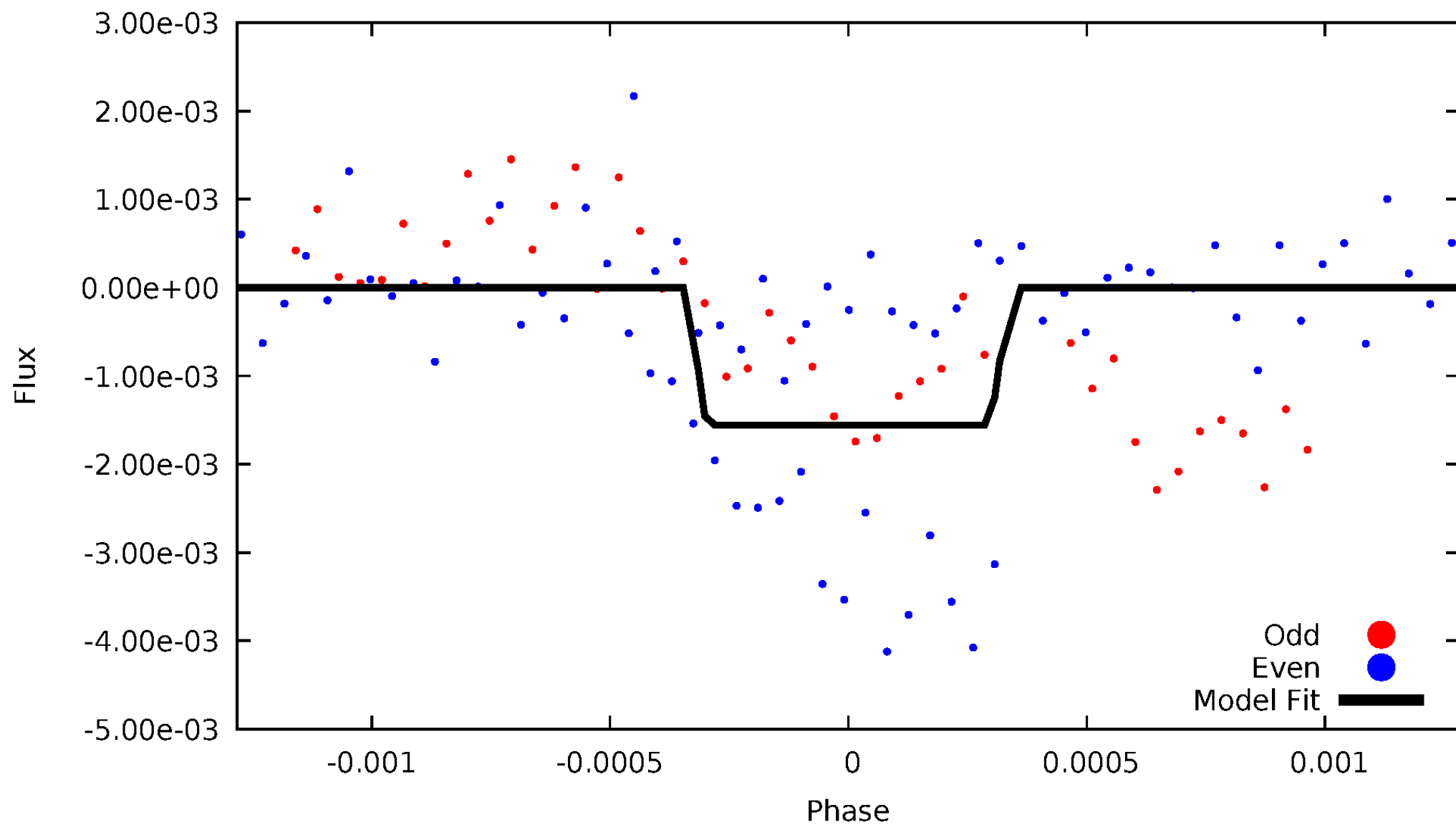
DV Odd/Even

TCE 011032573-05

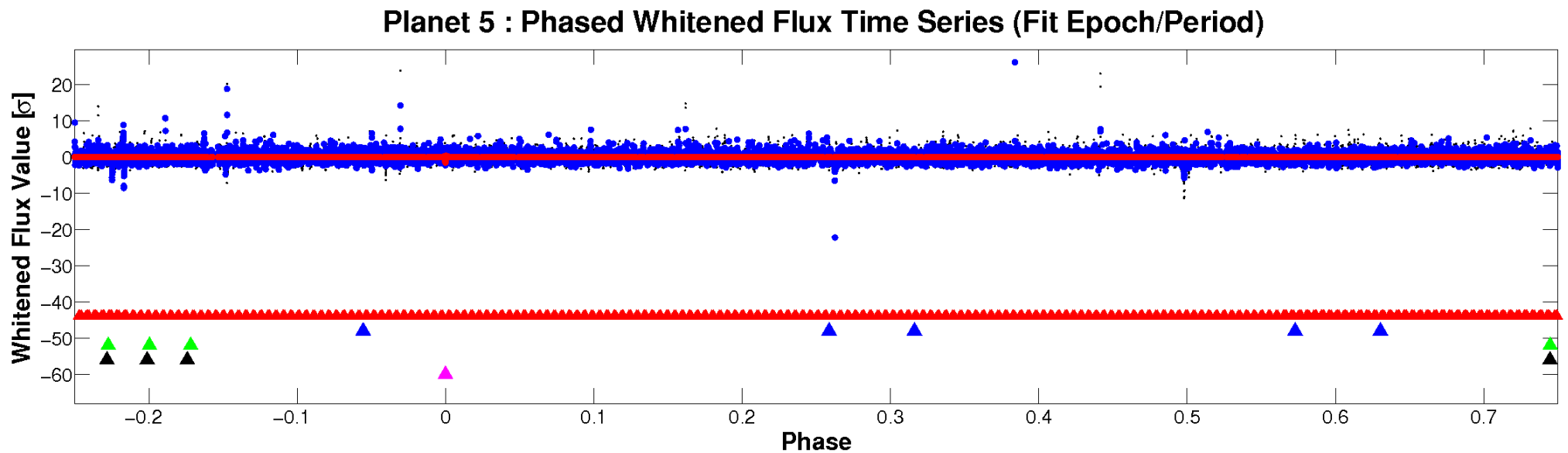
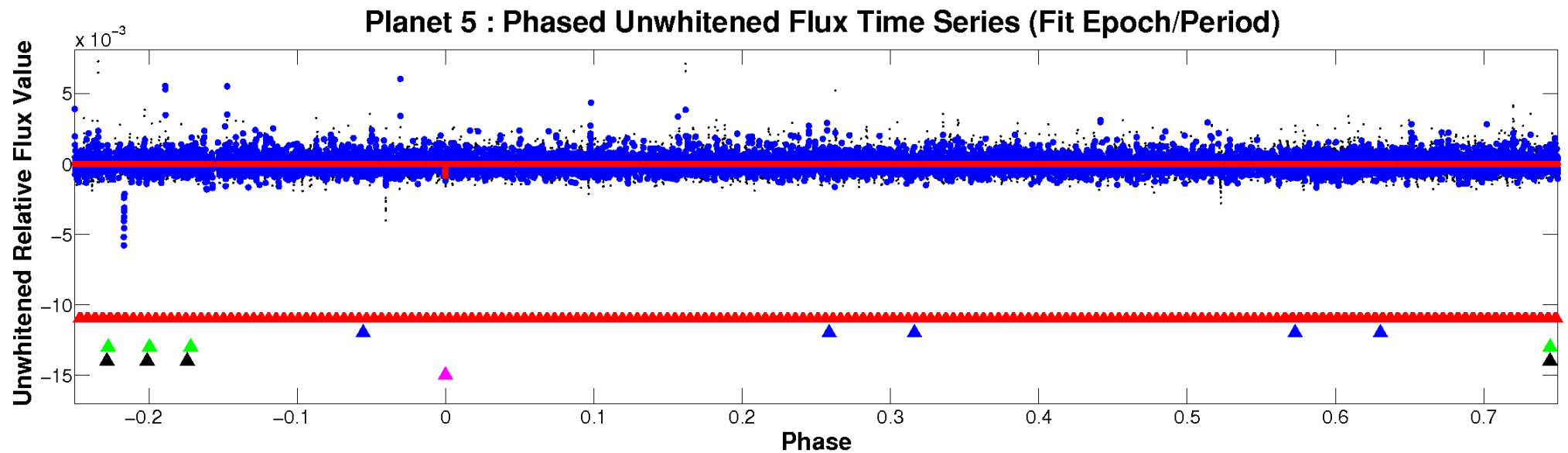


ALT Odd/Even

TCE 011032573-05

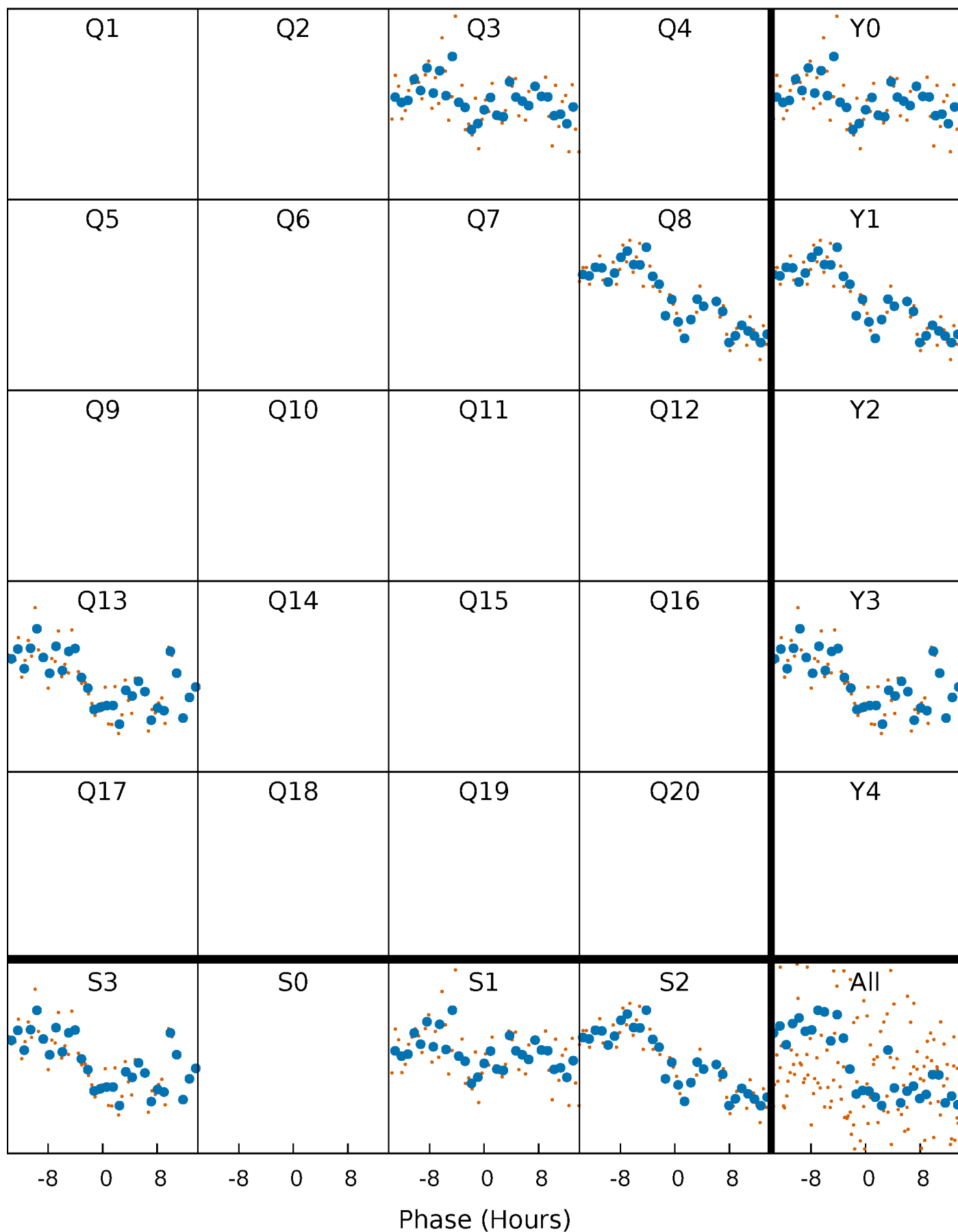


Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 011032573-05 $P=452.478269$ Days $T_0=329.545067$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 011032573-05 $P=452.478269$ Days $T_0=329.545067$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

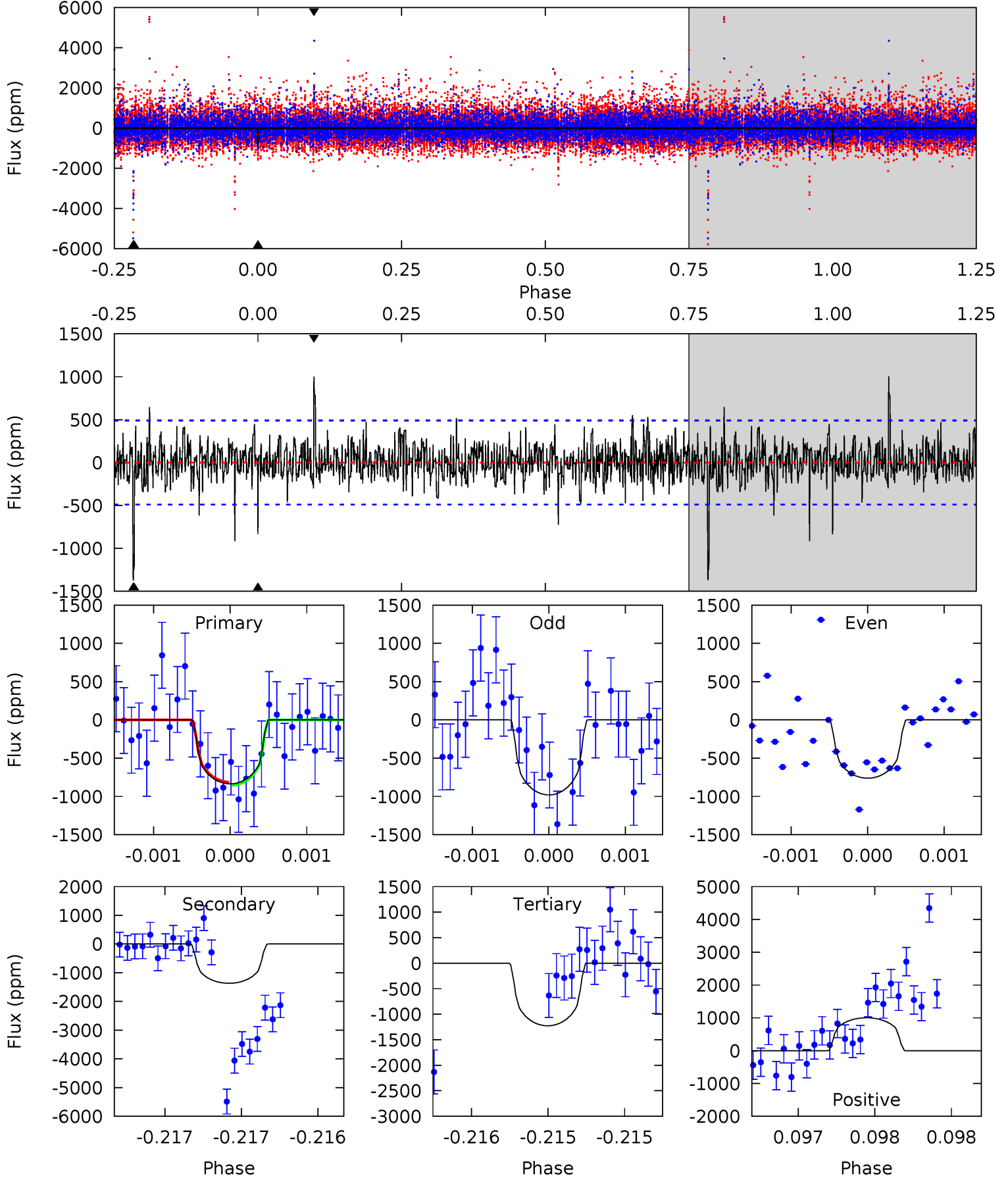
TCE 011032573-05 $P=452.494375$ Days $T_0=329.573395$ (BKJD)



DV Model-Shift Uniqueness Test

011032573-05, P = 452.478269 Days, E = 329.545067 Days

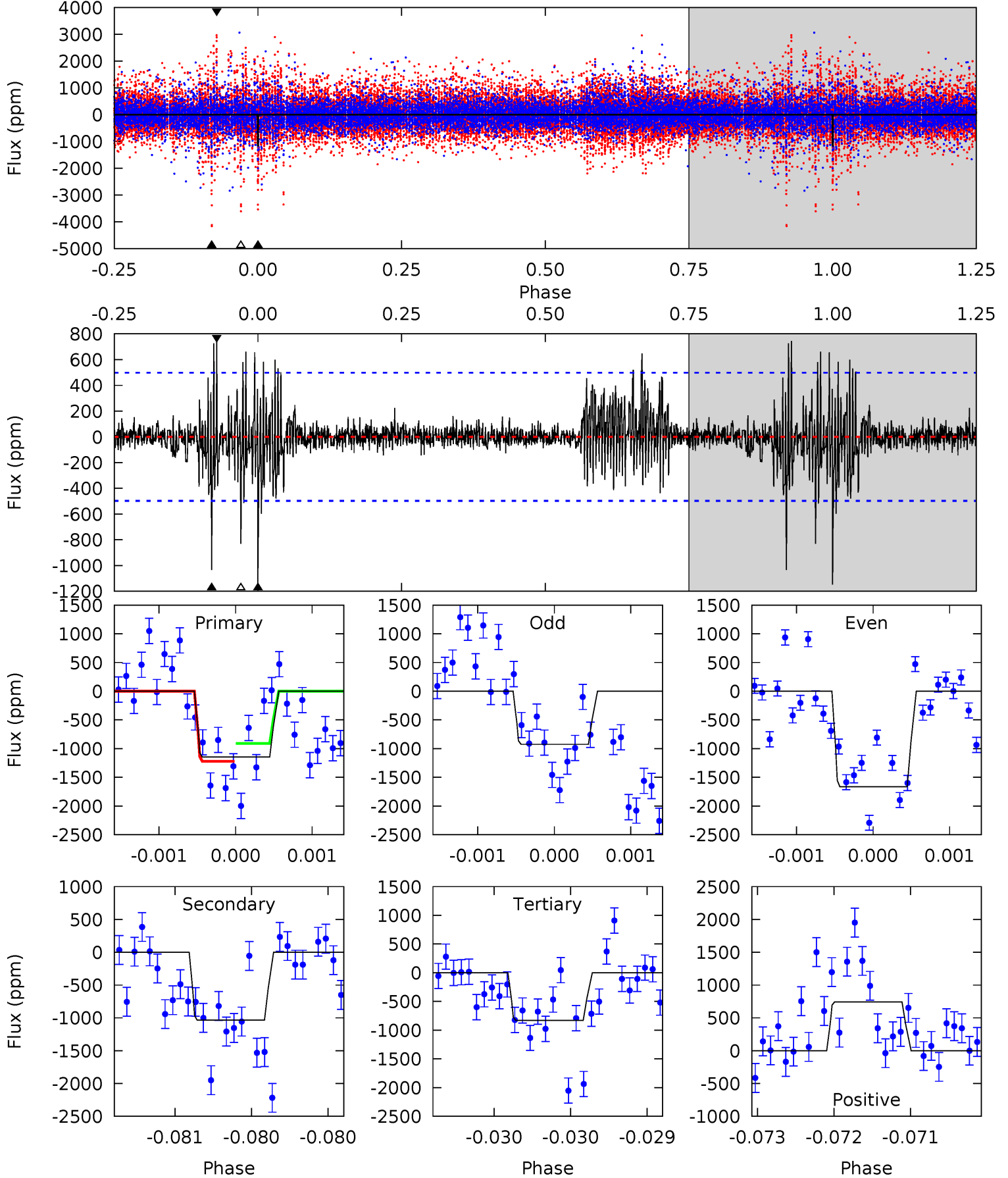
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.41	15.4	13.8	11.3	5.52	3.40	1.76	-4.41	-1.89	1.59	4.11	1.08	0.98	0.42	0.23



Alt Model-Shift Uniqueness Test

011032573-05, P = 452.494375 Days, E = 329.573395 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	11.5	9.22	8.27	5.53	3.41	1.42	3.53	4.49	2.27	3.22	4.01	1.53	0.39	1.70



Stellar Parameters For KIC 011032573

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4564^{+137}_{-137}	$4.579^{+0.042}_{-0.025}$	$0.360^{+0.100}_{-0.300}$	$0.745^{+0.031}_{-0.053}$	$0.767^{+0.032}_{-0.056}$	$2.614^{+0.506}_{-0.222}$
	+3%/-3%	+1%/-1%	+28%/-83%	+4%/-7%	+4%/-7%	+19%/-8%
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 011032573-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1367 ± 89	$2.85^{+1.98}_{-1.75}$	235^{+8}_{-8}	4651^{+2827}_{-839}	$104791^{+625505}_{-68520}$
Alt.	-1033 ± 90	$3.38^{+2.18}_{-1.77}$	235^{+8}_{-7}	4117^{+1515}_{-639}	$54043^{+197289}_{-33524}$

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

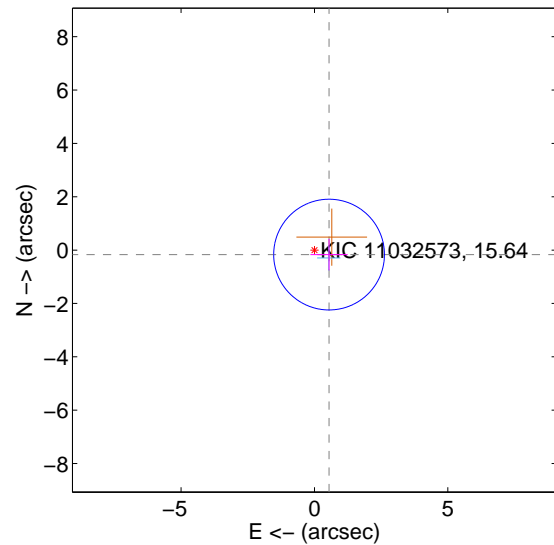
Supplemental centroid analysis for 011032573-05. Kepler magnitude: 15.64. Transit SNR 7.99

There are 1 quarters with good PRF difference image offsets

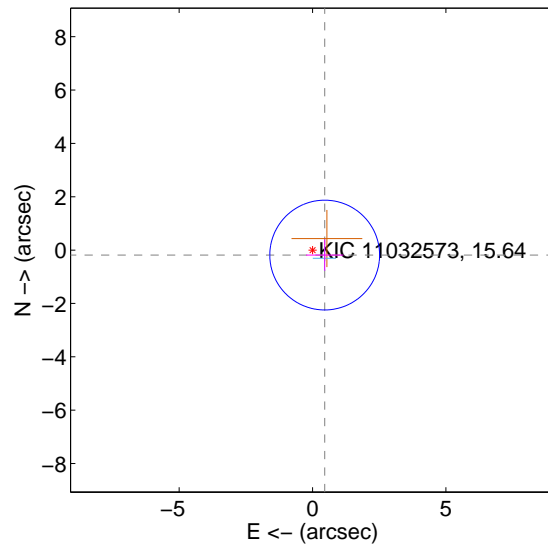
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.573 ± 0.692	0.83	-0.548 ± 0.701	-0.168 ± 0.589
PRF-fit source offset from KIC position	0.493 ± 0.686	0.72	-0.456 ± 0.701	-0.186 ± 0.589
photometric centroid source offset	2.20 ± 1.79	1.23	-2.04 ± 1.79	-0.83 ± 1.78

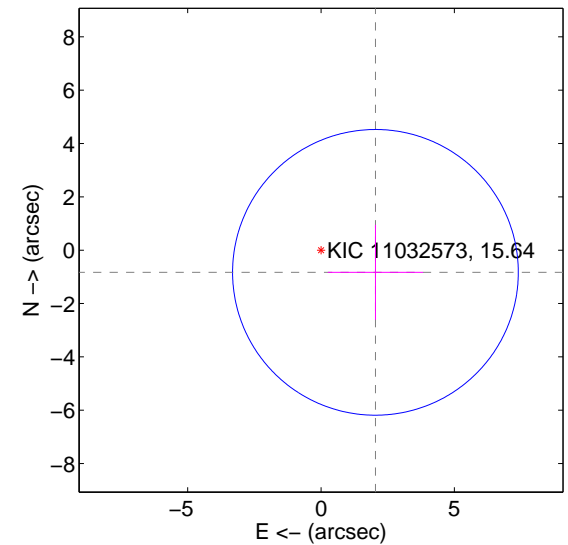
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

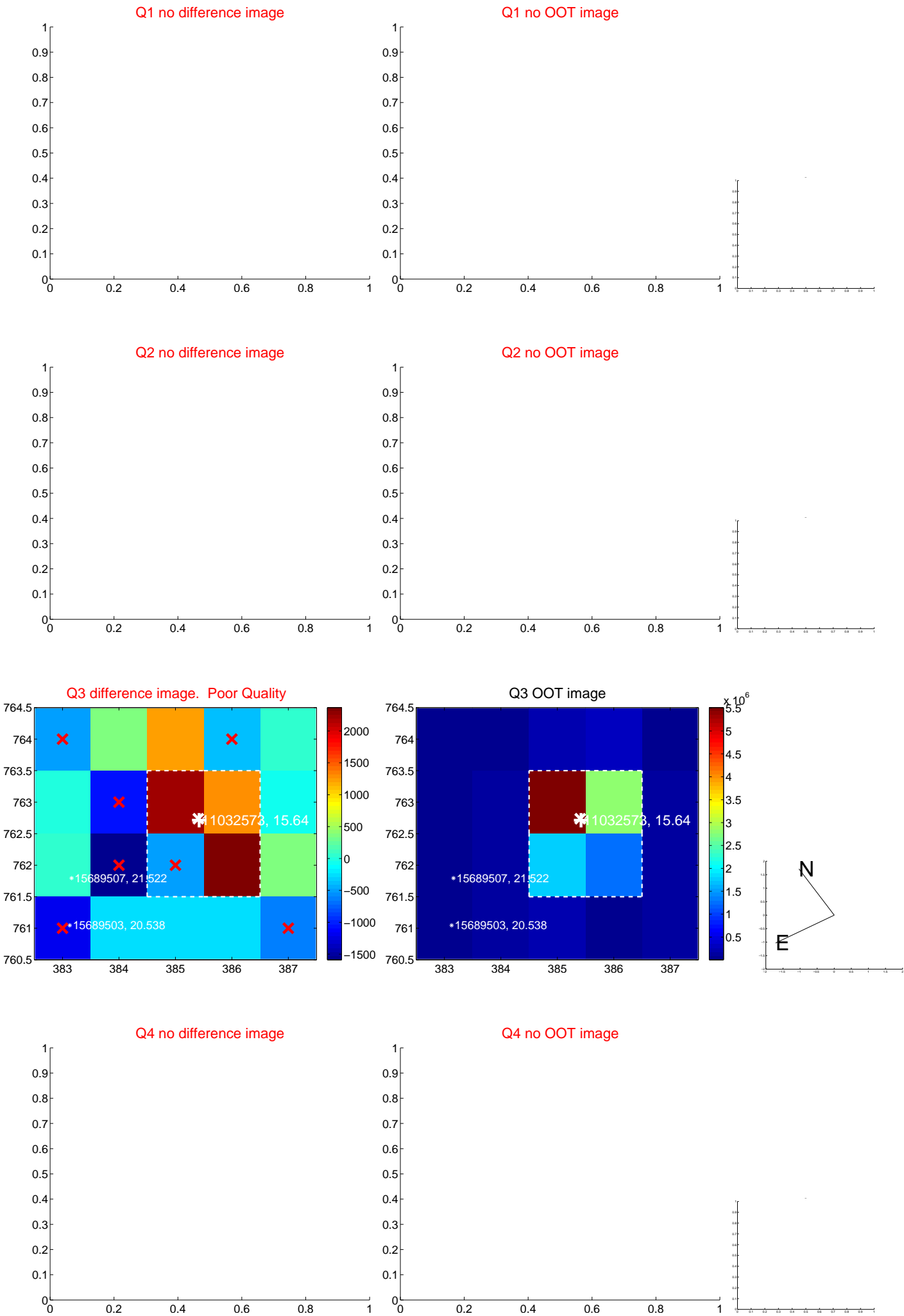


offset from photometric centroids

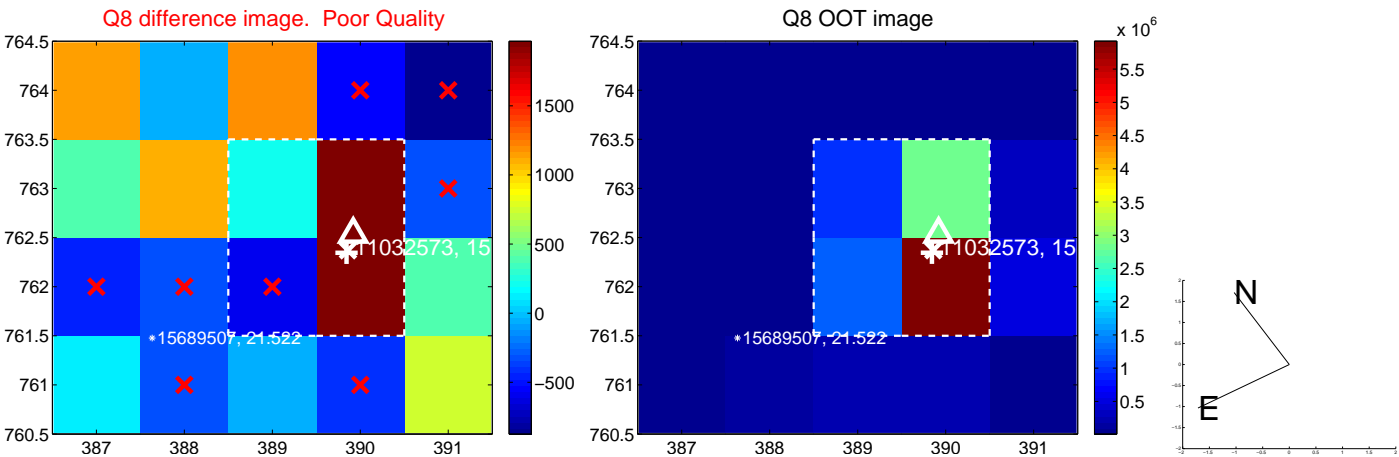


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



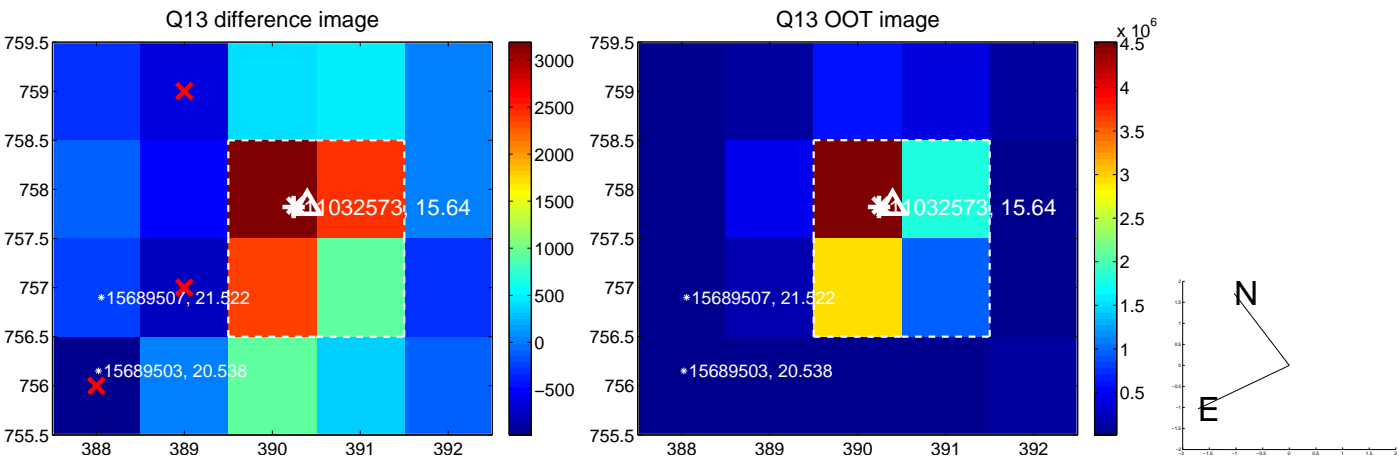
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



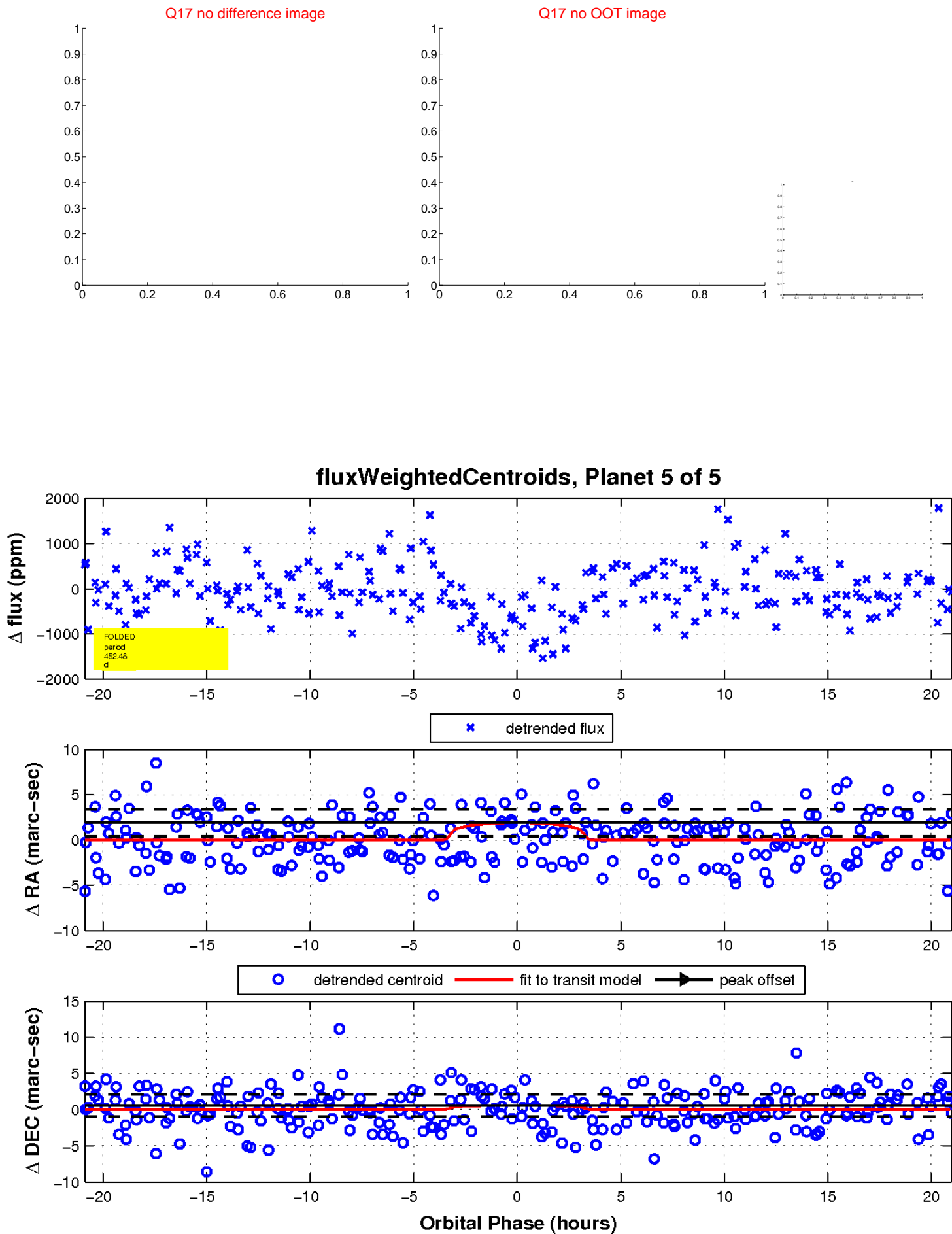
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

