

KIC 002141387

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})
002141387-01	OBS	No	113.042143	135.963403	185.2	1.795	20.6	2.0	2.03	7219	3.27	34.12
002141387-02	OBS	No	113.041552	136.115162	729.5	2.500	21.6	-1.0	2.03	7219	5.56	34.12
002141387-03	OBS	No	620.174729	149.589081	266.4	1.994	16.2	1.5	2.03	7219	3.56	3.53
002141387-04	OBS	No	699.342689	134.397683	509.3	2.777	20.6	2.7	2.03	7219	5.05	3.00
002141387-05	OBS	No	200.112304	321.703748	815.1	2.500	20.2	-1.0	2.03	7219	5.88	15.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002141387-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
002141387-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_NOFITS
002141387-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA_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
002141387-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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
002141387-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

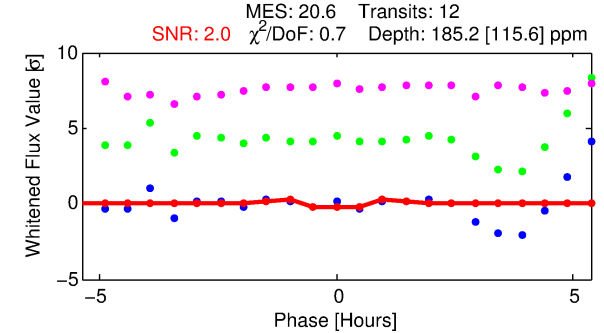
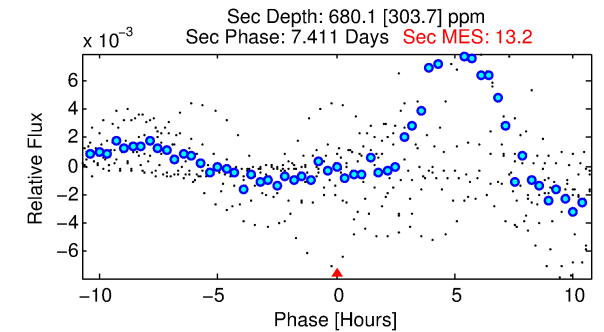
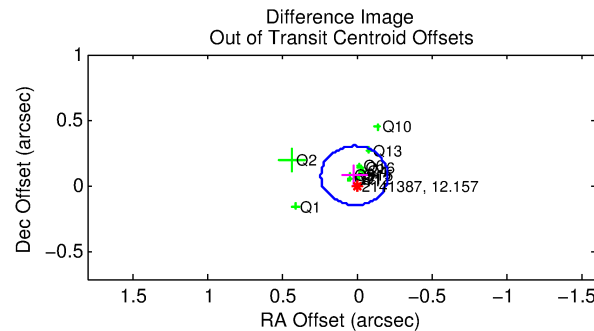
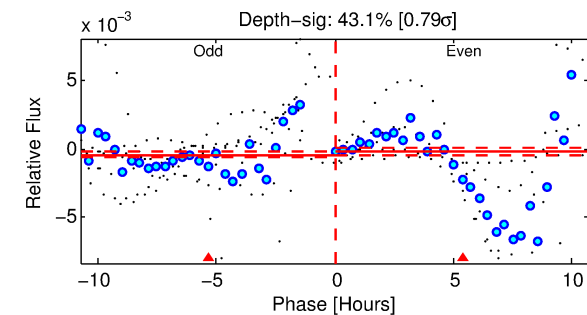
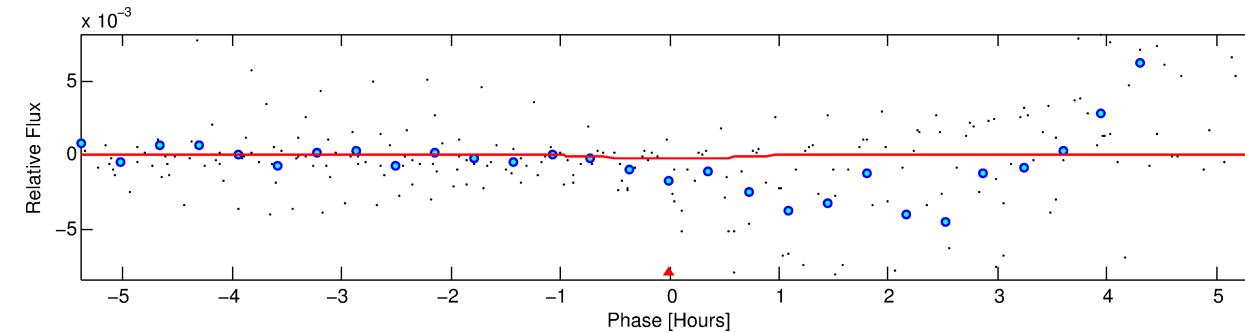
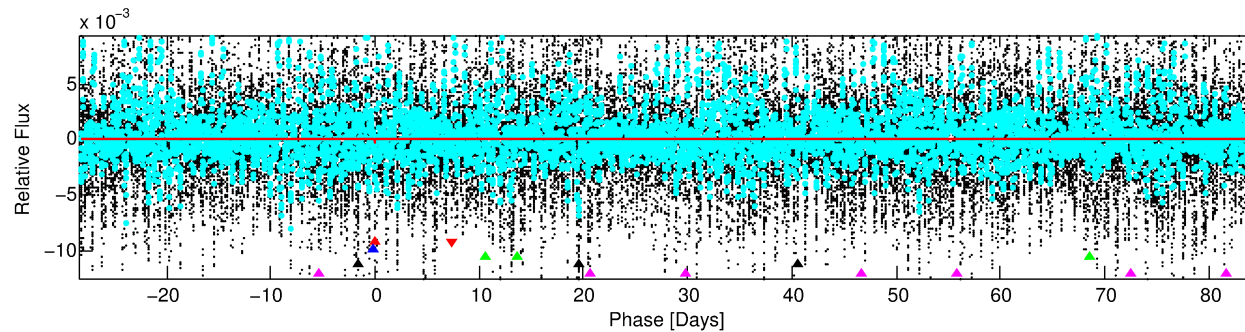
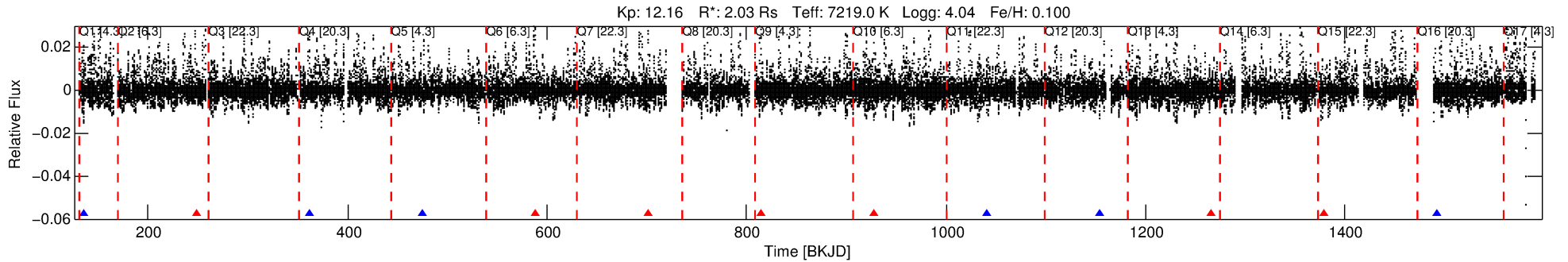
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002141387-01

No Significant Match Found

DV One-Page Summary

KIC: 2141387 Candidate: 1 of 5 Period: 113.042 d



DV Fit Results:

Period = 113.04214 [0.00151] d
Epoch = 135.9634 [0.0136] BKJD
Rp/R* = 0.0148 [0.0161]
a/R* = 202.98 [1242.96]
b = 0.92 [0.99]
Seff = 34.12 [12.85]
Teq = 616 [58] K
Rp = 3.27 [3.70] Re
a = 0.5424 [0.1270] AU
Ag = 10268.90 [23116.35] [0.44σ]
Teffp = 9591 [5361] K [1.67σ]

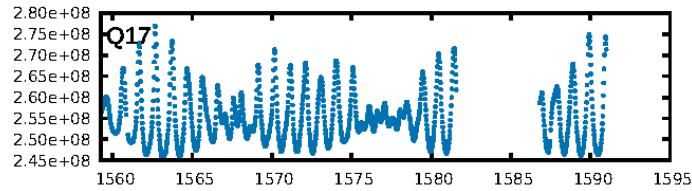
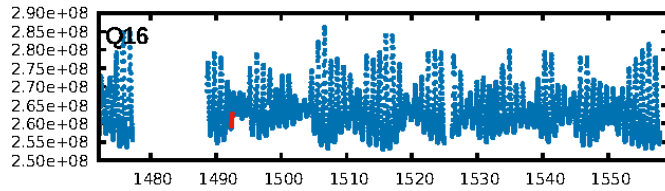
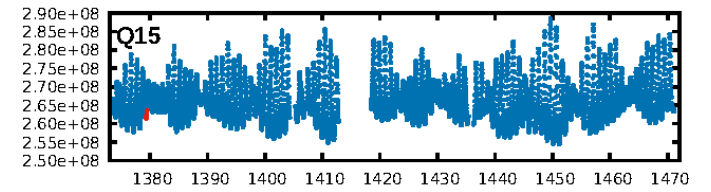
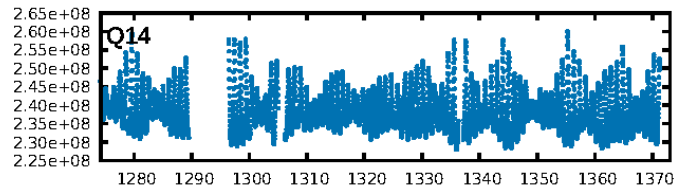
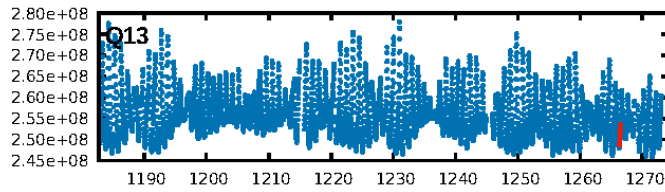
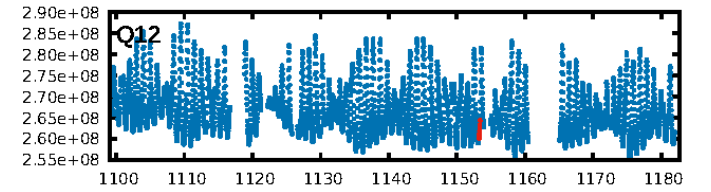
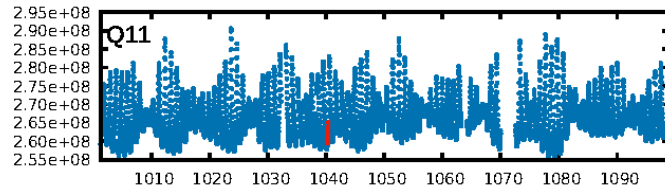
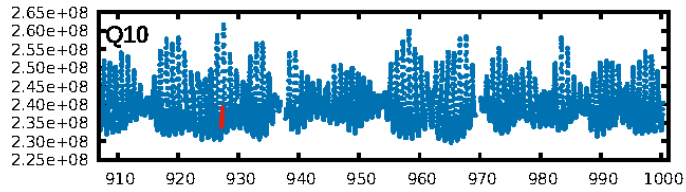
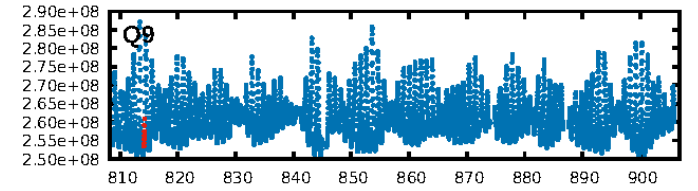
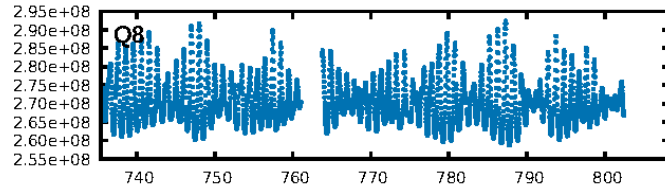
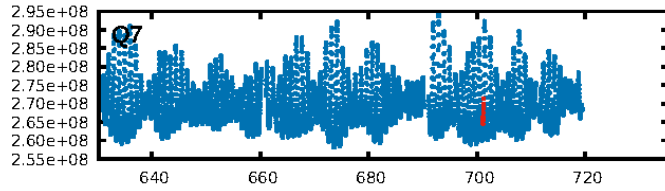
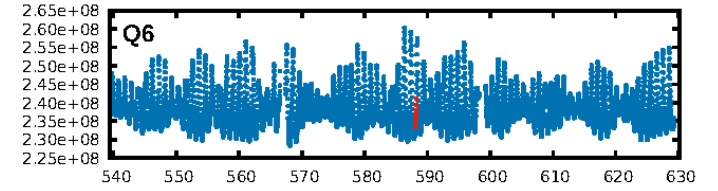
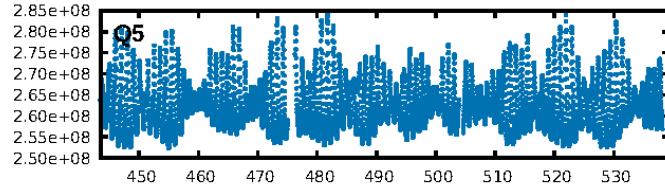
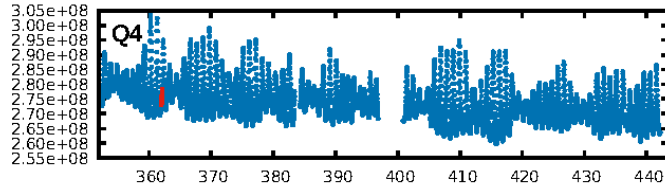
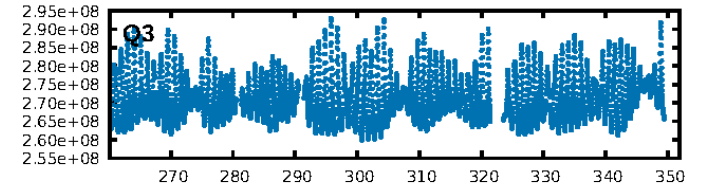
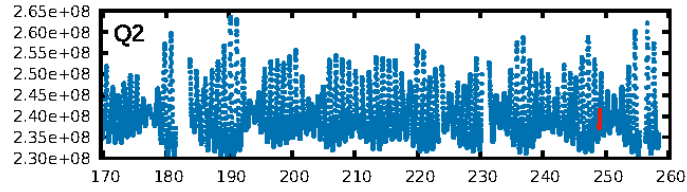
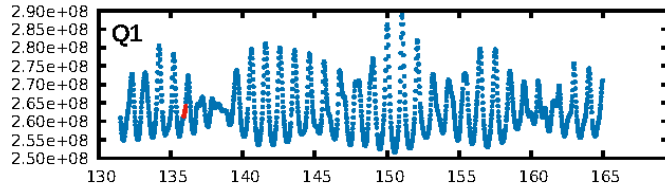
DV Diagnostic Results:

ShortPeriod-sig: 0.4% [0.00σ]
LongPeriod-sig: 100.0% [678.94σ]
ModelChiSquare2-sig: 98.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.36 [4/11]
GhostDiagnostic-chr: 1.137
Centroid-sig: 92.2%
Centroid-so: 0.462 arcsec [0.26σ]
OotOffset-rm: 0.084 arcsec [1.12σ]
KicOffset-rm: 0.073 arcsec [1.00σ]
OotOffset-st: 3/3/3 [12]
KicOffset-st: 3/3/3 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 0.00 [0/12]

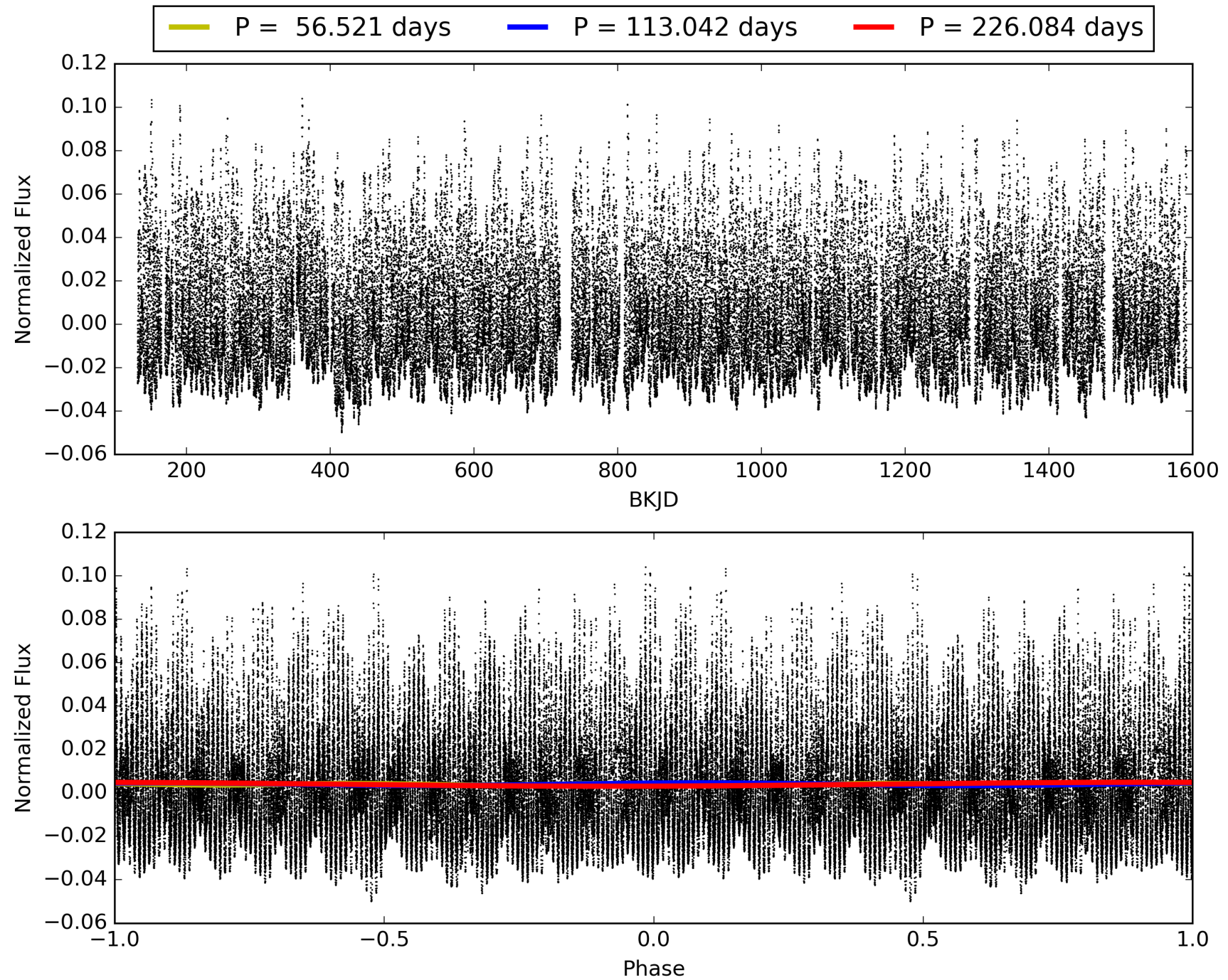
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:56:02 Z

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

TCE 002141387-01, PDC Light Curves

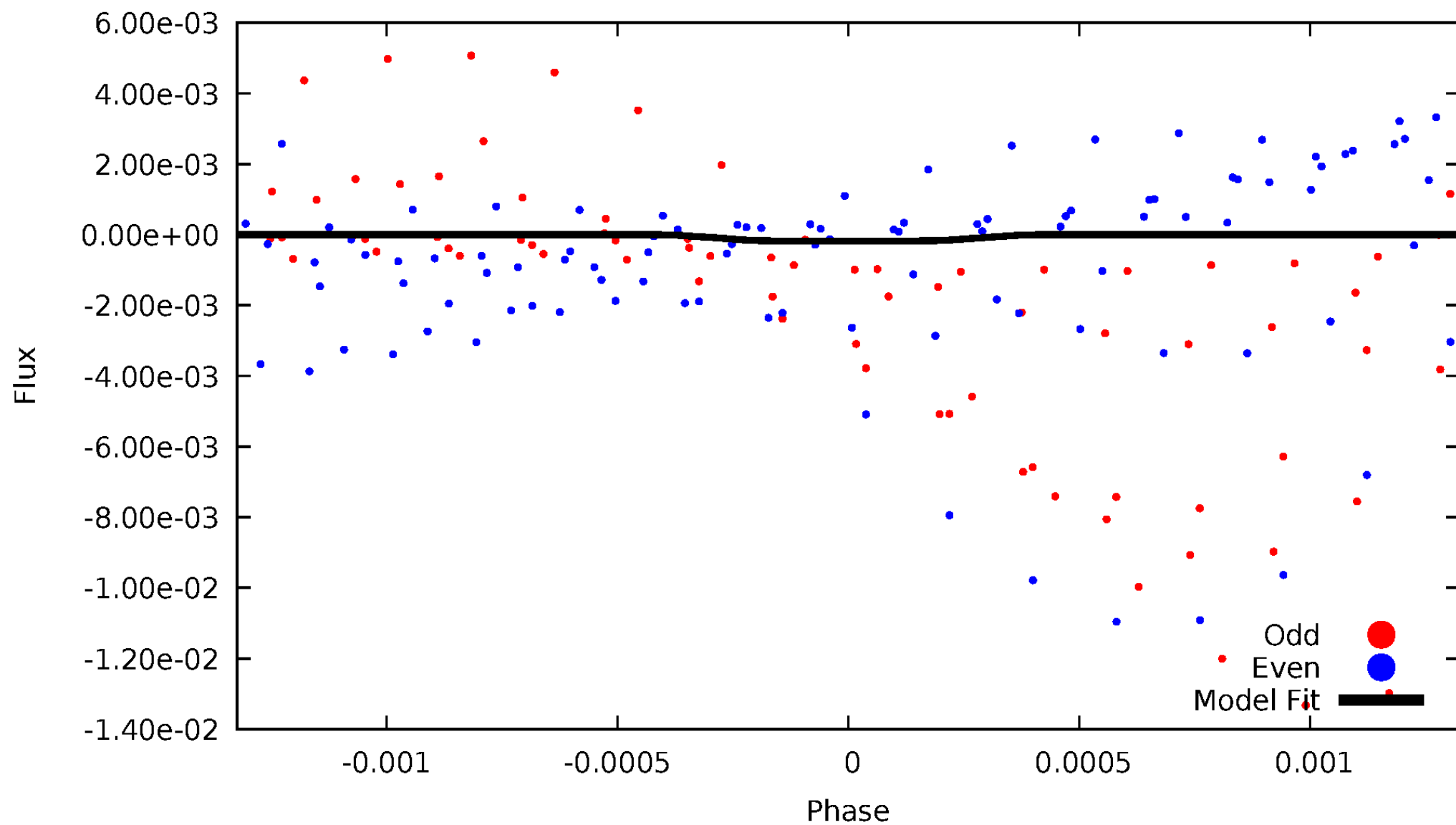


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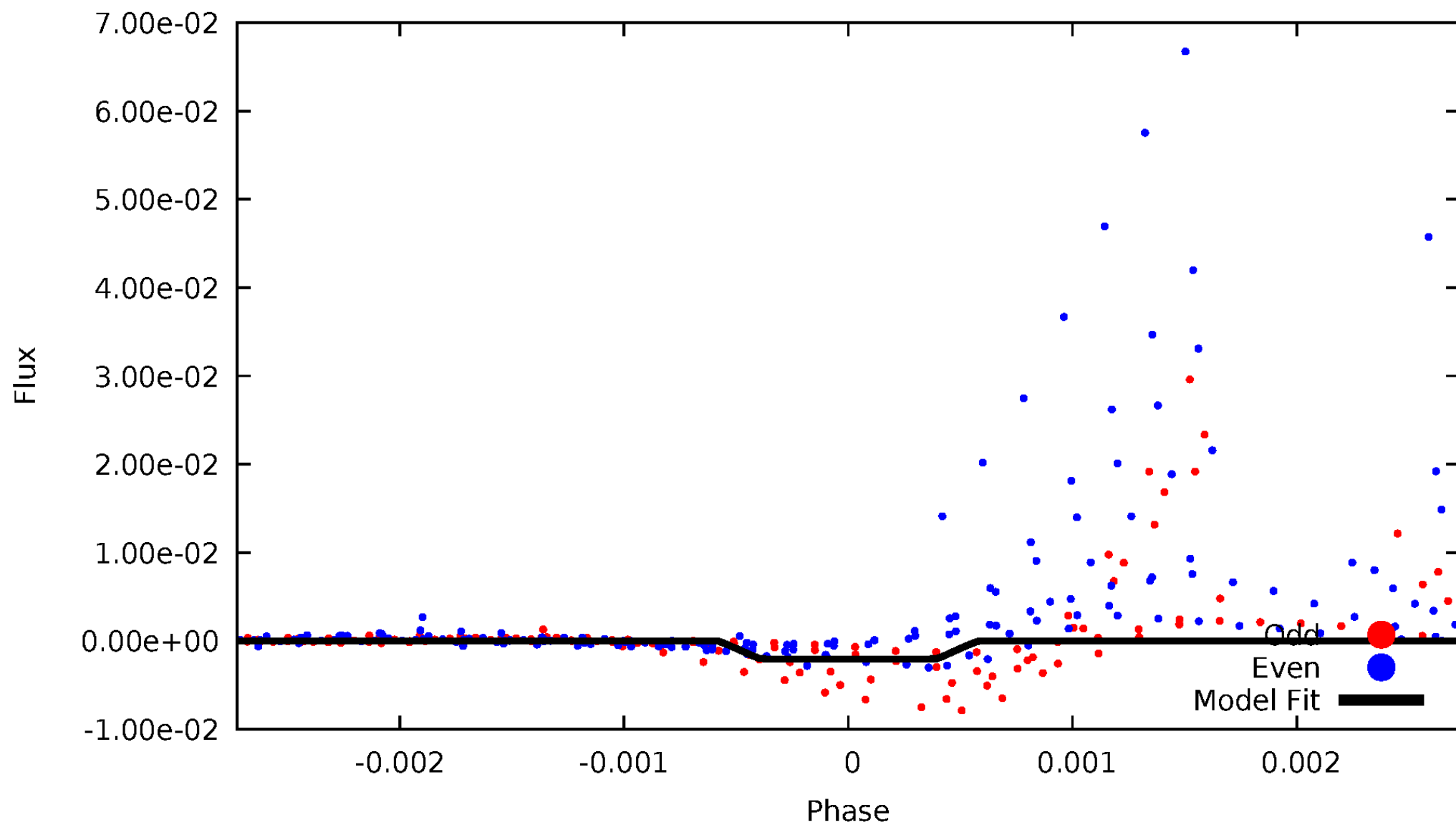
DV Odd/Even

TCE 002141387-01



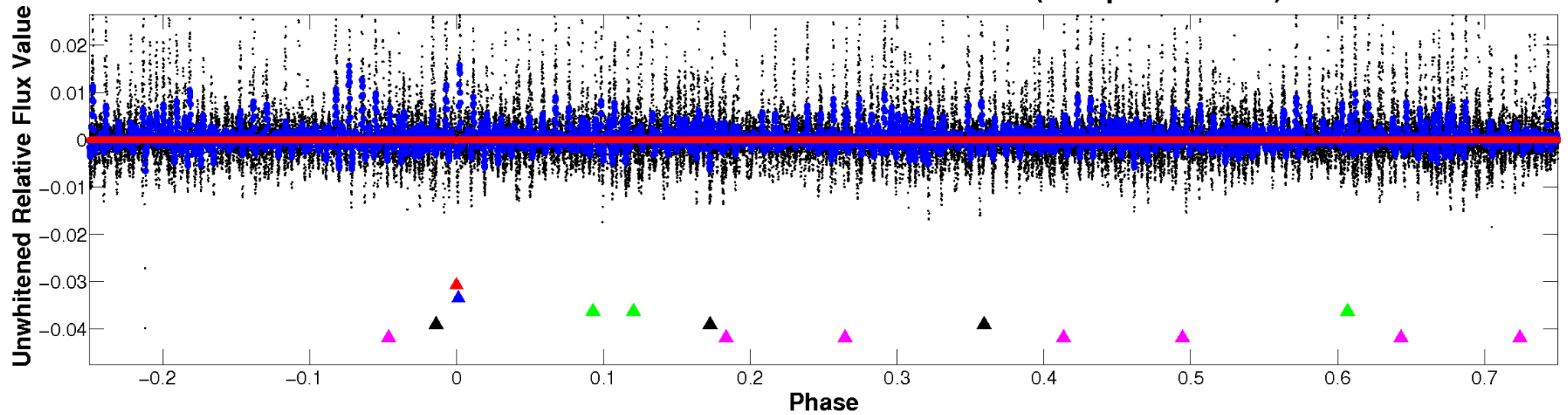
ALT Odd/Even

TCE 002141387-01

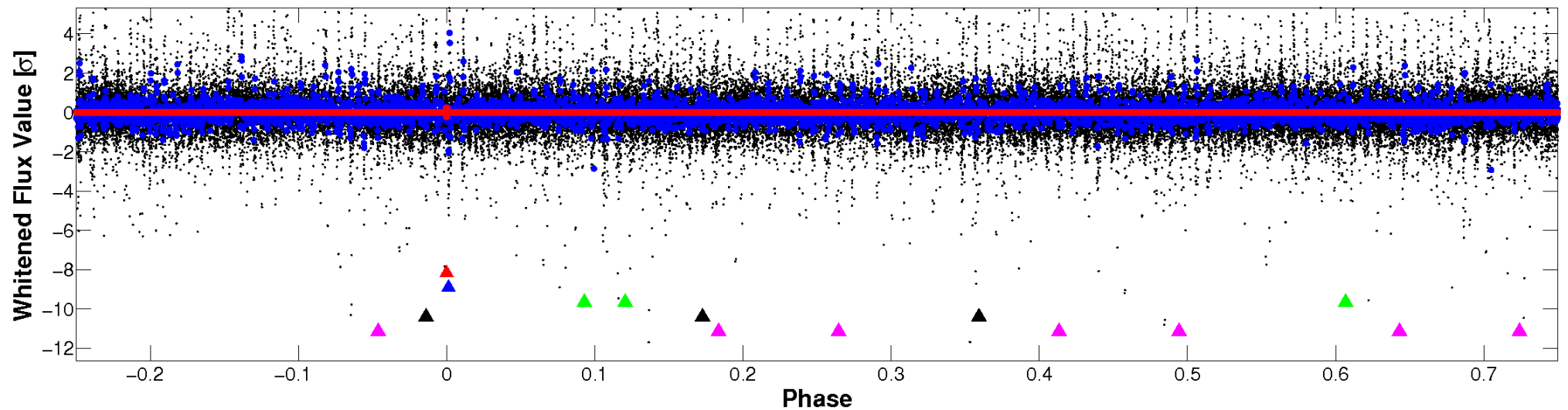


Non-Whitened Vs. Whitened Light Curve

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

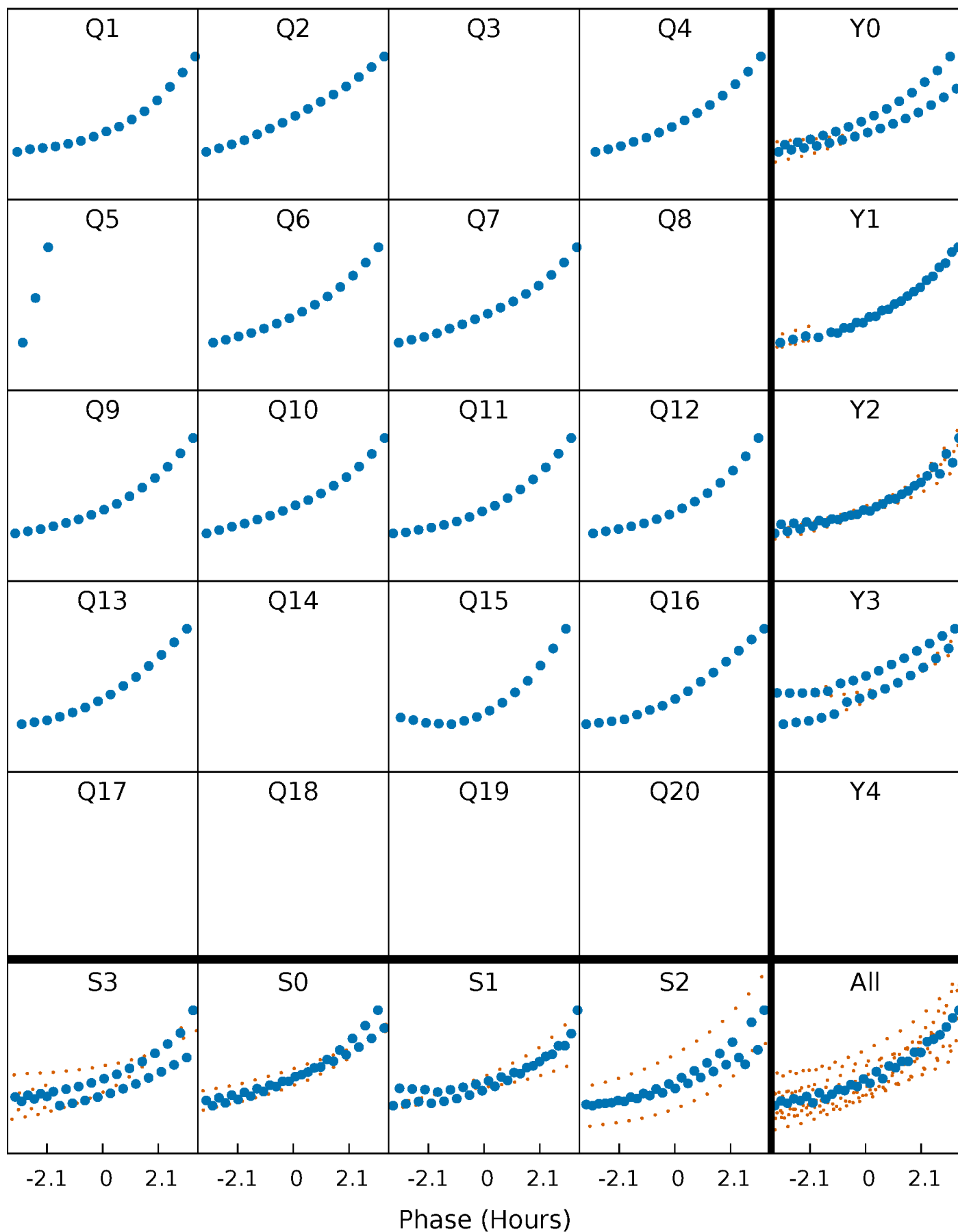


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



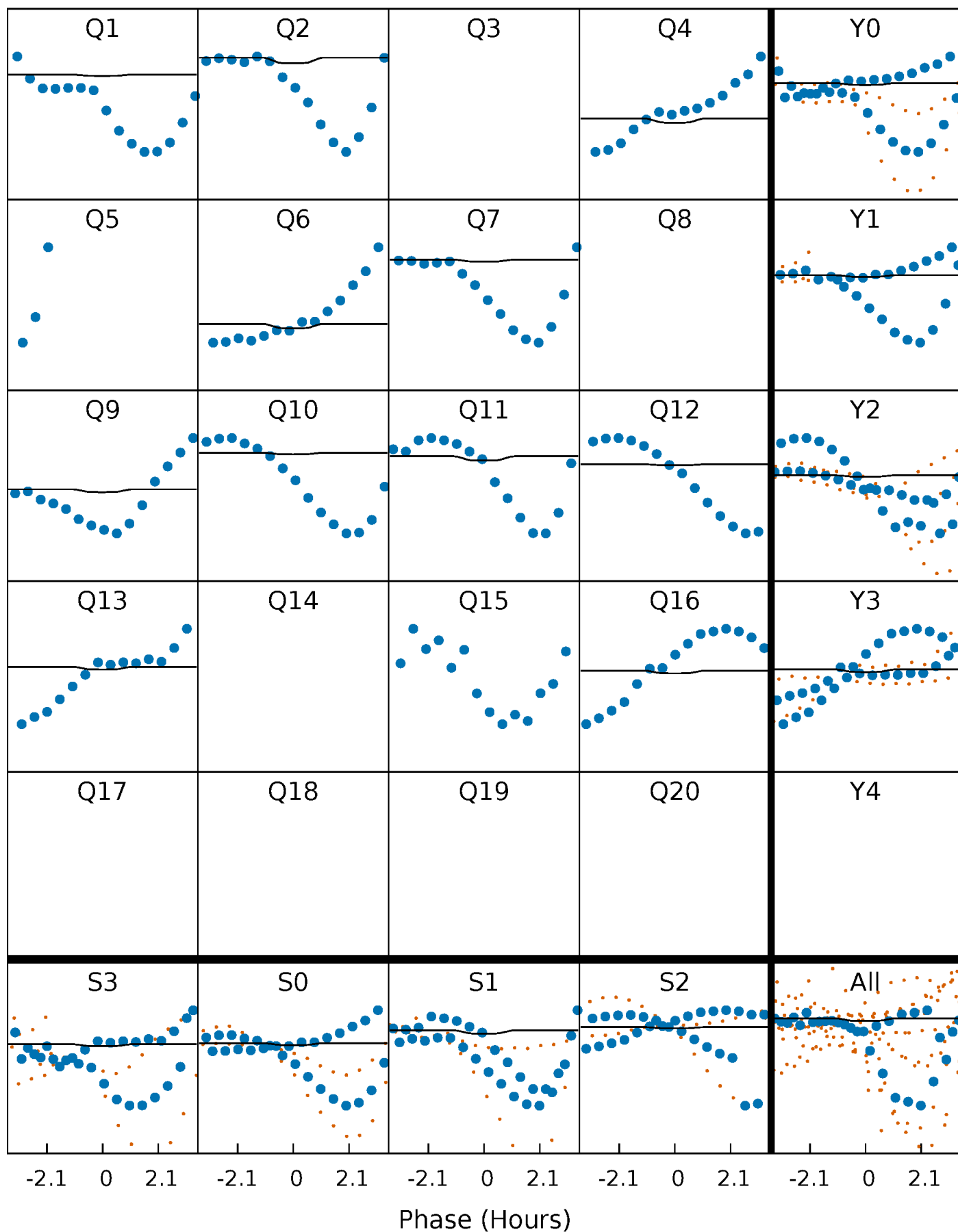
PDC Quarter-Phased Transit Curves

TCE 002141387-01 P=113.042143 Days $T_0=135.963403$ (BKJD)



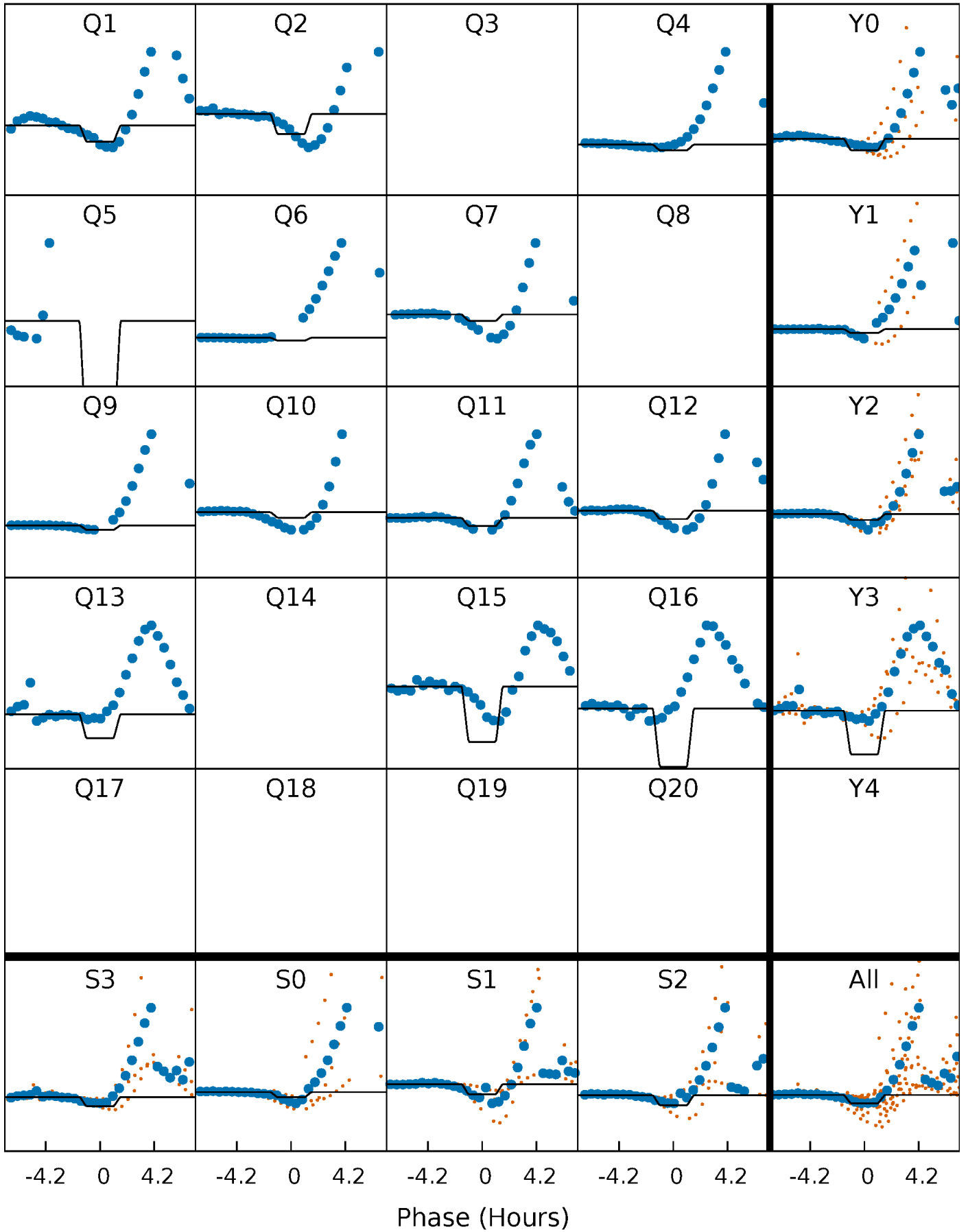
DV Quarter-Phased Transit Curves

TCE 002141387-01 P=113.042143 Days $T_0=135.963403$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

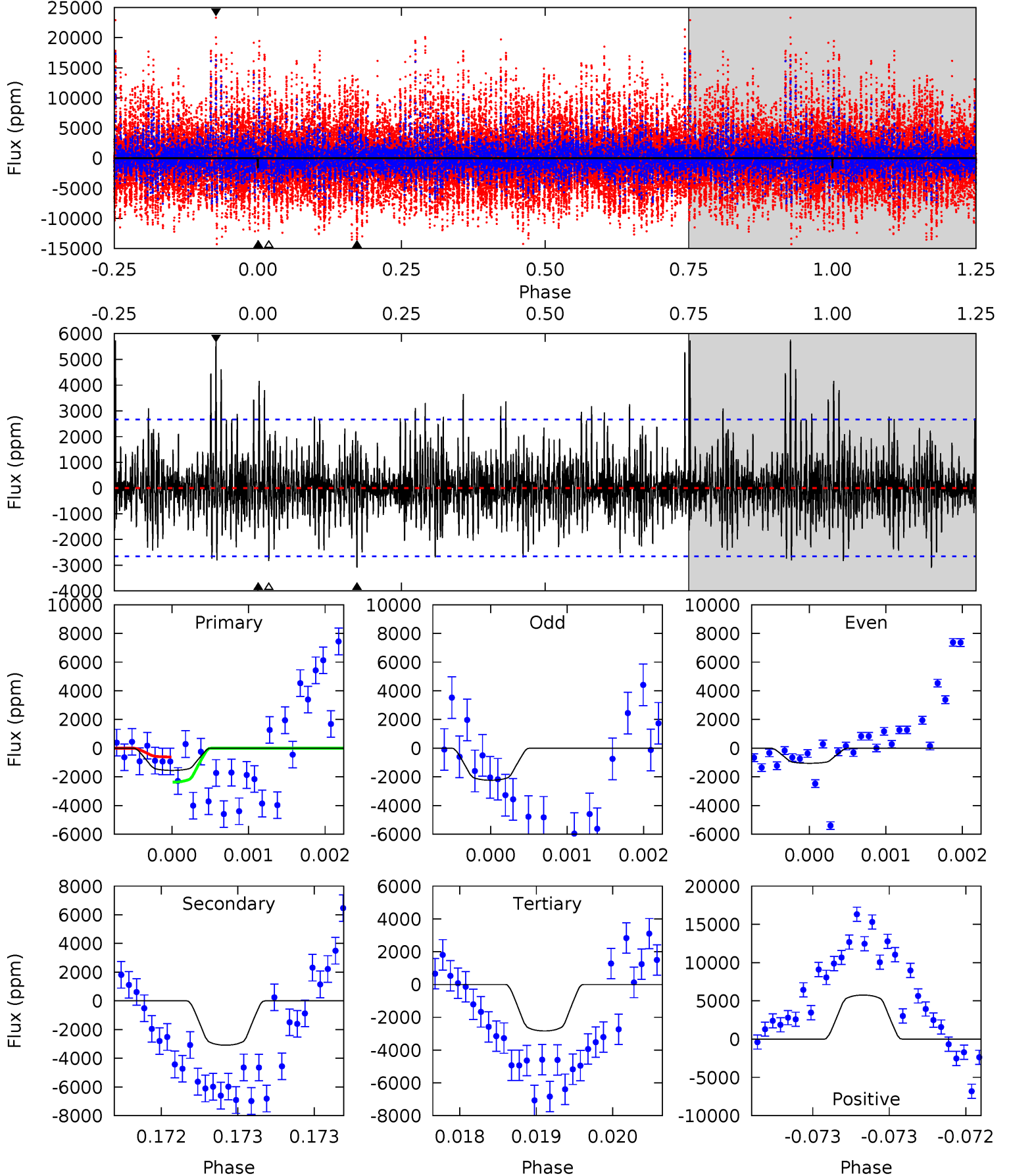
TCE 002141387-01 P=113.044757 Days $T_0=135.979183$ (BKJD)



DV Model-Shift Uniqueness Test

002141387-01, $P = 113.042143$ Days, $E = 22.921260$ Days

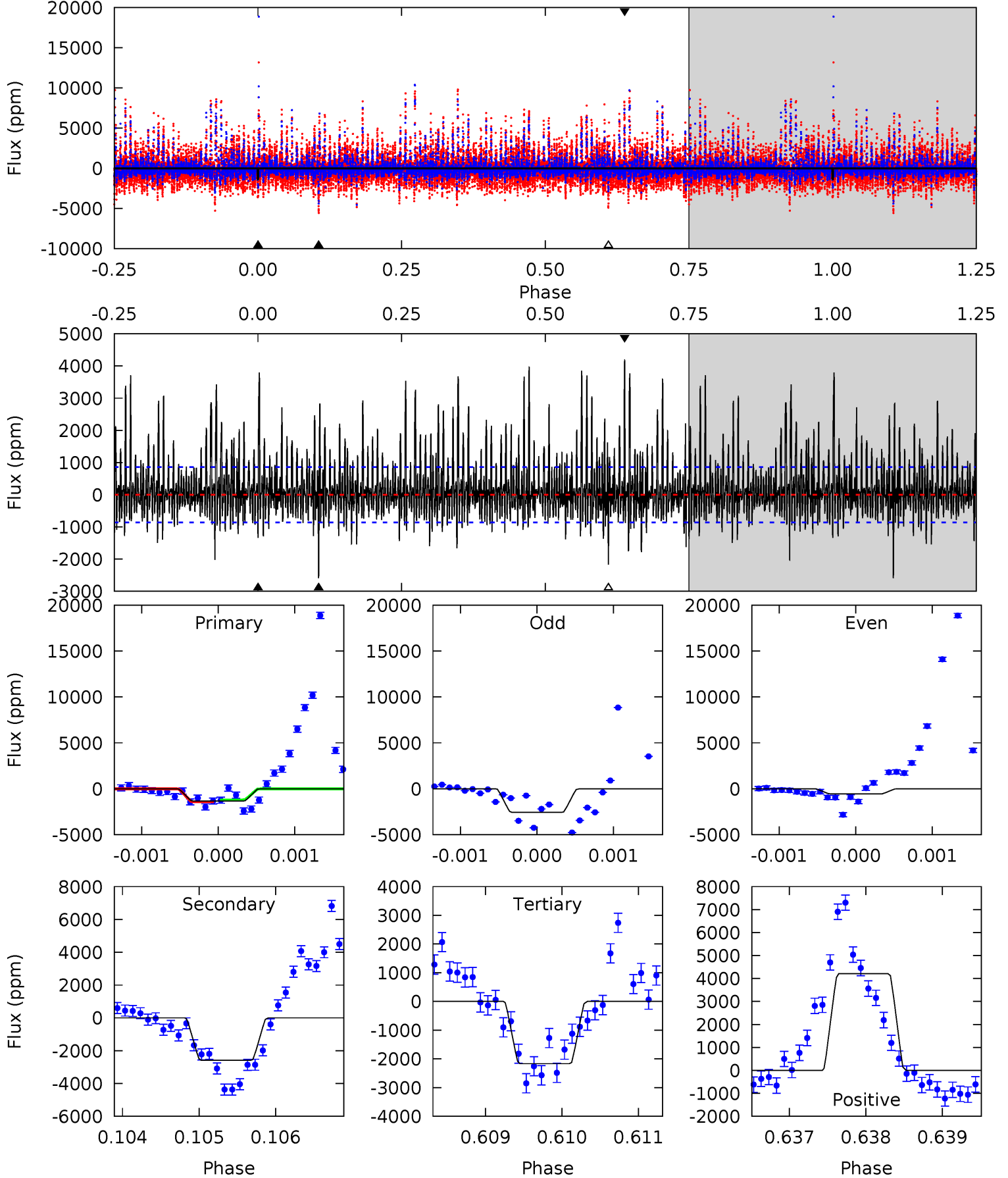
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.20	6.37	5.85	11.9	5.49	3.34	1.93	-2.65	-8.69	0.52	-5.52	1.14	1.39	0.65	1.83



Alt Model-Shift Uniqueness Test

002141387-01, P = 113.044757 Days, E = 22.934426 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.42	16.4	13.7	26.6	5.43	3.26	4.39	-5.28	-18.2	2.65	-10.2	5.74	0.64	0.62	0



Stellar Parameters For KIC 002141387

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7219^{+200}_{-343}	$4.044^{+0.170}_{-0.170}$	$0.100^{+0.200}_{-0.350}$	$2.031^{+0.592}_{-0.538}$	$1.664^{+0.193}_{-0.290}$	$0.280^{+0.273}_{-0.140}$
	+3%/-5%	+4%/-4%	+200%/-350%	+29%/-26%	+12%/-17%	+97%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 002141387-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3089 ± 485	$4.06^{+3.28}_{-2.61}$	855^{+71}_{-58}	16784^{+44406}_{-6798}	$30629^{+187074}_{-21497}$
Alt.	-2588 ± 158	$9.55^{+4.06}_{-3.64}$	855^{+72}_{-62}	7851^{+2983}_{-1350}	4514^{+7003}_{-2348}

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

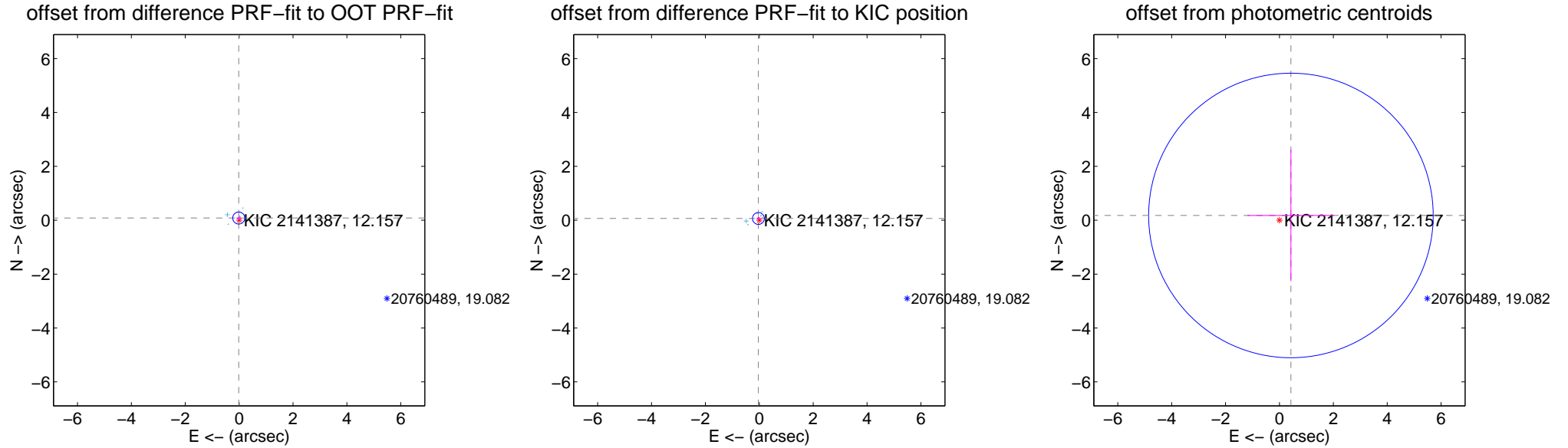
DV Centroid Data

Supplemental centroid analysis for 002141387-01. Kepler magnitude: 12.16. Transit SNR 2.03

There are 12 quarters with good PRF difference image offsets

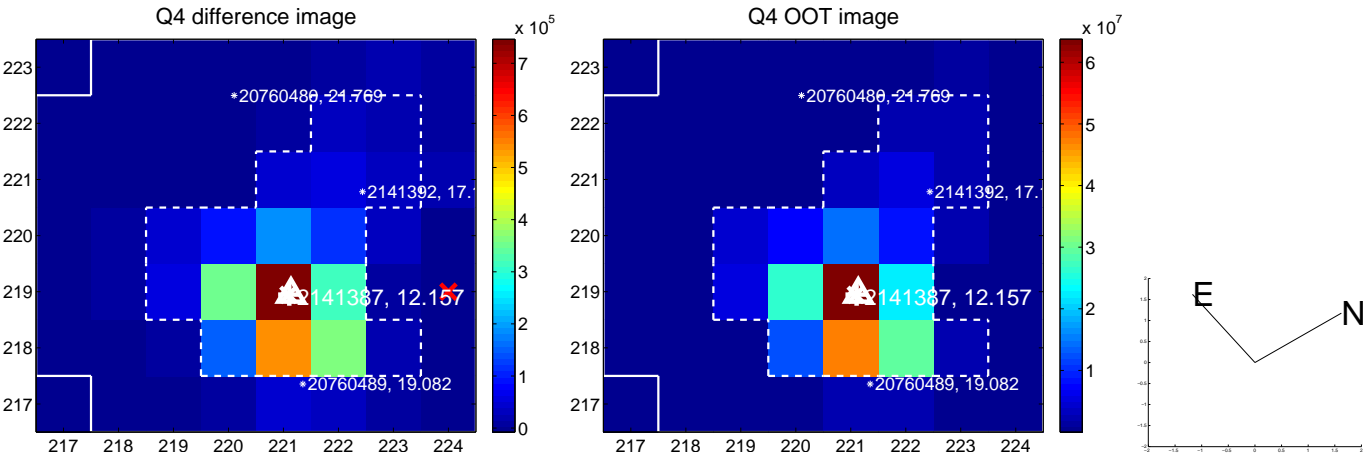
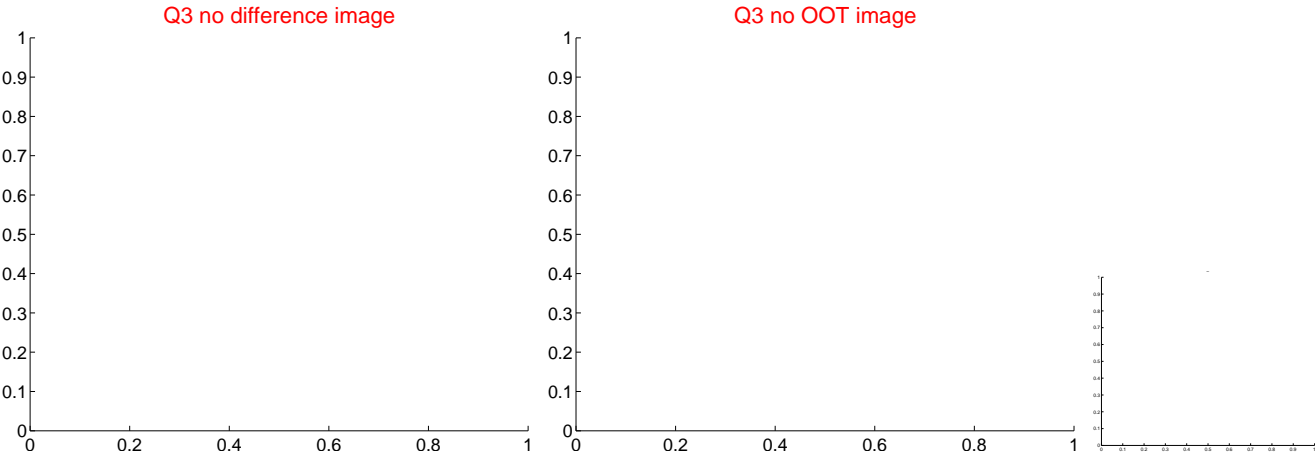
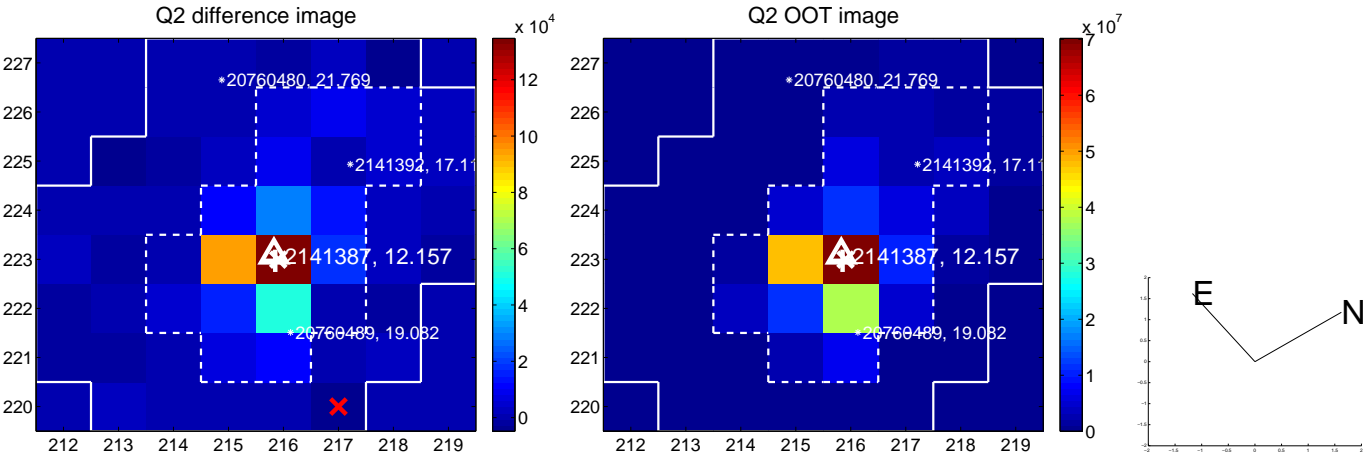
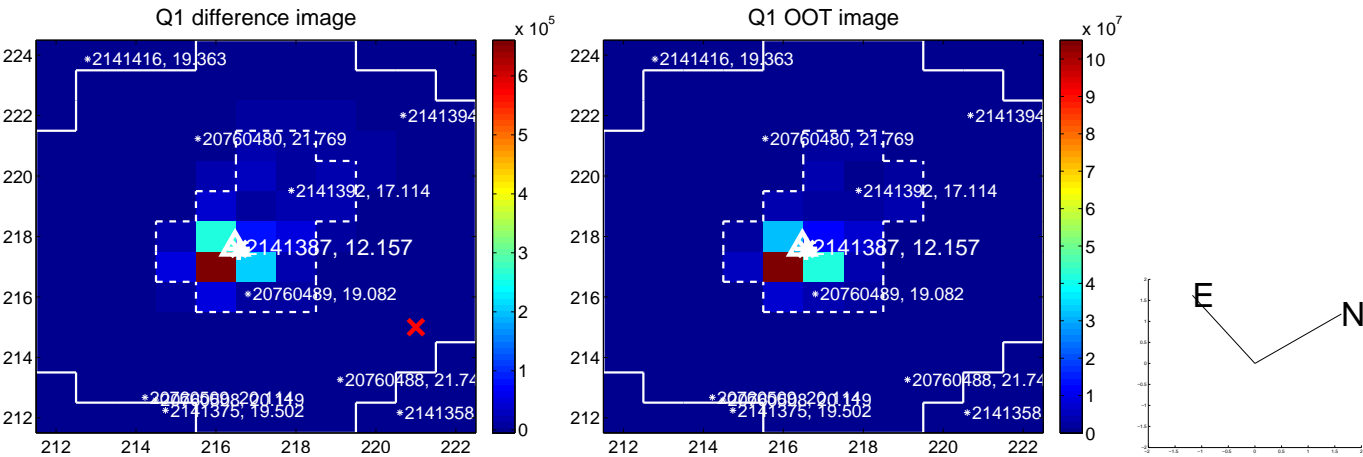
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.084 ± 0.075	1.12	0.015 ± 0.084	0.082 ± 0.077
PRF-fit source offset from KIC position	0.073 ± 0.073	1.00	0.033 ± 0.073	0.066 ± 0.074
photometric centroid source offset	0.46 ± 1.76	0.26	-0.43 ± 1.61	0.18 ± 2.44

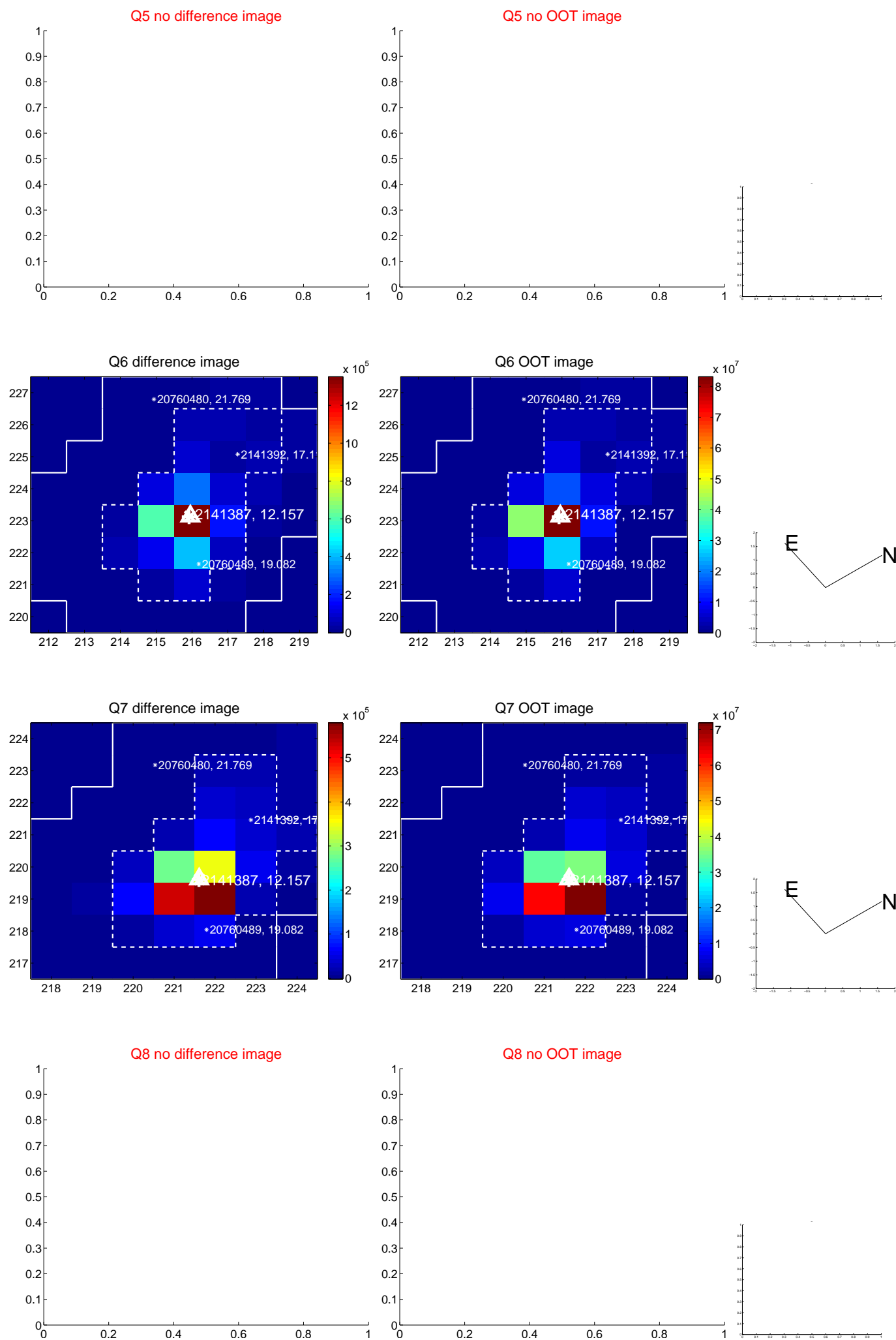


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

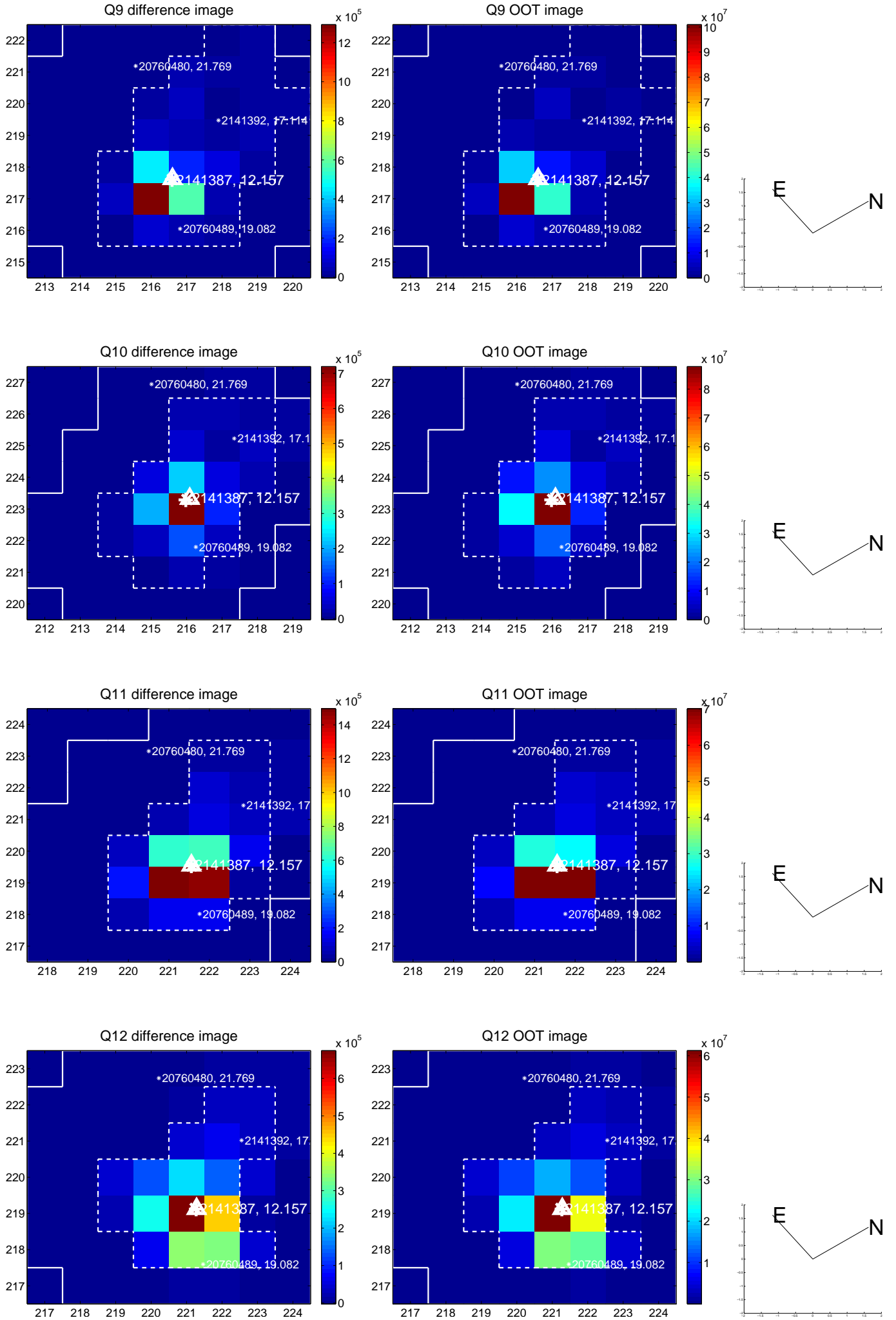
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



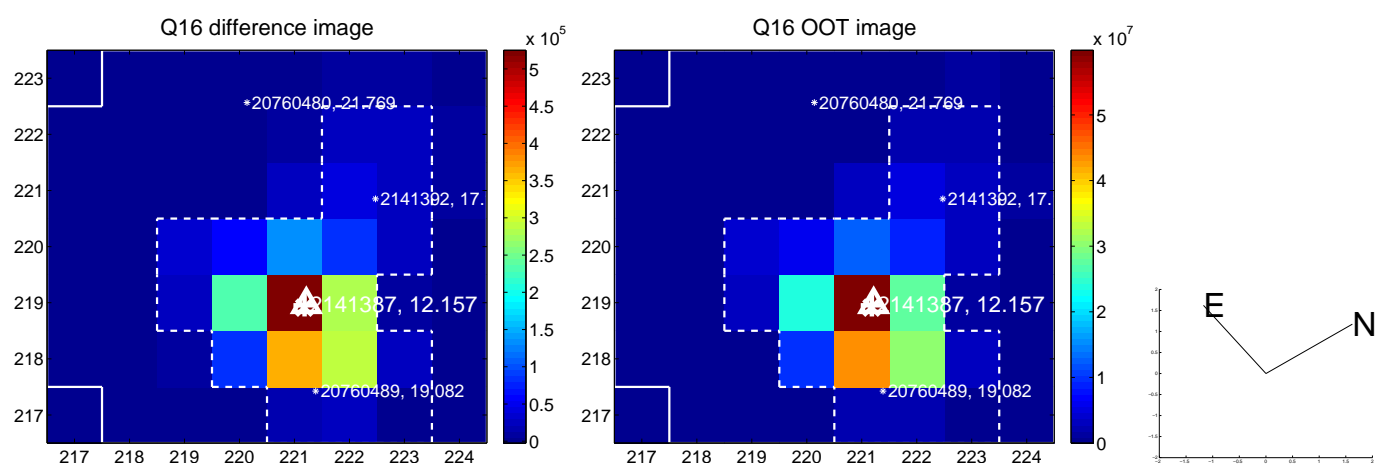
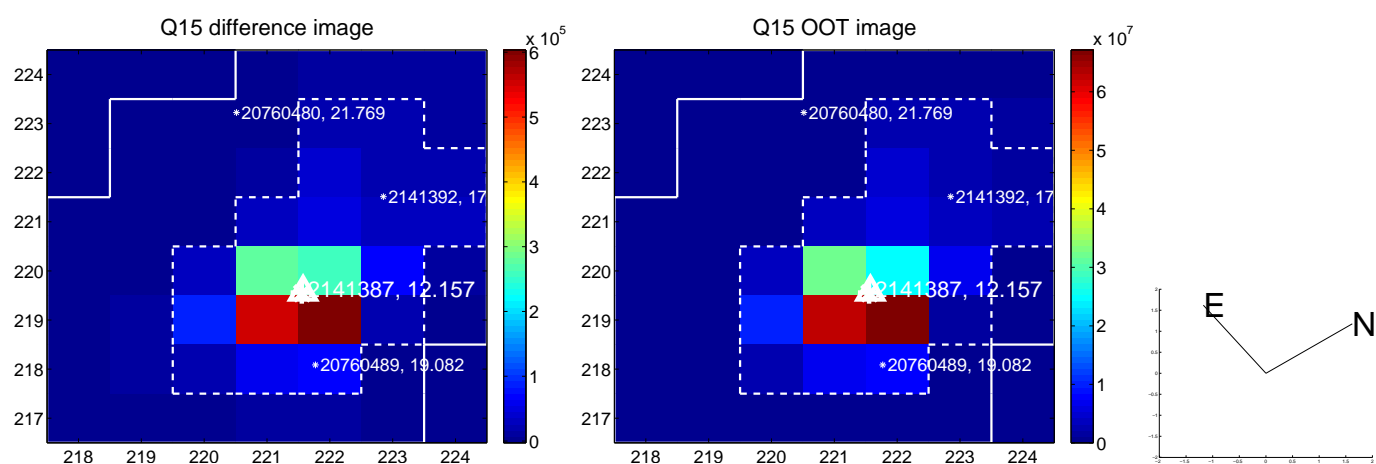
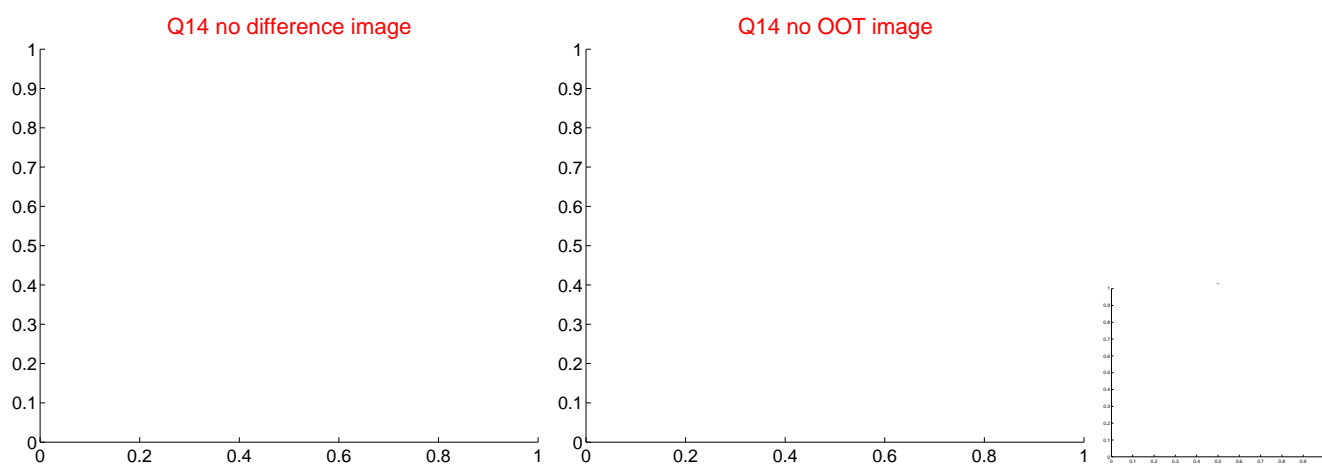
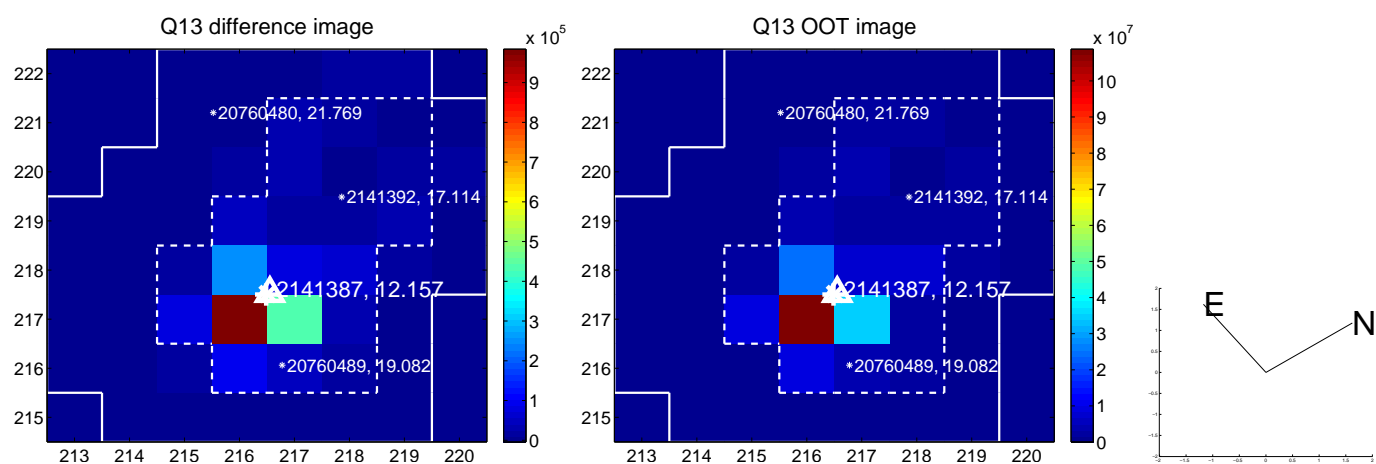
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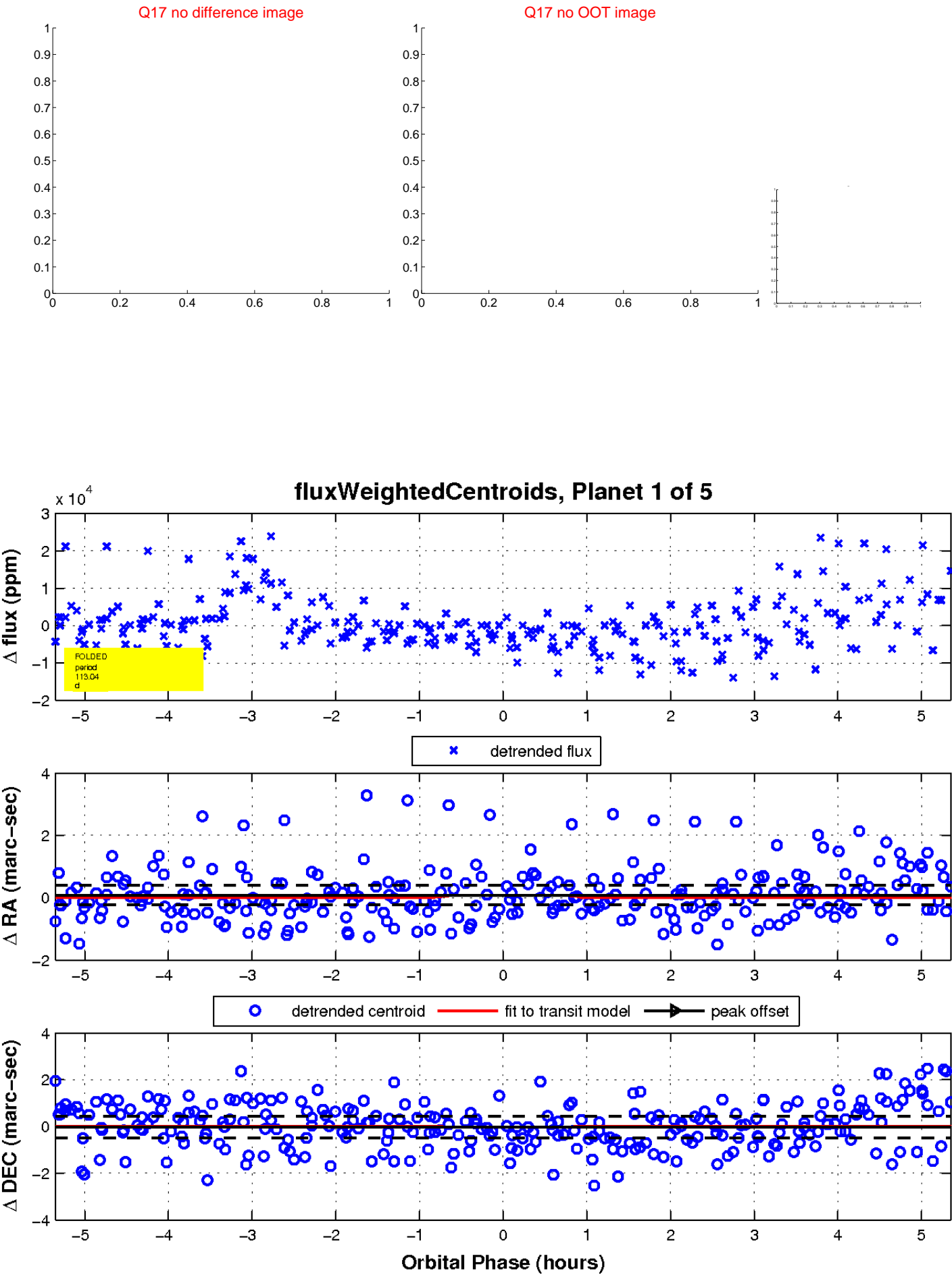
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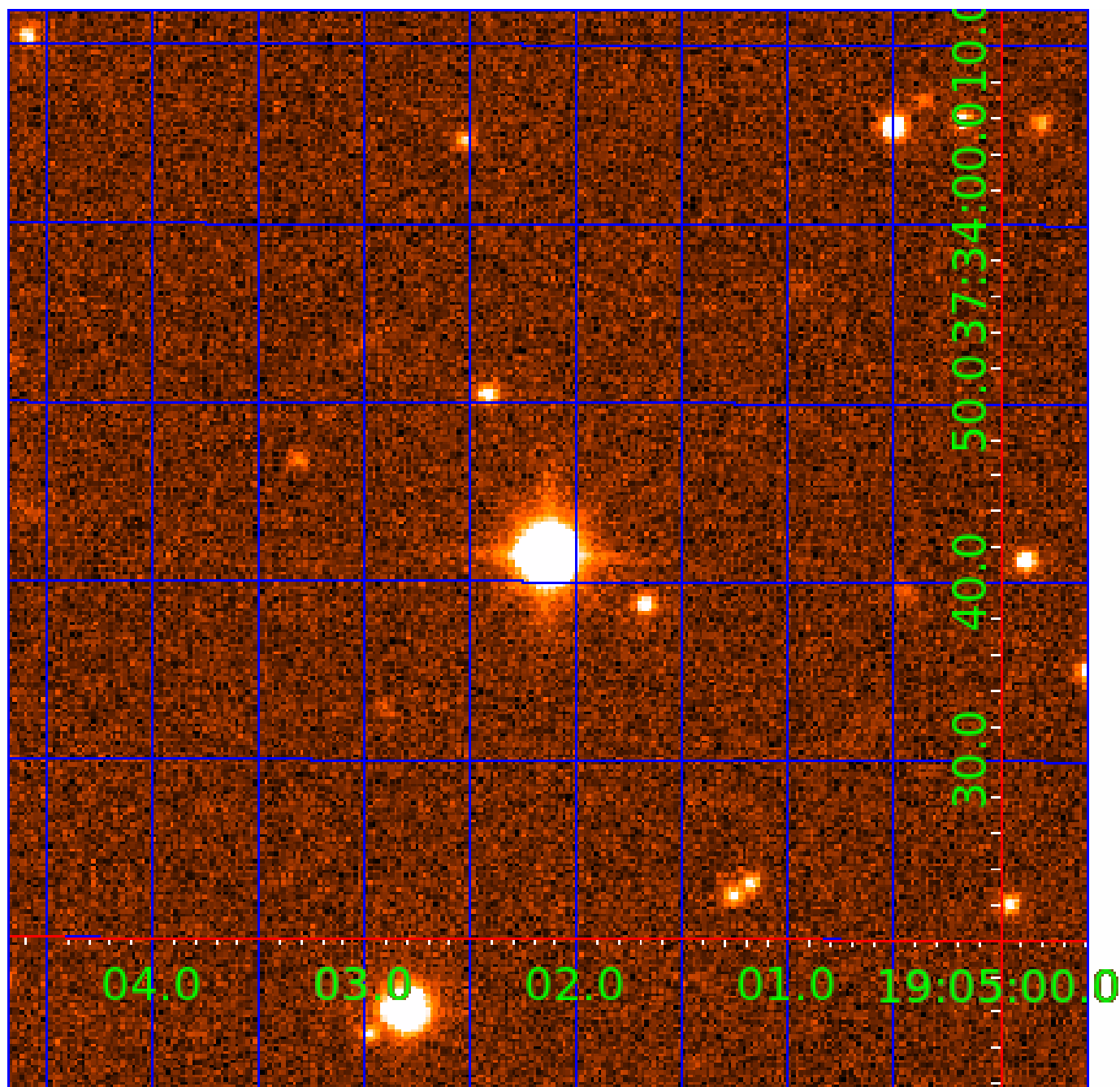


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UKIRT Image

Declination



KIC 002141387

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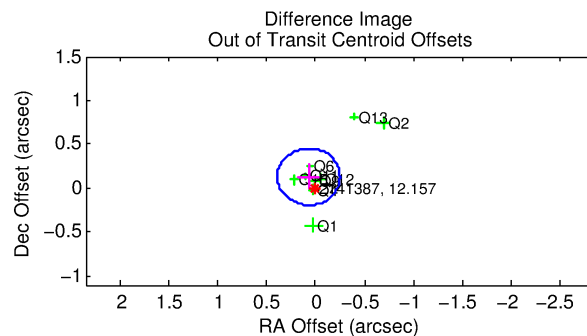
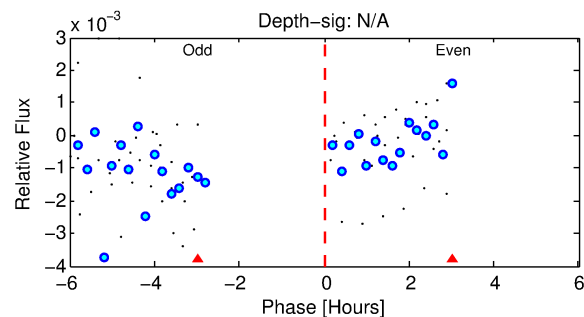
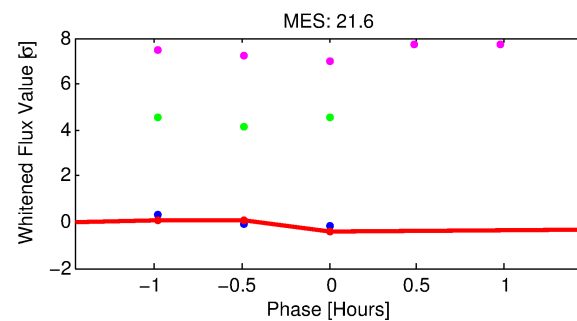
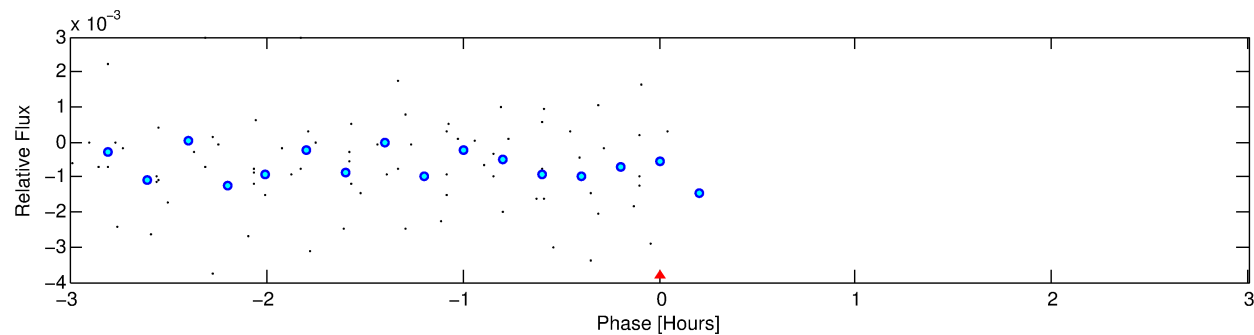
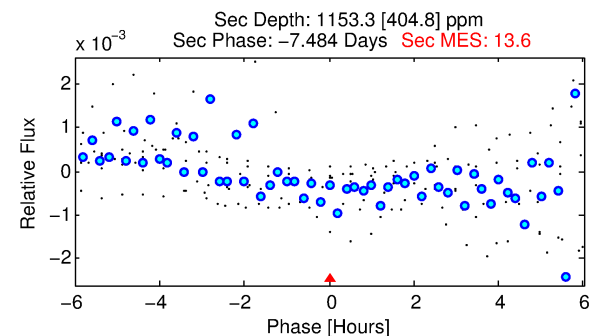
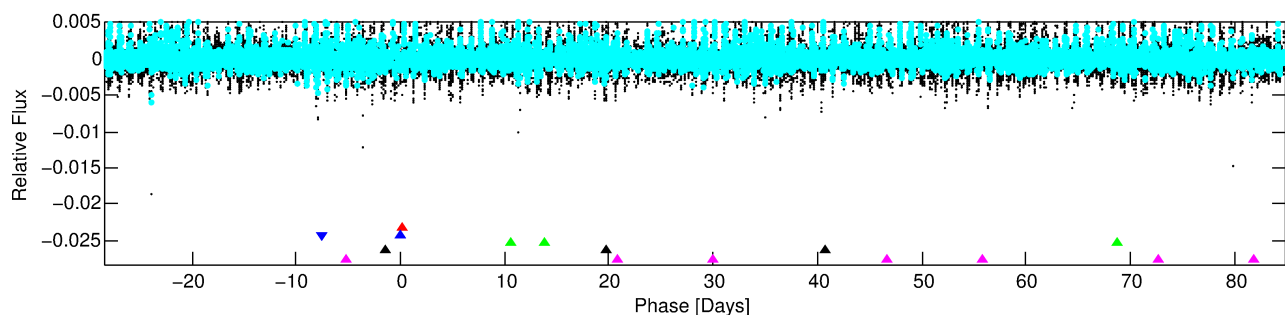
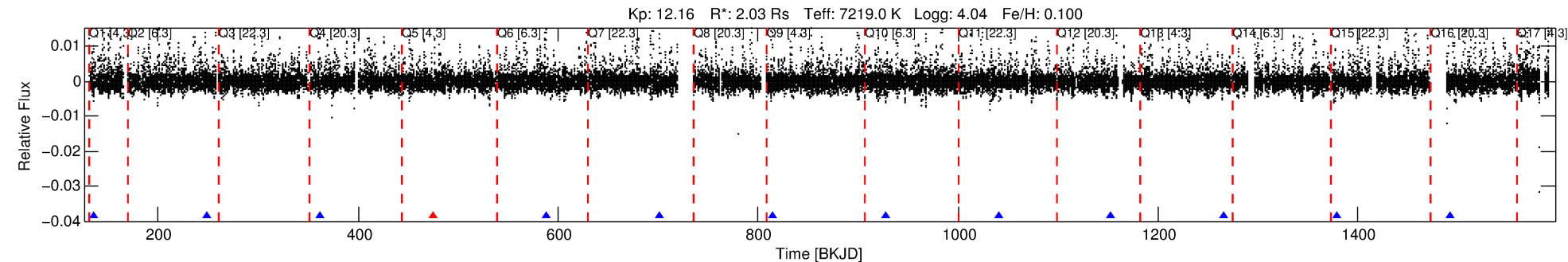
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002141387-02

No Significant Match Found

DV One-Page Summary

KIC: 2141387 Candidate: 2 of 5 Period: 113.042 d



TPS TCE Results:

Period = 113.04155 d
Epoch = 136.1152 BKJD

DV fit results are unavailable

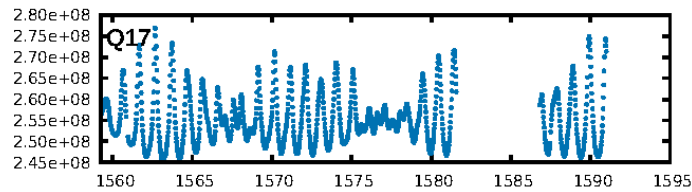
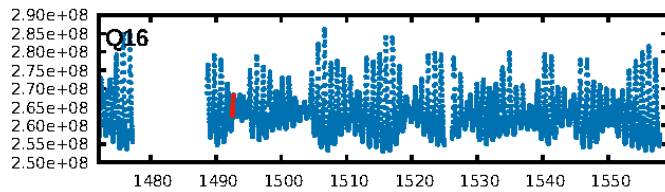
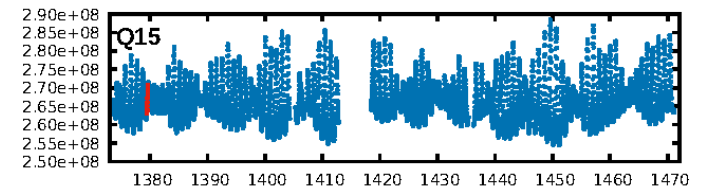
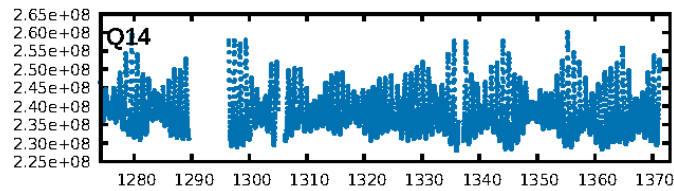
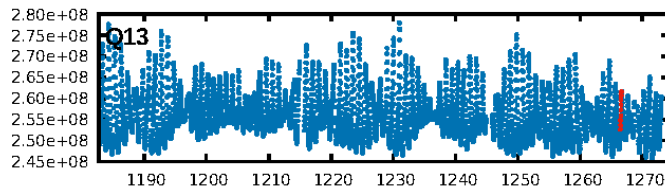
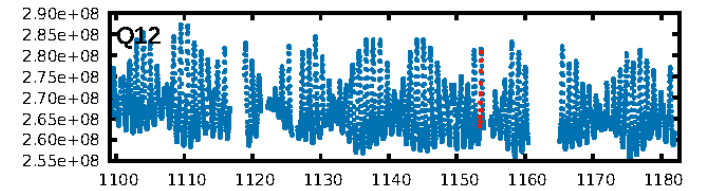
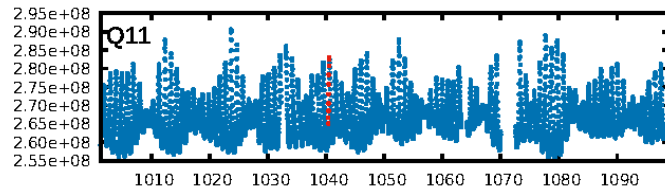
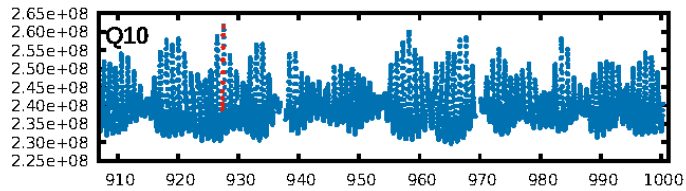
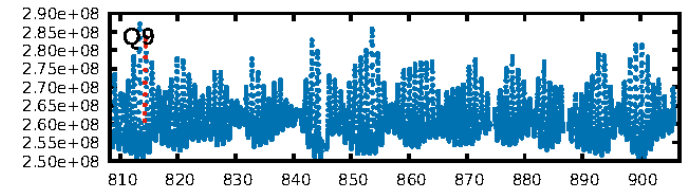
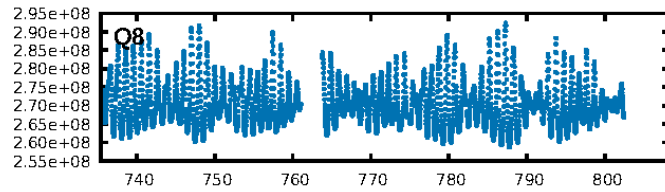
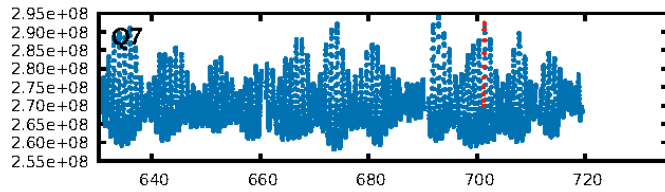
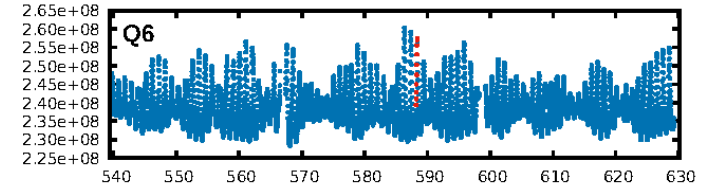
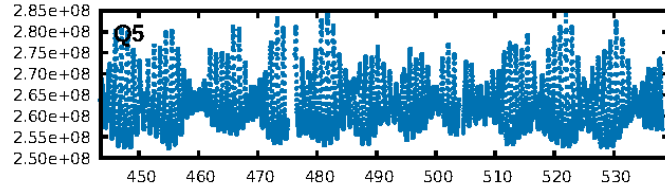
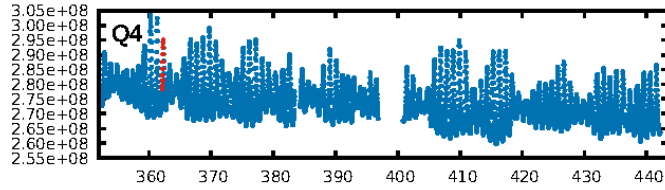
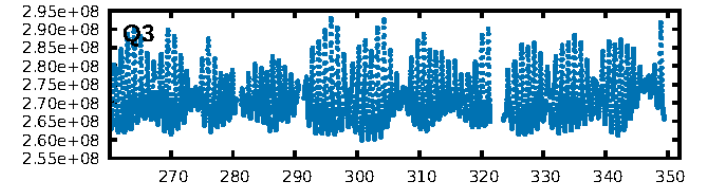
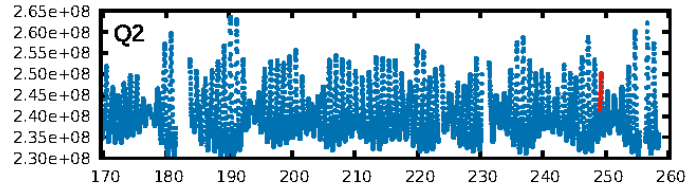
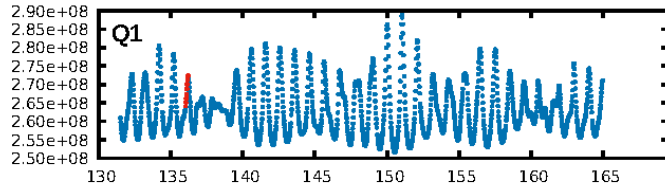
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.4% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.92 [11/12]
GhostDiagnostic-chr: 0.5004
Centroid-sig: 42.3%
Centroid-so: 0.046 arcsec [1.18σ]
OotOffset-rm: 0.150 arcsec [1.40σ]
KicOffset-rm: 0.104 arcsec [0.91σ]
OotOffset-st: 2/2/2/3 [9]
KicOffset-st: 2/2/2/3 [9]
DiffImageQuality-fgm: 0.89 [8/9]
DiffImageOverlap-fno: 0.00 [0/9]

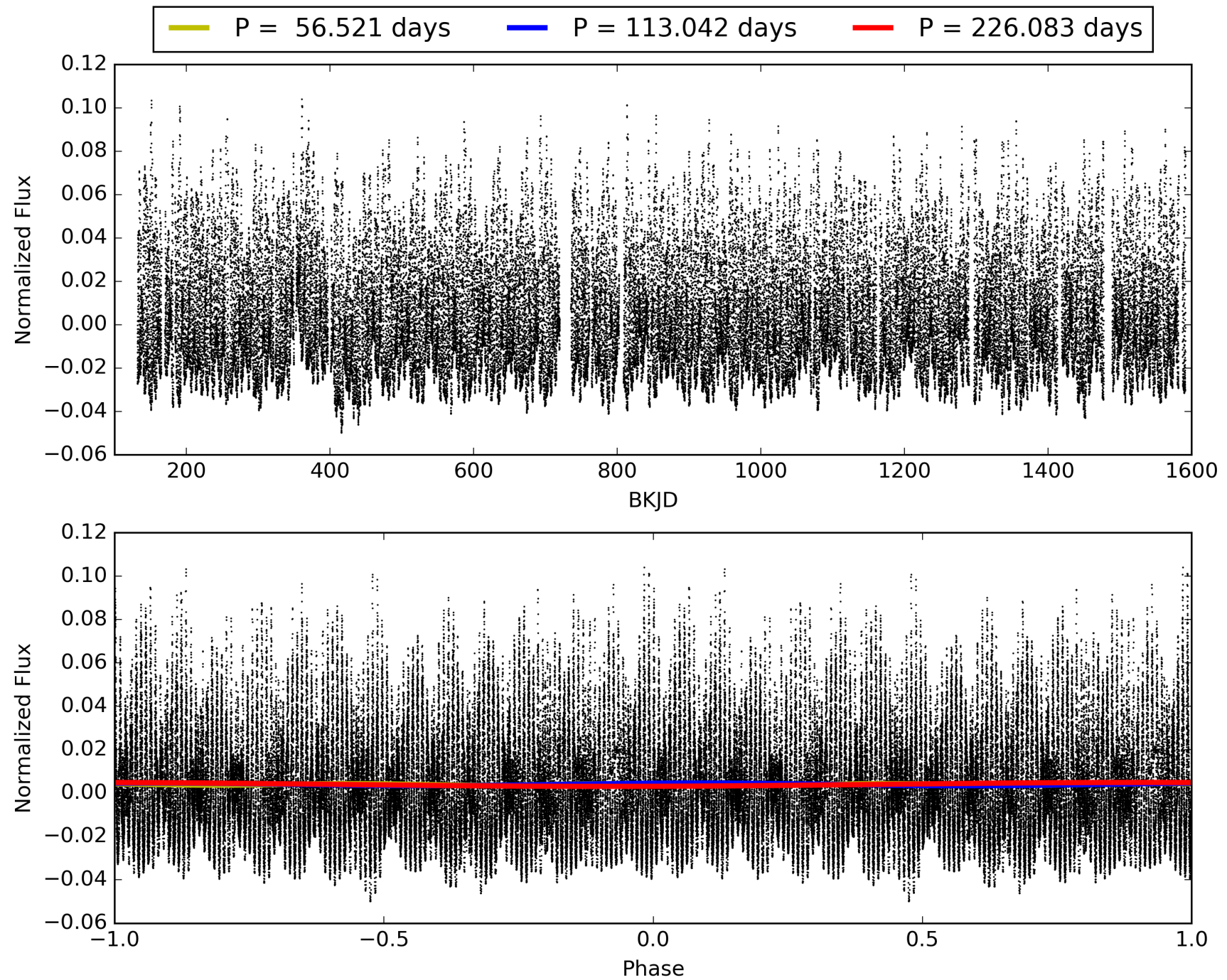
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:56:18 Z

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

TCE 002141387-02, PDC Light Curves

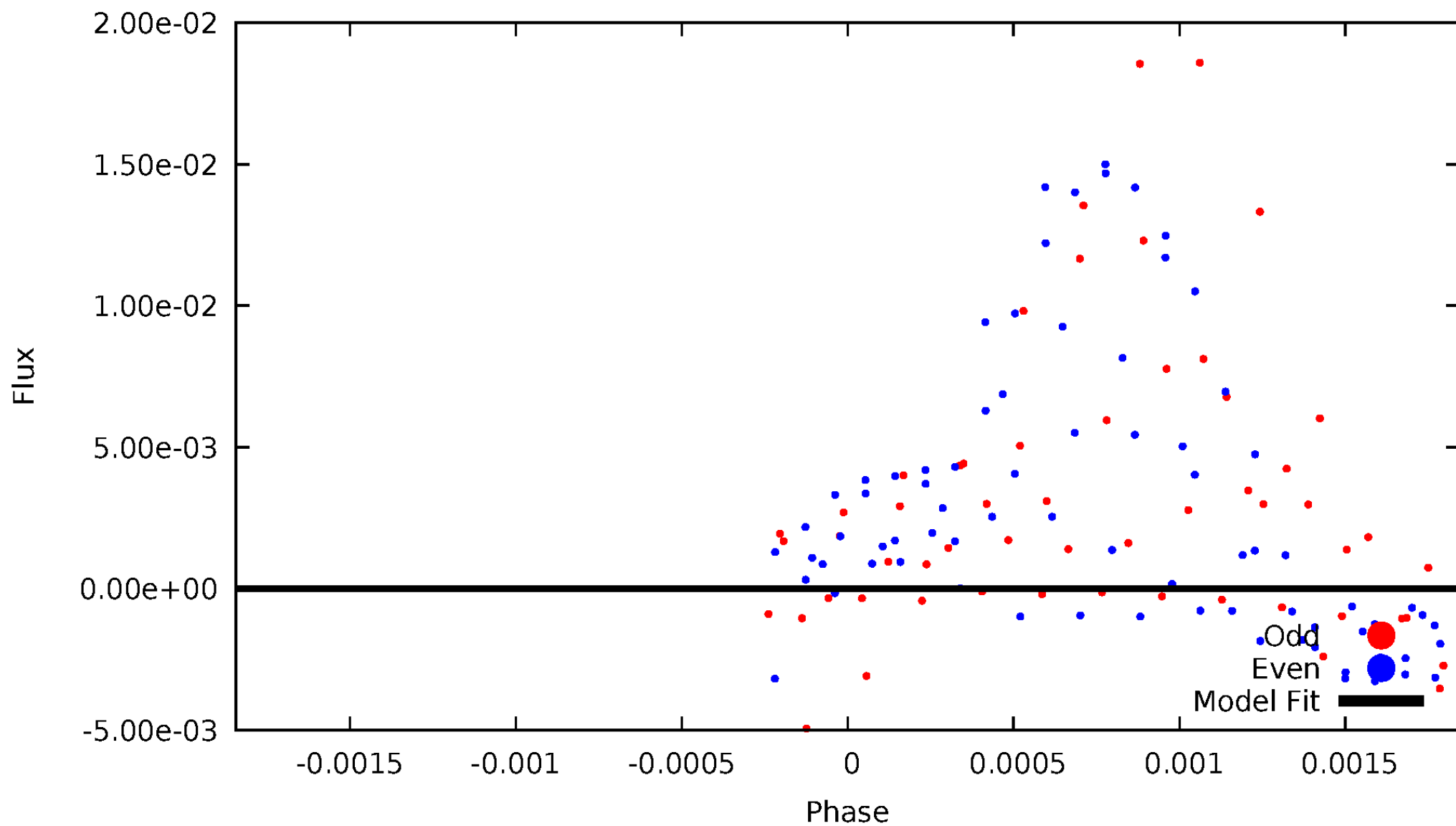


TCE 002141387-02



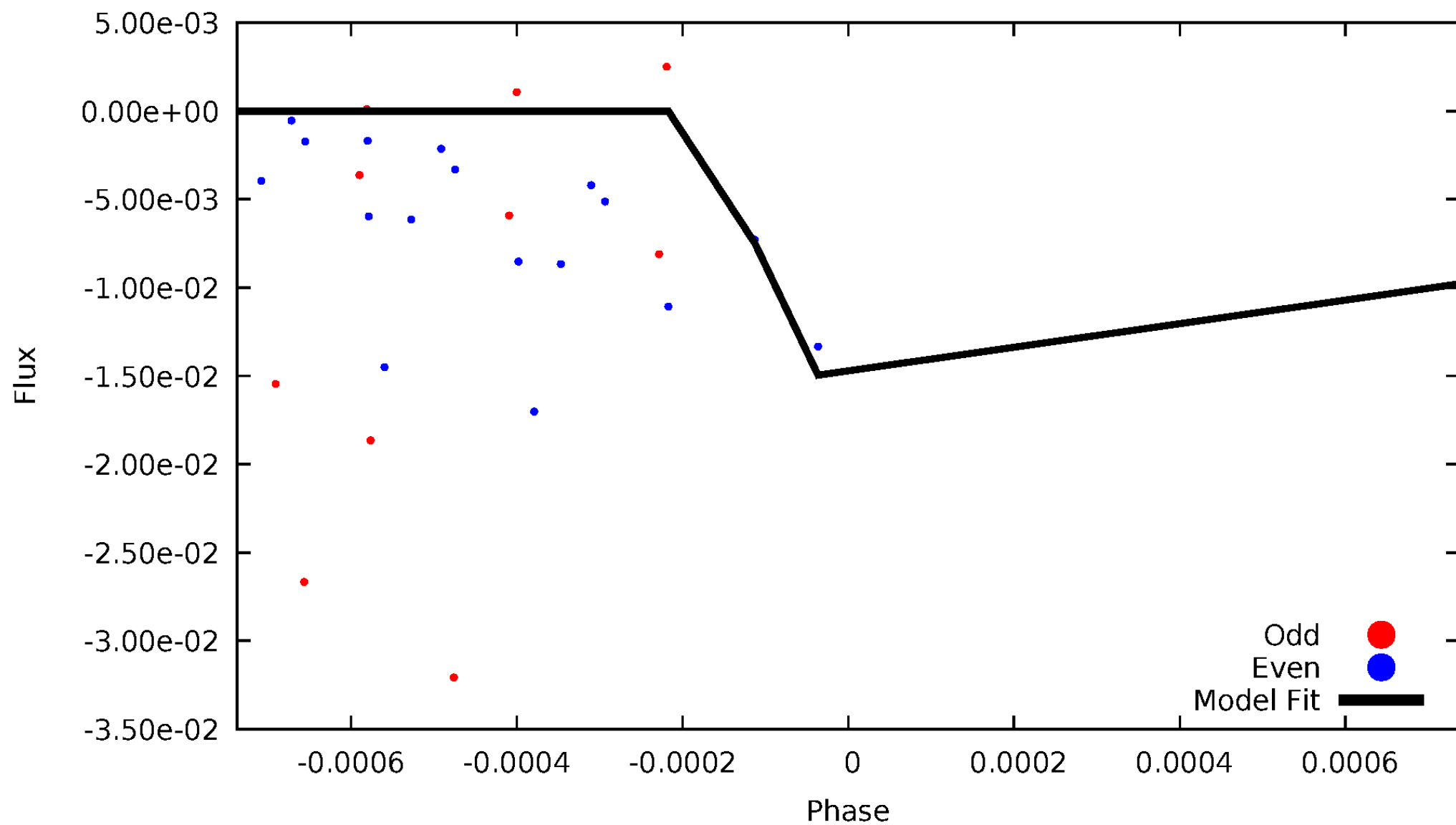
DV Odd/Even

TCE 002141387-02



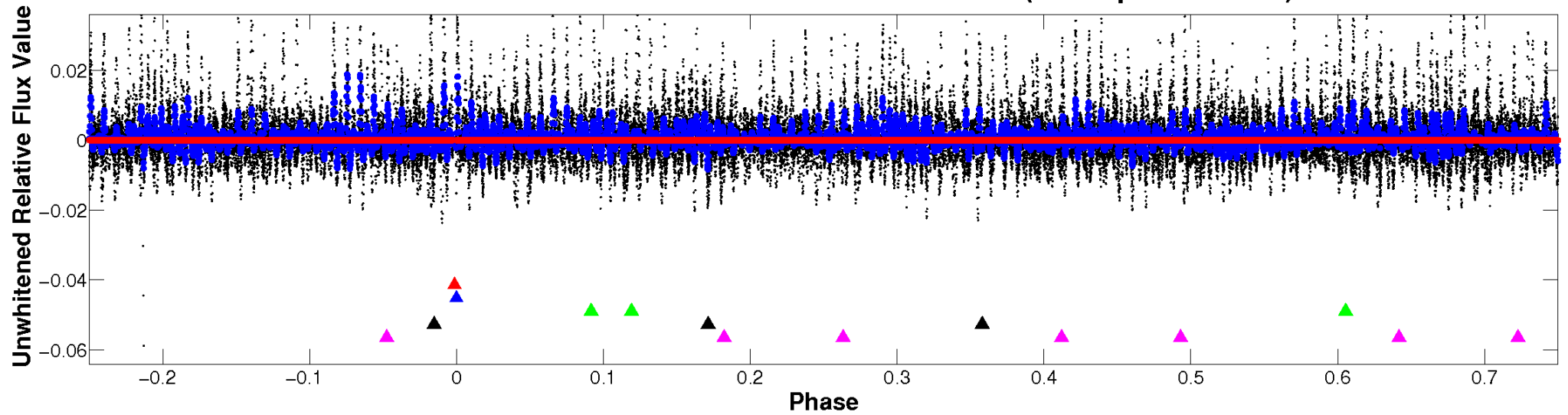
ALT Odd/Even

TCE 002141387-02

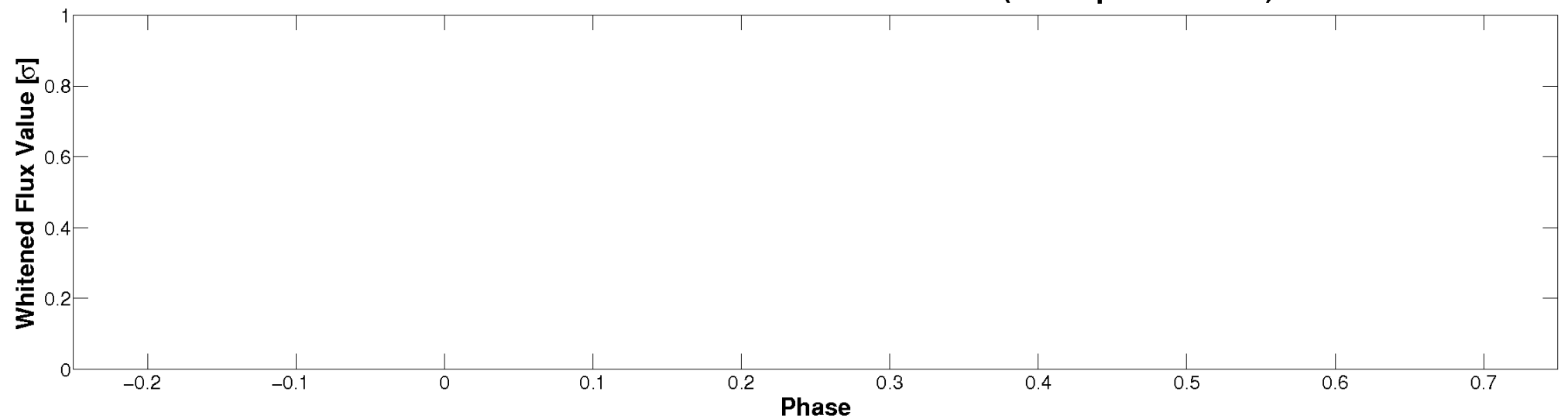


Non-Whitened Vs. Whitened Light Curve

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

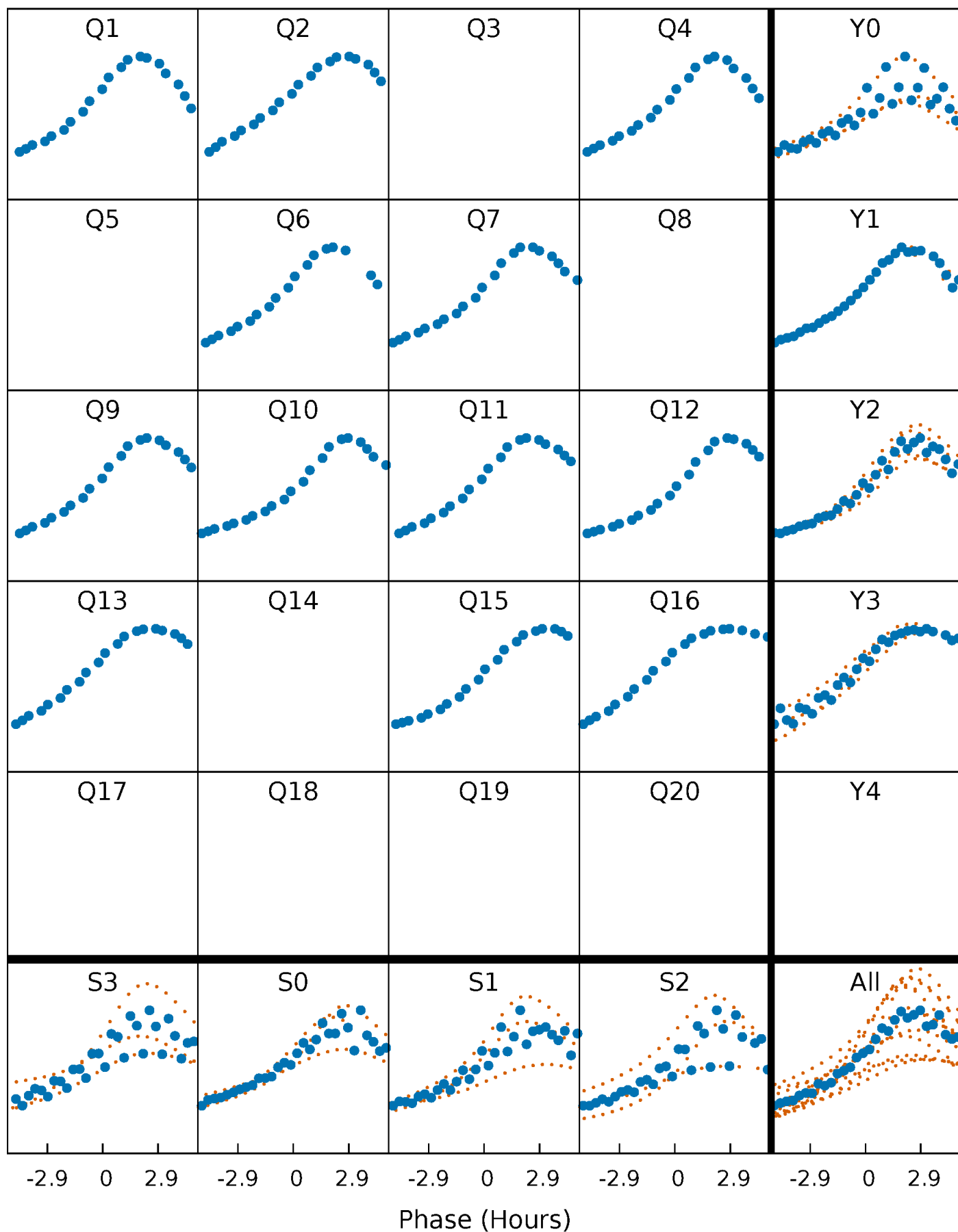


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



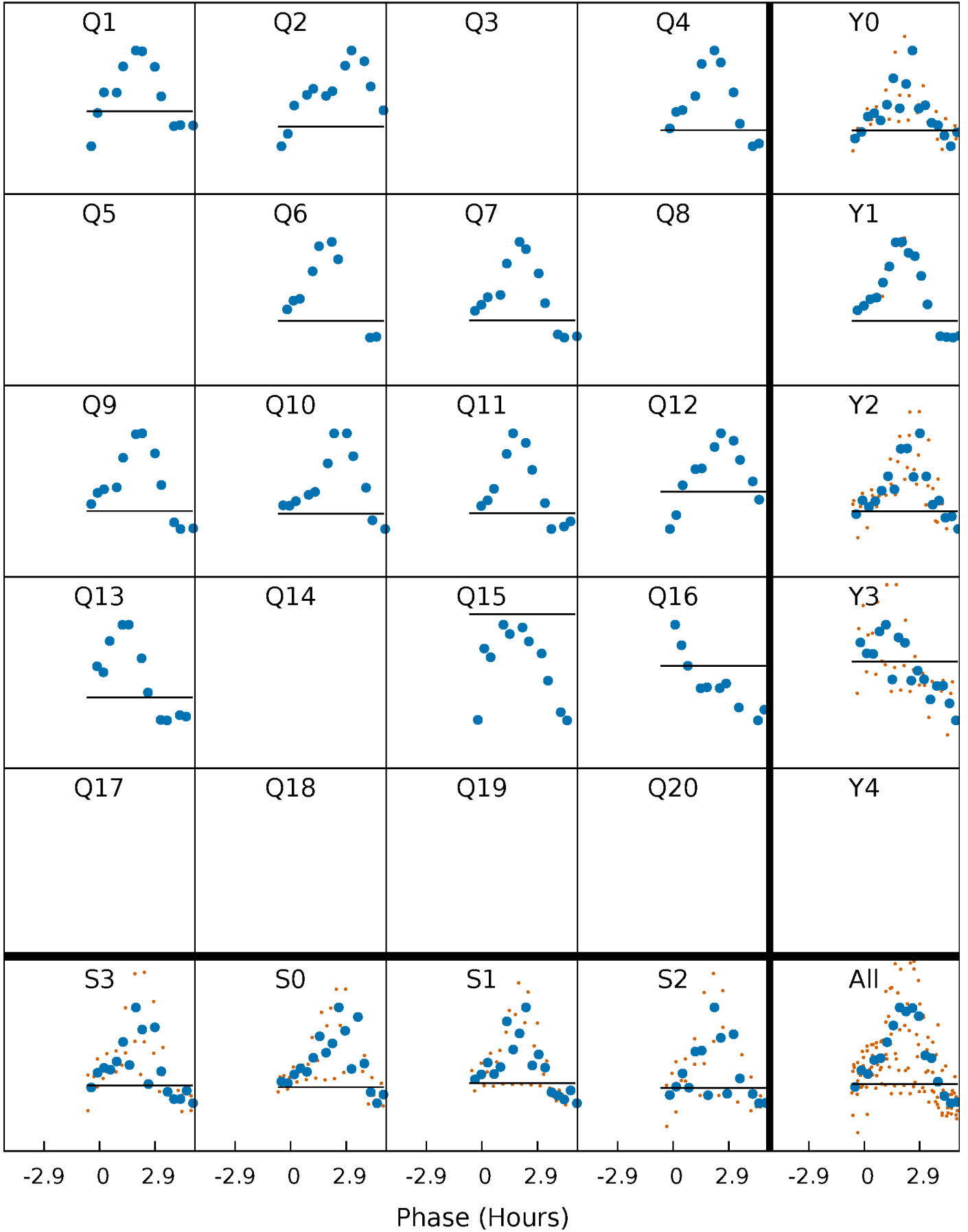
PDC Quarter-Phased Transit Curves

TCE 002141387-02 P=113.041552 Days $T_0=136.115162$ (BKJD)



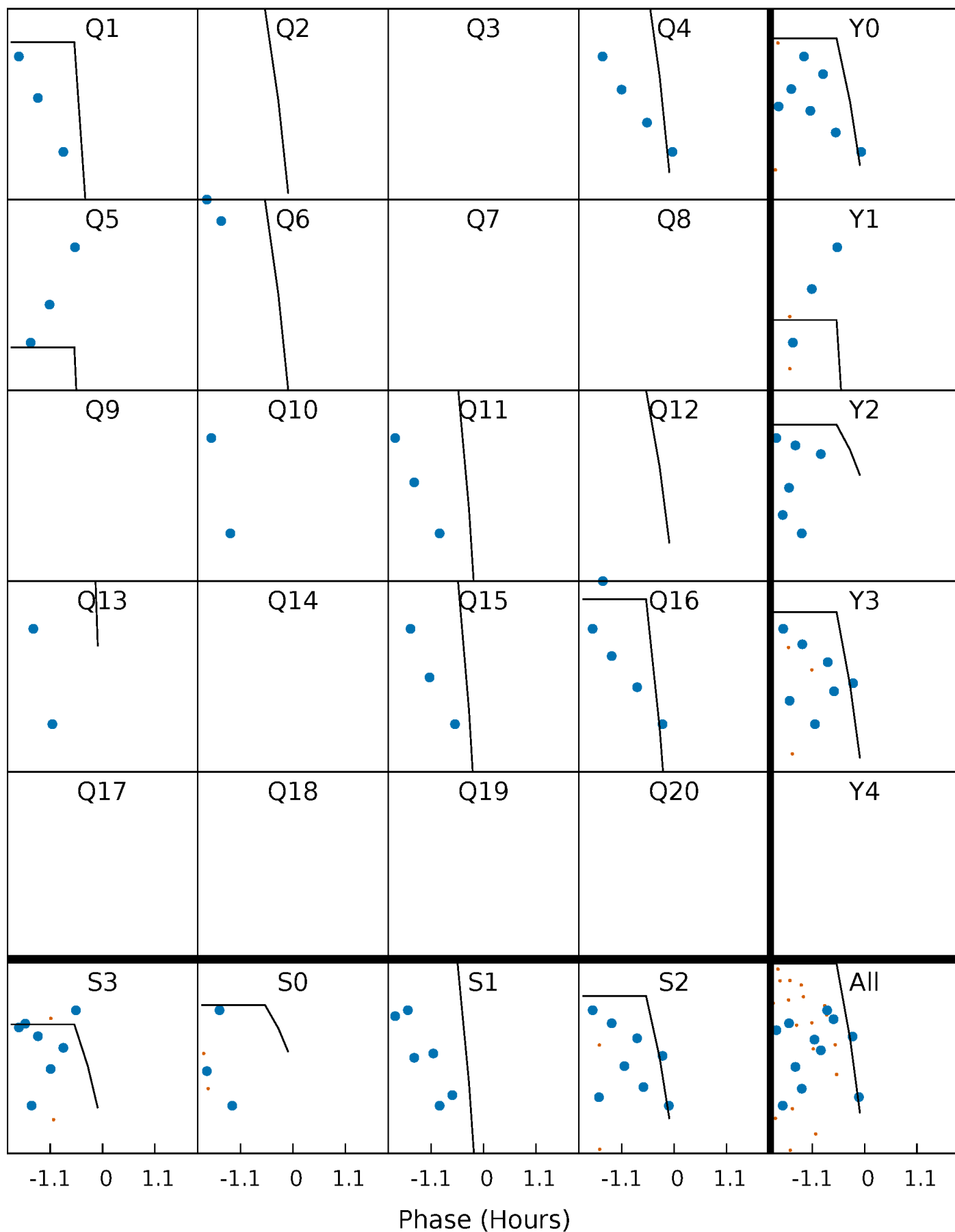
DV Quarter-Phased Transit Curves

TCE 002141387-02 P=113.041552 Days $T_0=136.115162$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

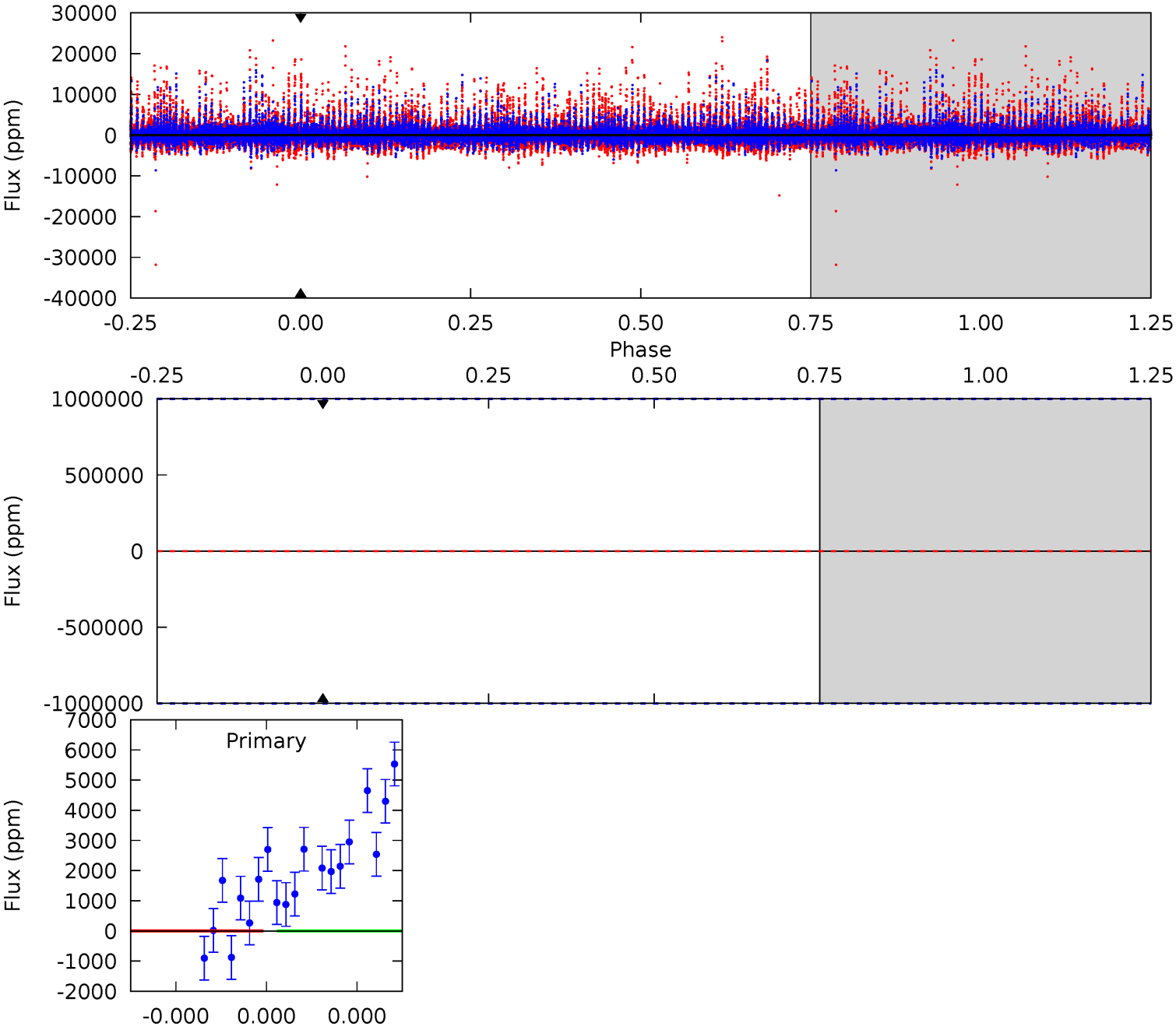
TCE 002141387-02 P=113.041552 Days $T_0=135.839337$ (BKJD)



DV Model-Shift Uniqueness Test

002141387-02, P = 113.041552 Days, E = 23.073610 Days

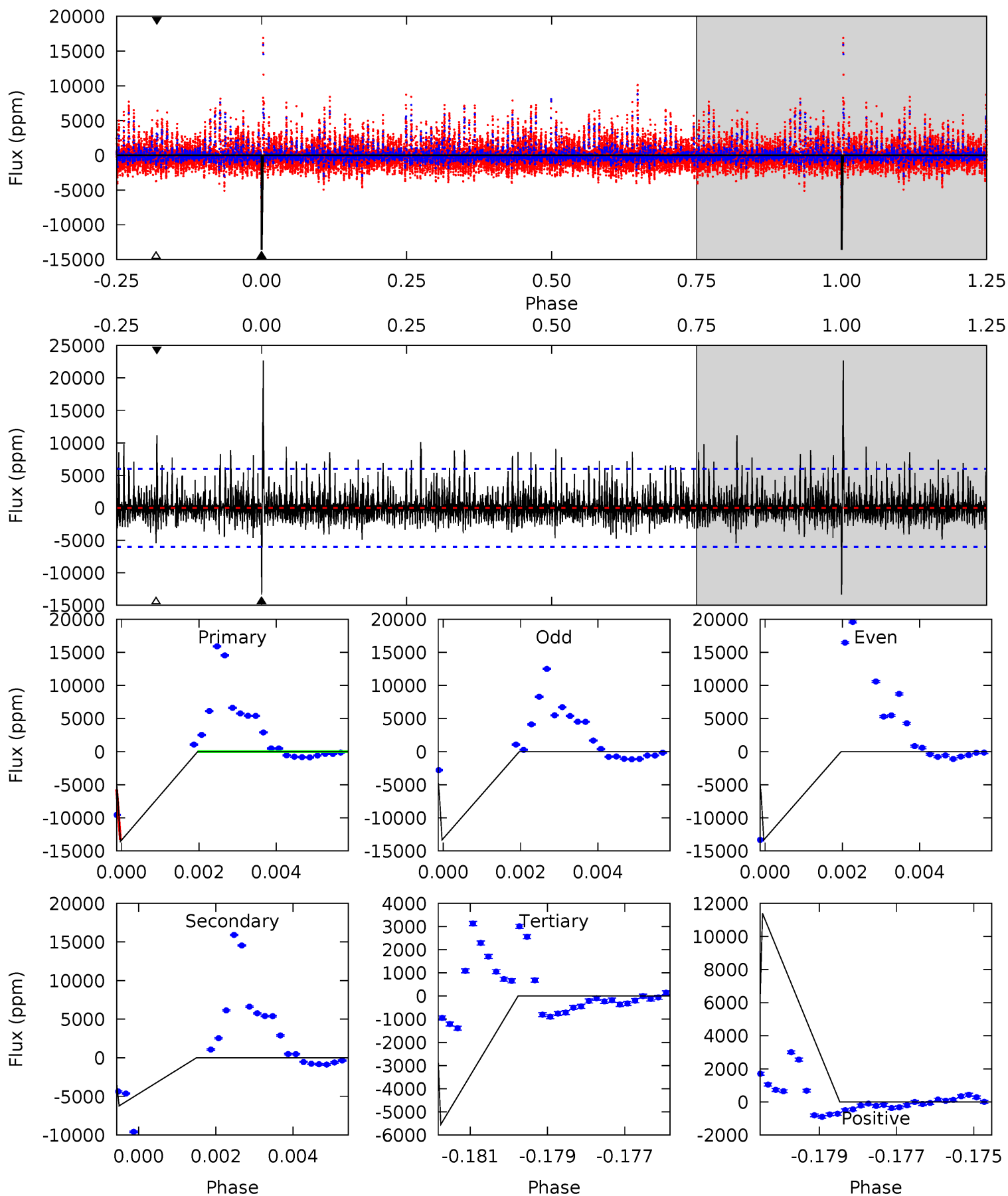
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

002141387-02, P = 113.041552 Days, E = 22.797785 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	5.42	4.83	9.92	5.31	3.06	1.00	7.01	1.91	0.59	-4.50	0	0	0.63	0



Stellar Parameters For KIC 002141387

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7219^{+200}_{-343}	$4.044^{+0.170}_{-0.170}$	$0.100^{+0.200}_{-0.350}$	$2.031^{+0.592}_{-0.538}$	$1.664^{+0.193}_{-0.290}$	$0.280^{+0.273}_{-0.140}$
	+3%/-5%	+4%/-4%	+200%/-350%	+29%/-26%	+12%/-17%	+97%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 002141387-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$16.40^{+18.05}_{-11.62}$	862^{+66}_{-72}	-5629^{+37568}_{-37752}	$-1466.629^{+87900.124}_{-123225.844}$
Alt.	-6223 ± 1127	$33.00^{+22.24}_{-18.94}$	856^{+71}_{-61}	5193^{+3001}_{-935}	884^{+4406}_{-564}

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 $A_{obs} \gg 1.0$

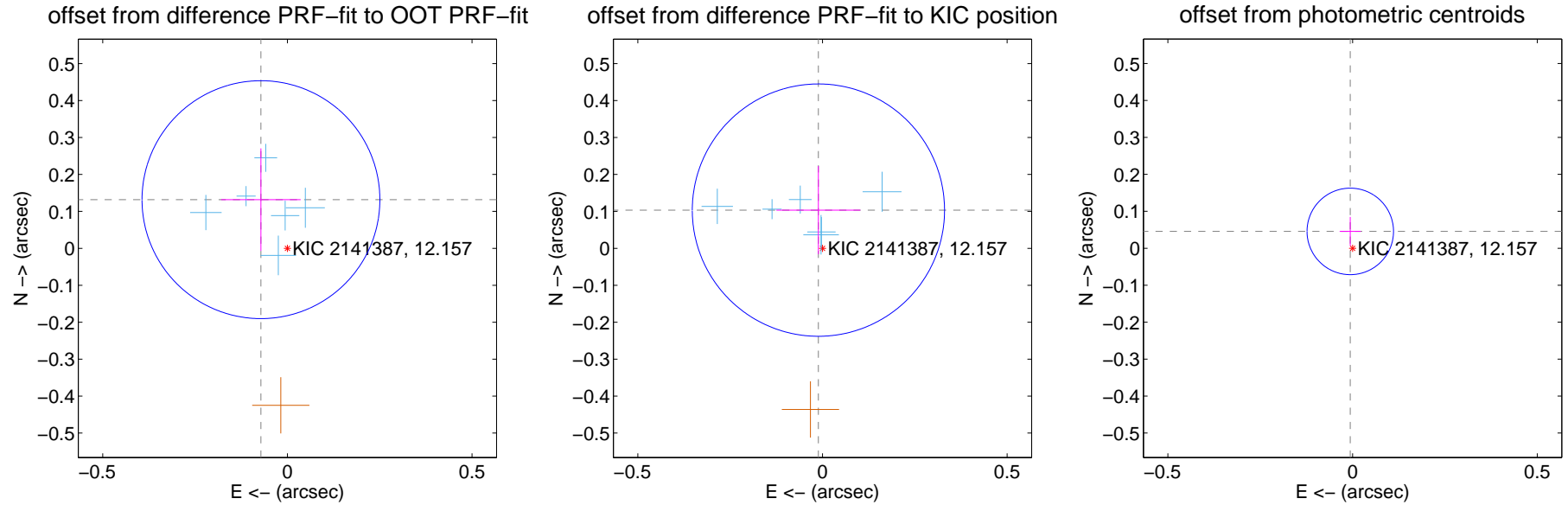
DV Centroid Data

Supplemental centroid analysis for 002141387-02. Kepler magnitude: 12.16. Transit SNR -1.00

There are 8 quarters with good PRF difference image offsets

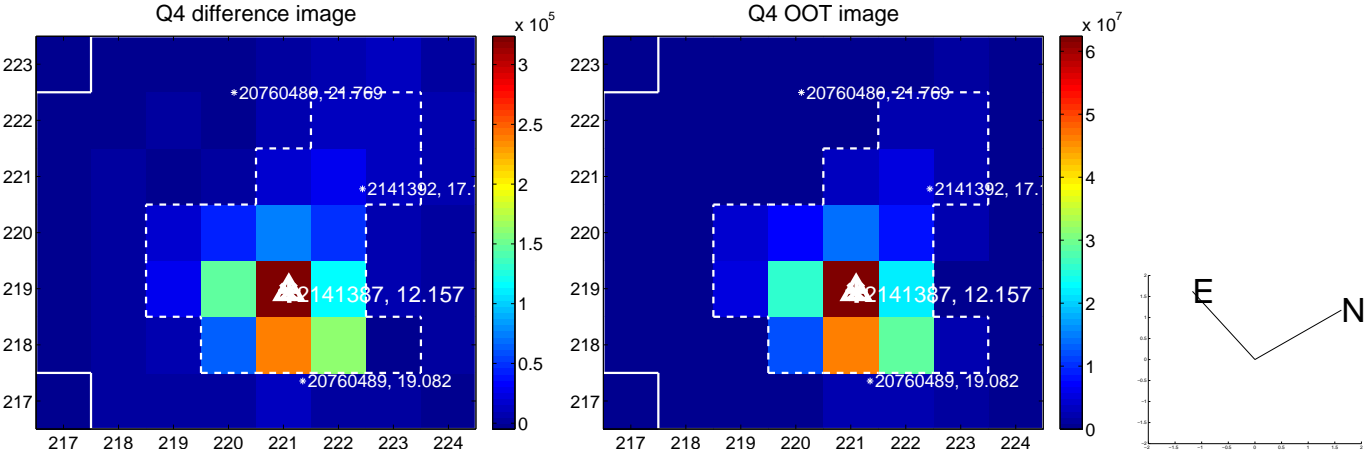
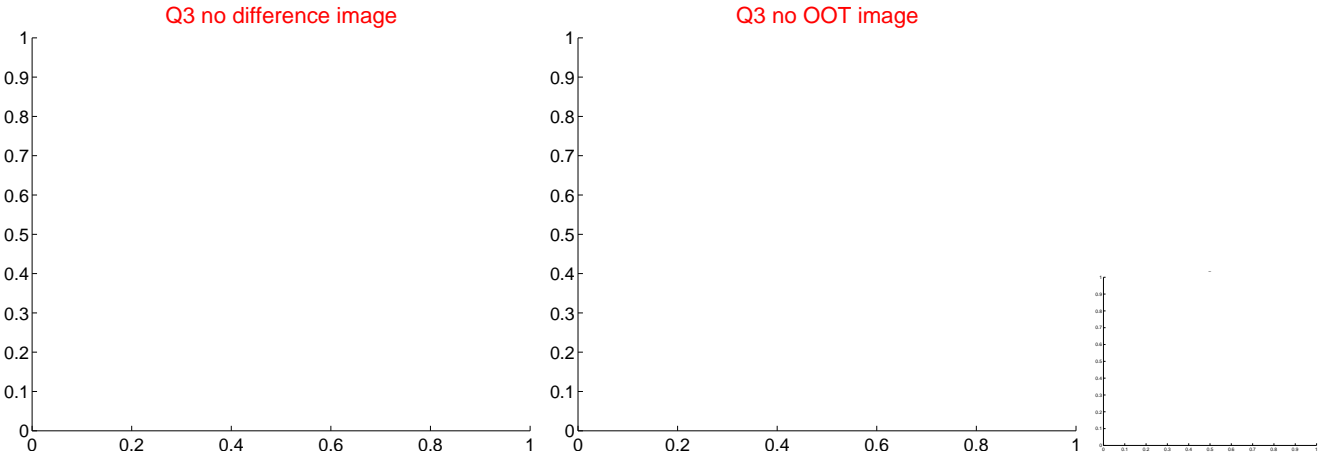
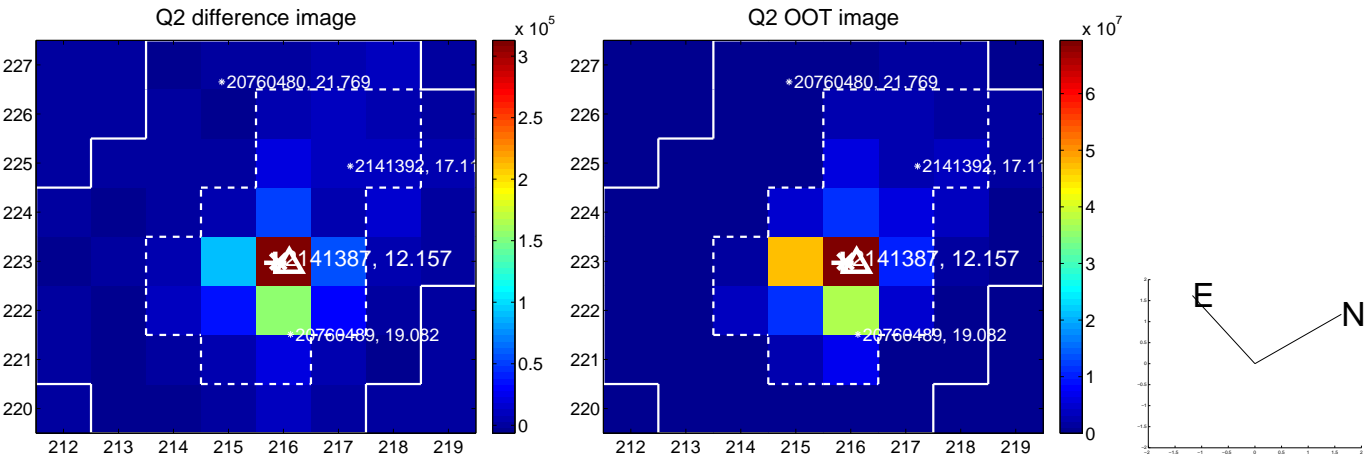
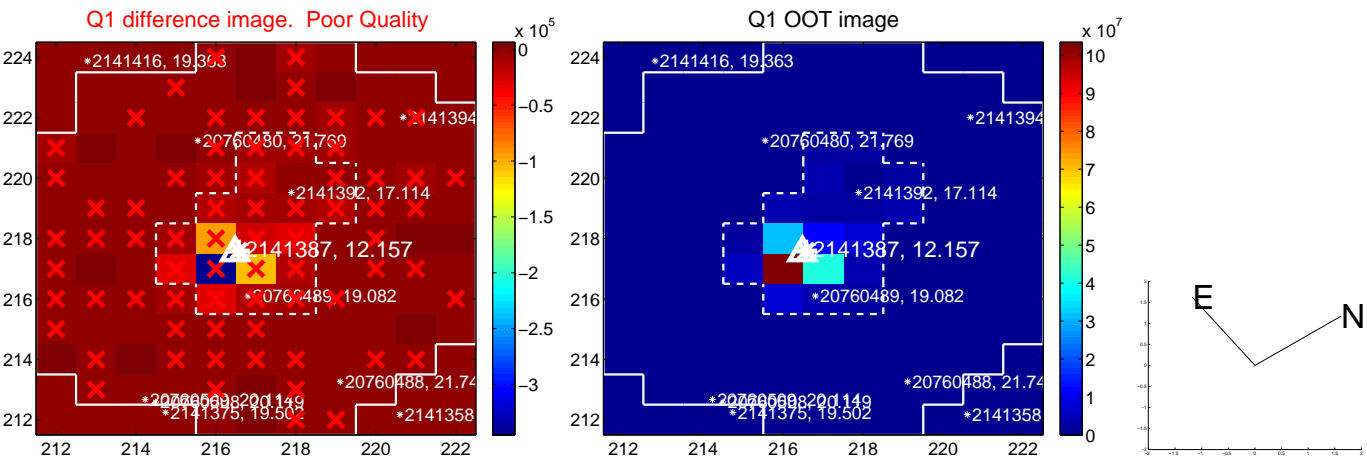
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.150 ± 0.107	1.40	0.072 ± 0.108	0.132 ± 0.139
PRF-fit source offset from KIC position	0.104 ± 0.114	0.91	0.011 ± 0.114	0.103 ± 0.119
photometric centroid source offset	0.05 ± 0.04	1.18	0.01 ± 0.03	0.05 ± 0.04

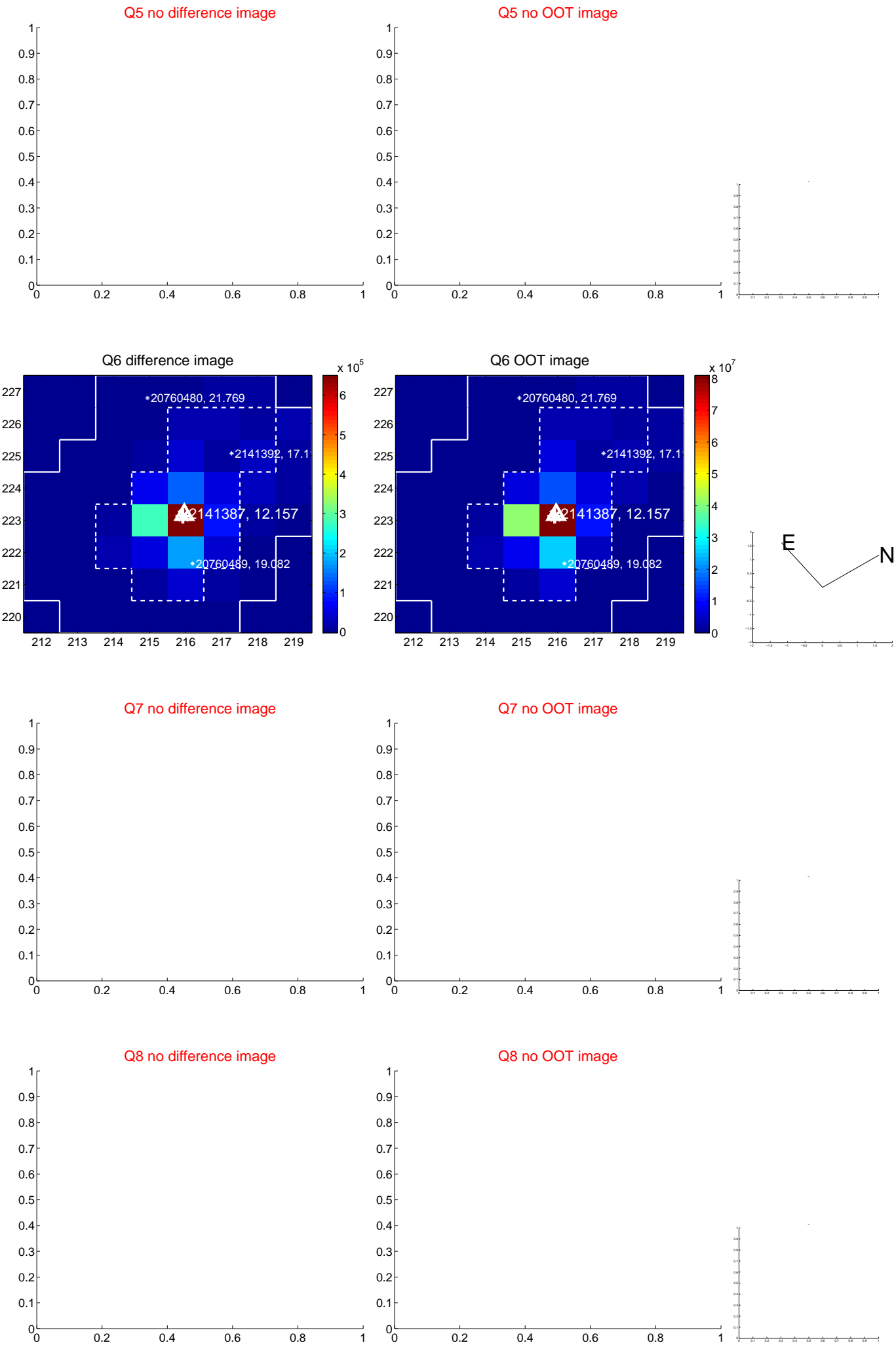


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

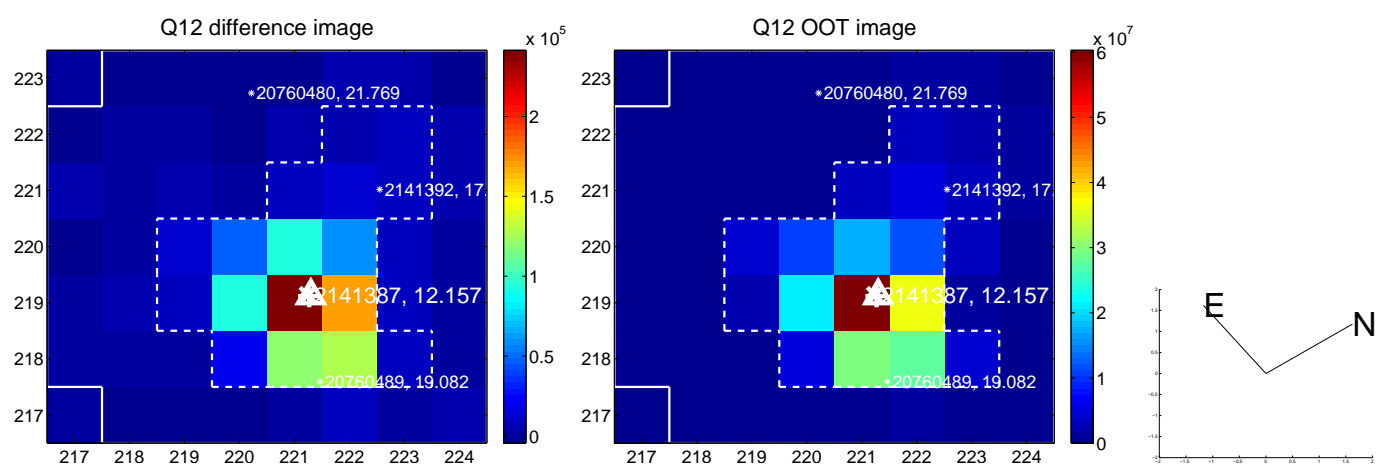
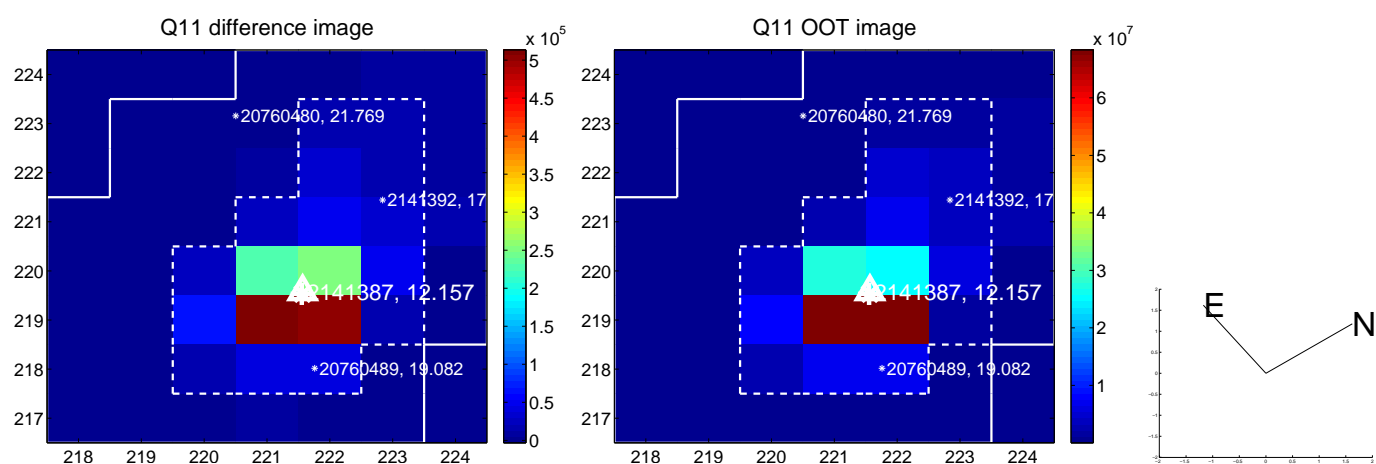
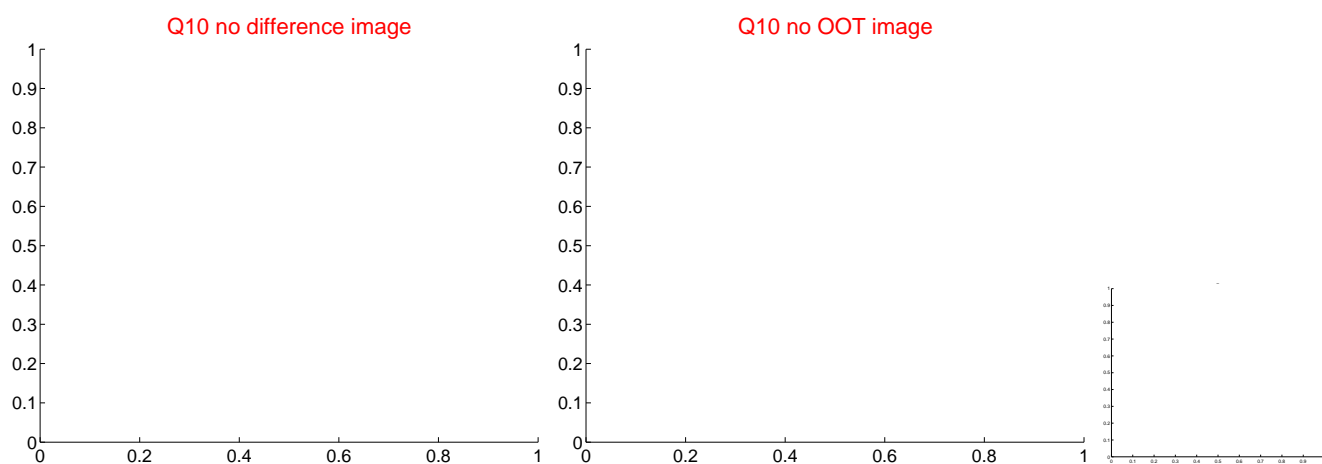
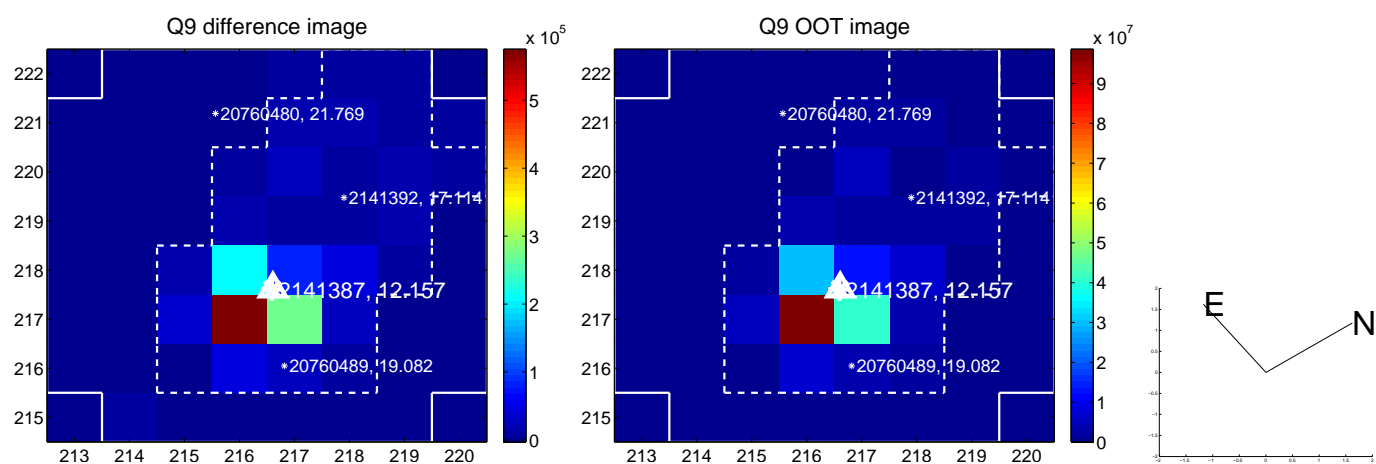
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



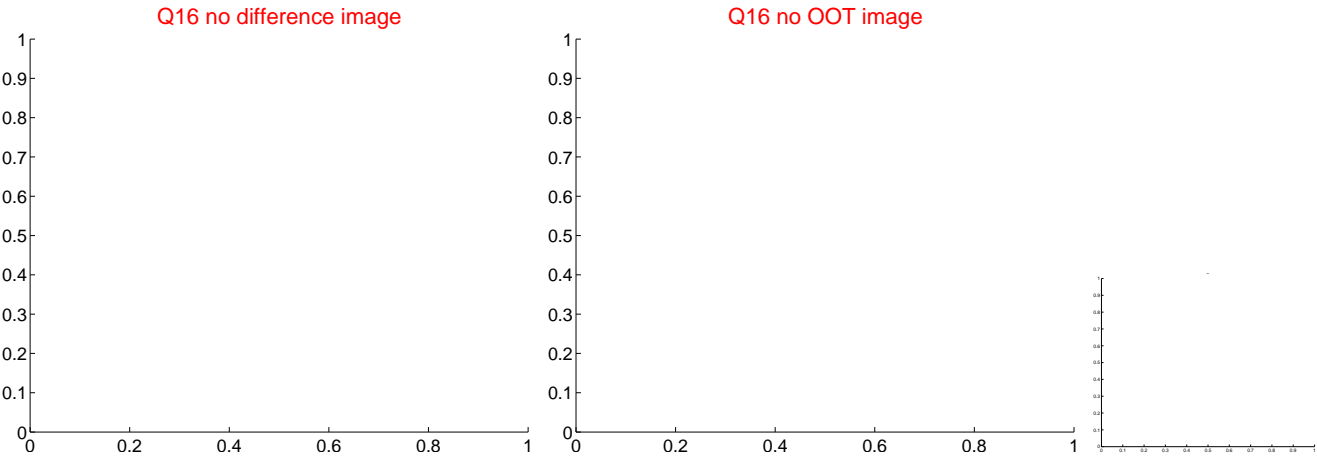
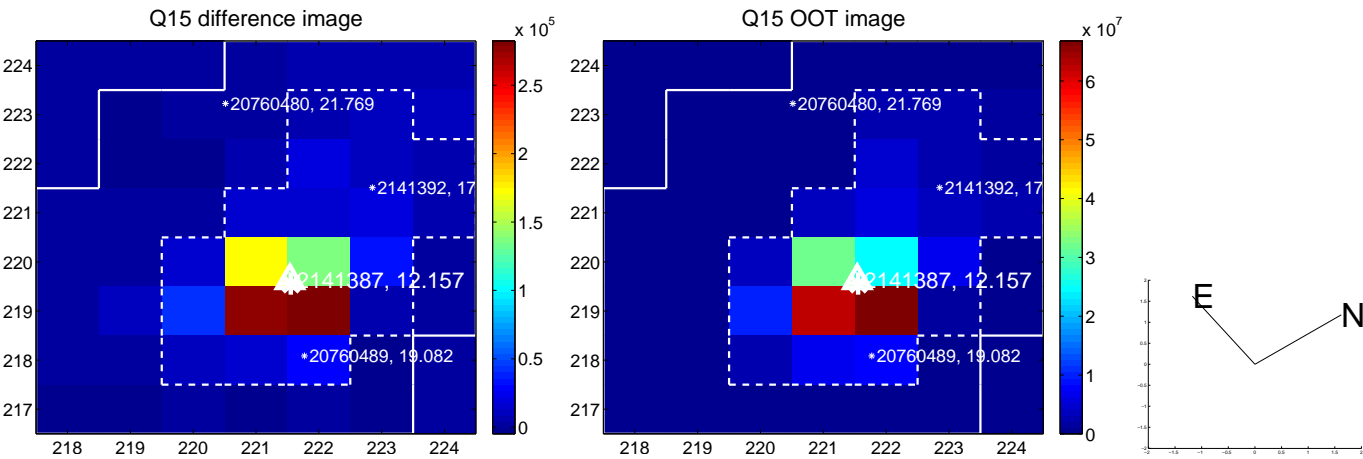
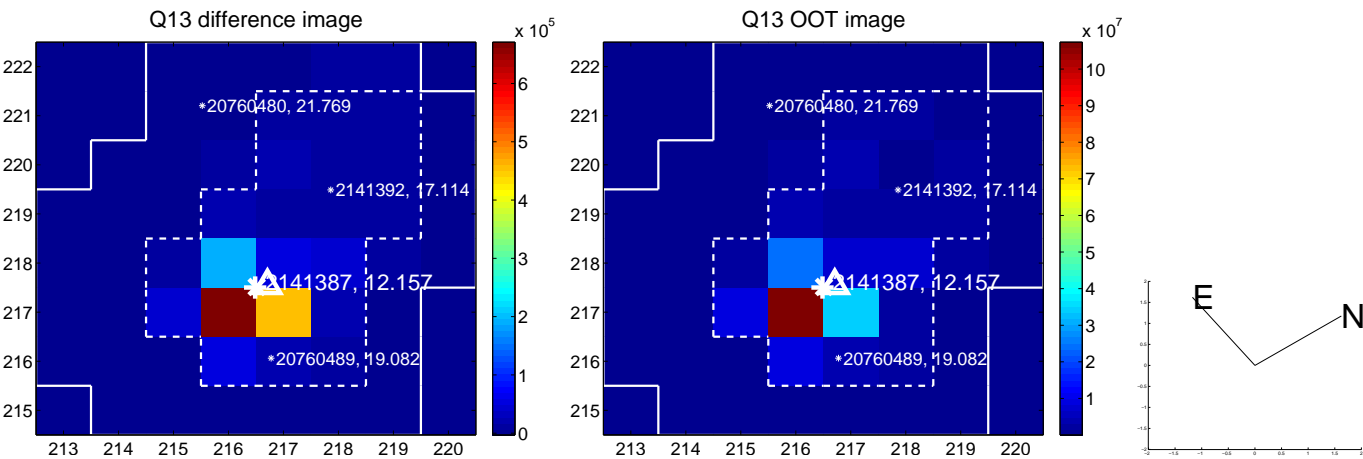
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



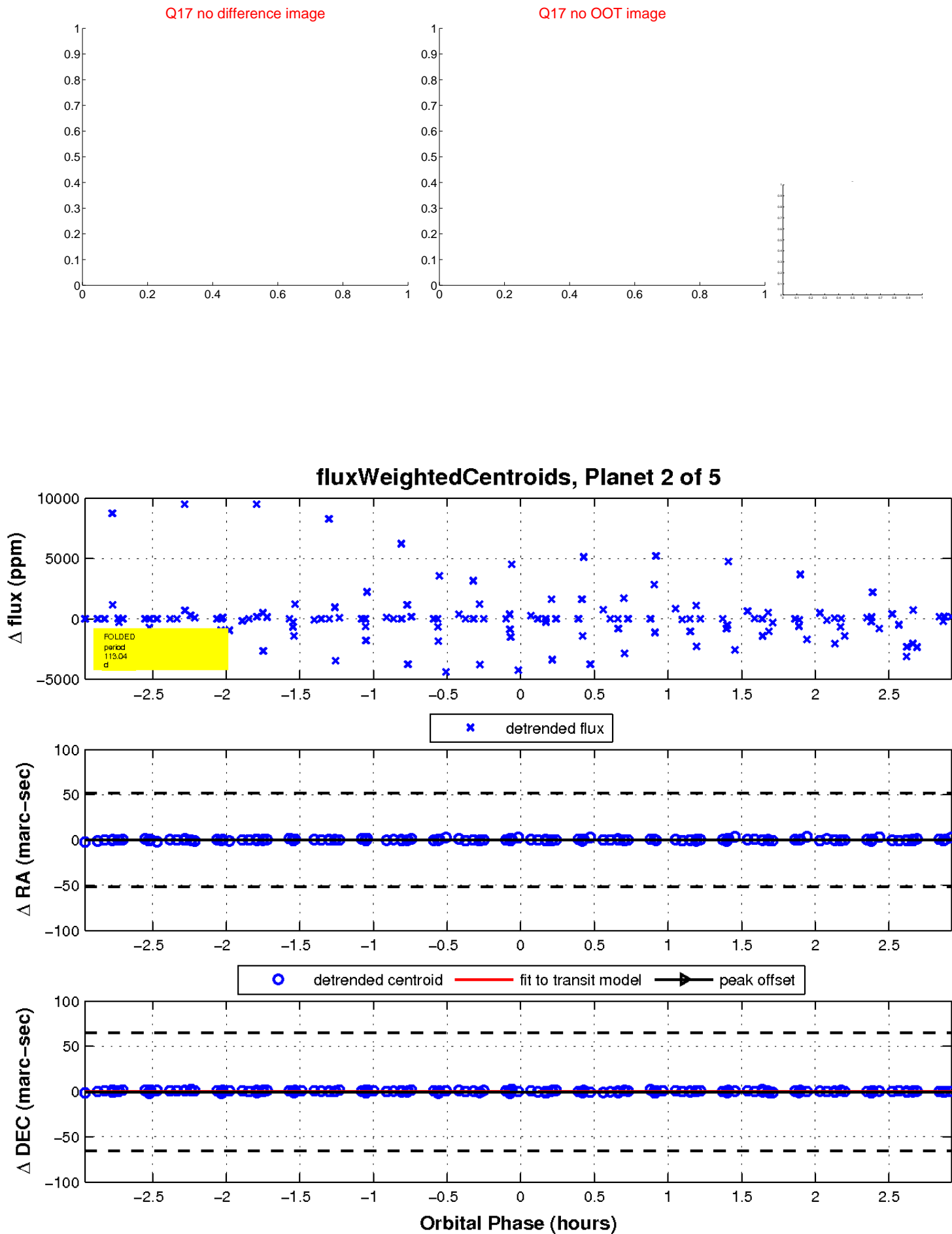
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

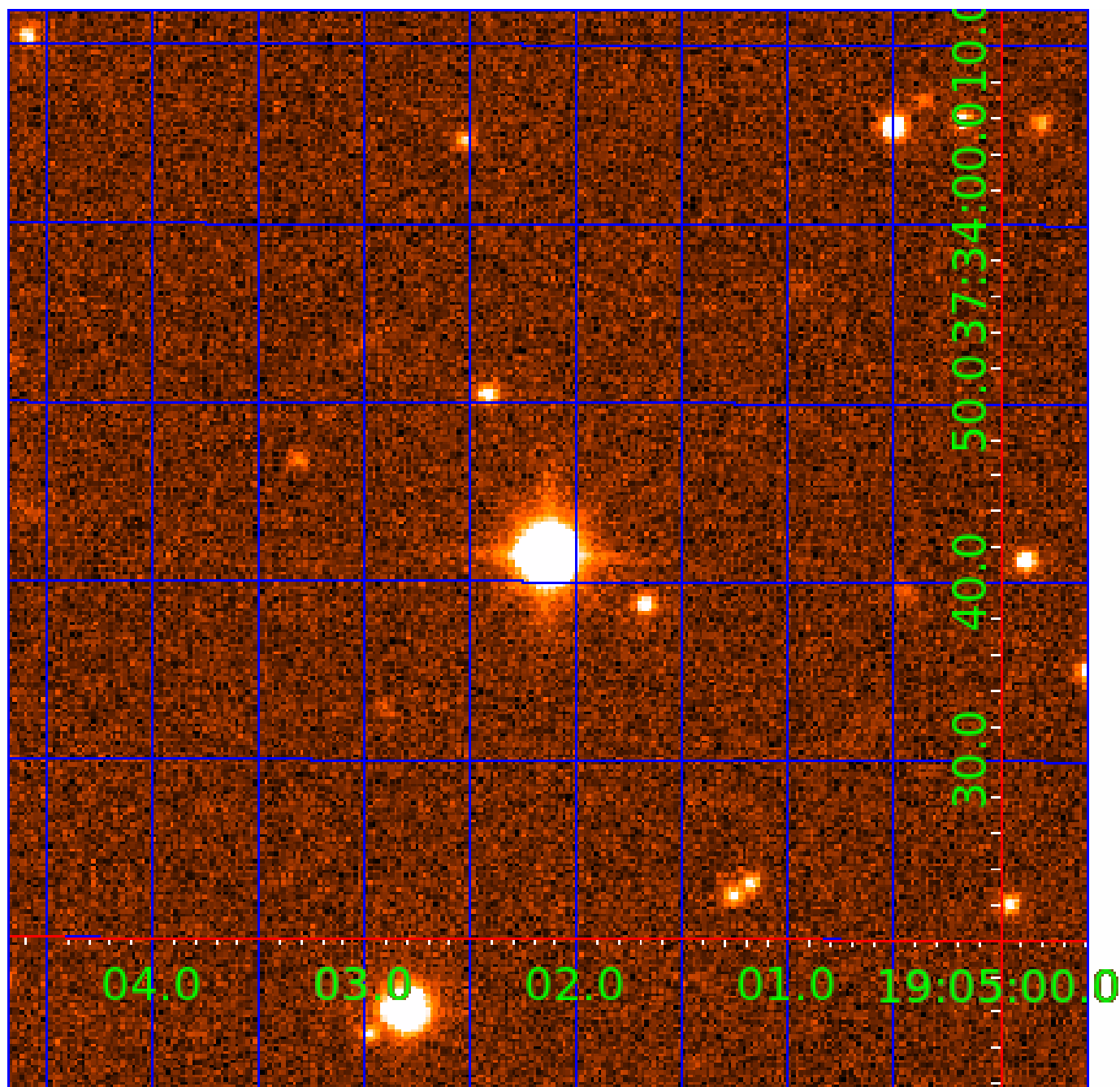


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002141387

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})
002141387-01	OBS	No	113.042143	135.963403	185.2	1.795	20.6	2.0	2.03	7219	3.27	34.12
002141387-02	OBS	No	113.041552	136.115162	729.5	2.500	21.6	-1.0	2.03	7219	5.56	34.12
002141387-03	OBS	No	620.174729	149.589081	266.4	1.994	16.2	1.5	2.03	7219	3.56	3.53
002141387-04	OBS	No	699.342689	134.397683	509.3	2.777	20.6	2.7	2.03	7219	5.05	3.00
002141387-05	OBS	No	200.112304	321.703748	815.1	2.500	20.2	-1.0	2.03	7219	5.88	15.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002141387-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
002141387-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_NOFITS
002141387-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA_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
002141387-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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
002141387-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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.

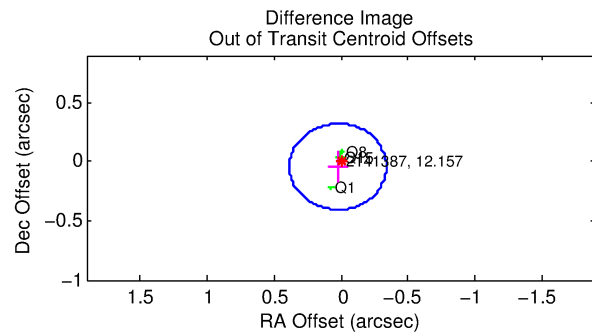
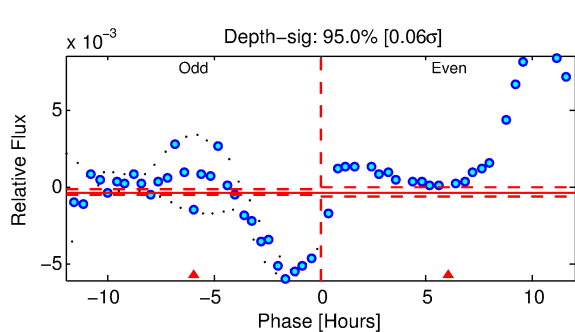
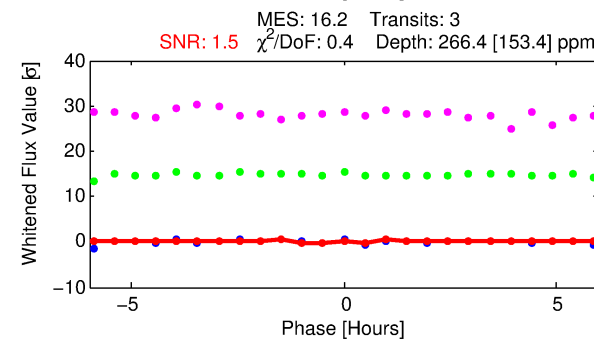
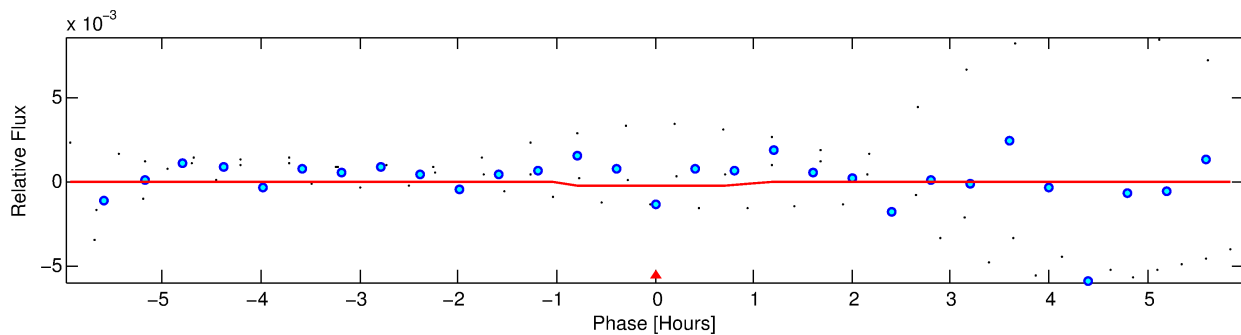
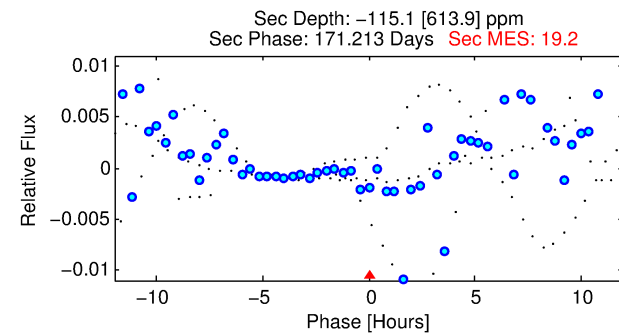
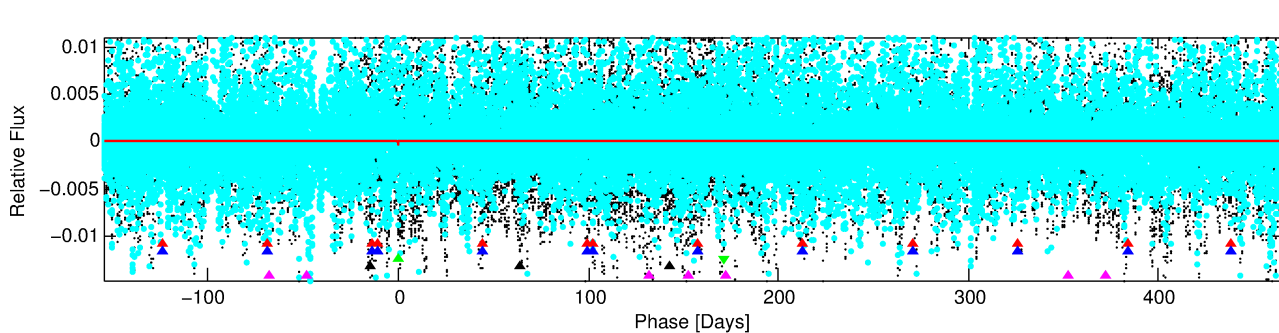
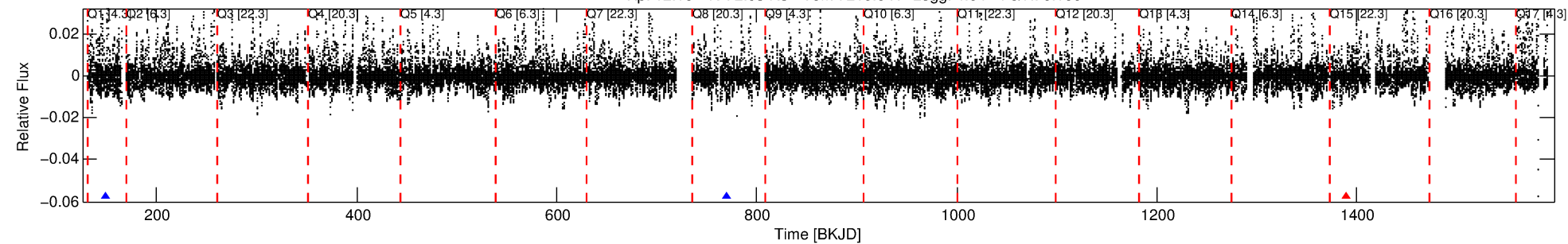
Ephemeris Match Information For 002141387-03

No Significant Match Found

DV One-Page Summary

KIC: 2141387 Candidate: 3 of 5 Period: 620.175 d

Kp: 12.16 R*: 2.03 Rs Teff: 7219.0 K Logg: 4.04 Fe/H: 0.100



DV Fit Results:

Period = 620.17473 [0.00631] d
Epoch = 149.5891 [0.0109] BKJD
Rp/R* = 0.0161 [0.0386]
a/R* = 1750.42 [25621.27]
b = 0.70 [10.79]
Seff = 3.53 [1.33]
Teq = 349 [33] K
Rp = 3.56 [8.62] Re
a = 1.6873 [0.3949] AU
Ag = N/A
Teffp = N/A

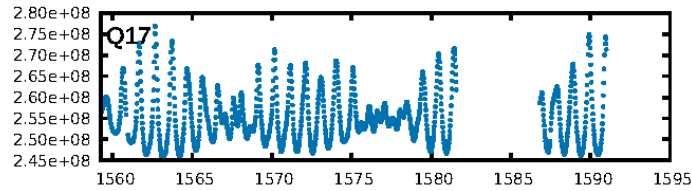
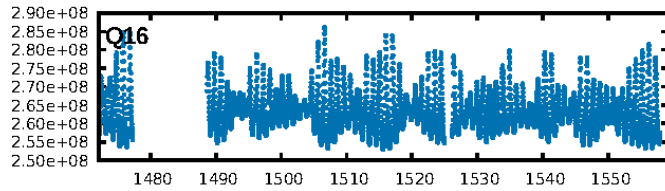
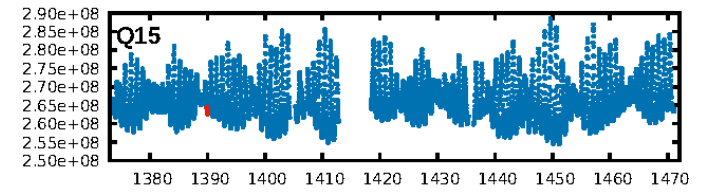
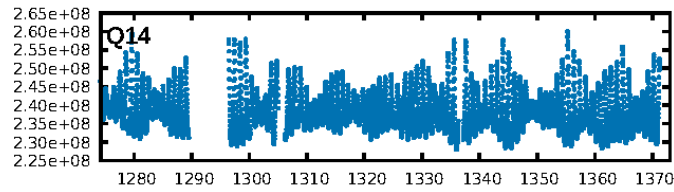
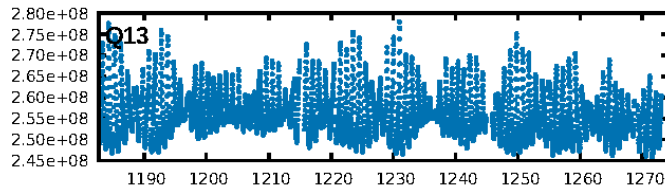
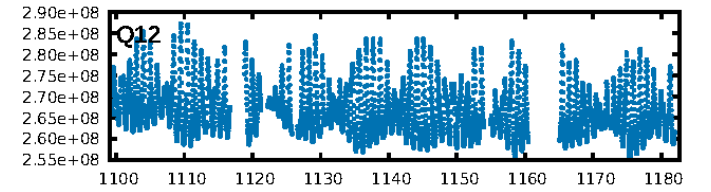
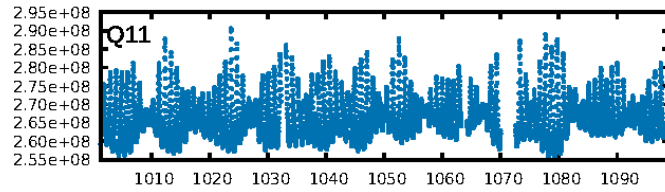
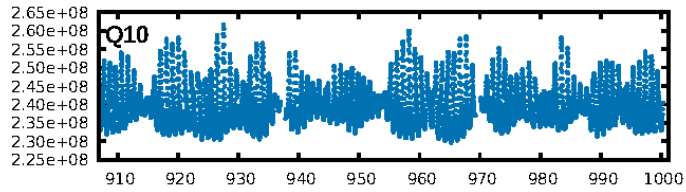
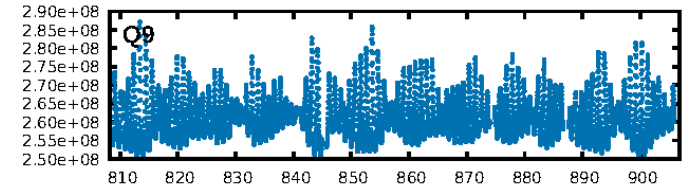
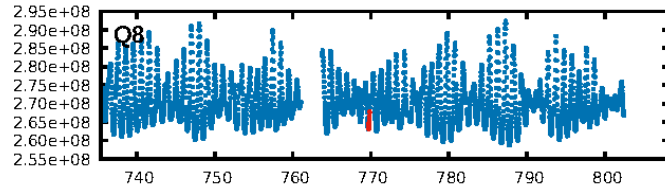
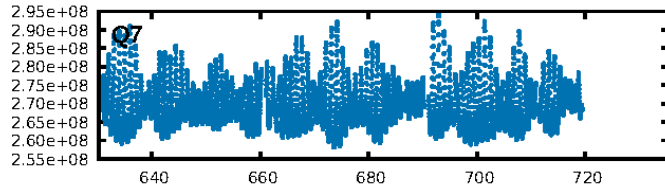
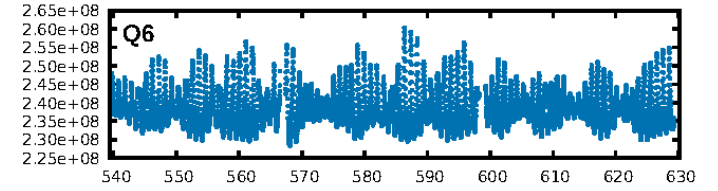
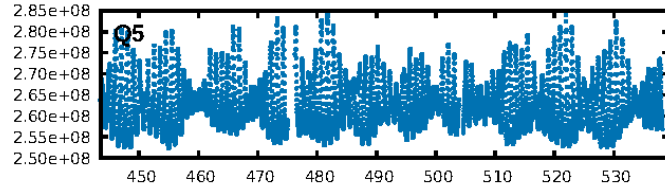
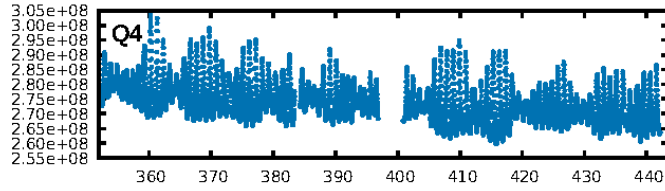
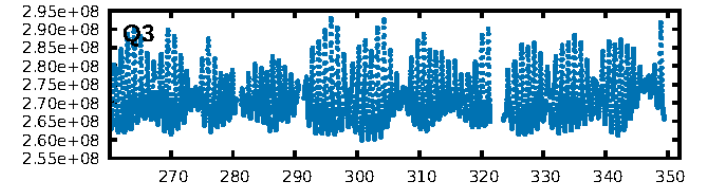
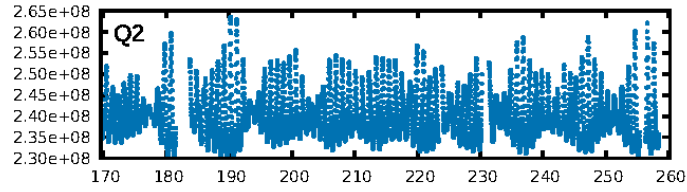
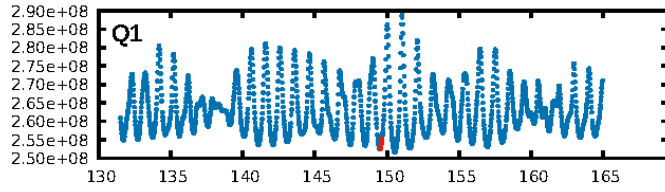
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3152.42σ]
LongPeriod-sig: 100.0% [555.75σ]
ModelChiSquare2-sig: 92.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.50 [1/2]
GhostDiagnostic-chr: -0.8706
Centroid-sig: 71.9%
Centroid-so: 1.418 arcsec [0.43σ]
OotOffset-rm: 0.048 arcsec [0.39σ]
KicOffset-rm: 0.051 arcsec [0.34σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

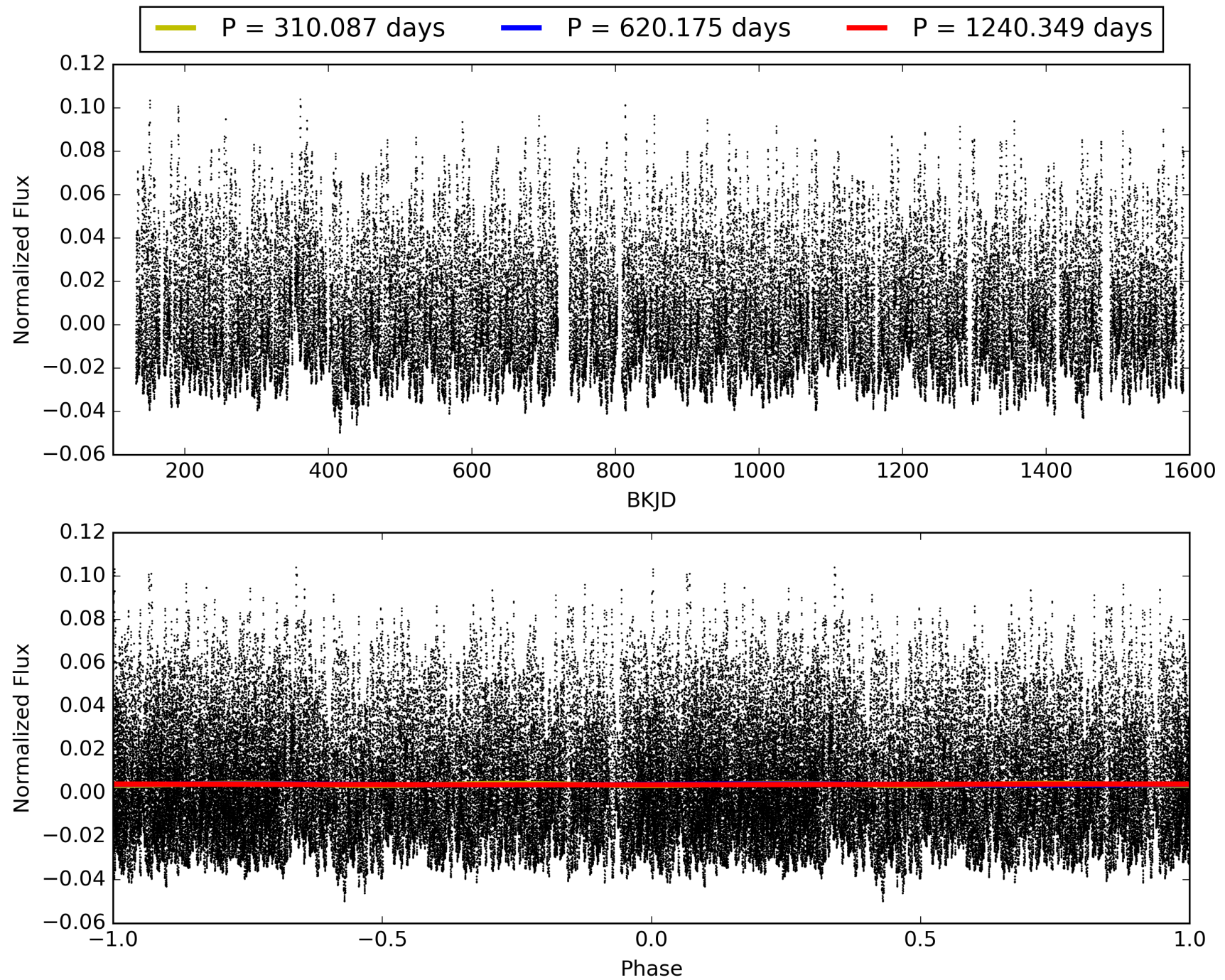
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:56:54 Z

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

TCE 002141387-03, PDC Light Curves

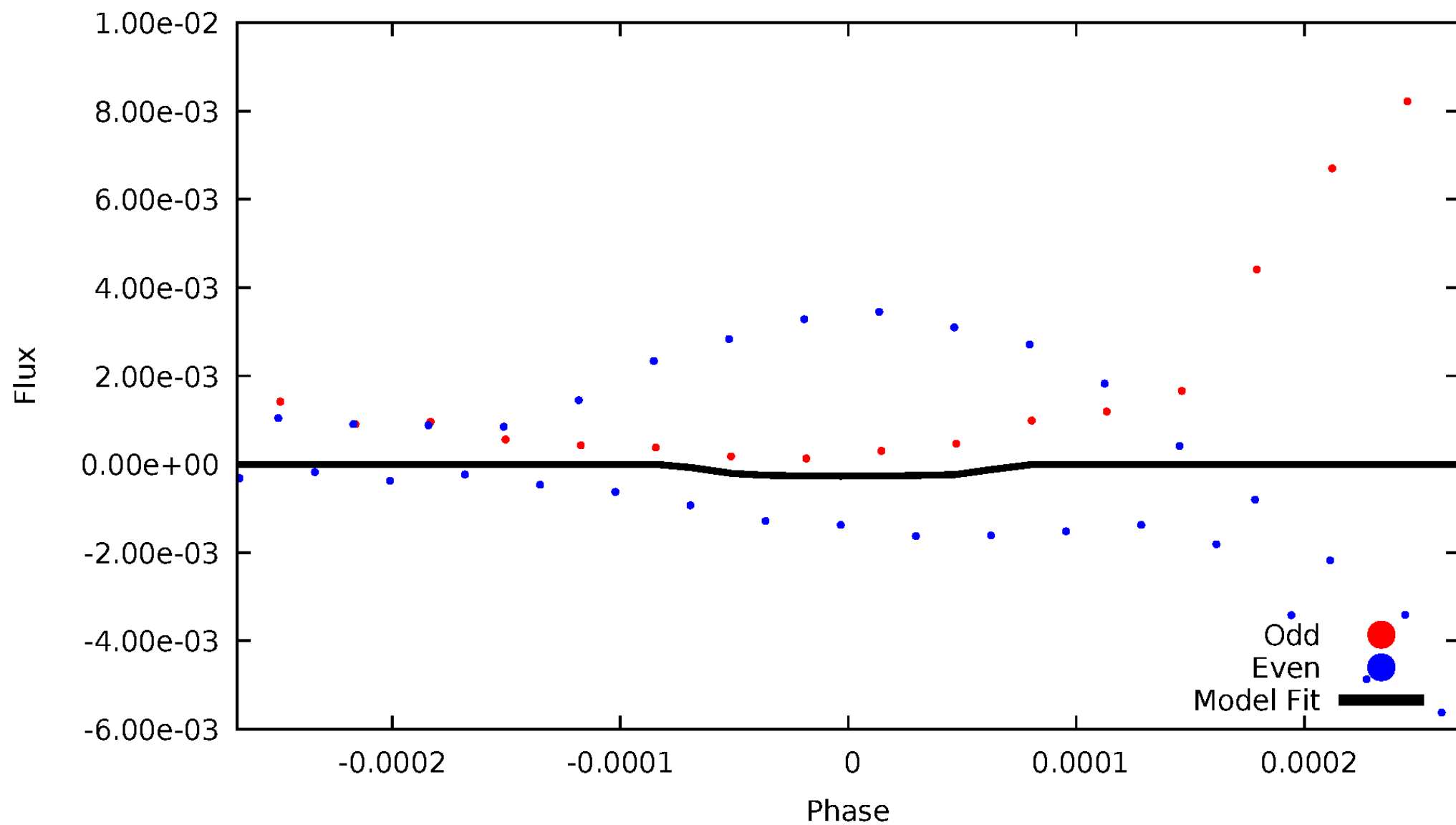


TCE 002141387-03



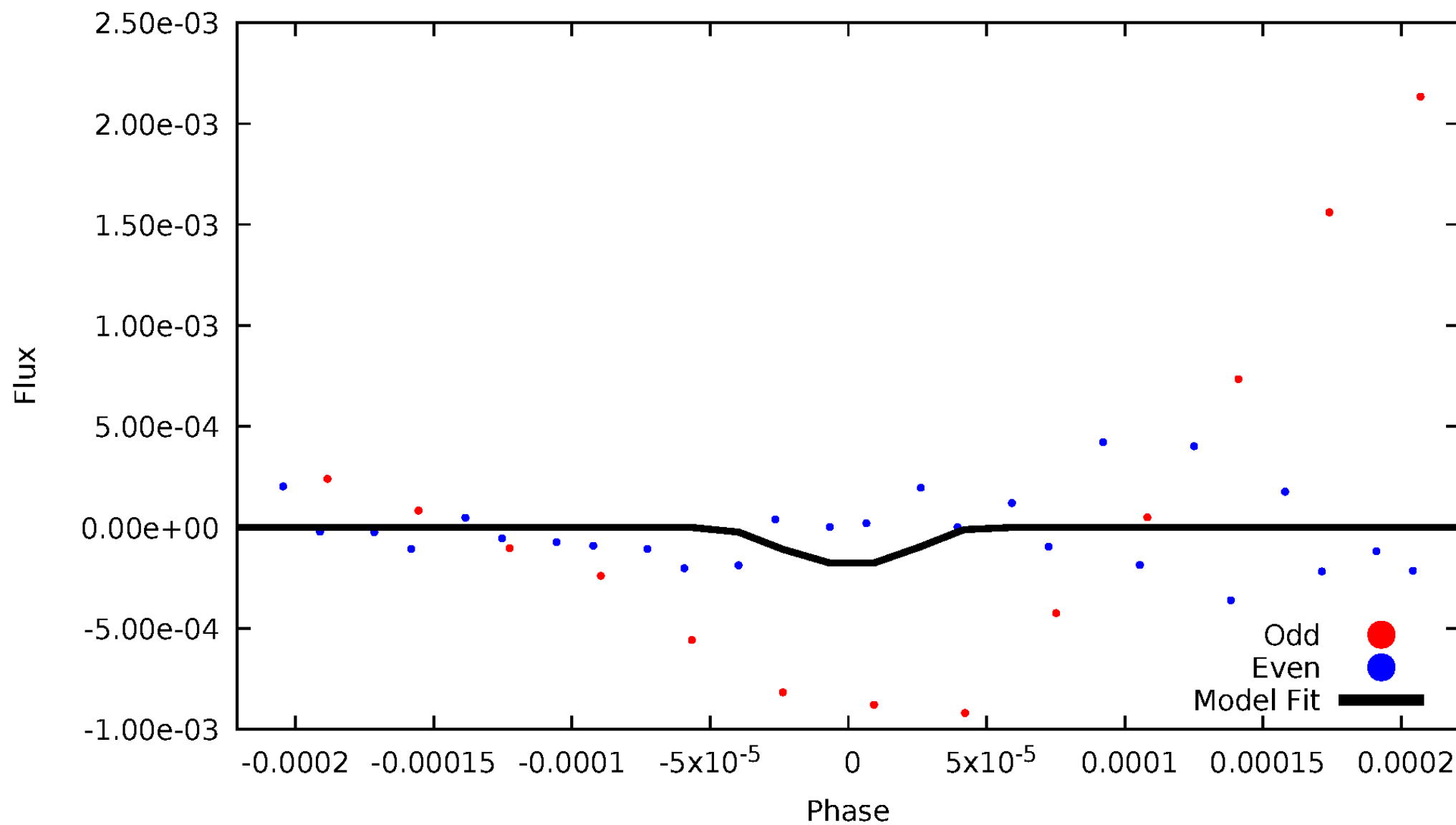
DV Odd/Even

TCE 002141387-03



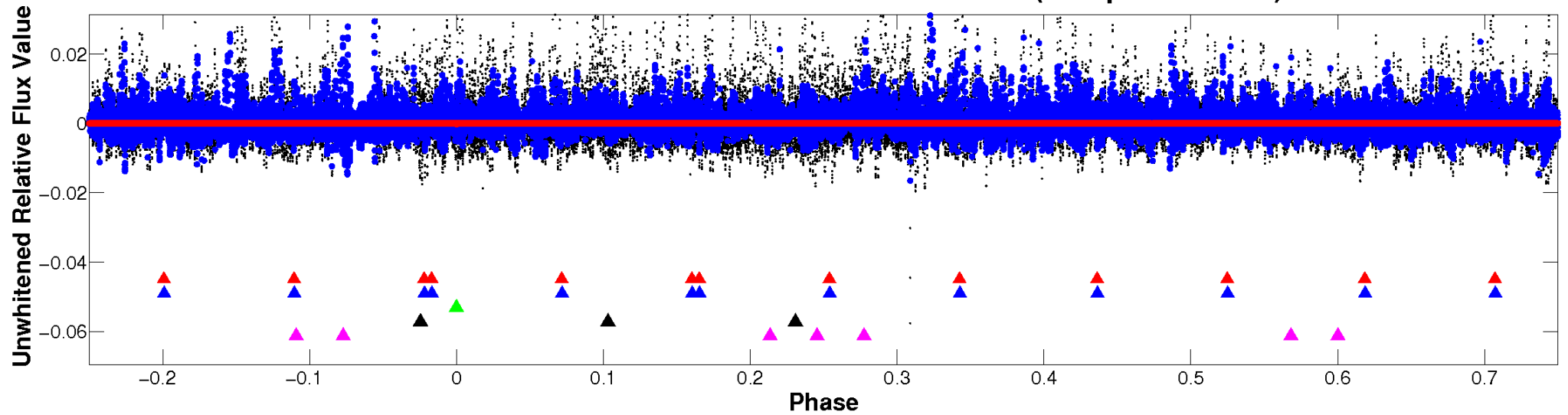
ALT Odd/Even

TCE 002141387-03

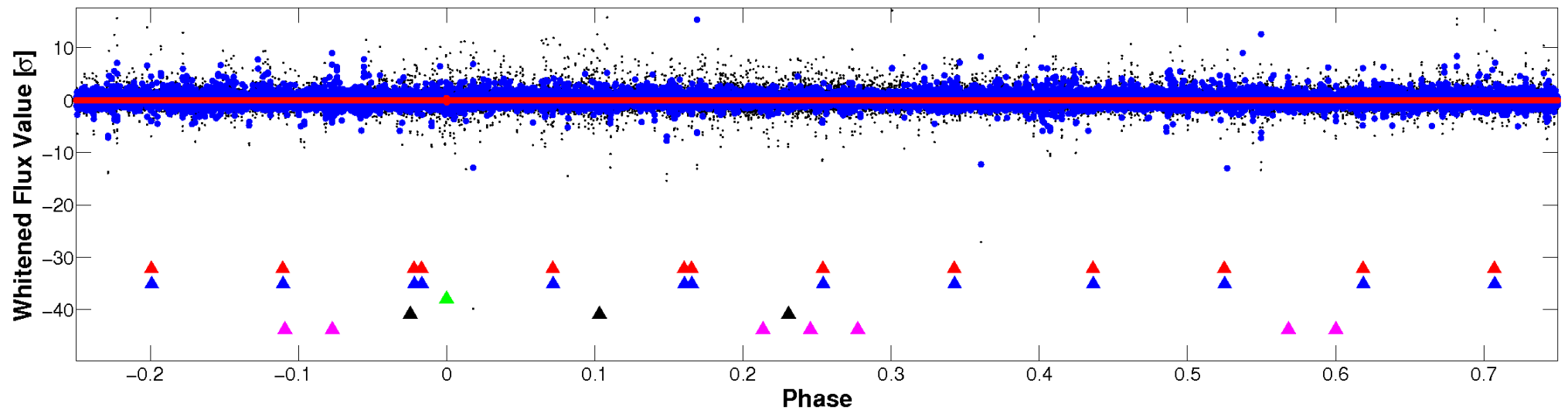


Non-Whitened Vs. Whitened Light Curve

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

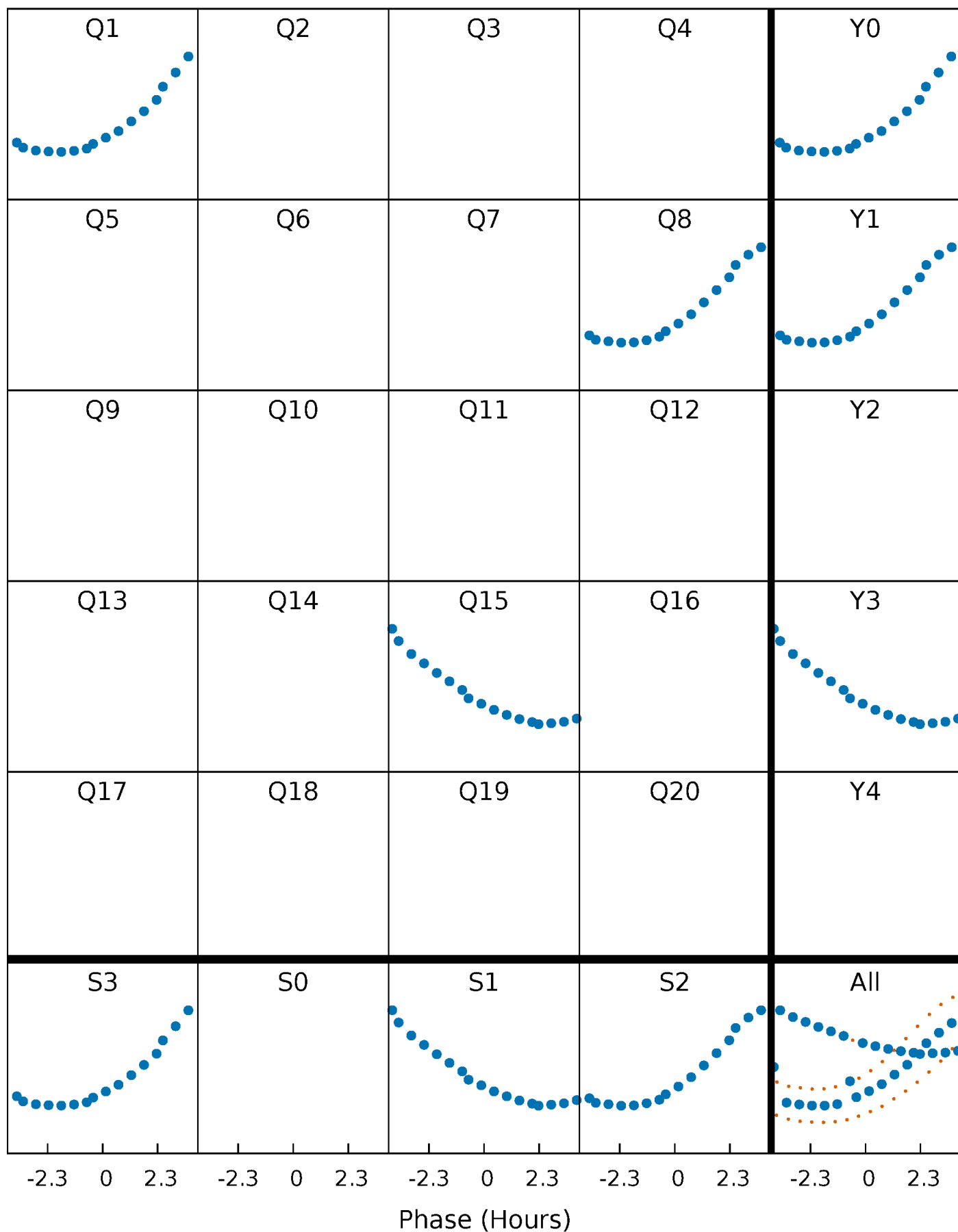


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



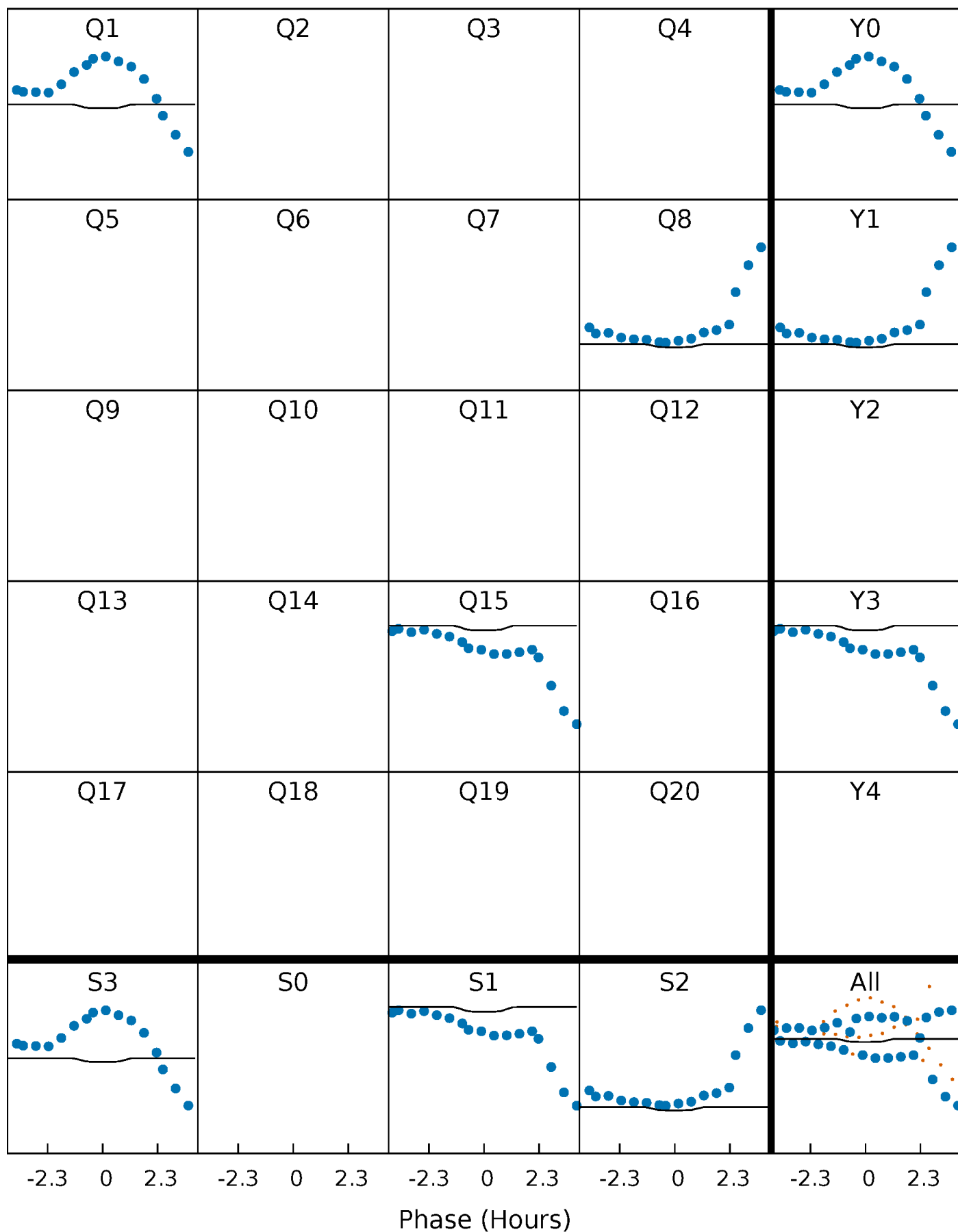
PDC Quarter-Phased Transit Curves

TCE 002141387-03 P=620.174729 Days $T_0=149.589081$ (BKJD)



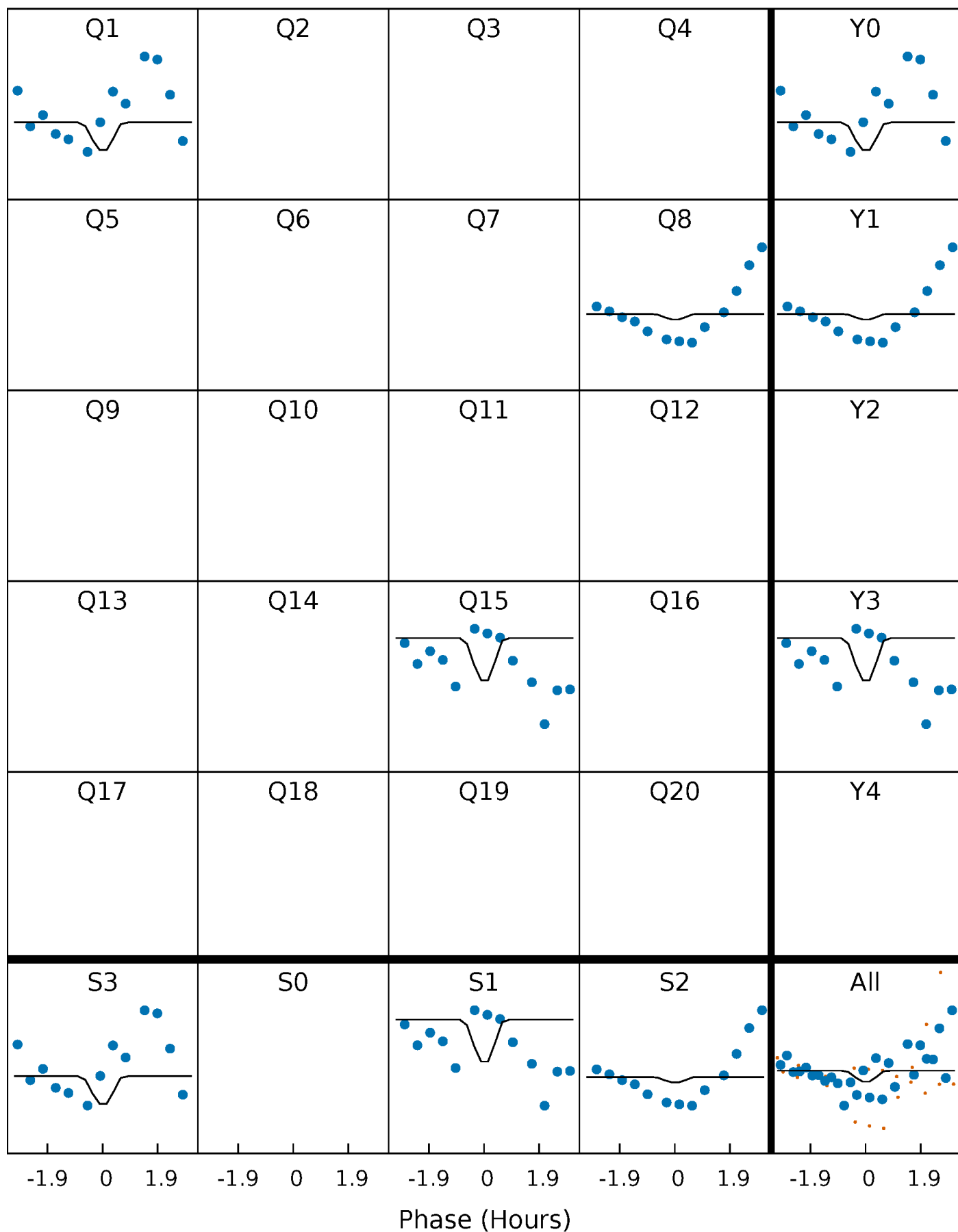
DV Quarter-Phased Transit Curves

TCE 002141387-03 P=620.174729 Days $T_0=149.589081$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

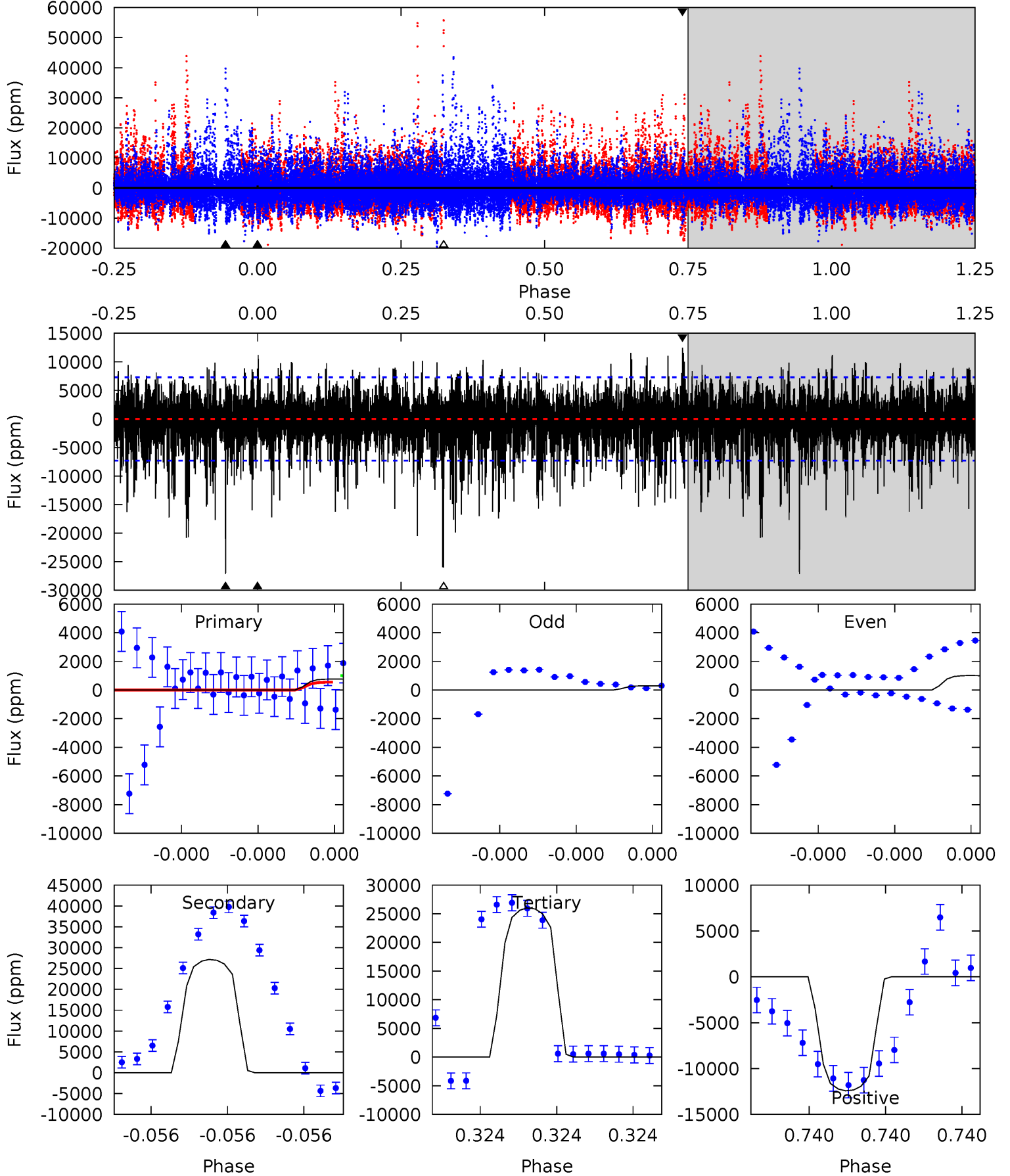
TCE 002141387-03 P=620.185791 Days $T_0=149.581235$ (BKJD)



DV Model-Shift Uniqueness Test

002141387-03, P = 620.174729 Days, E = 149.589081 Days

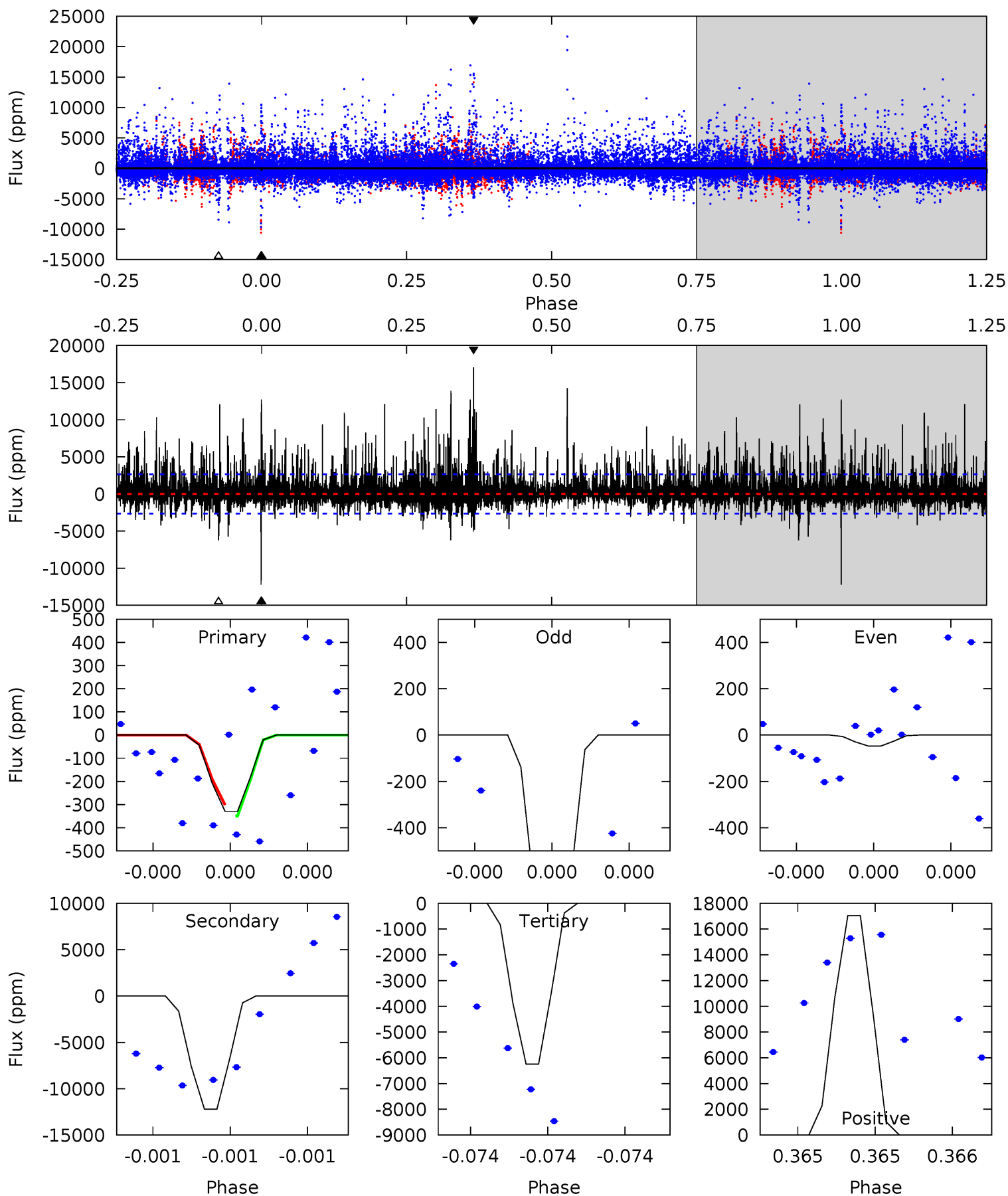
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.61	21.4	20.5	9.80	5.76	3.77	2.65	-19.9	-9.20	0.90	11.6	0.25	2.42	0.31	0.18



Alt Model-Shift Uniqueness Test

002141387-03, P = 620.185791 Days, E = 149.581235 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.73	27.0	13.8	37.7	5.85	3.89	2.69	-13.1	-37.0	13.2	-10.7	0.78	-9.99	0.58	0.05



Stellar Parameters For KIC 002141387

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7219^{+200}_{-343}	$4.044^{+0.170}_{-0.170}$	$0.100^{+0.200}_{-0.350}$	$2.031^{+0.592}_{-0.538}$	$1.664^{+0.193}_{-0.290}$	$0.280^{+0.273}_{-0.140}$
	+3%/-5%	+4%/-4%	+200%/-350%	+29%/-26%	+12%/-17%	+97%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 002141387-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-27170 ± 1267	$7.47^{+6.99}_{-5.23}$	489^{+39}_{-39}	$29637^{+186061}_{-15445}$	$769336^{+7896649}_{-563801}$
Alt.	-12199 ± 452	$6.68^{+6.56}_{-4.67}$	486^{+39}_{-35}	$19729^{+106626}_{-8885}$	$434360^{+4360716}_{-327255}$

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

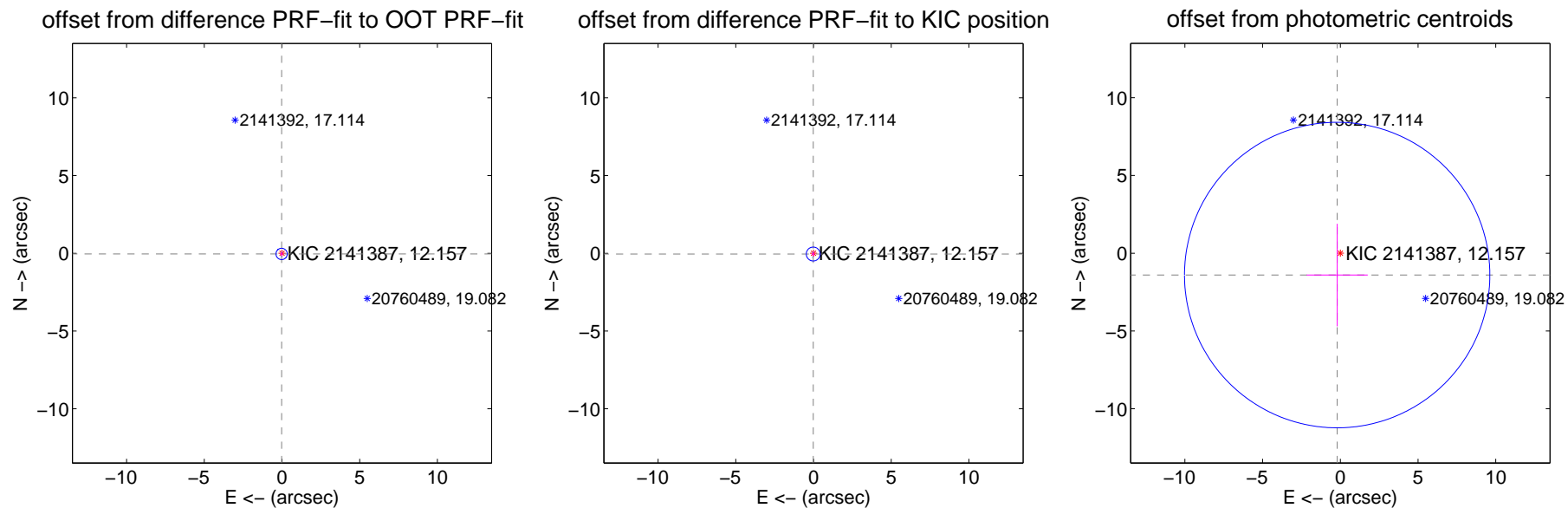
DV Centroid Data

Supplemental centroid analysis for 002141387-03. Kepler magnitude: 12.16. Transit SNR 1.47

There are 3 quarters with good PRF difference image offsets

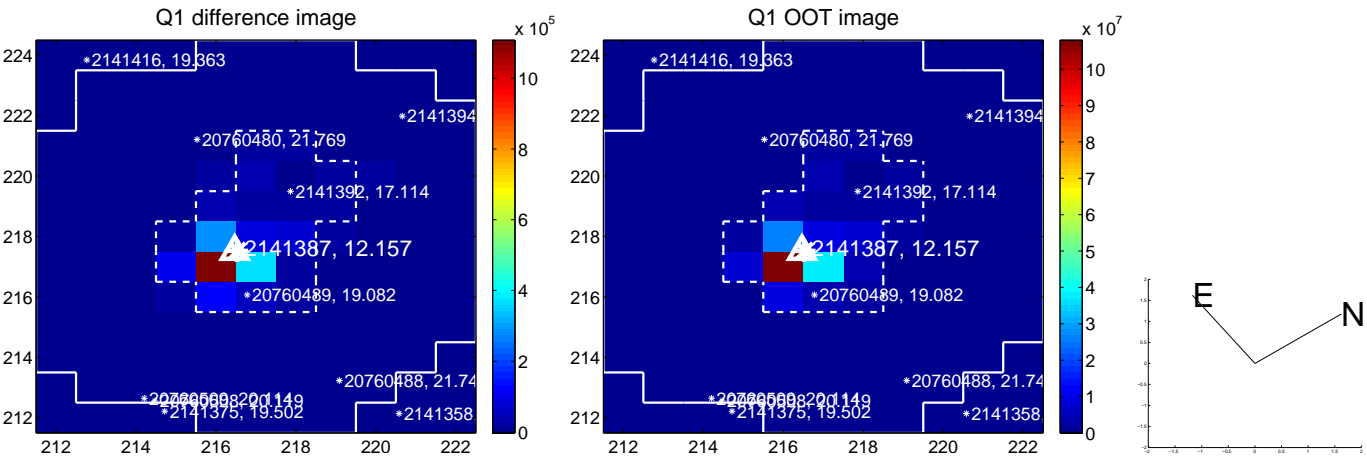
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.048 ± 0.121	0.39	0.024 ± 0.072	-0.041 ± 0.133
PRF-fit source offset from KIC position	0.051 ± 0.149	0.34	0.019 ± 0.083	-0.047 ± 0.157
photometric centroid source offset	1.42 ± 3.27	0.43	0.20 ± 1.97	-1.40 ± 3.30

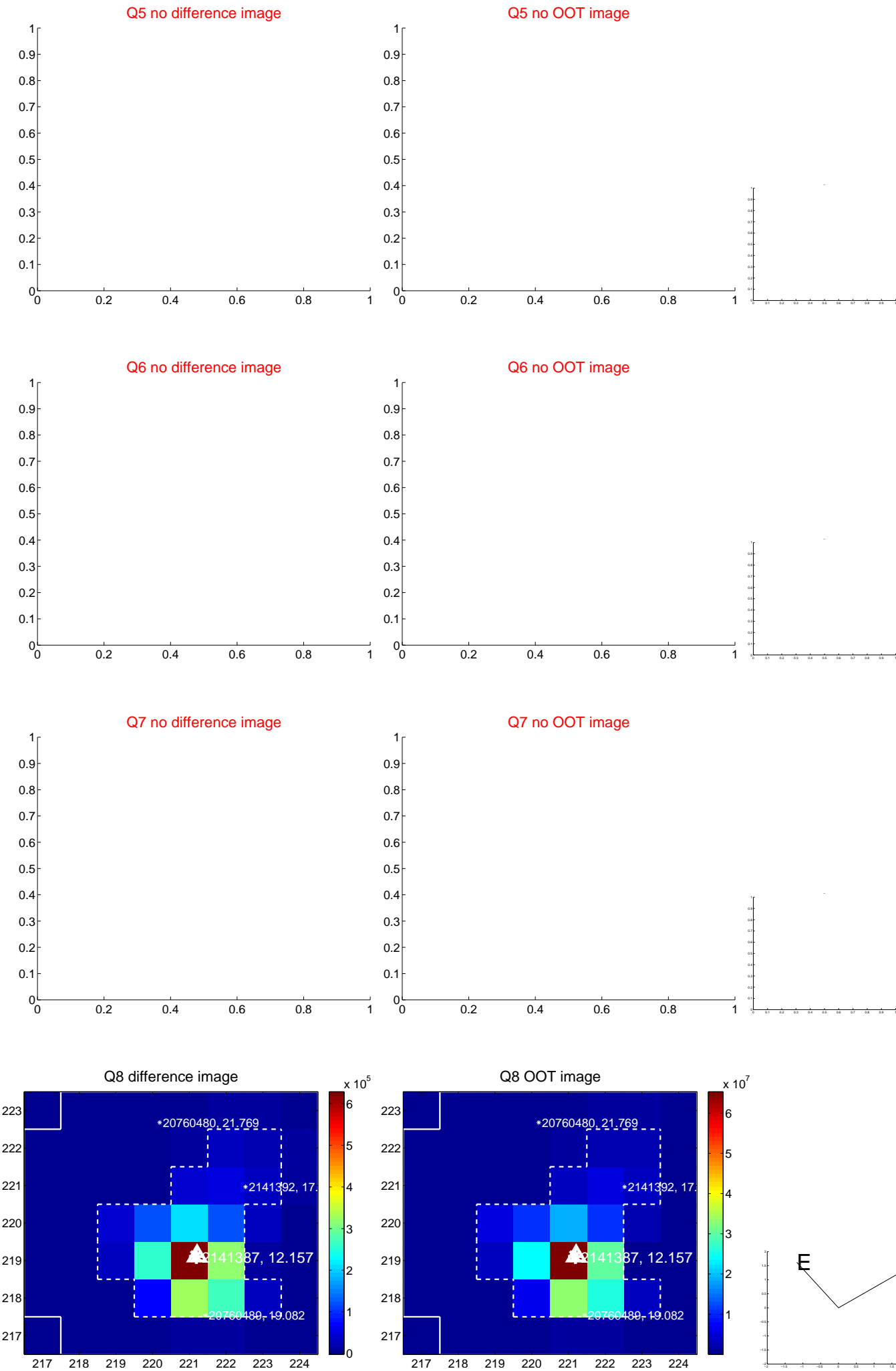


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



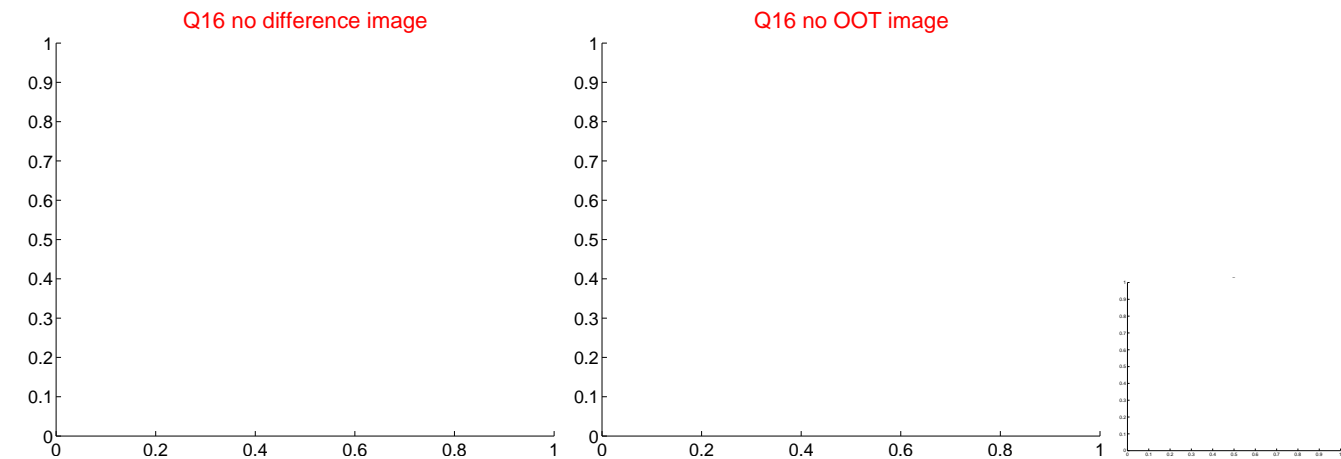
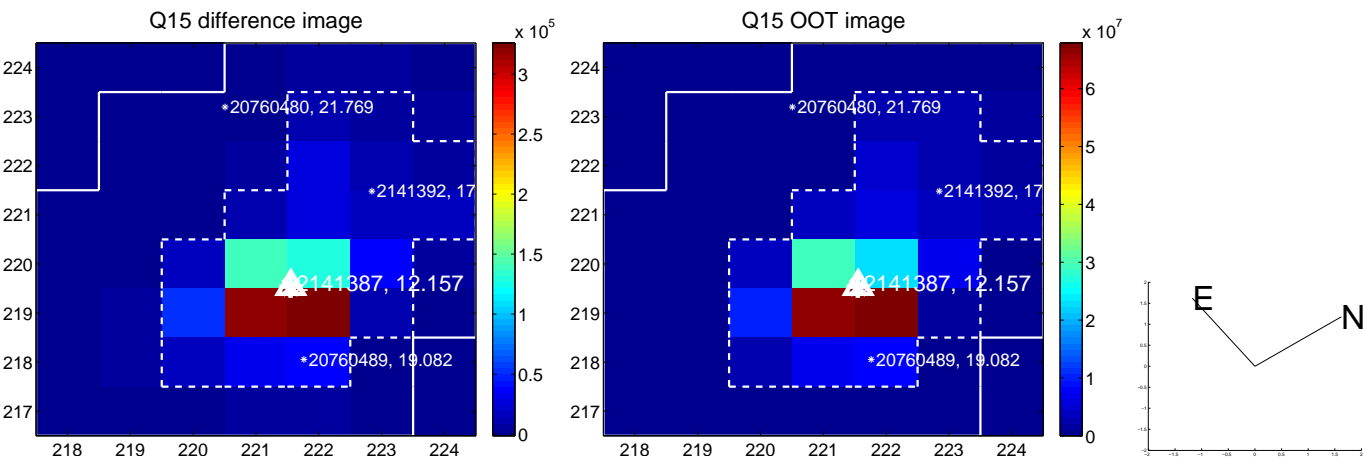
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



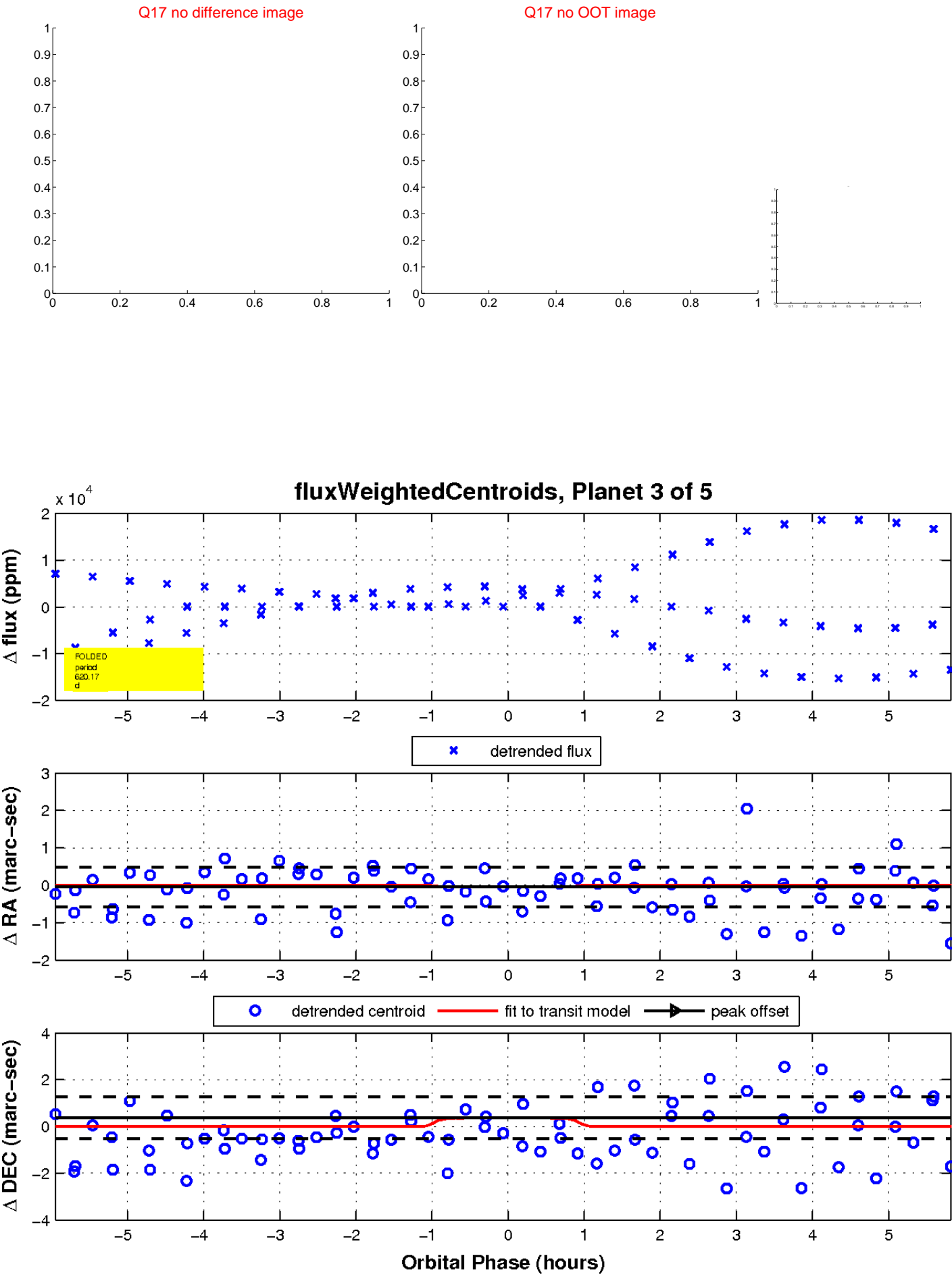
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

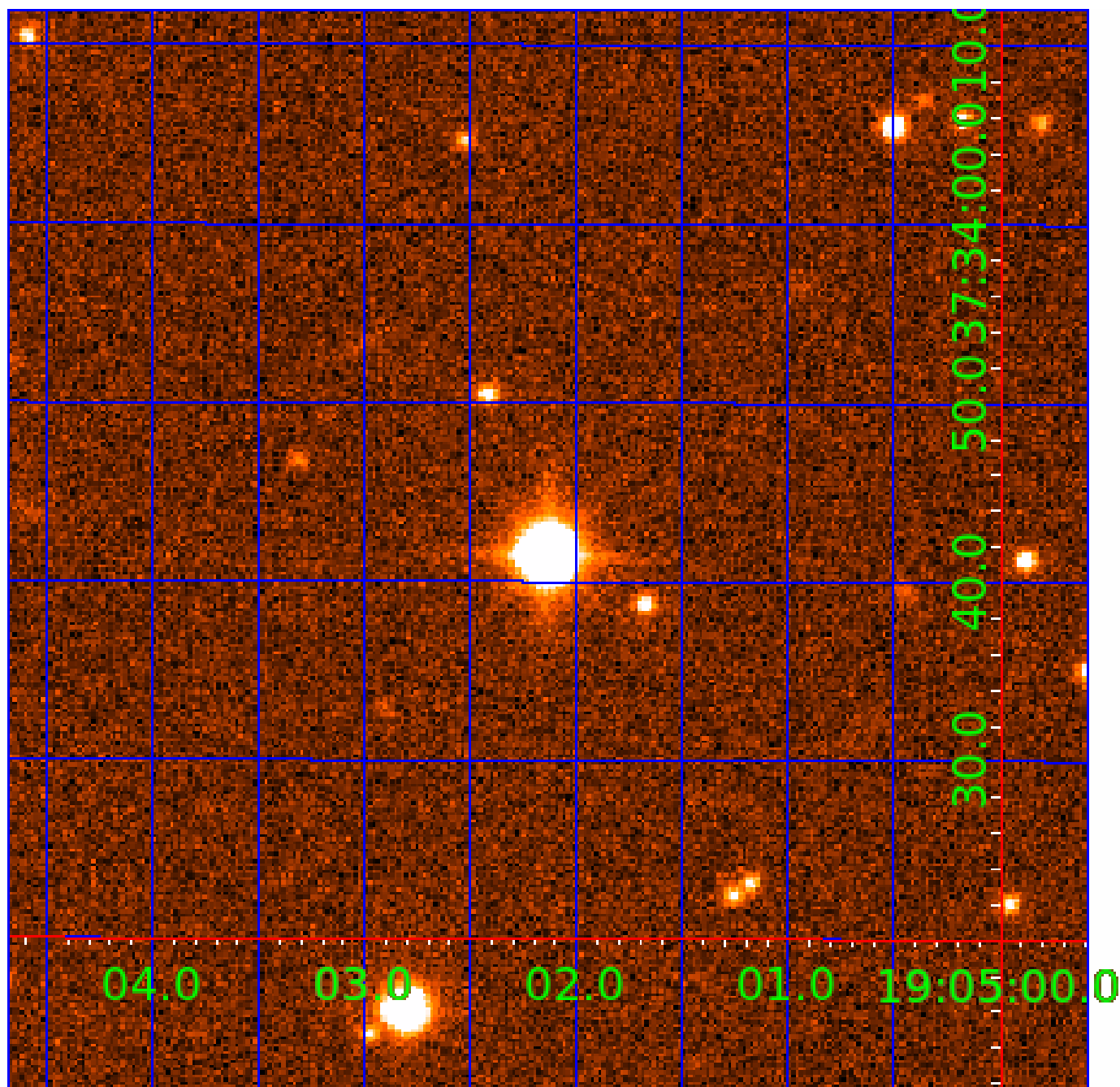


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002141387

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})
002141387-01	OBS	No	113.042143	135.963403	185.2	1.795	20.6	2.0	2.03	7219	3.27	34.12
002141387-02	OBS	No	113.041552	136.115162	729.5	2.500	21.6	-1.0	2.03	7219	5.56	34.12
002141387-03	OBS	No	620.174729	149.589081	266.4	1.994	16.2	1.5	2.03	7219	3.56	3.53
002141387-04	OBS	No	699.342689	134.397683	509.3	2.777	20.6	2.7	2.03	7219	5.05	3.00
002141387-05	OBS	No	200.112304	321.703748	815.1	2.500	20.2	-1.0	2.03	7219	5.88	15.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002141387-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
002141387-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_NOFITS
002141387-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA_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
002141387-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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
002141387-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

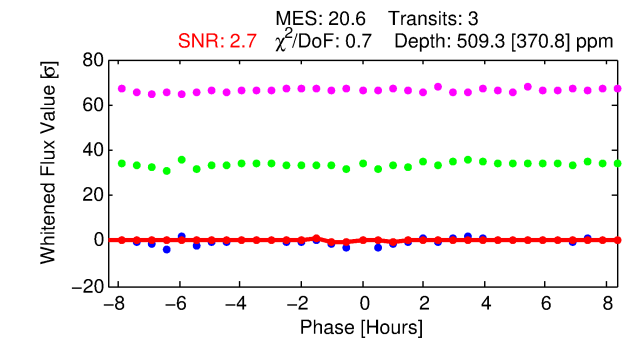
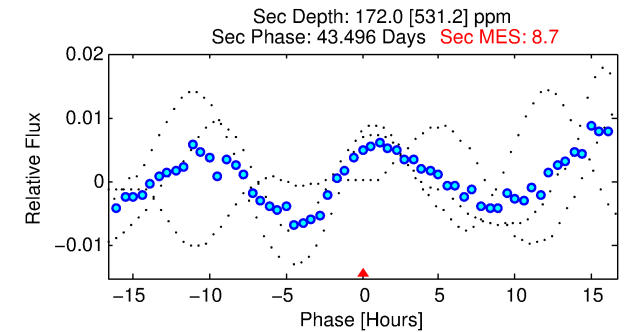
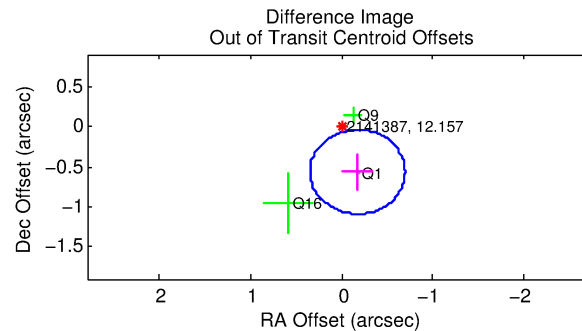
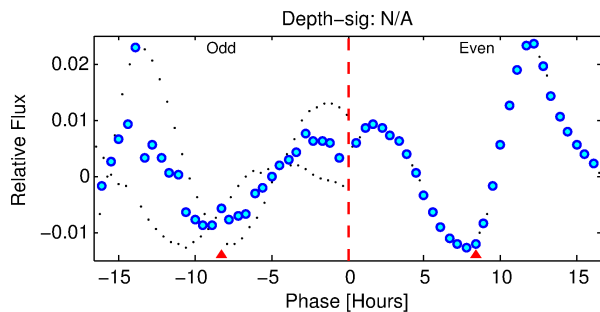
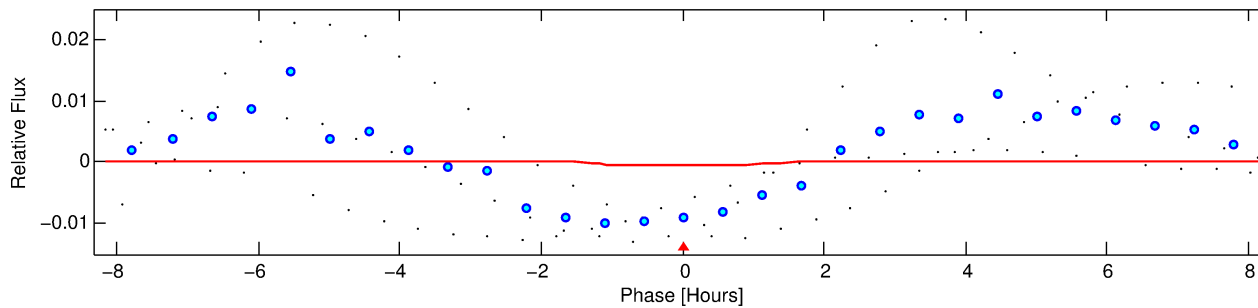
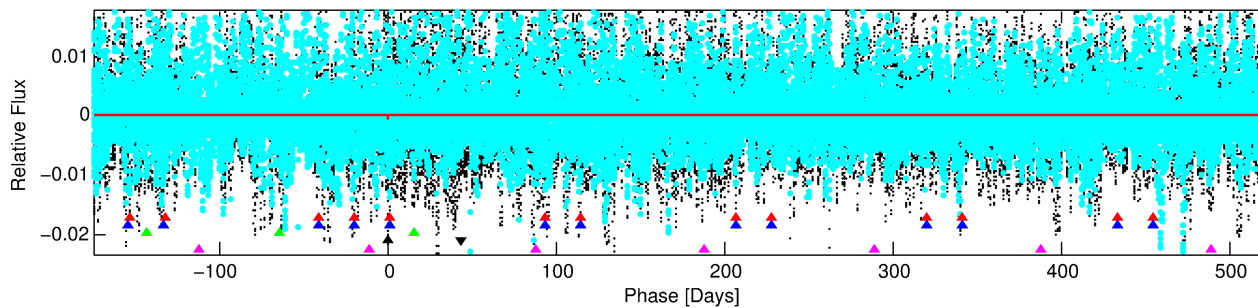
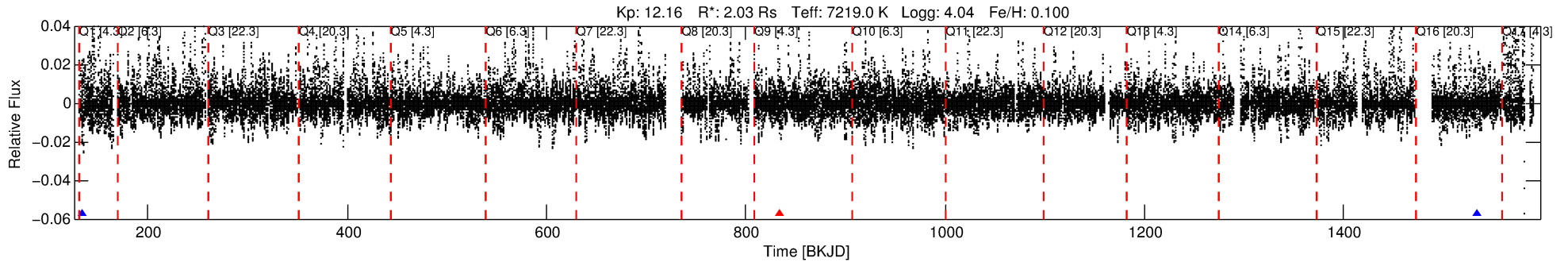
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002141387-04

No Significant Match Found

DV One-Page Summary

KIC: 2141387 Candidate: 4 of 5 Period: 699.343 d



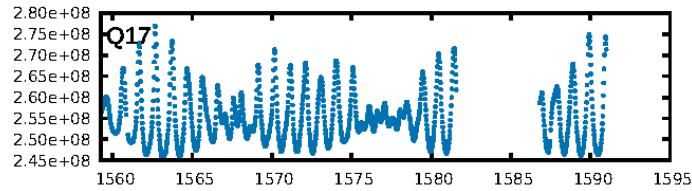
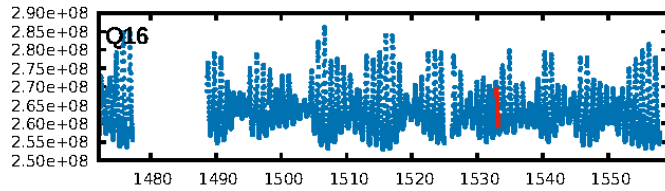
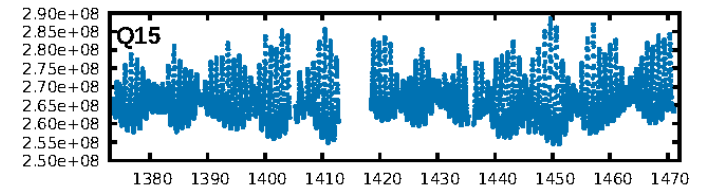
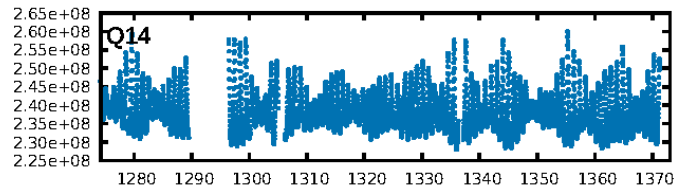
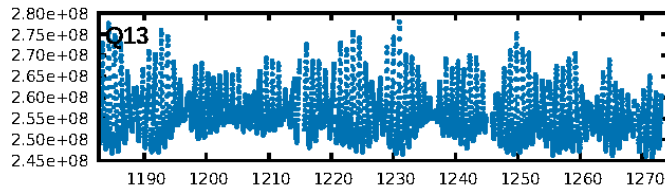
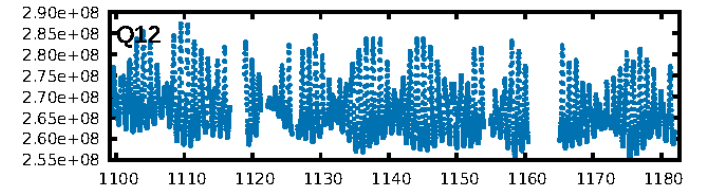
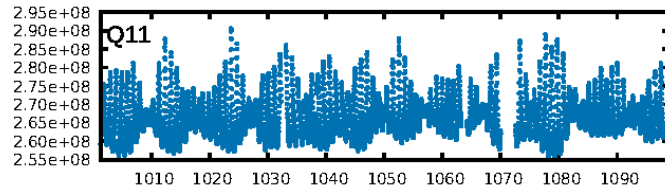
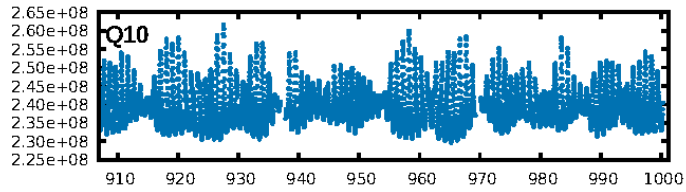
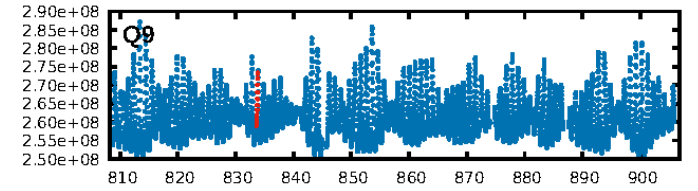
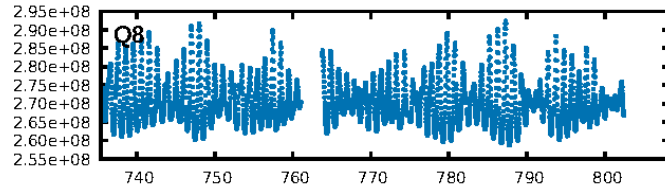
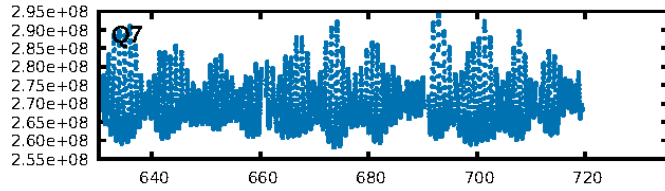
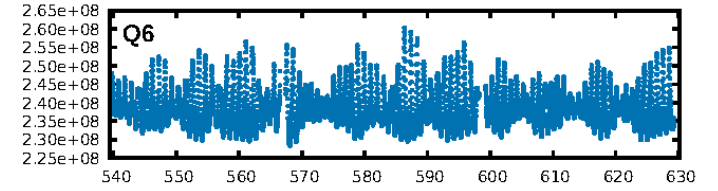
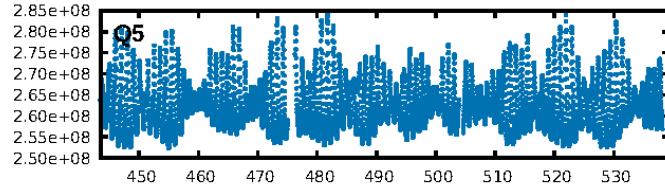
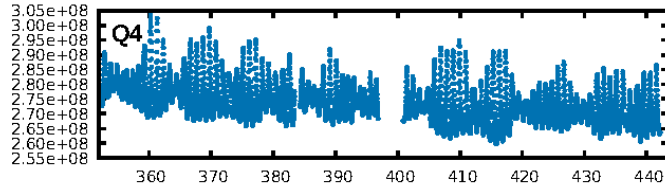
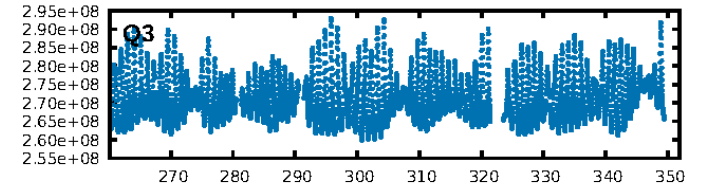
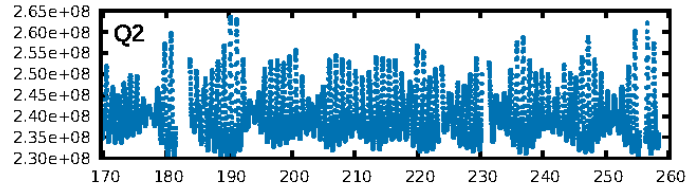
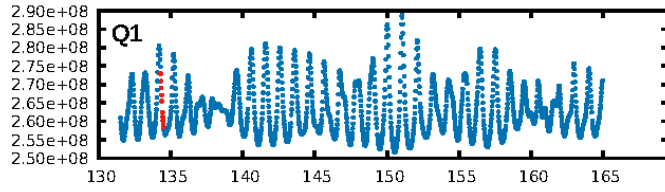
DV Fit Results:

Period = 699.34269 [0.00628] d
Epoch = 134.3977 [0.0095] BKJD
Rp/R* = 0.0228 [0.0194]
a/R* = 1233.17 [5253.66]
b = 0.80 [1.96]
Seff = 3.00 [1.13]
Teq = 336 [32] K
Rp = 5.05 [4.55] Re
a = 1.8279 [0.4279] AU
Ag = 12390.65 [43880.68] [0.28σ]
Teffp = 5476 [4835] K [1.06σ]

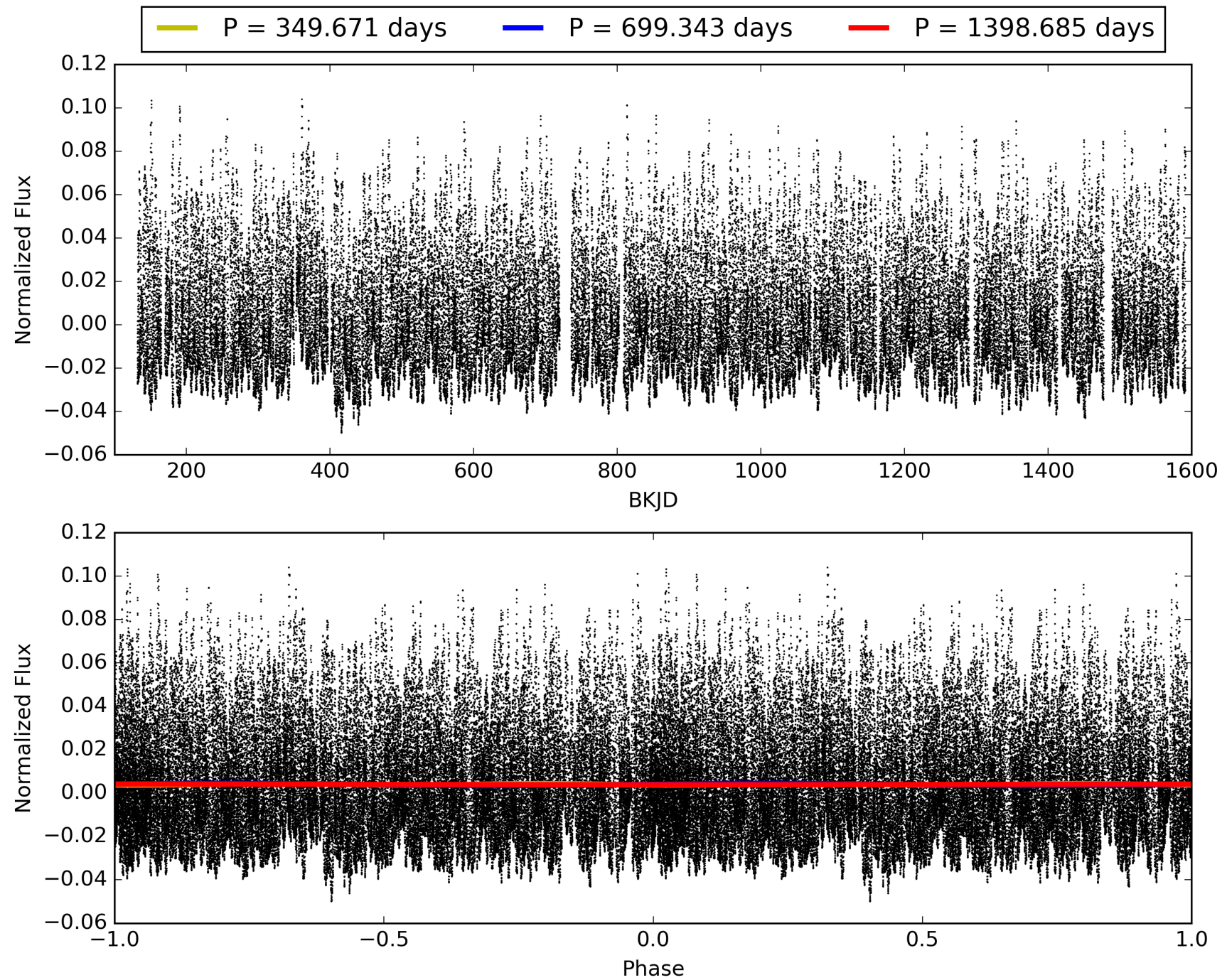
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [555.75σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 63.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.50 [1/2]
GhostDiagnostic-chr: 6.083
Centroid-sig: 95.4%
Centroid-so: 0.320 arcsec [0.18σ]
OotOffset-rm: 0.592 arcsec [3.38σ]
KicOffset-rm: 0.602 arcsec [3.49σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 002141387-04, PDC Light Curves

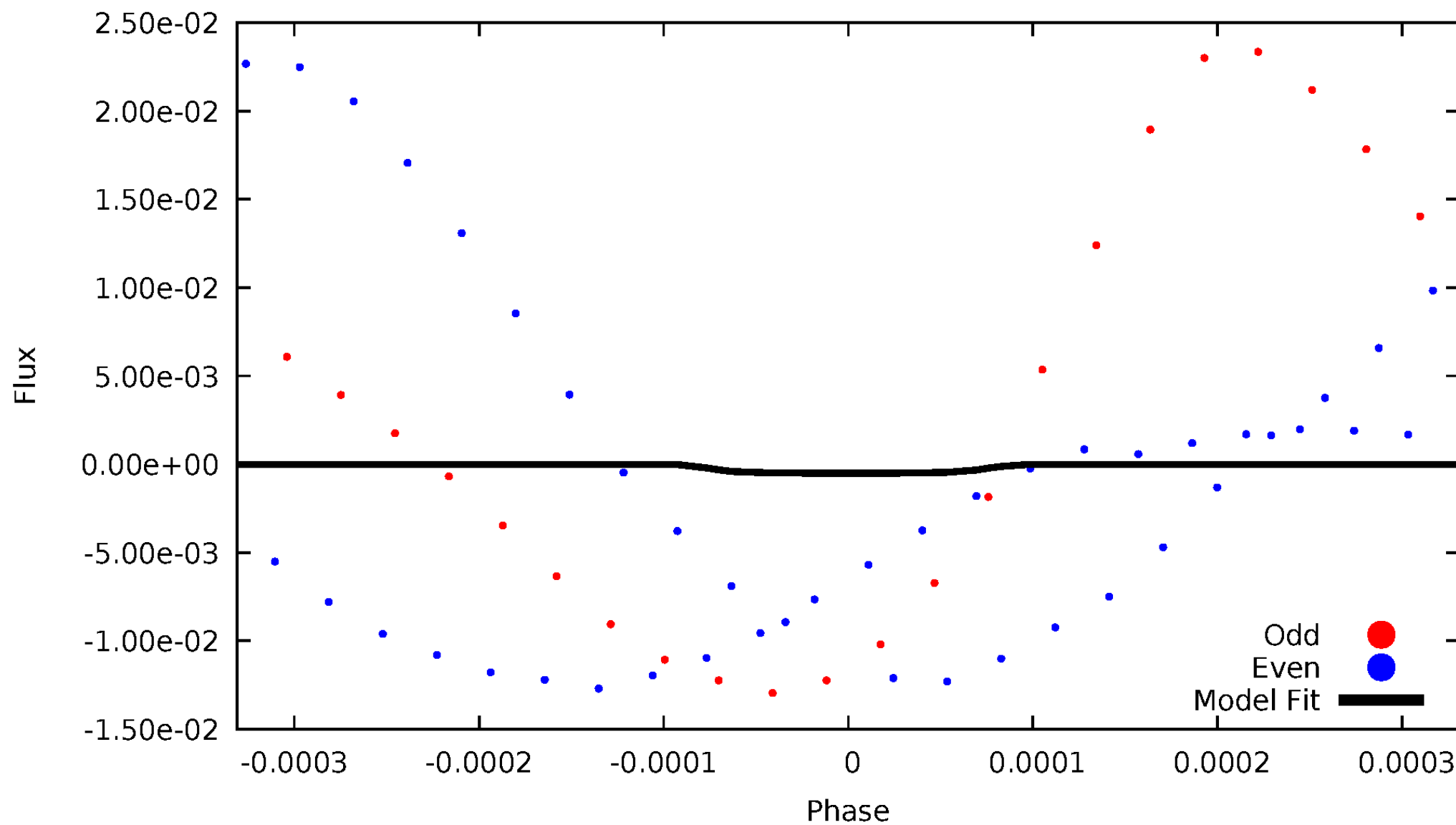


TCE 002141387-04



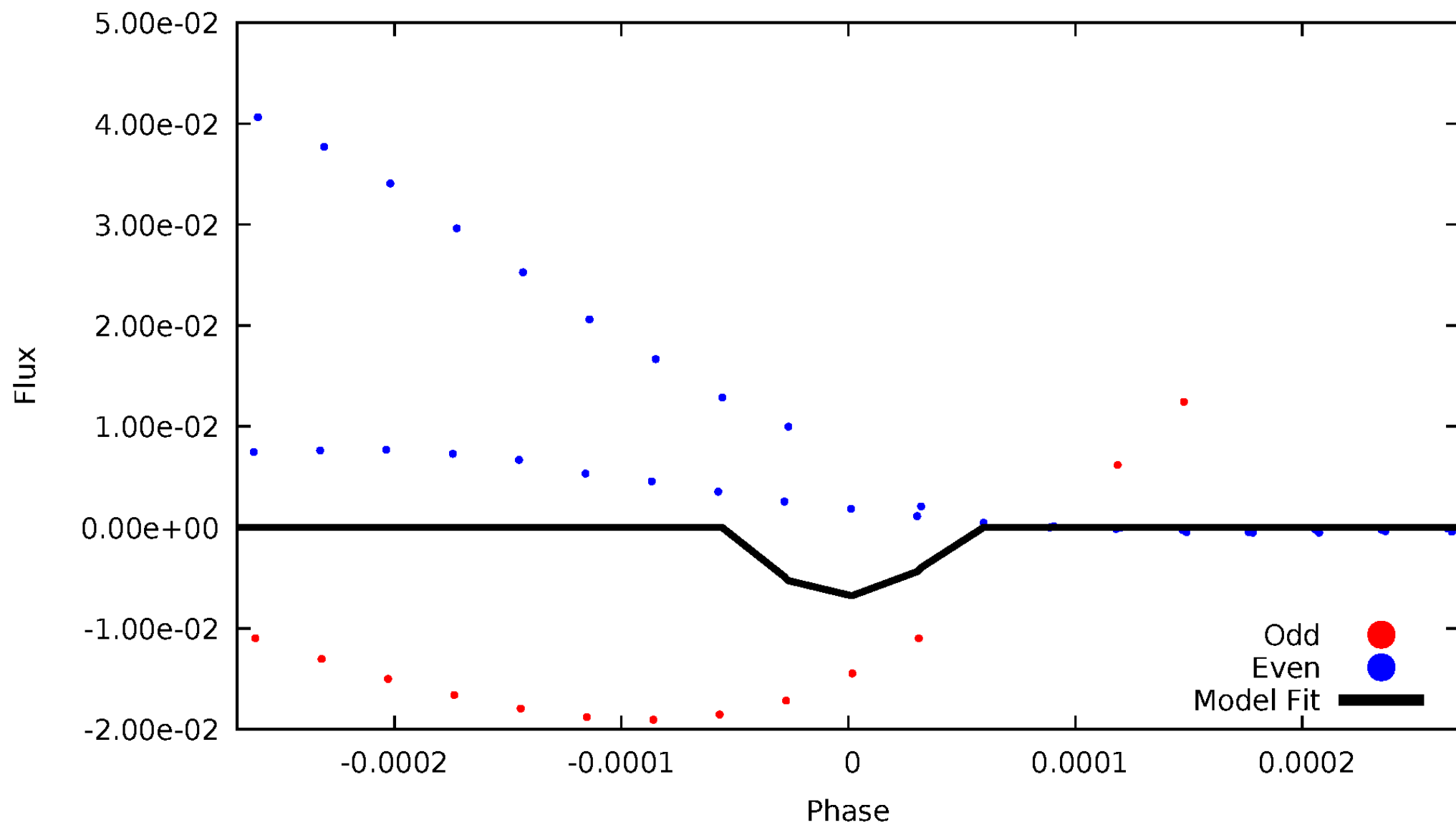
DV Odd/Even

TCE 002141387-04



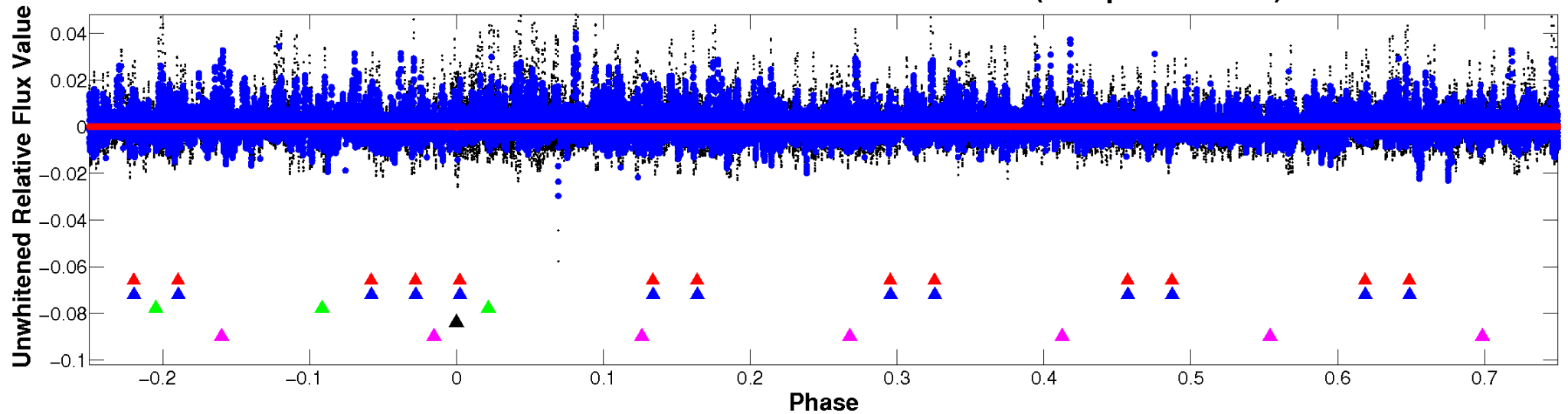
ALT Odd/Even

TCE 002141387-04

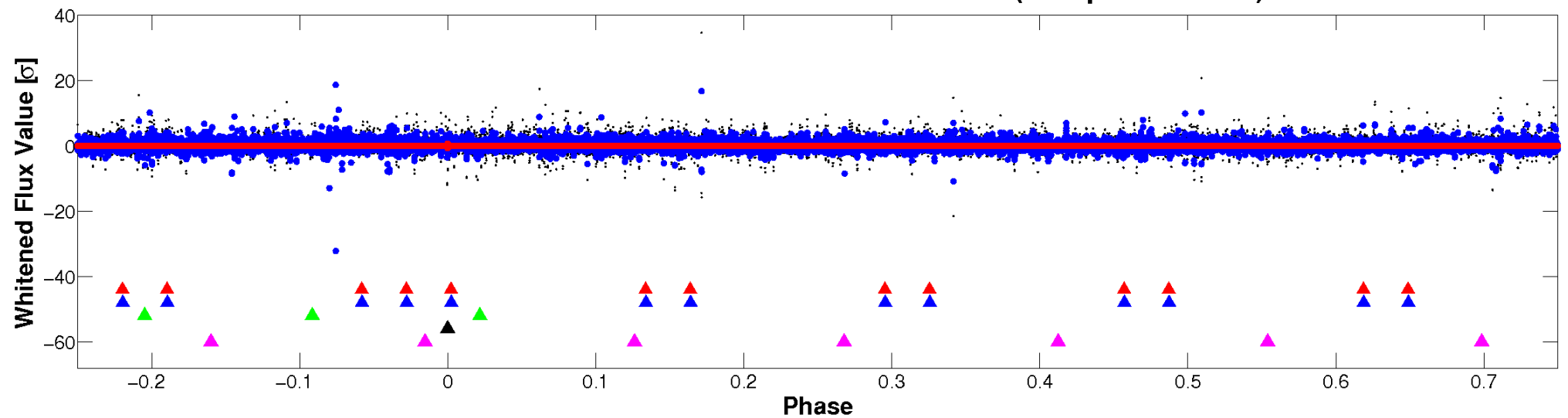


Non-Whitened Vs. Whitened Light Curve

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

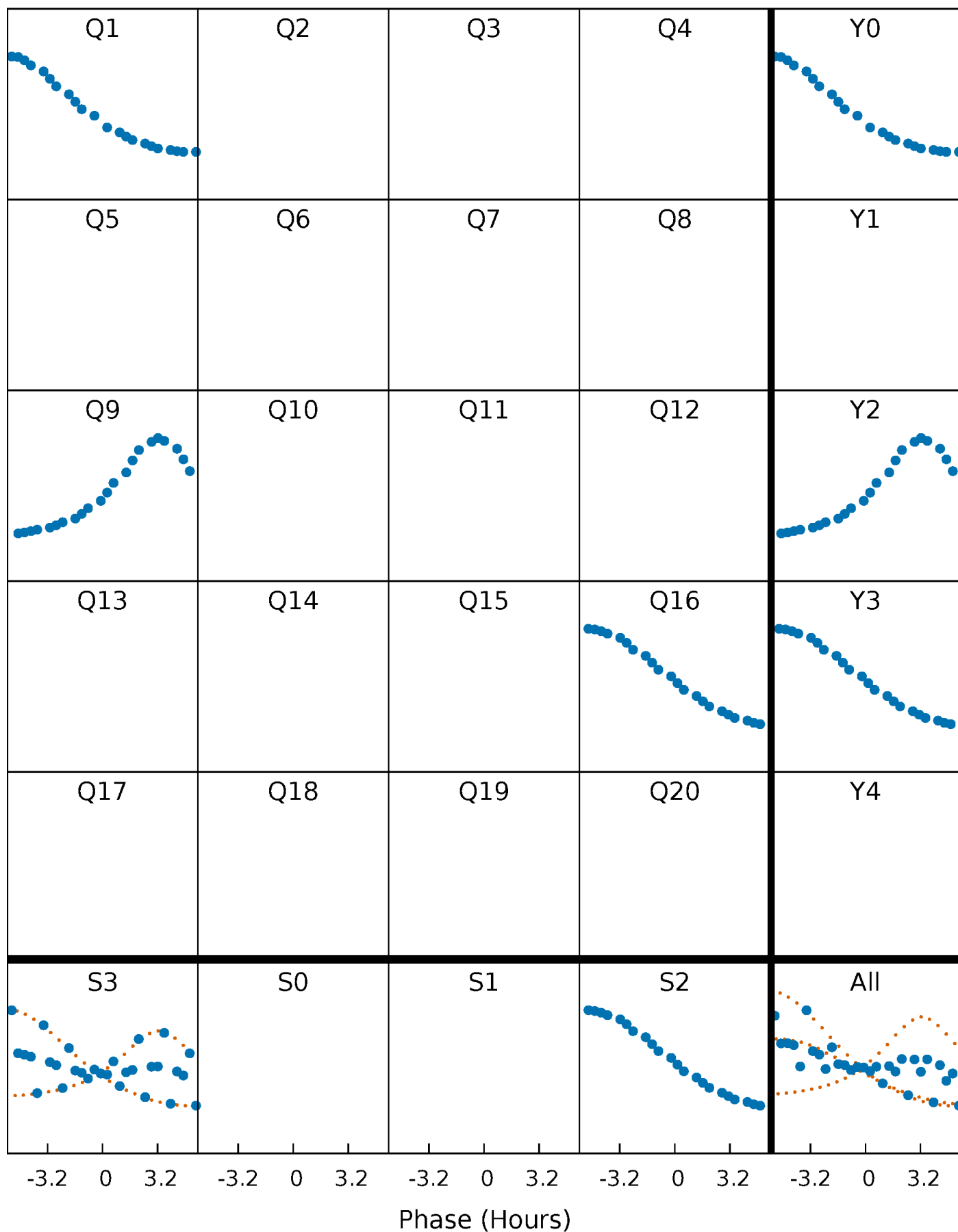


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



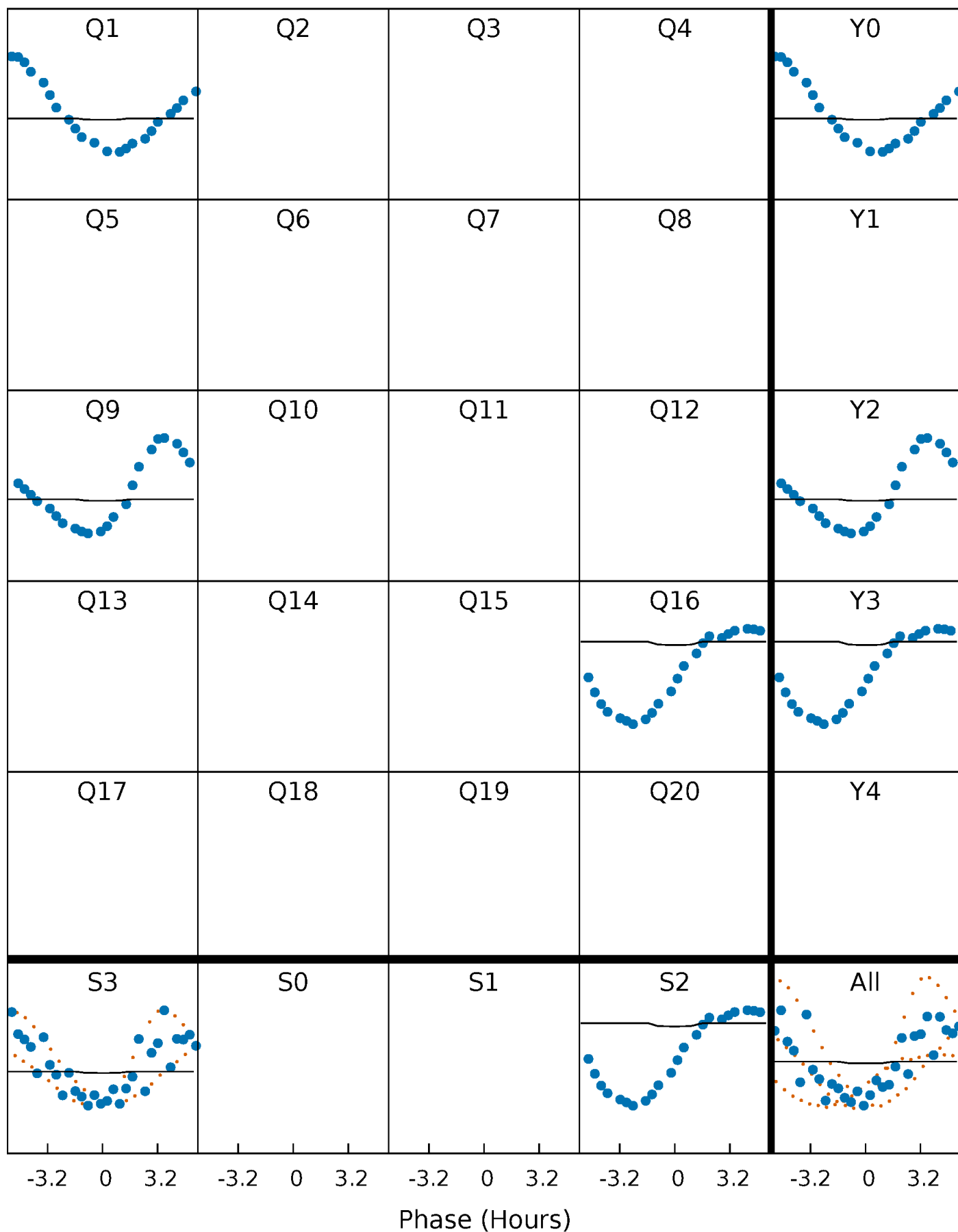
PDC Quarter-Phased Transit Curves

TCE 002141387-04 P=699.342689 Days $T_0=134.397683$ (BKJD)



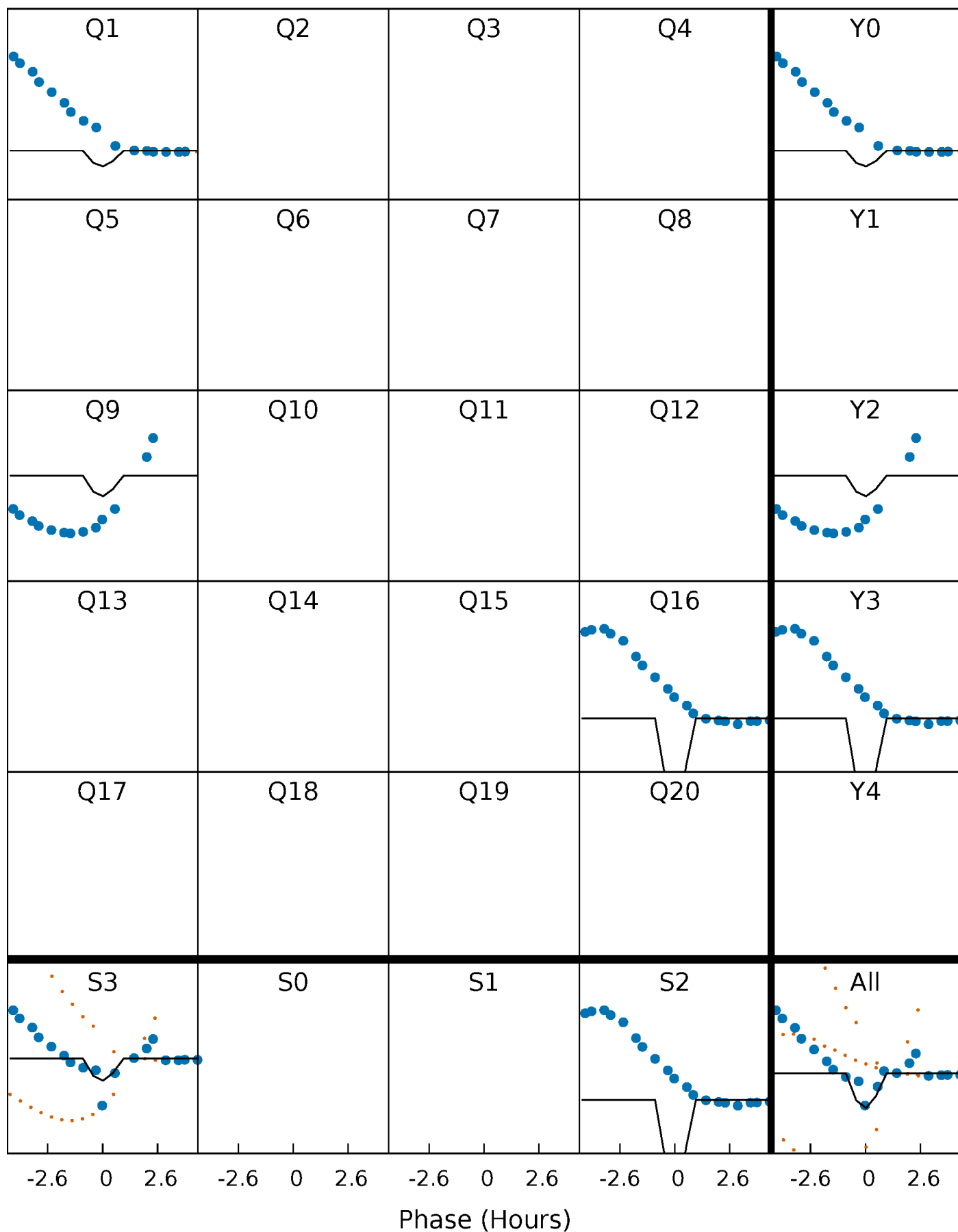
DV Quarter-Phased Transit Curves

TCE 002141387-04 $P=699.342689$ Days $T_0=134.397683$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

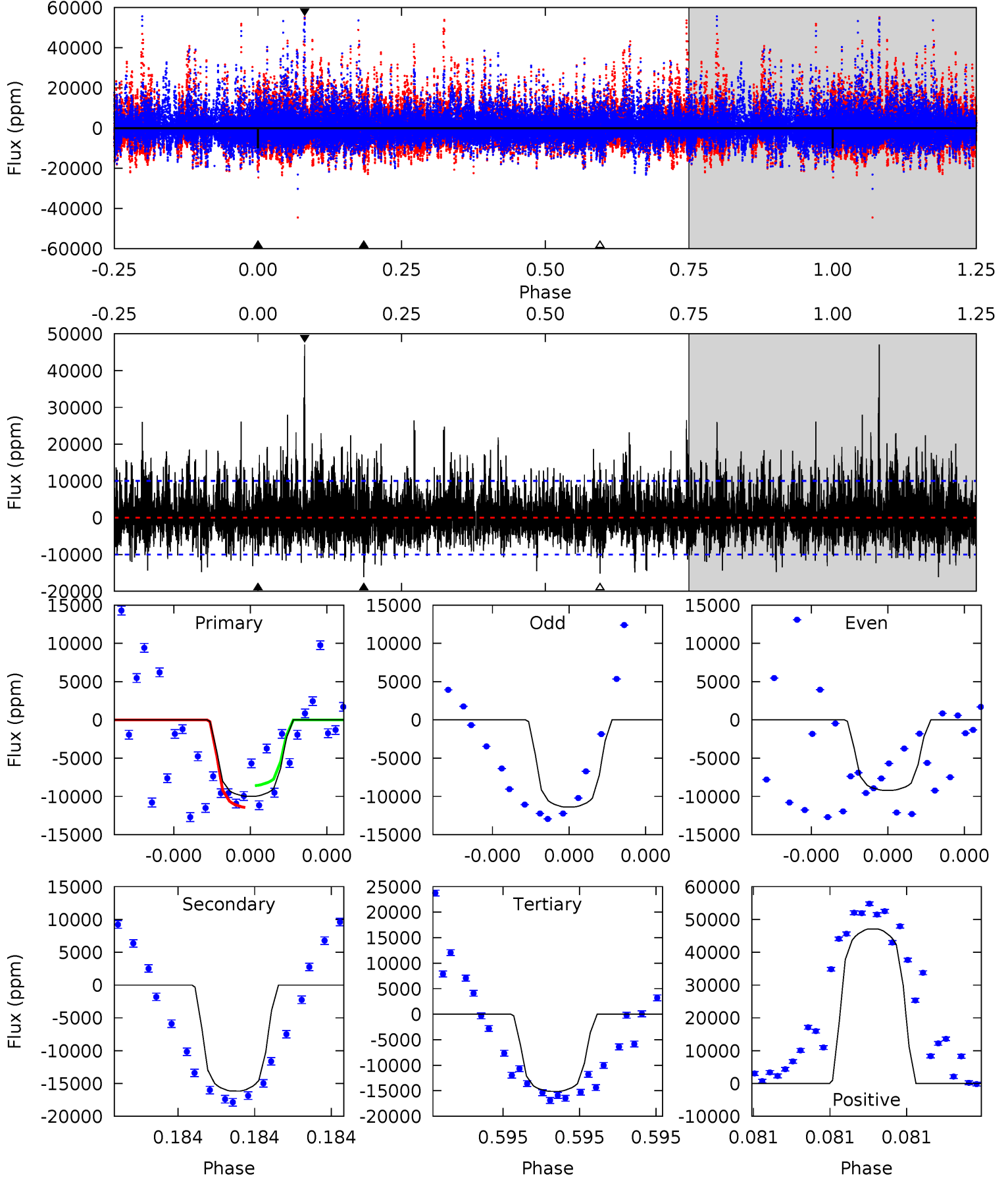
TCE 002141387-04 P=699.338591 Days $T_0=134.392300$ (BKJD)



DV Model-Shift Uniqueness Test

002141387-04, P = 699.342689 Days, E = 134.397683 Days

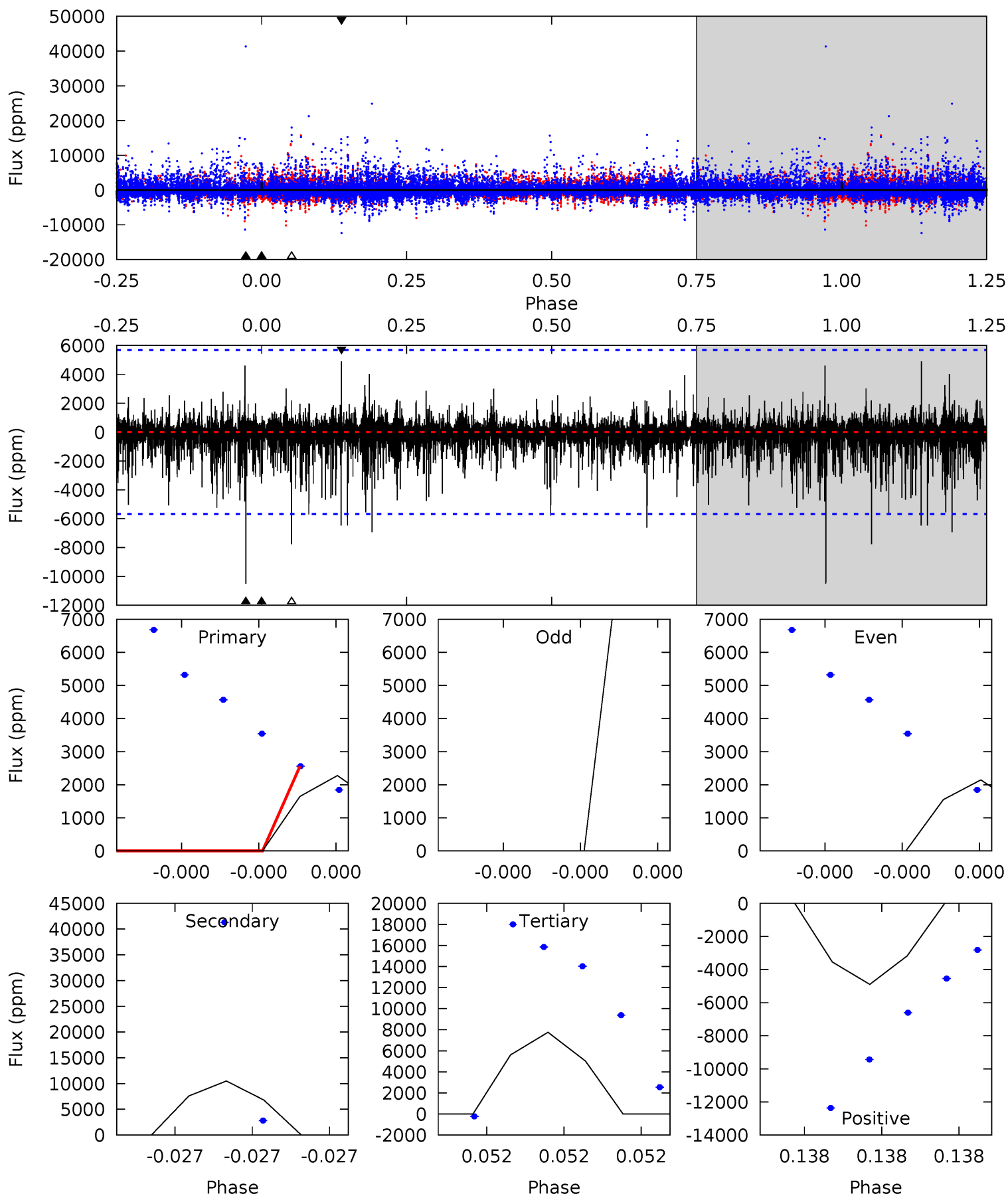
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.73	9.27	8.68	27.0	5.75	3.75	2.77	-2.95	-21.3	0.59	-17.7	0.62	0.89	0.74	0.82



Alt Model-Shift Uniqueness Test

002141387-04, P = 699.338591 Days, E = 134.392300 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.38	11.0	8.10	5.11	5.93	4.01	0.52	-5.72	-2.73	2.87	5.85	5.39	-0.85	0.32	0



Stellar Parameters For KIC 002141387

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7219^{+200}_{-343}	$4.044^{+0.170}_{-0.170}$	$0.100^{+0.200}_{-0.350}$	$2.031^{+0.592}_{-0.538}$	$1.664^{+0.193}_{-0.290}$	$0.280^{+0.273}_{-0.140}$
	+3%/-5%	+4%/-4%	+200%/-350%	+29%/-26%	+12%/-17%	+97%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 002141387-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-16160 ± 1743	$5.61^{+3.87}_{-3.35}$	468^{+36}_{-32}	$30074^{+103043}_{-13858}$	$914278^{+4824425}_{-591442}$
Alt.	-10503 ± 958	$17.74^{+5.52}_{-4.42}$	465^{+37}_{-32}	8339^{+1655}_{-1174}	61528^{+47748}_{-25983}

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

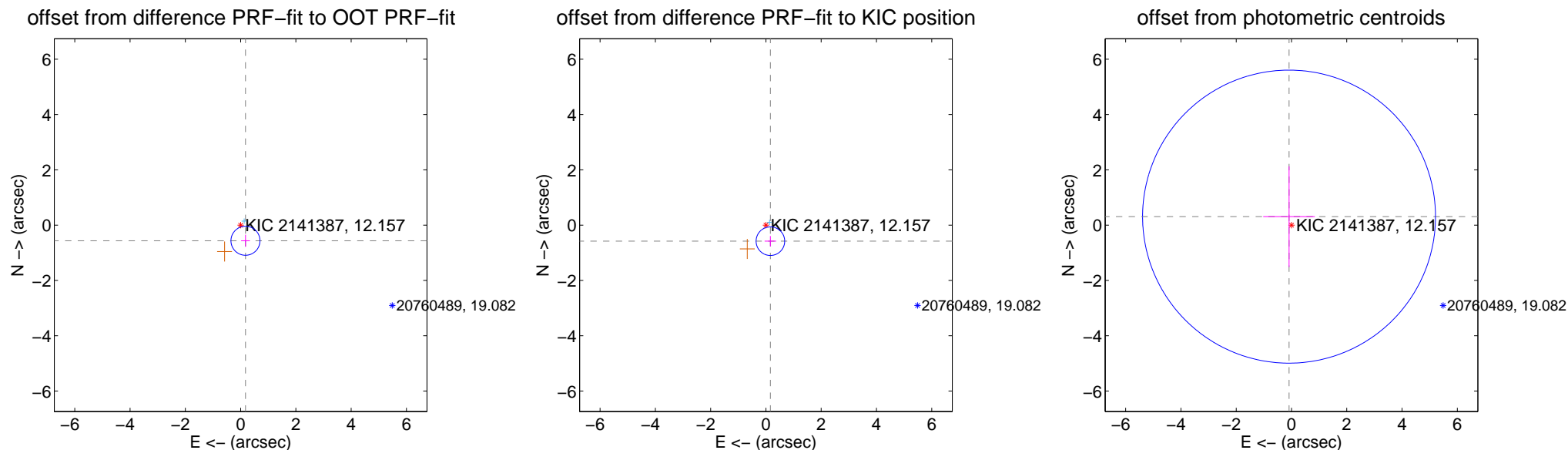
DV Centroid Data

Supplemental centroid analysis for 002141387-04. Kepler magnitude: 12.16. Transit SNR 2.67

There are 2 quarters with good PRF difference image offsets

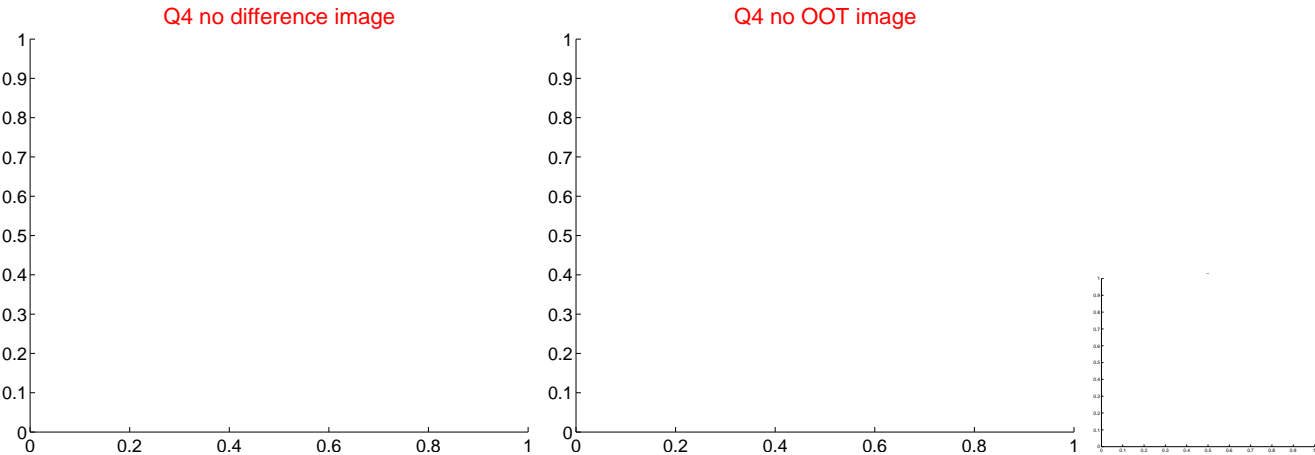
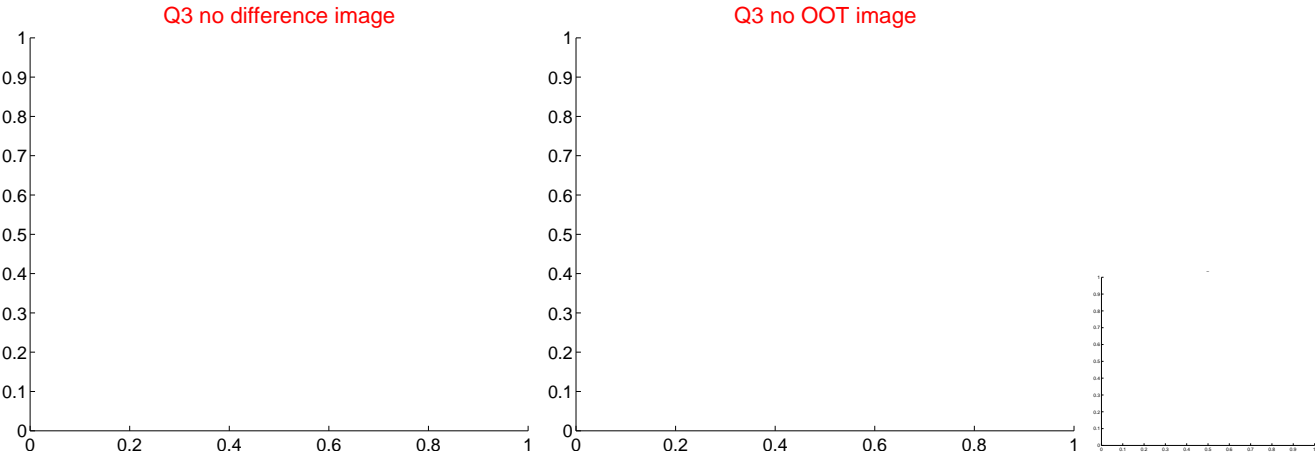
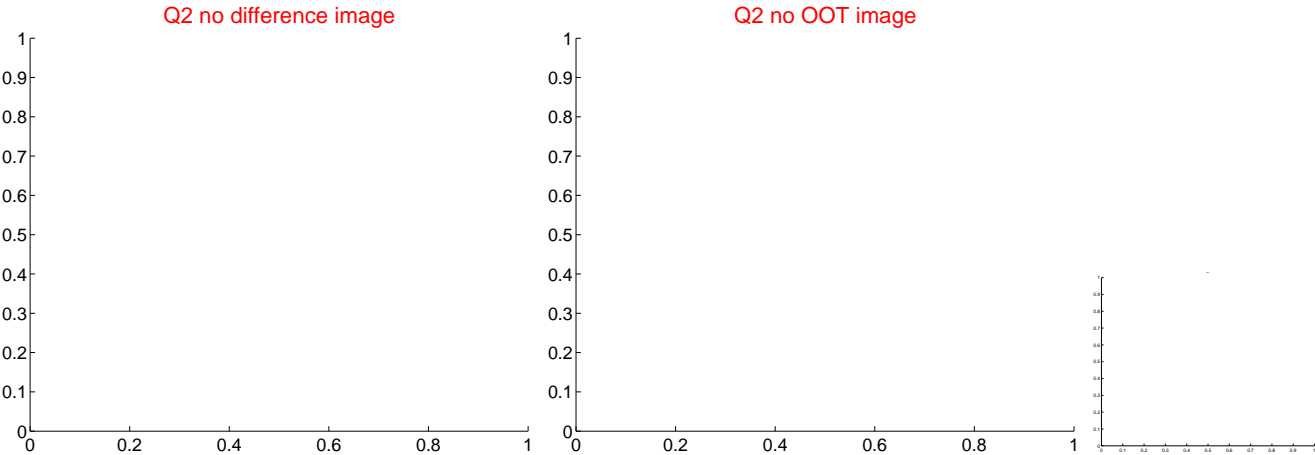
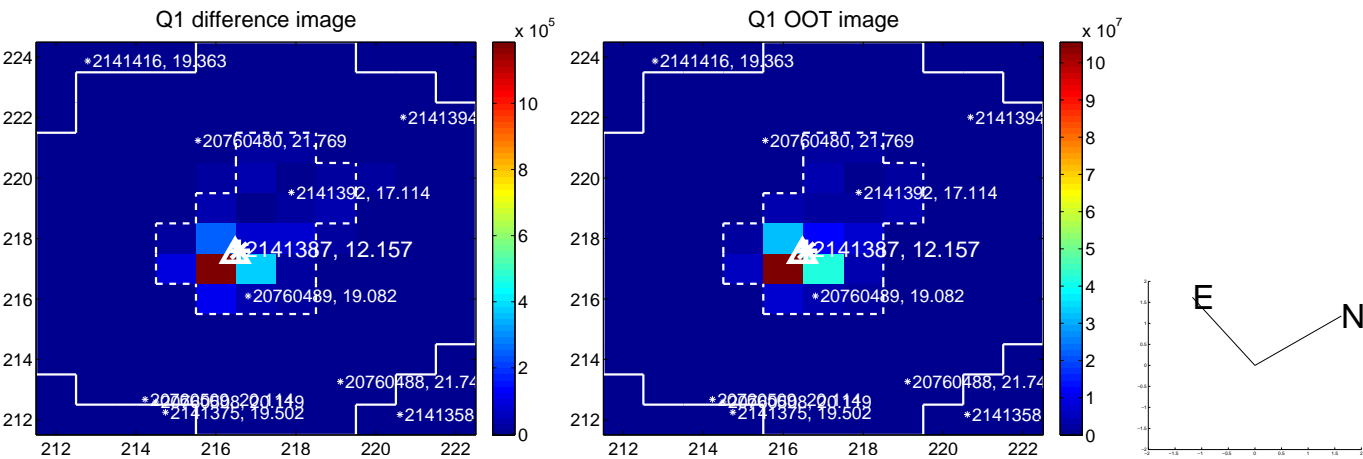
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.592 ± 0.175	3.38	-0.176 ± 0.160	-0.565 ± 0.217
PRF-fit source offset from KIC position	0.602 ± 0.172	3.49	-0.162 ± 0.209	-0.580 ± 0.187
photometric centroid source offset	0.32 ± 1.77	0.18	0.09 ± 0.93	0.31 ± 1.82



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.

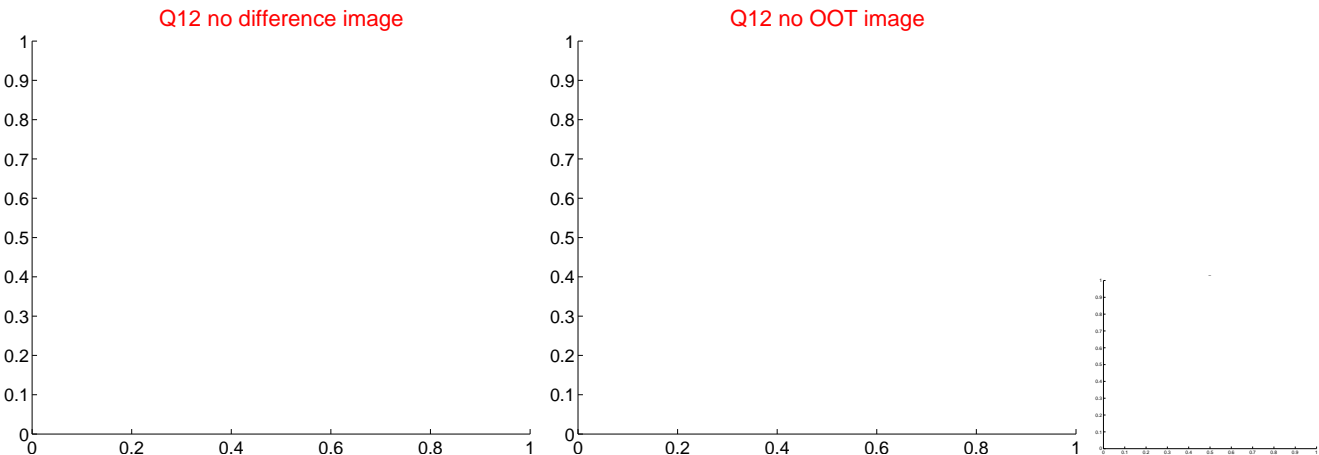
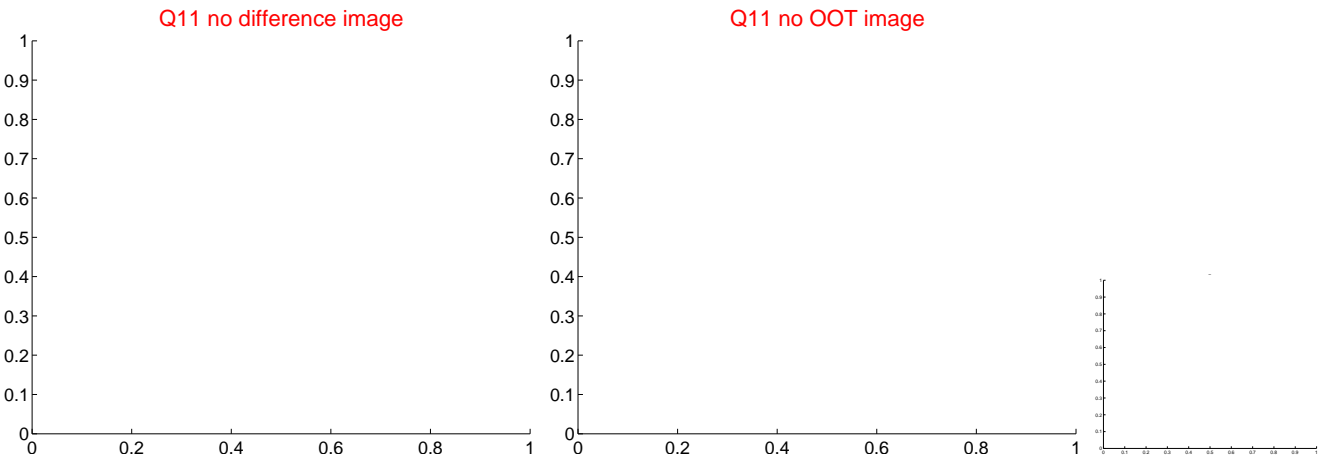
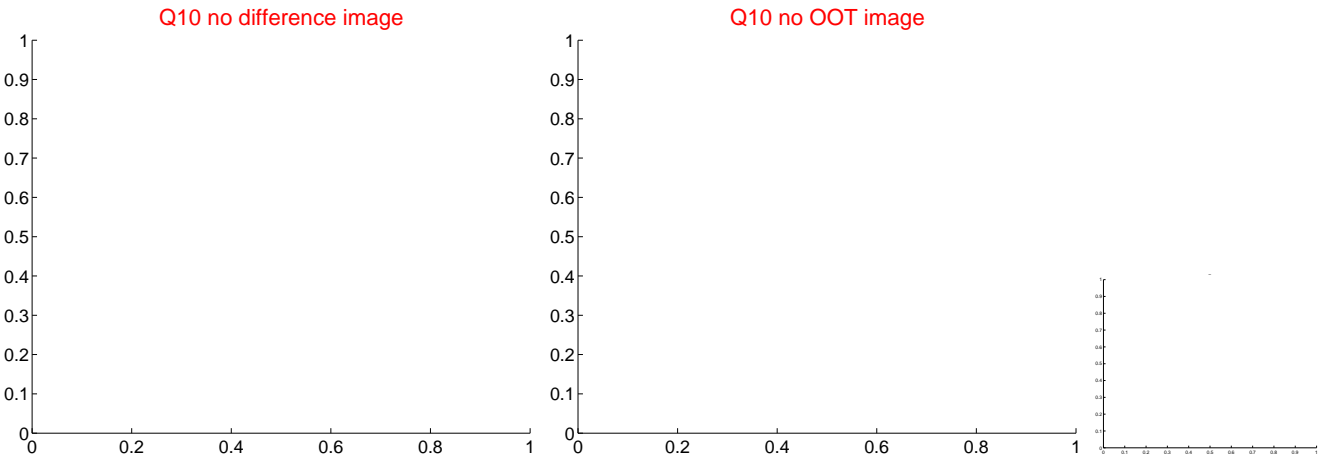
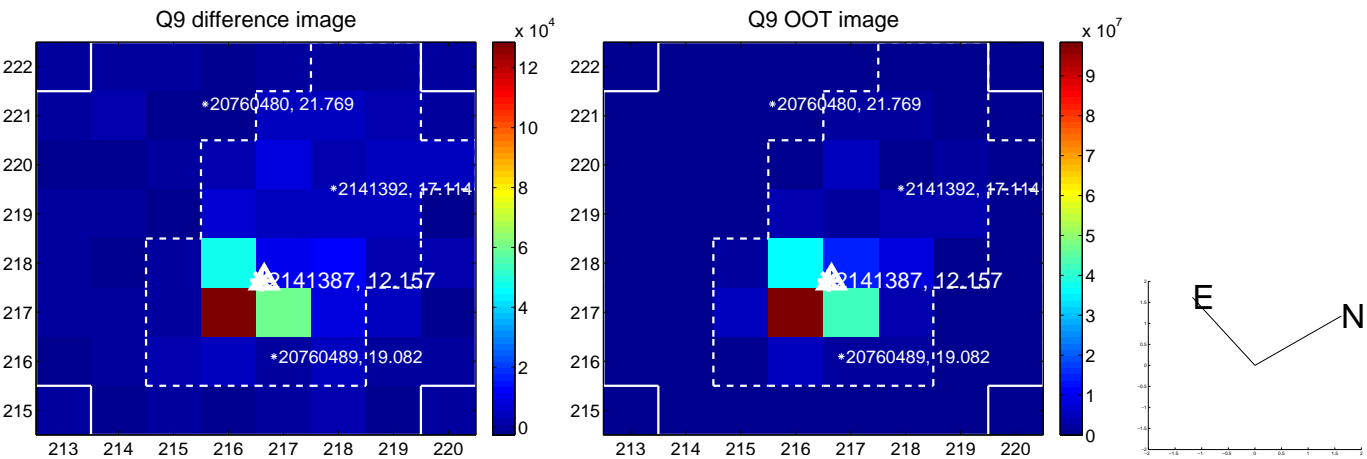
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



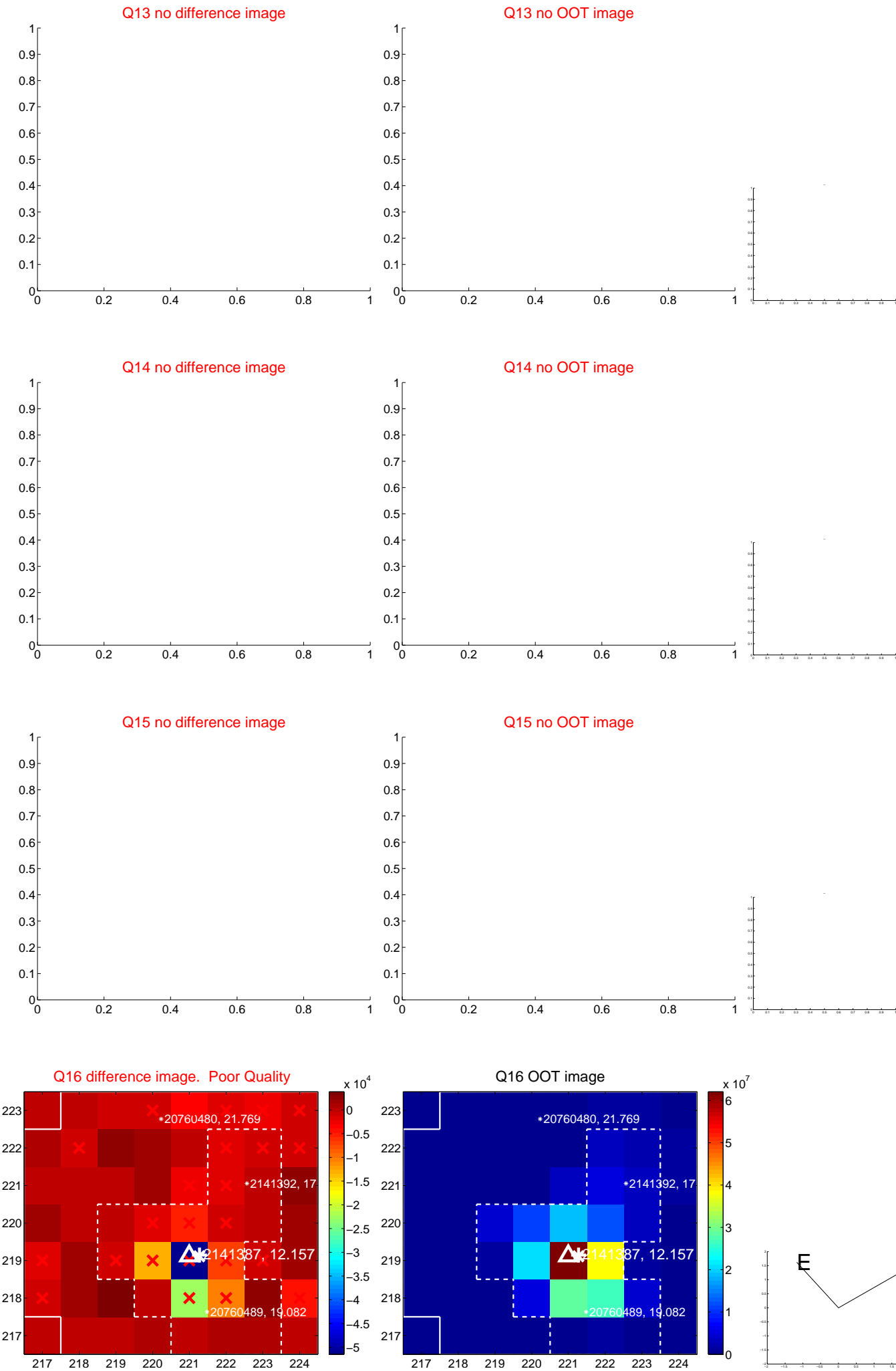
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



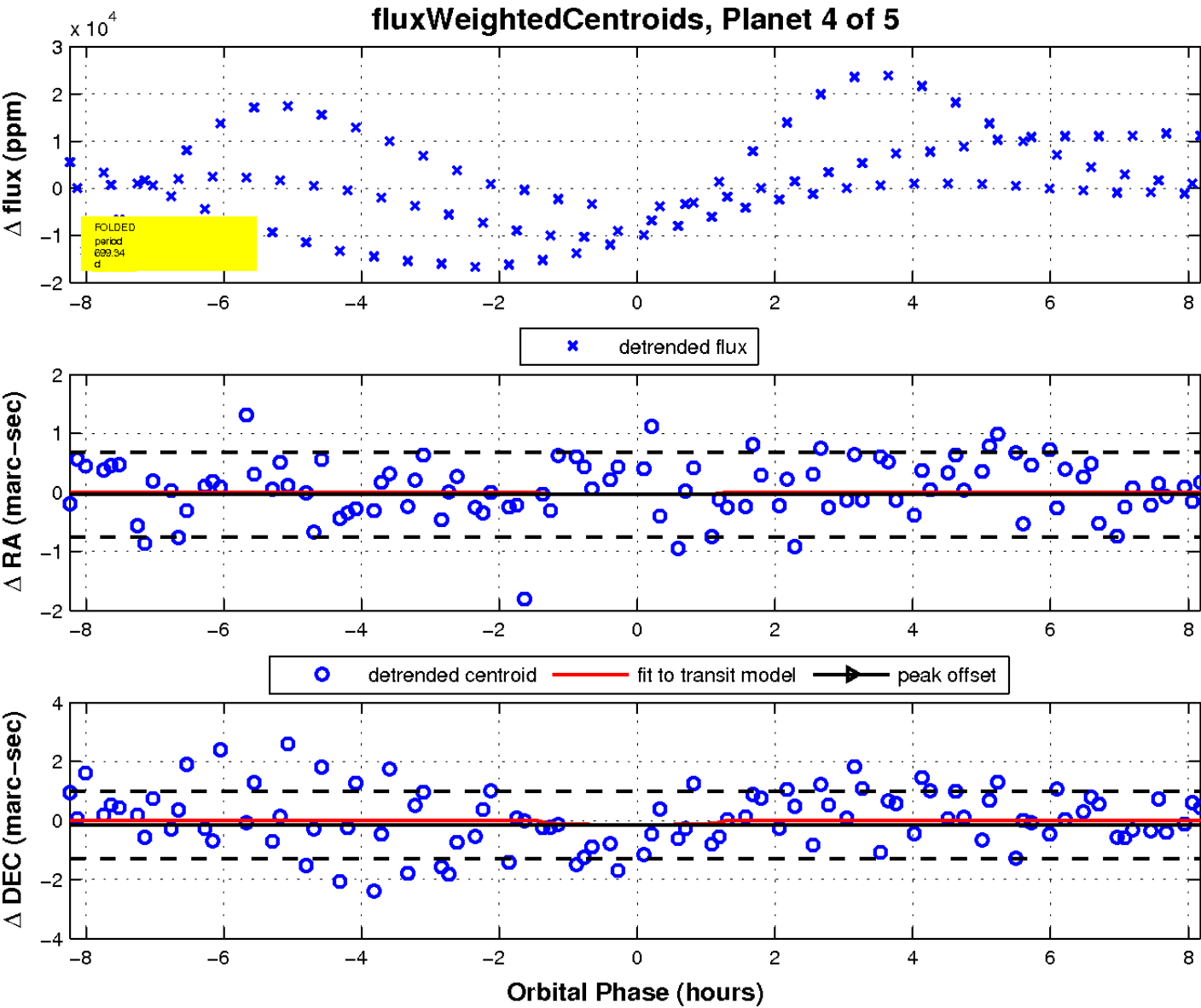
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

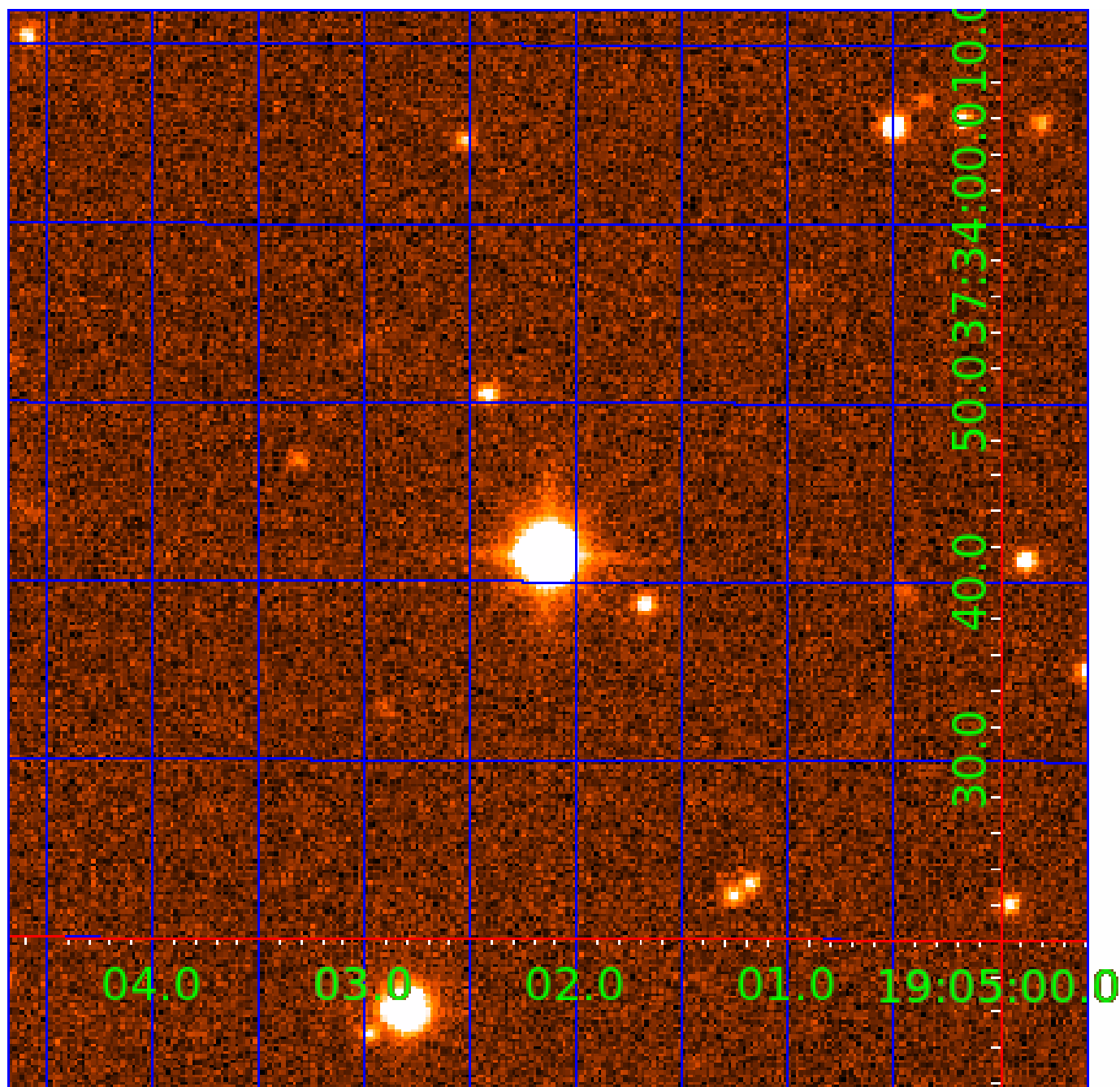


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002141387

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})
002141387-01	OBS	No	113.042143	135.963403	185.2	1.795	20.6	2.0	2.03	7219	3.27	34.12
002141387-02	OBS	No	113.041552	136.115162	729.5	2.500	21.6	-1.0	2.03	7219	5.56	34.12
002141387-03	OBS	No	620.174729	149.589081	266.4	1.994	16.2	1.5	2.03	7219	3.56	3.53
002141387-04	OBS	No	699.342689	134.397683	509.3	2.777	20.6	2.7	2.03	7219	5.05	3.00
002141387-05	OBS	No	200.112304	321.703748	815.1	2.500	20.2	-1.0	2.03	7219	5.88	15.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002141387-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
002141387-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_NOFITS
002141387-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA_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
002141387-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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
002141387-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

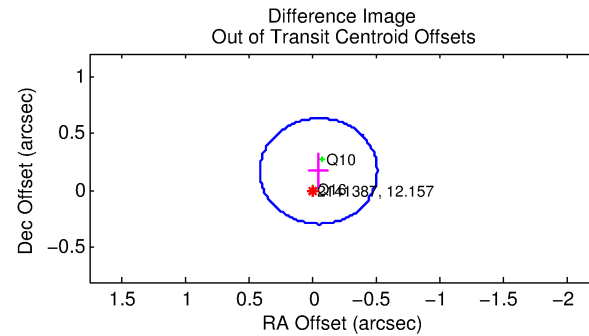
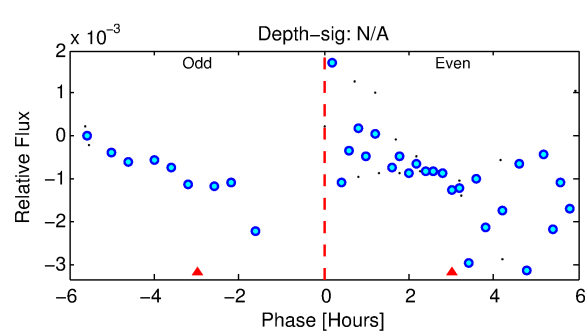
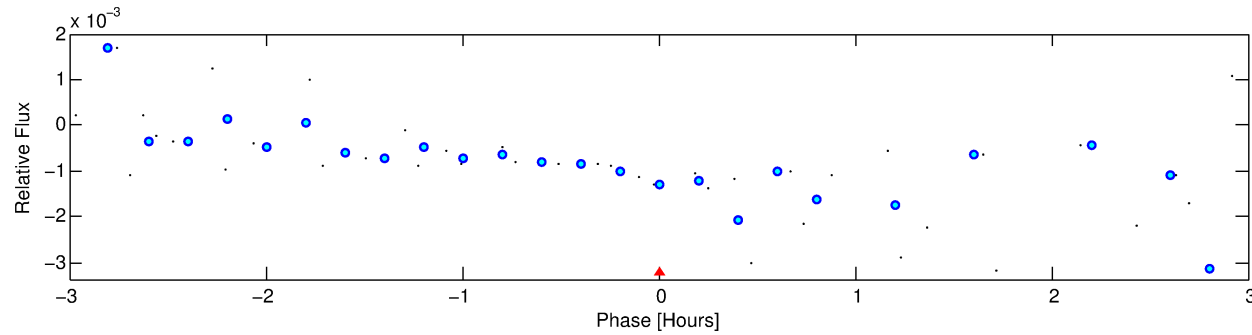
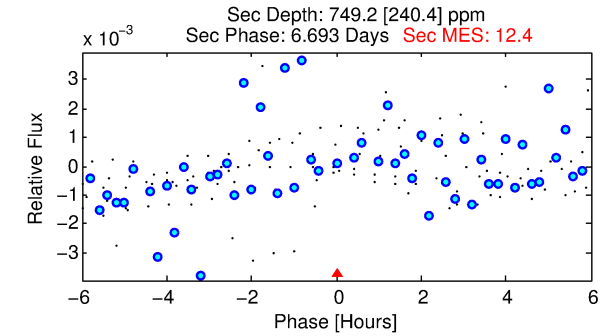
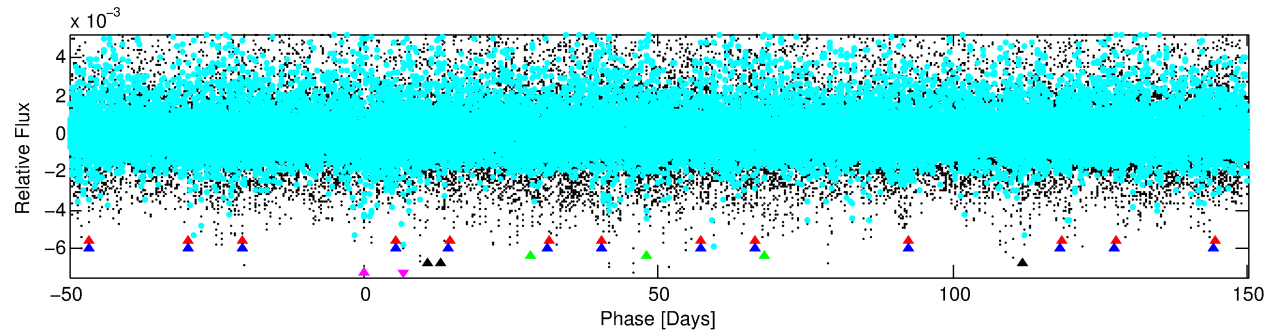
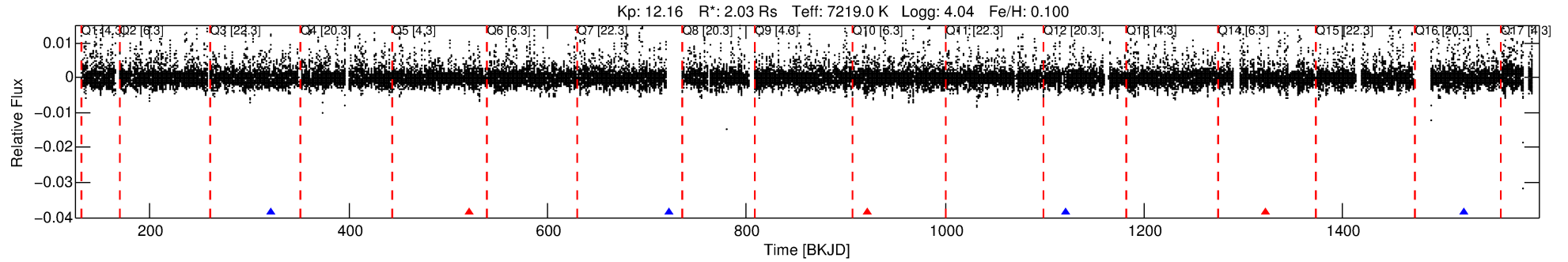
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002141387-05

No Significant Match Found

DV One-Page Summary

KIC: 2141387 Candidate: 5 of 5 Period: 200.112 d



TPS TCE Results:

Period = 200.11230 d
Epoch = 321.7037 BKJD

DV fit results are unavailable

DV Diagnostic Results:

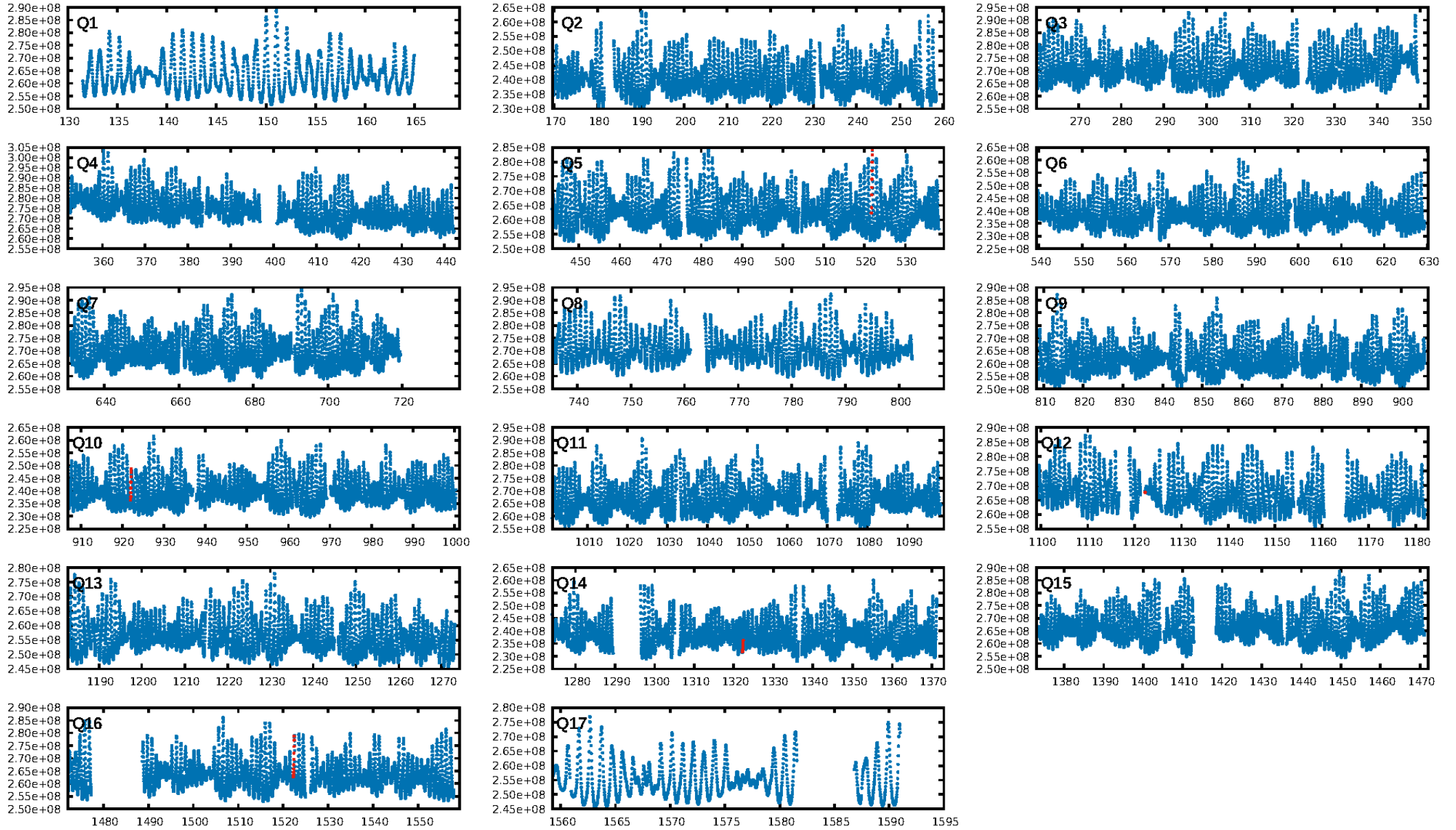
ShortPeriod-sig: 100.0% [678.94 σ]
LongPeriod-sig: 100.0% [3152.42 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.25 [1/4]
GhostDiagnostic-chr: -0.9198

Centroid-sig: 97.5%
Centroid-so: 0.297 arcsec [0.16 σ]
OotOffset-rm: 0.178 arcsec [1.16 σ]
KicOffset-rm: 0.134 arcsec [1.93 σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

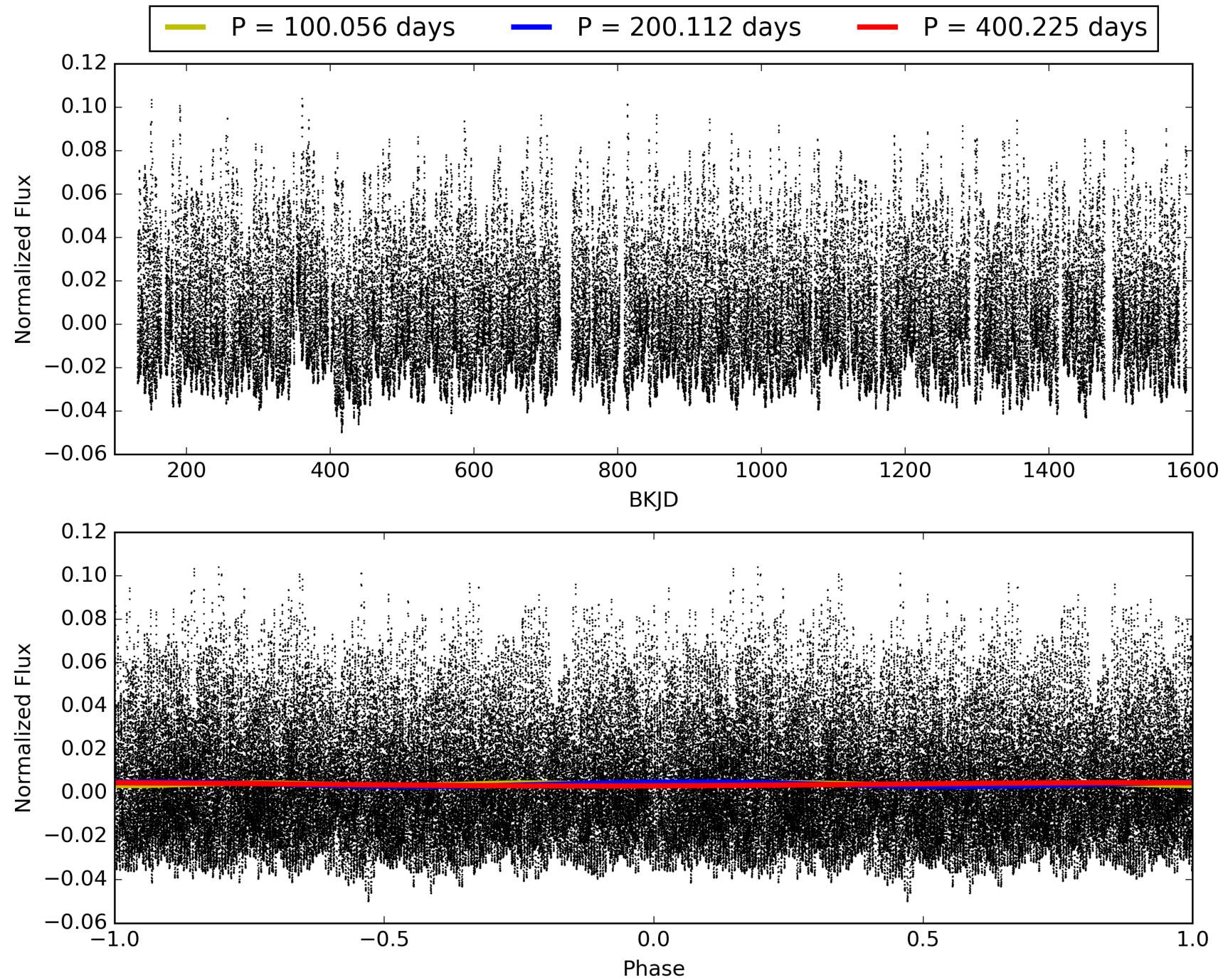
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:57:52 Z

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

TCE 002141387-05, PDC Light Curves

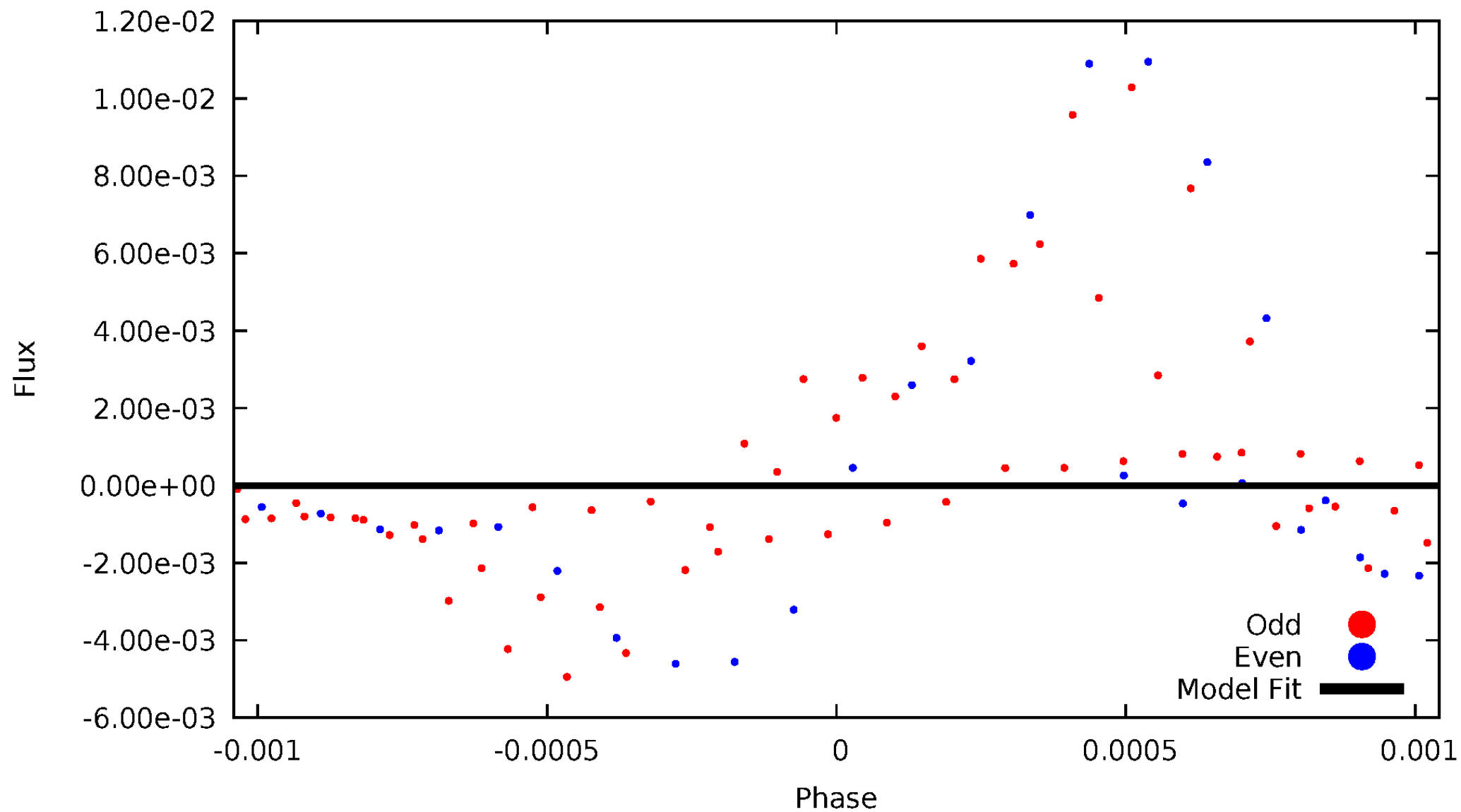


TCE 002141387-05



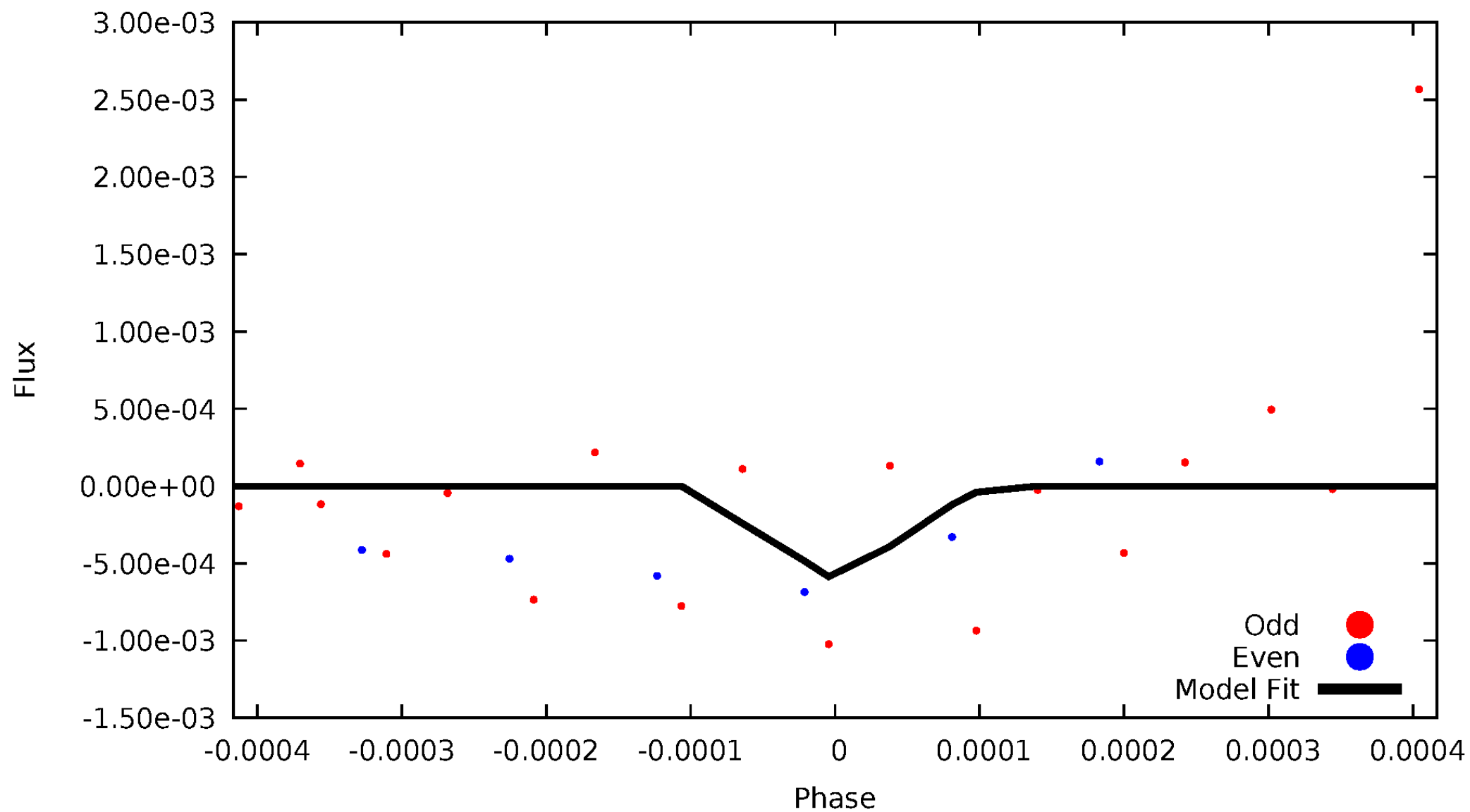
DV Odd/Even

TCE 002141387-05



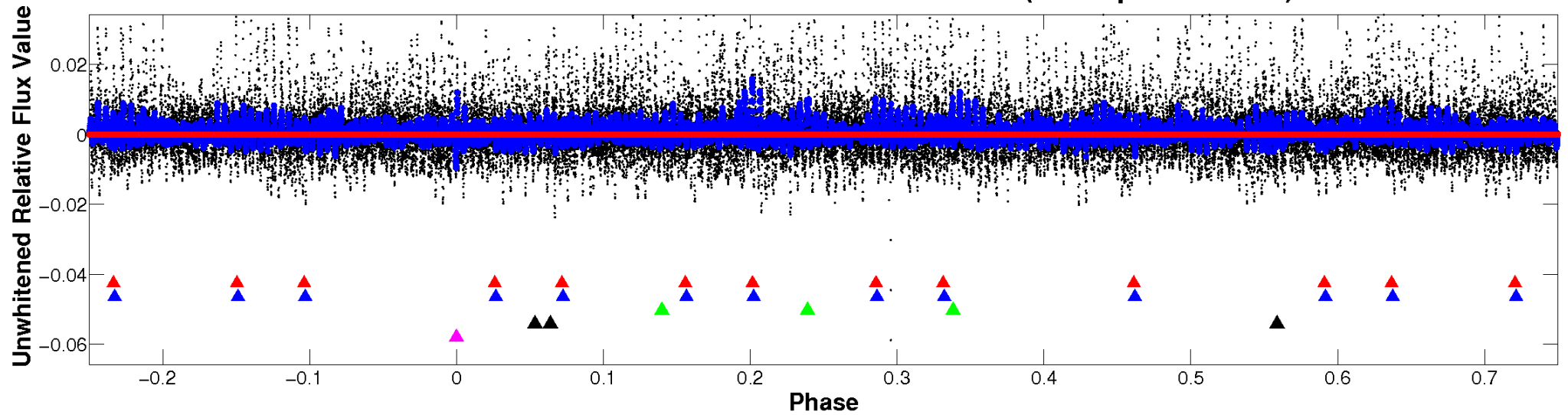
ALT Odd/Even

TCE 002141387-05



Non-Whitened Vs. Whitened Light Curve

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

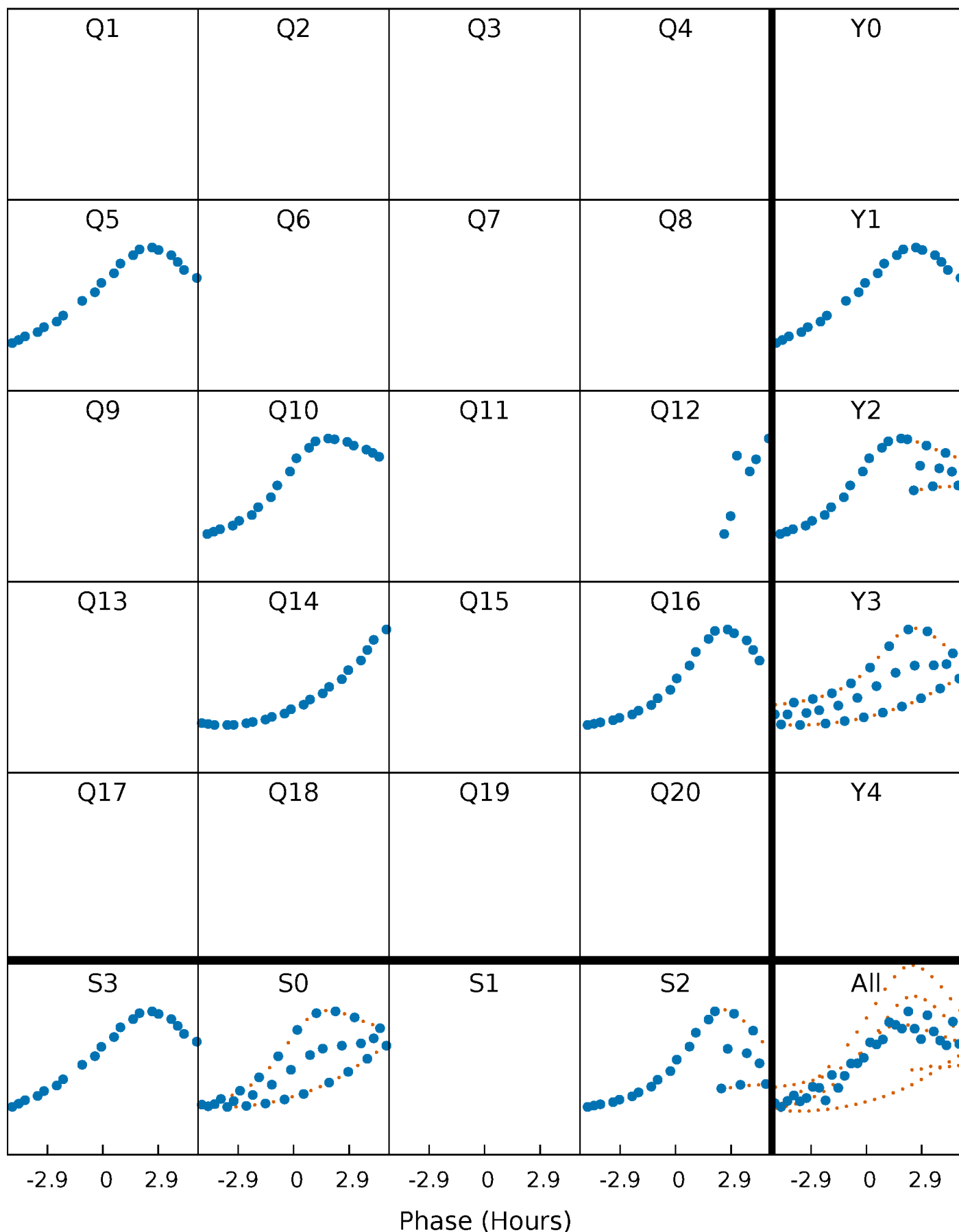


Planet 5 : Phased Whitened Flux Time Series (TPS Epoch/Period)



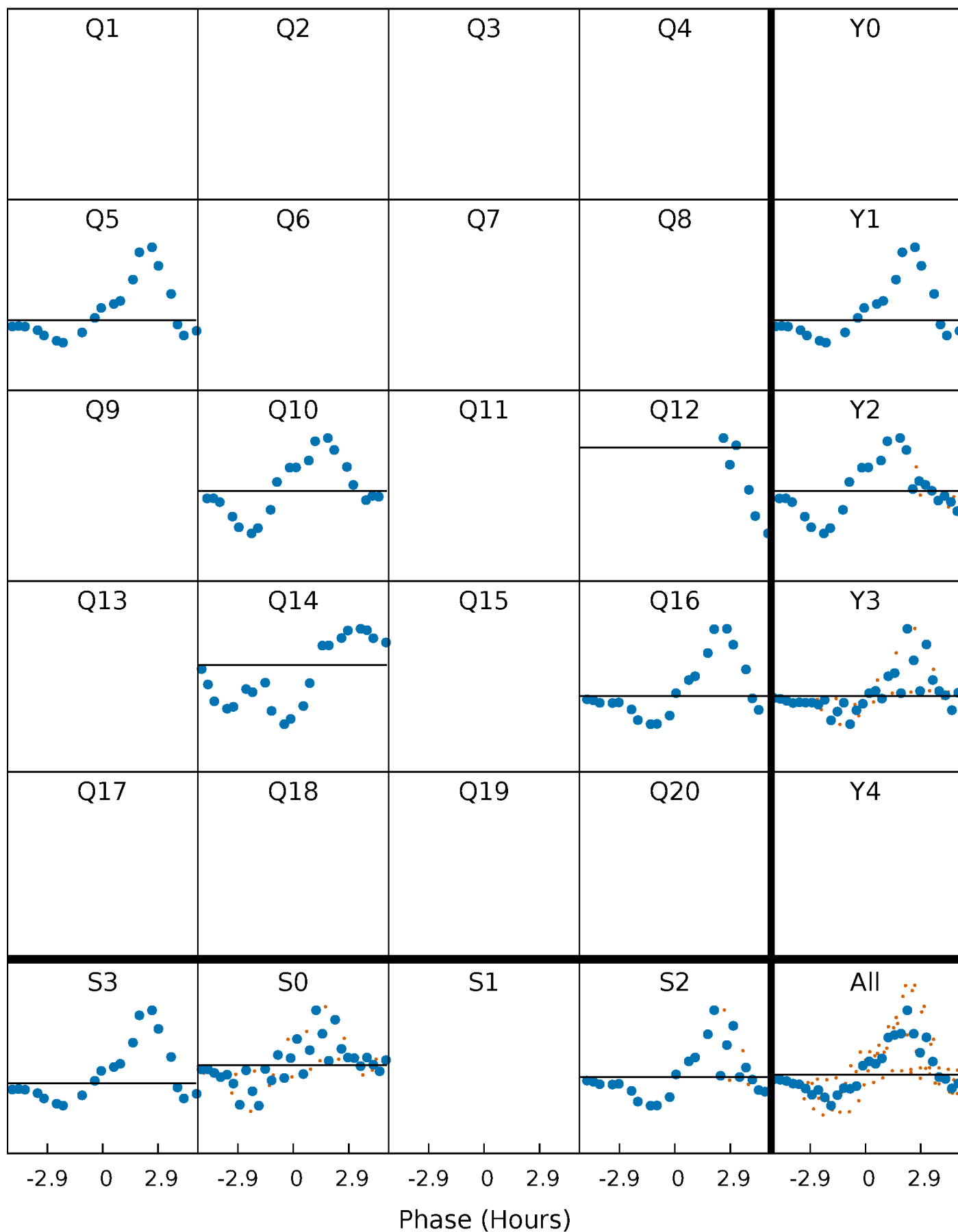
PDC Quarter-Phased Transit Curves

TCE 002141387-05 $P=200.112304$ Days $T_0=321.703748$ (BKJD)



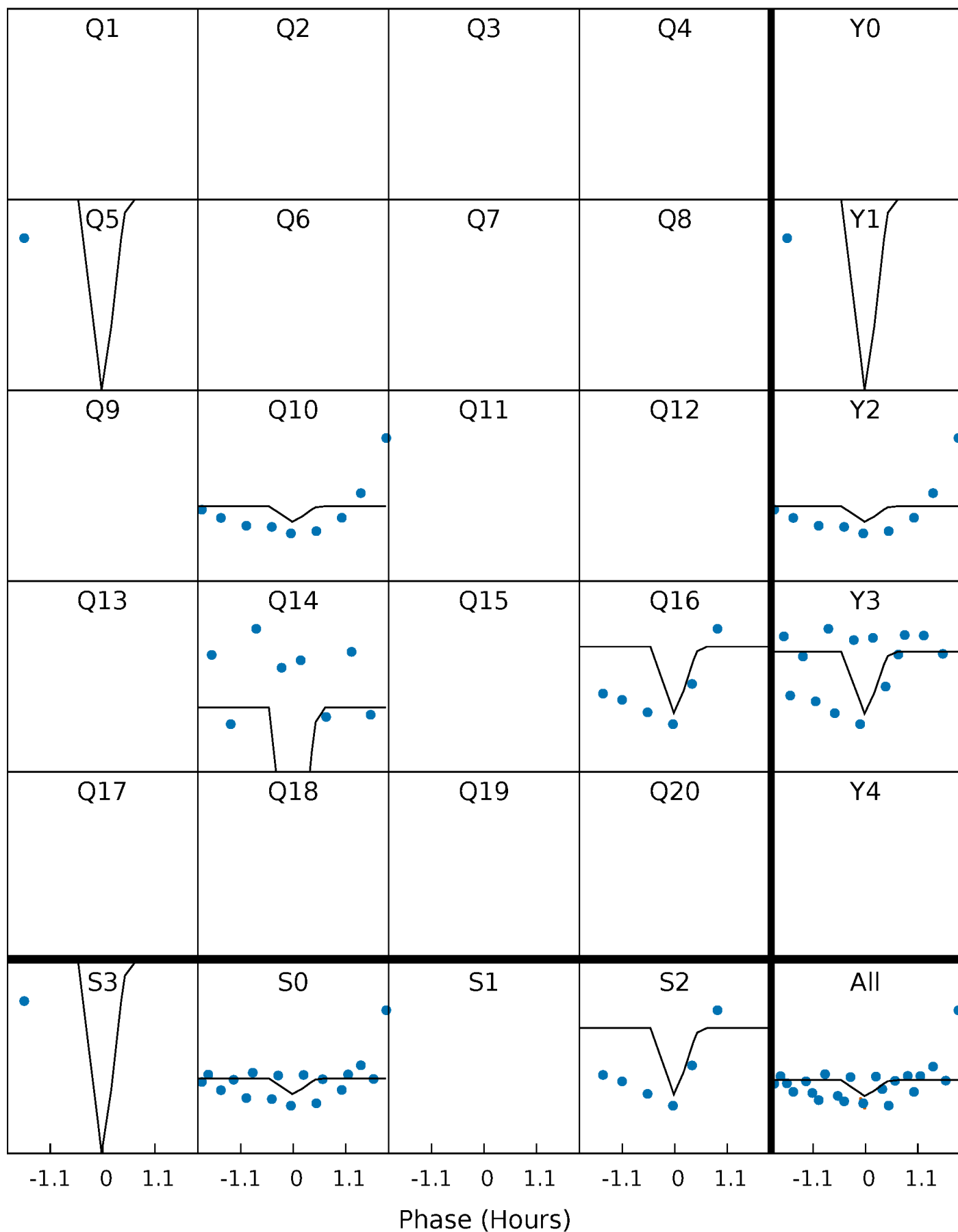
DV Quarter-Phased Transit Curves

TCE 002141387-05 $P=200.112304$ Days $T_0=321.703748$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

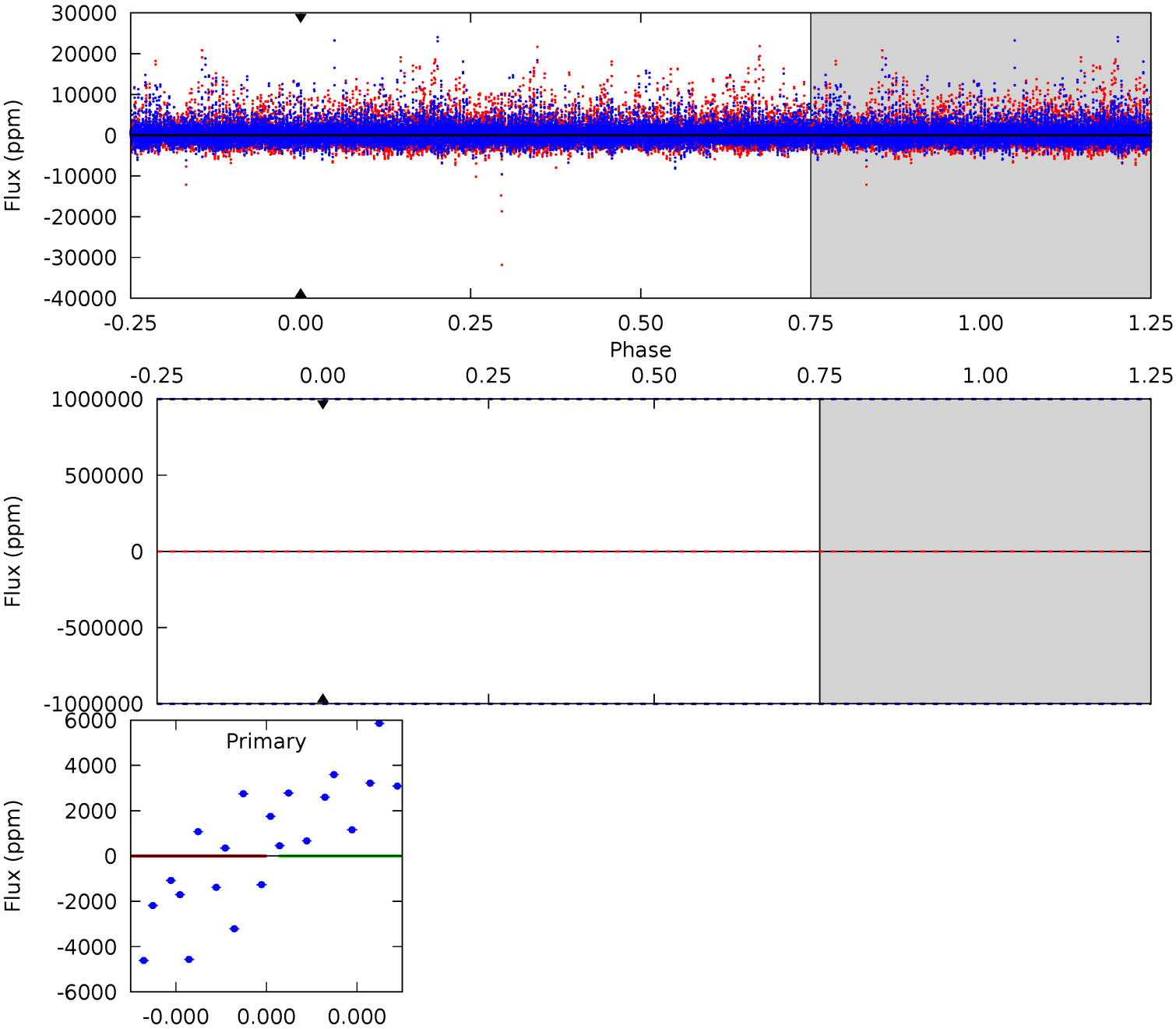
TCE 002141387-05 P=200.112304 Days $T_0=321.550156$ (BKJD)



DV Model-Shift Uniqueness Test

002141387-05, P = 200.112304 Days, E = 121.591444 Days

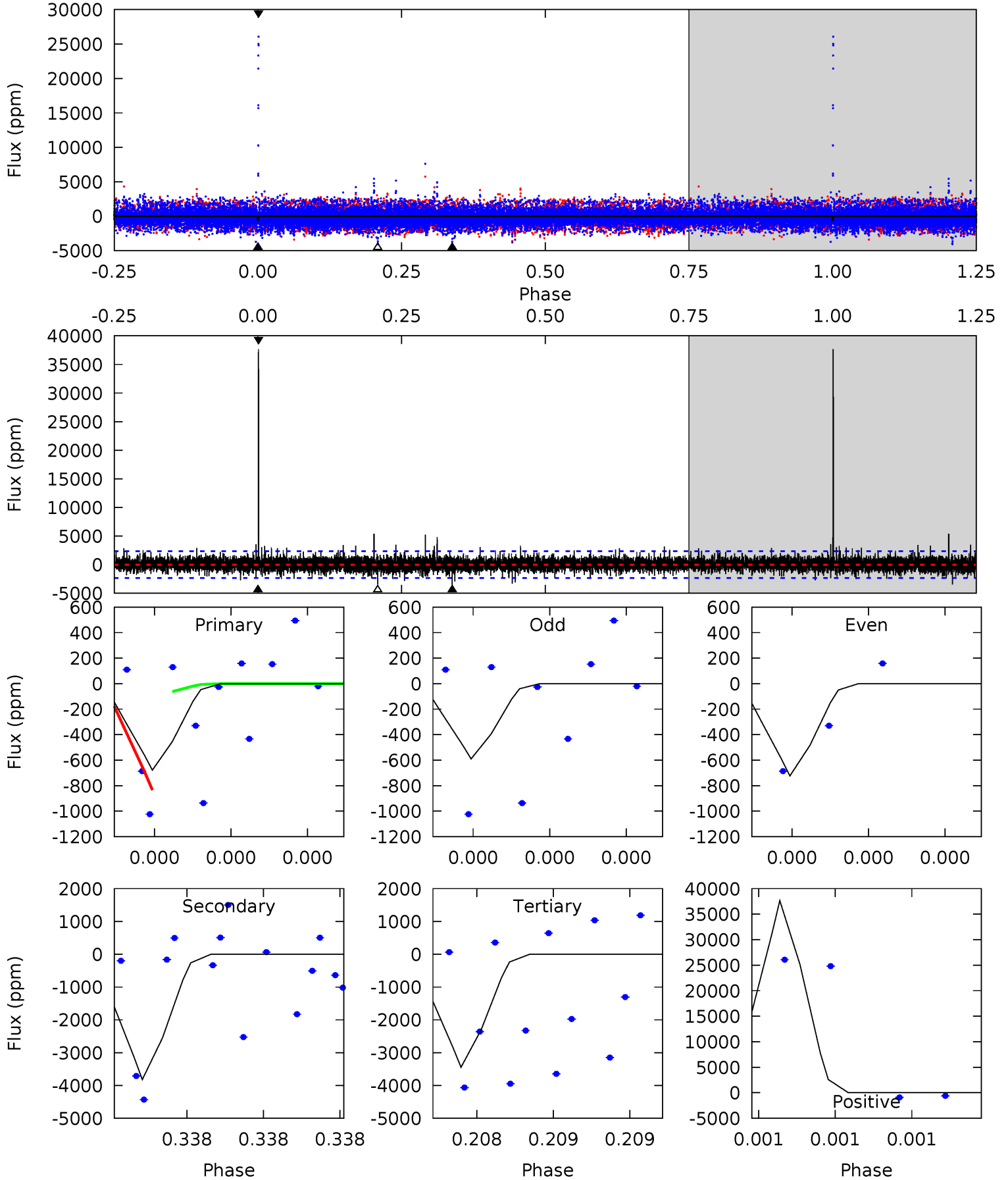
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

002141387-05, P = 200.112304 Days, E = 121.437852 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.67	9.42	8.49	92.8	5.77	3.77	1.79	-6.82	-91.1	0.92	-83.4	0.11	0.66	0.91	0.92



Stellar Parameters For KIC 002141387

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7219^{+200}_{-343}	$4.044^{+0.170}_{-0.170}$	$0.100^{+0.200}_{-0.350}$	$2.031^{+0.592}_{-0.538}$	$1.664^{+0.193}_{-0.290}$	$0.280^{+0.273}_{-0.140}$
	+3%/-5%	+4%/-4%	+200%/-350%	+29%/-26%	+12%/-17%	+97%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 002141387-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$16.49^{+17.74}_{-11.59}$	709^{+53}_{-57}	-3915^{+39828}_{-32141}	$-471.663^{+237195.766}_{-244782.693}$
Alt.	-3821 ± 406	$16.37^{+17.88}_{-11.62}$	714^{+53}_{-60}	6452^{+9220}_{-1821}	4744^{+54301}_{-3704}

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 $A_{obs} \gg 1.0$

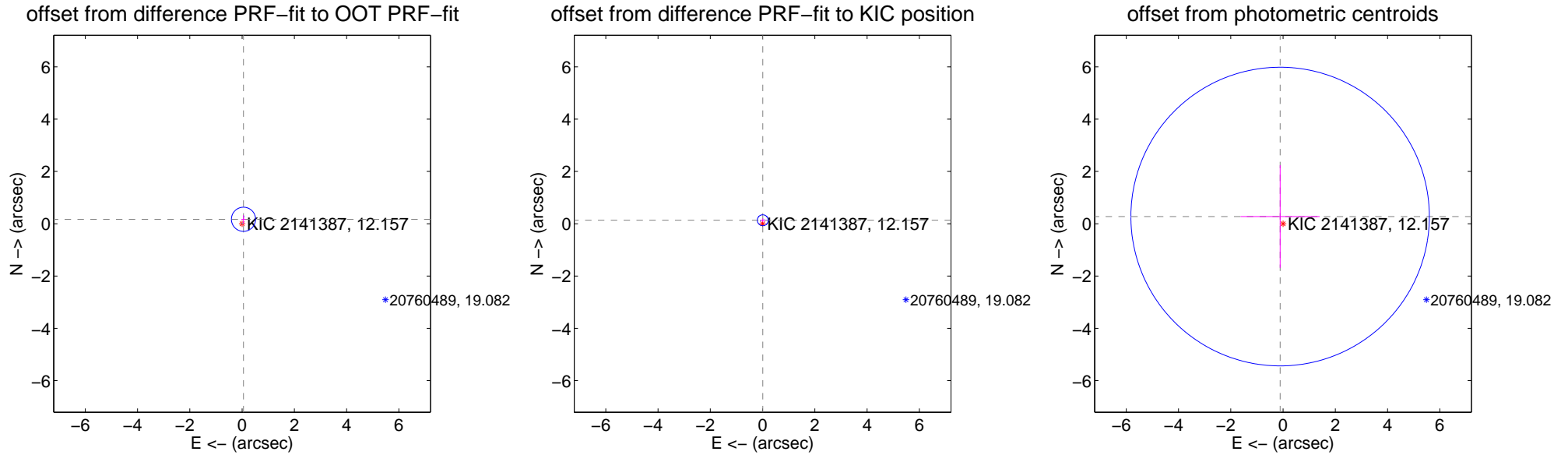
DV Centroid Data

Supplemental centroid analysis for 002141387-05. Kepler magnitude: 12.16. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.178 ± 0.154	1.16	-0.053 ± 0.078	0.170 ± 0.160
PRF-fit source offset from KIC position	0.134 ± 0.069	1.93	-0.008 ± 0.102	0.134 ± 0.069
photometric centroid source offset	0.30 ± 1.90	0.16	0.11 ± 1.51	0.27 ± 1.96



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.

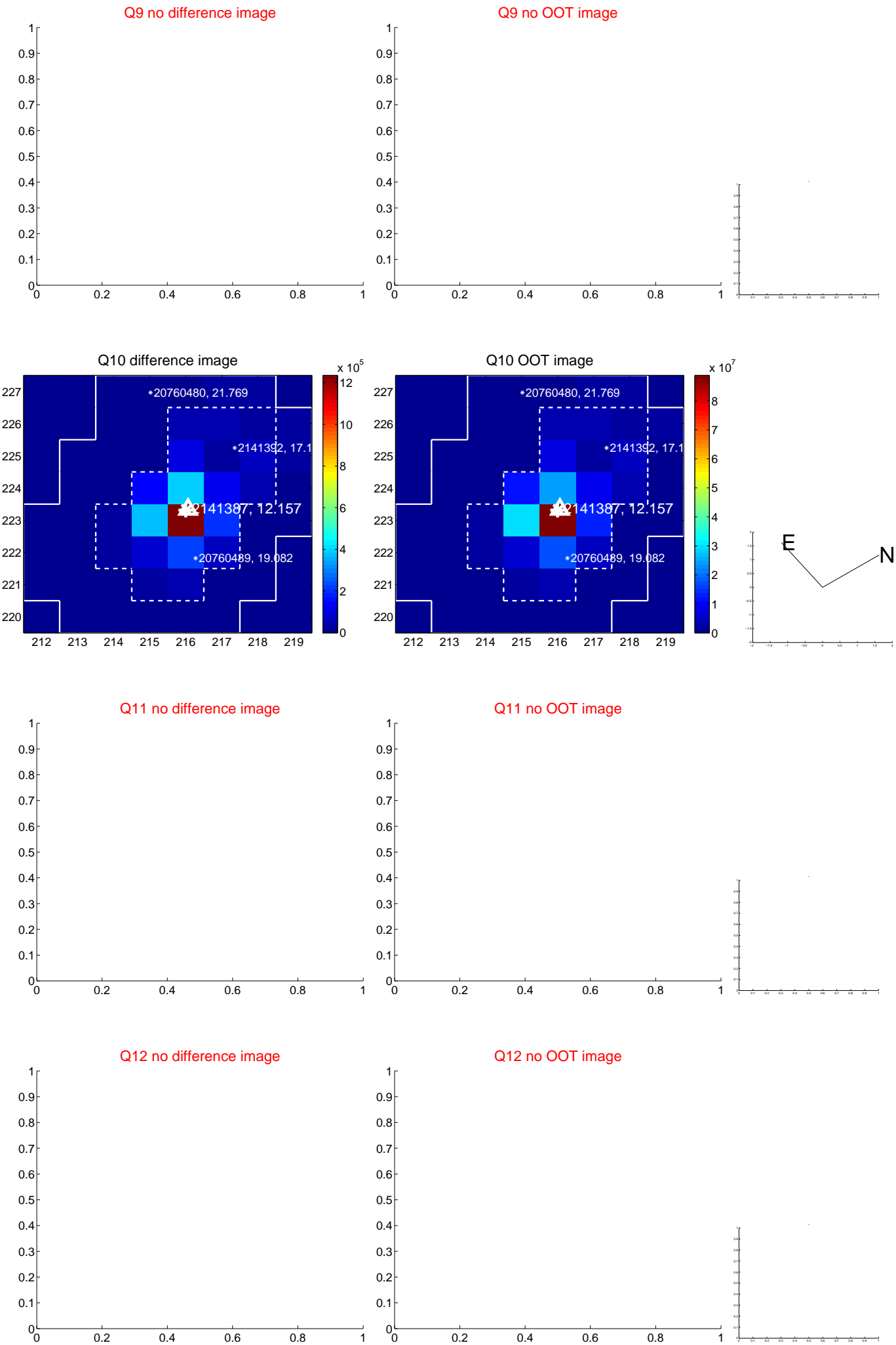
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



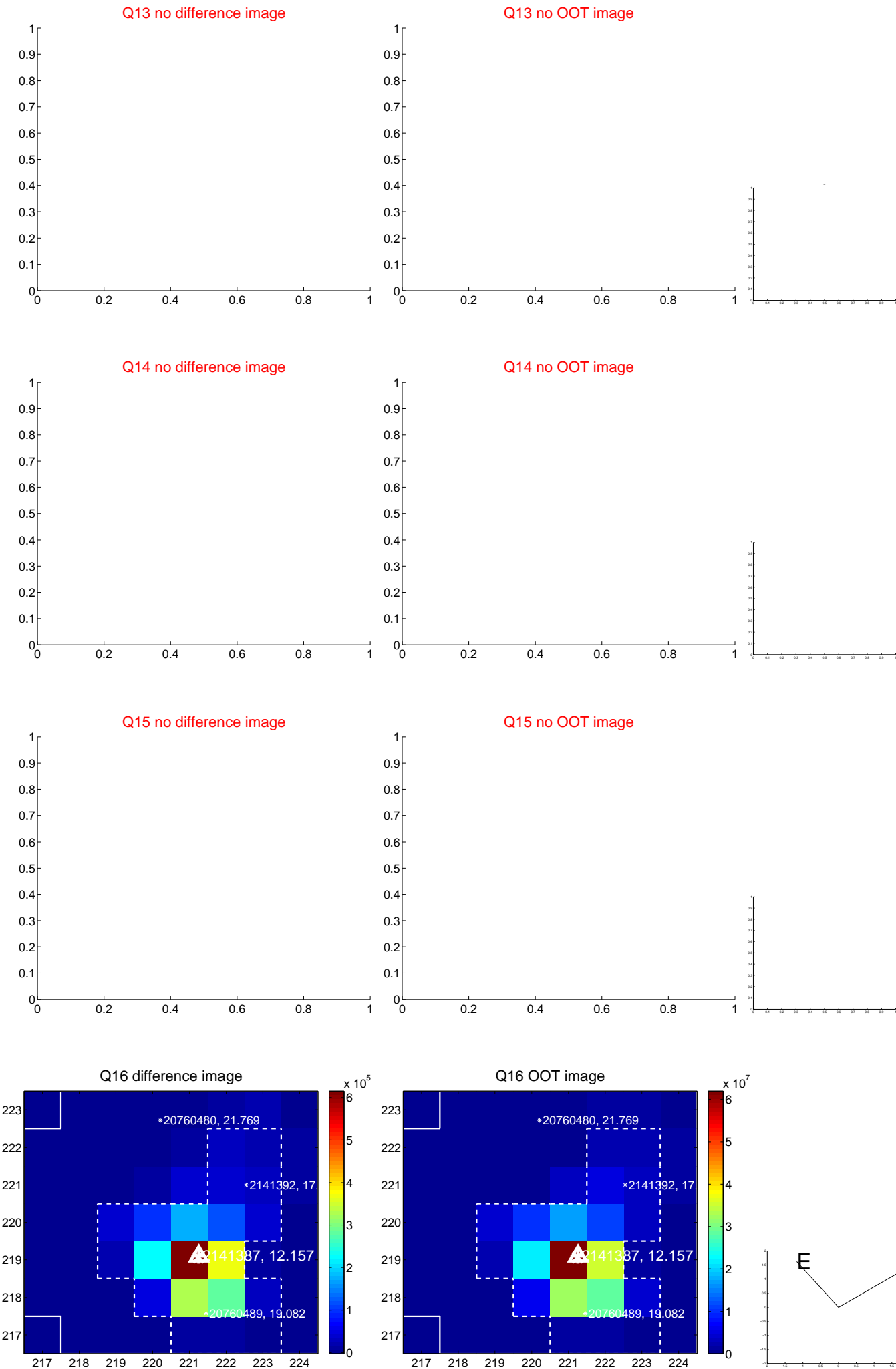
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



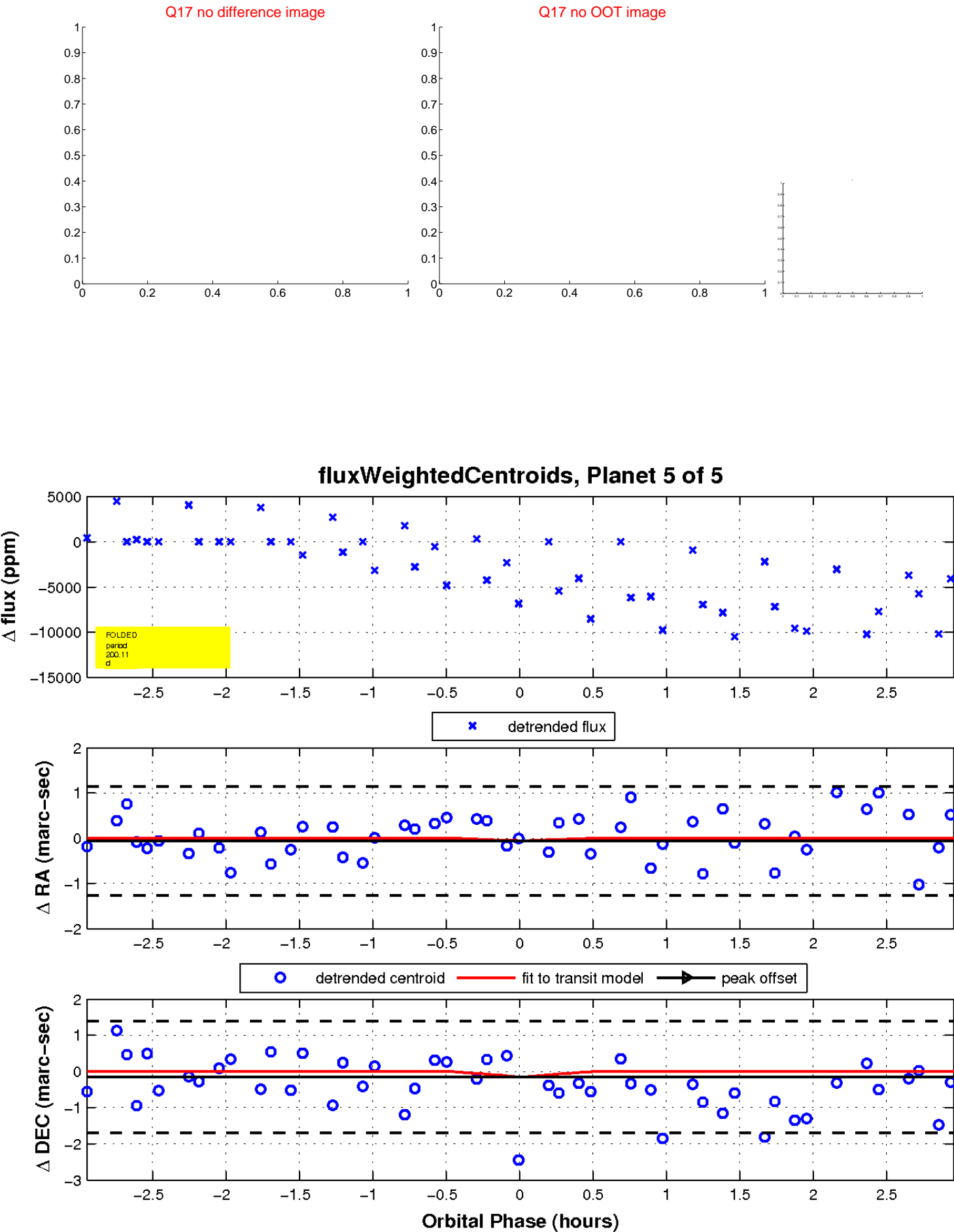
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

