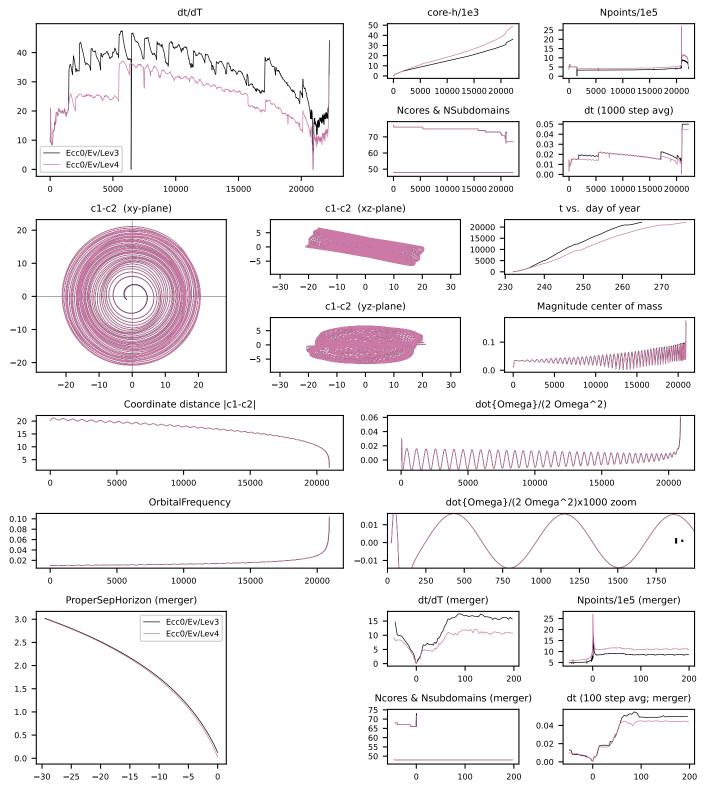
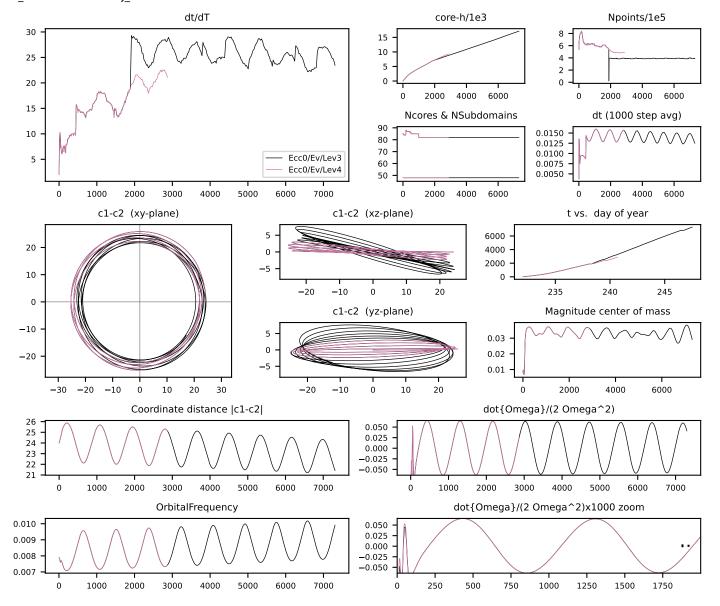
q= 3.000 chiA=(0.300, -0.000, 0.000) chiB=(0.200, -0.000, 0.100) E_ADM=0.9958115 J_ADM=0.9406777

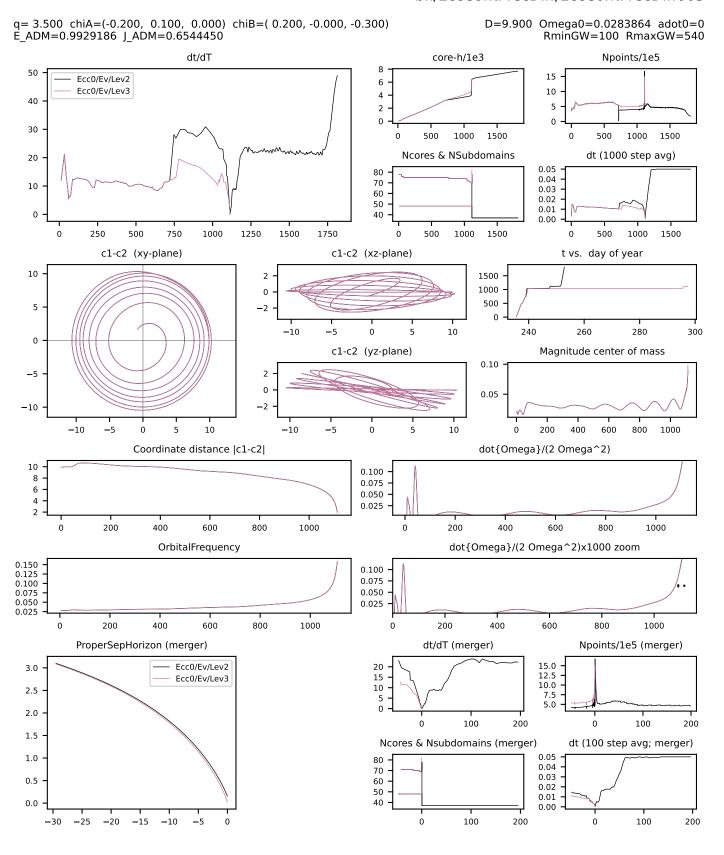
D=20.231 Omega0=0.0103729 adot0=0.0001412 RminGW=245 RmaxGW=1100

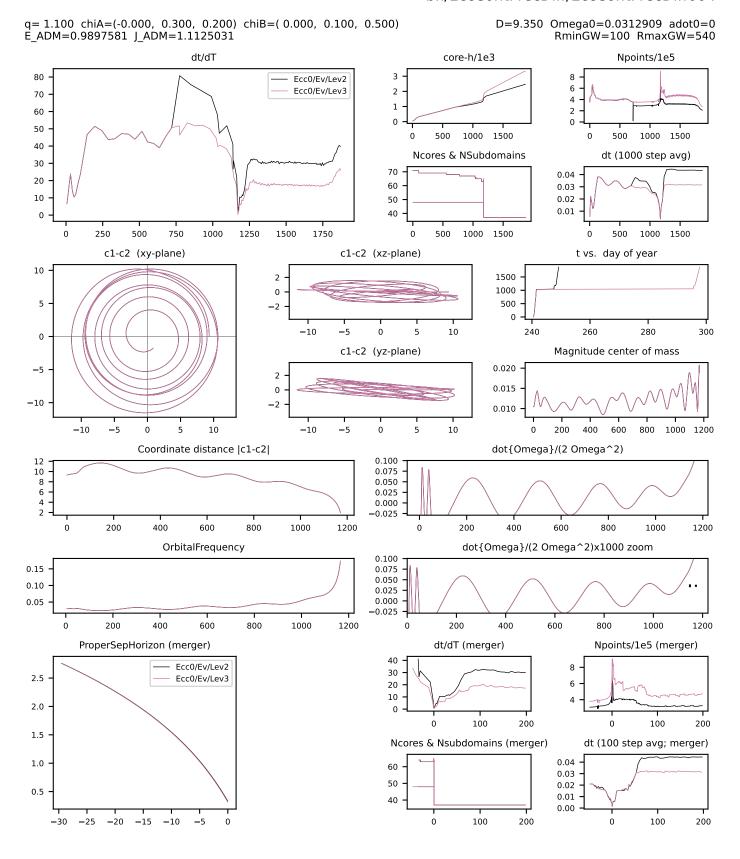


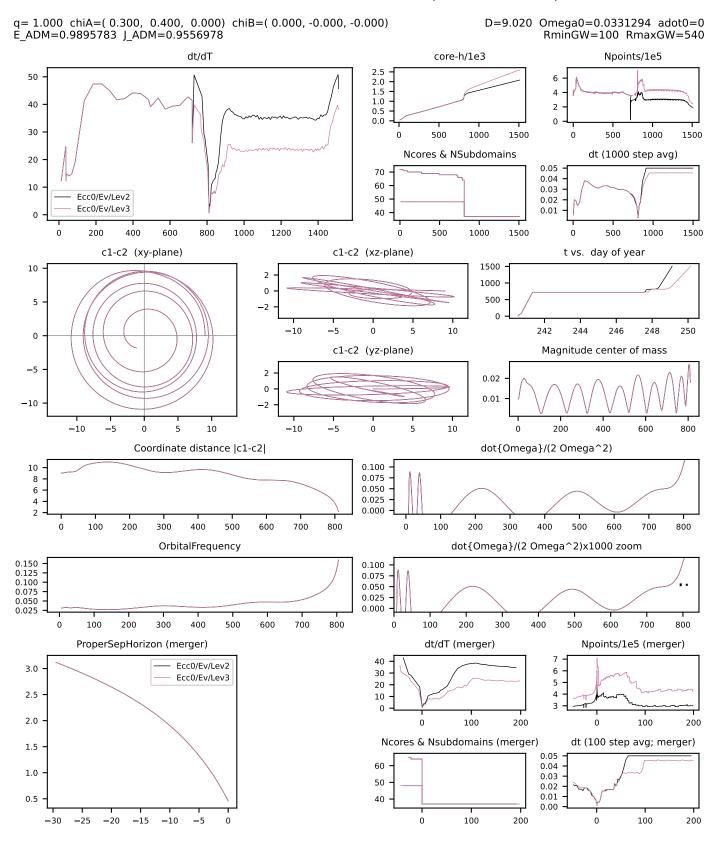
q=2.500 chiA=(0.100, 0.400, 0.000) chiB=(0.500, 0.000, -0.000) E_ADM=0.9960159 J_ADM=1.0784028

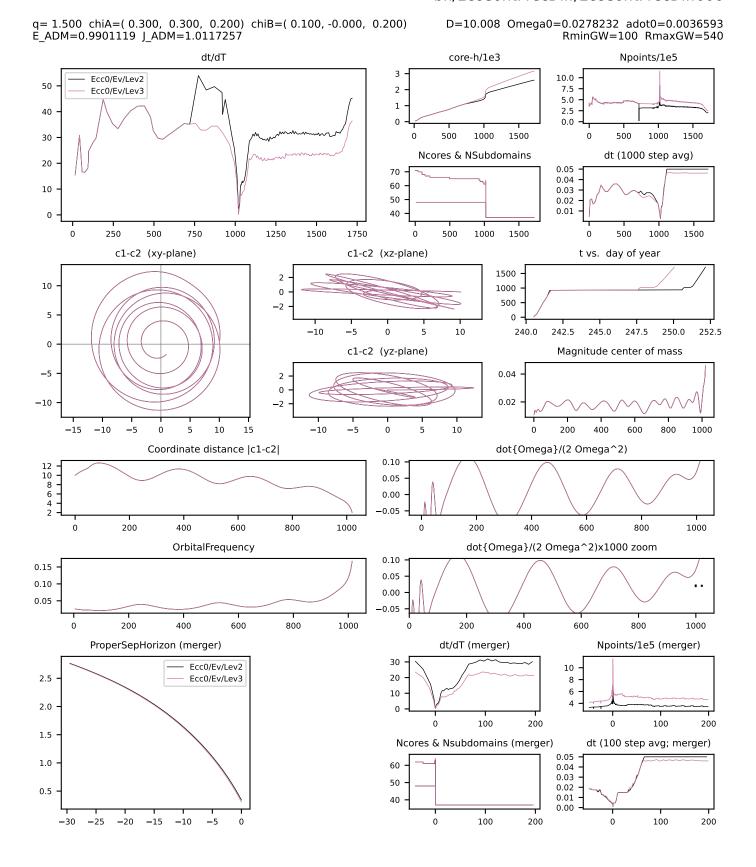
D=23.994 Omega0=0.0079944 adot0=0.0005560 RminGW=315 RmaxGW=1415

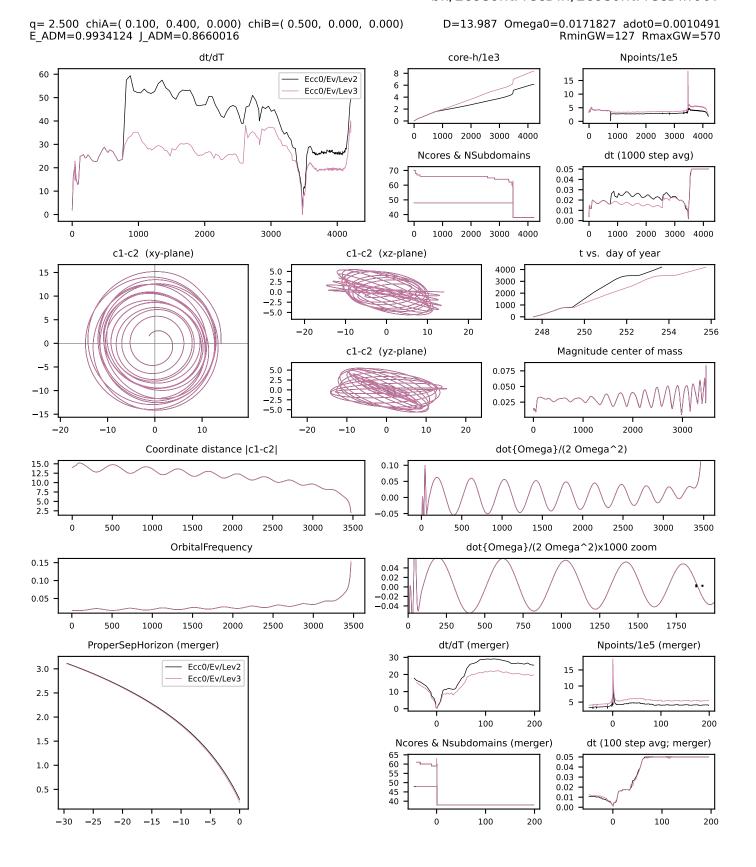


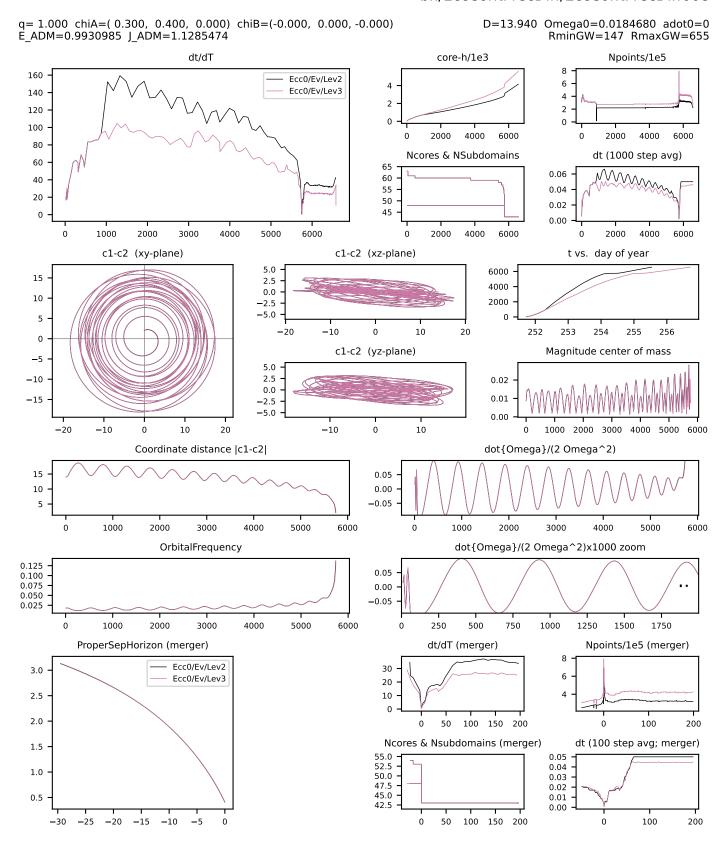


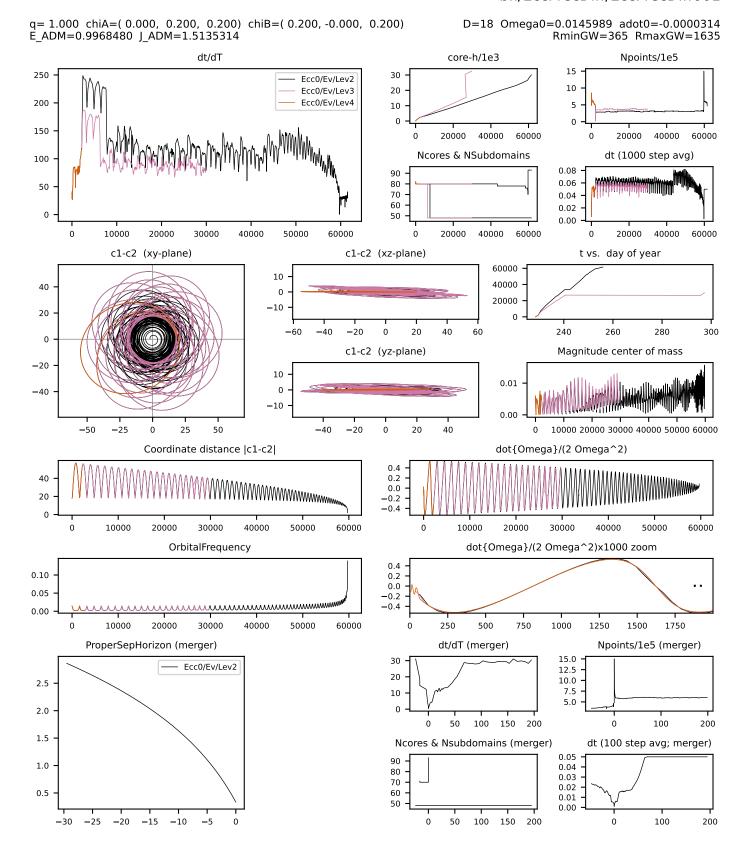


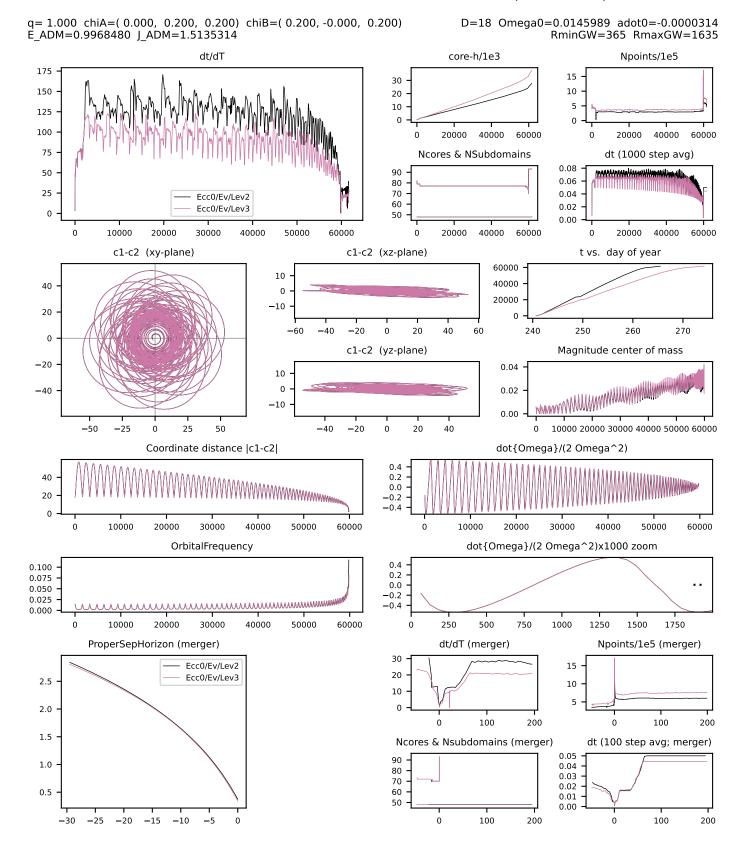




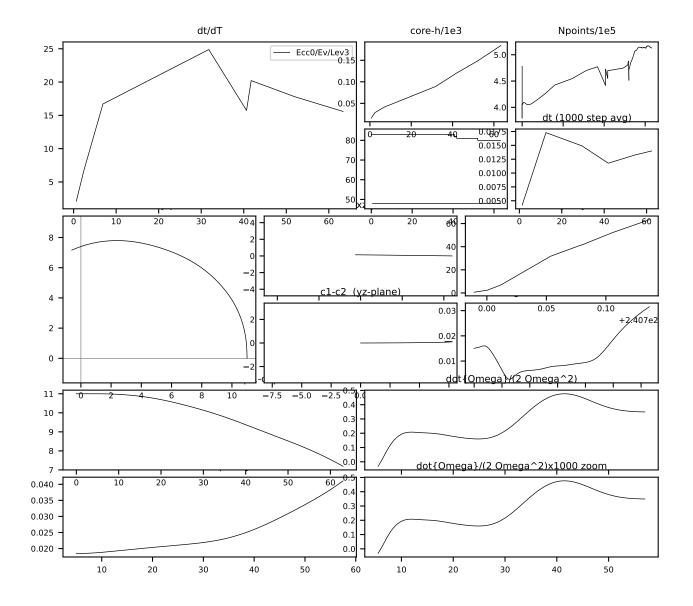


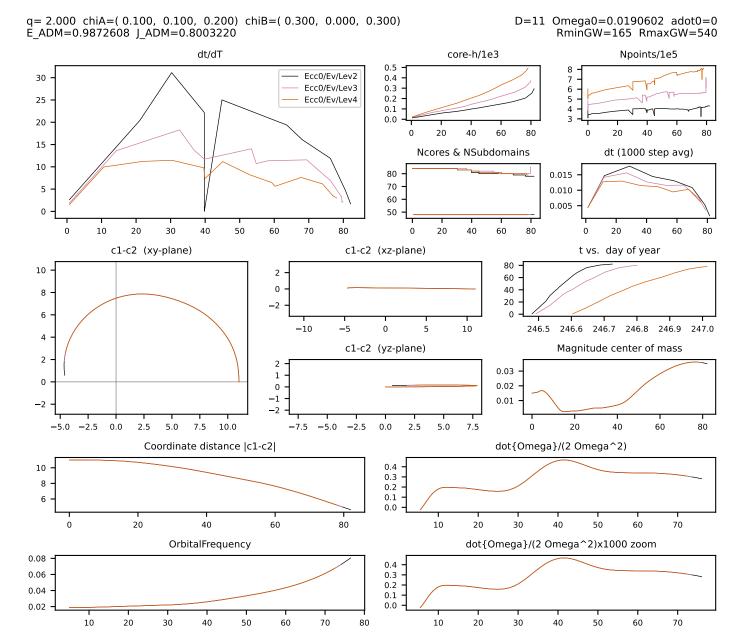


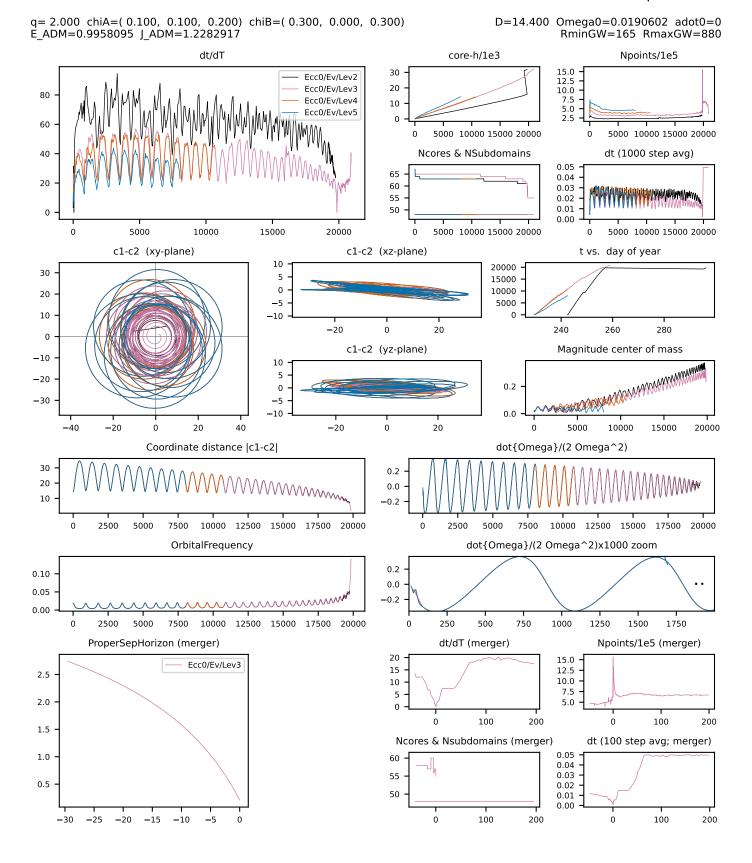


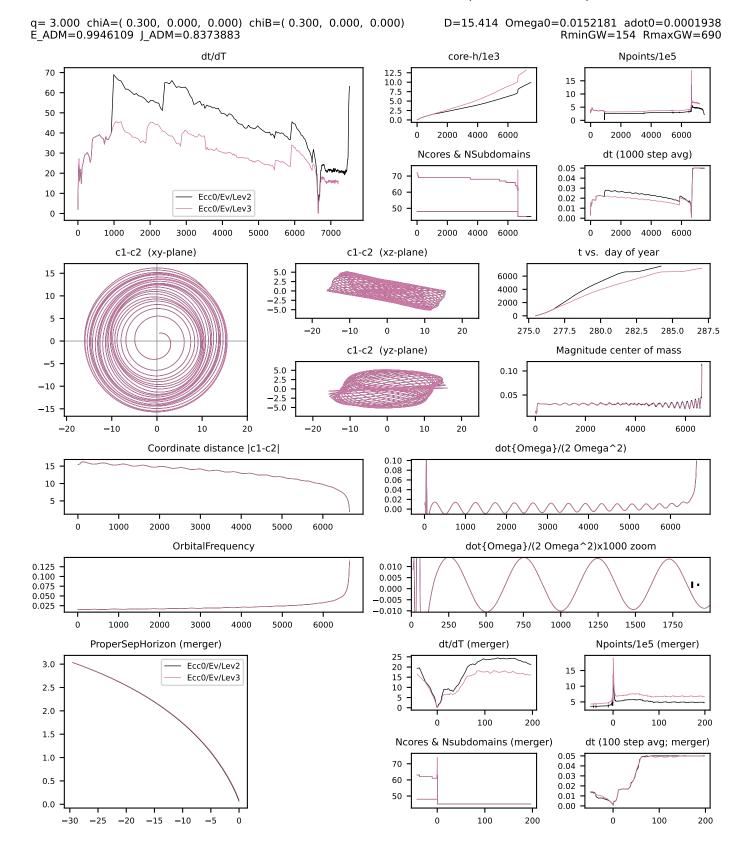


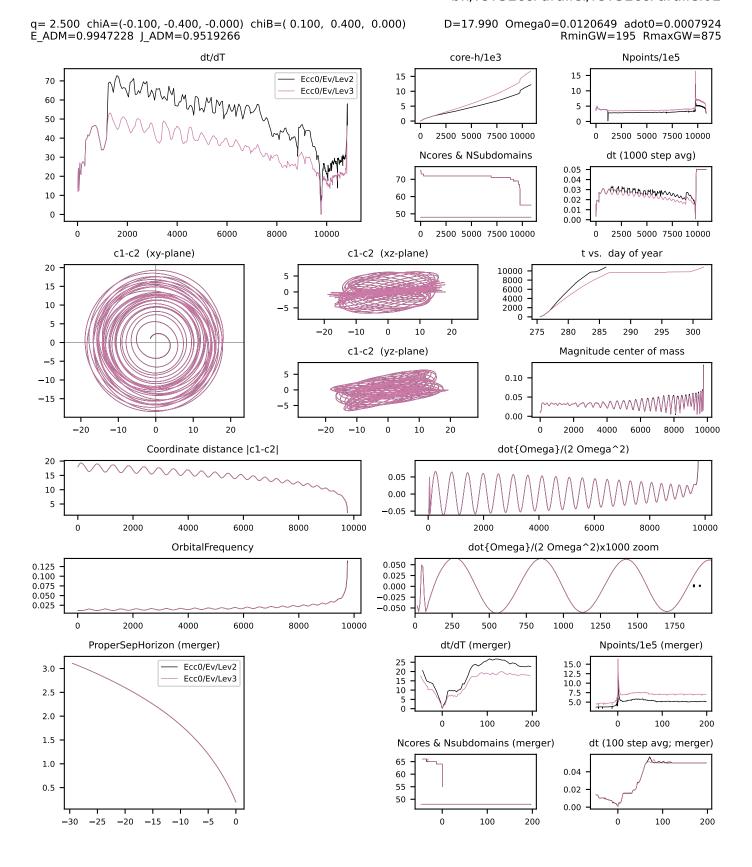
D=11 Omega0=0.0190602 adot0=0 RminGW=100 RmaxGW=540

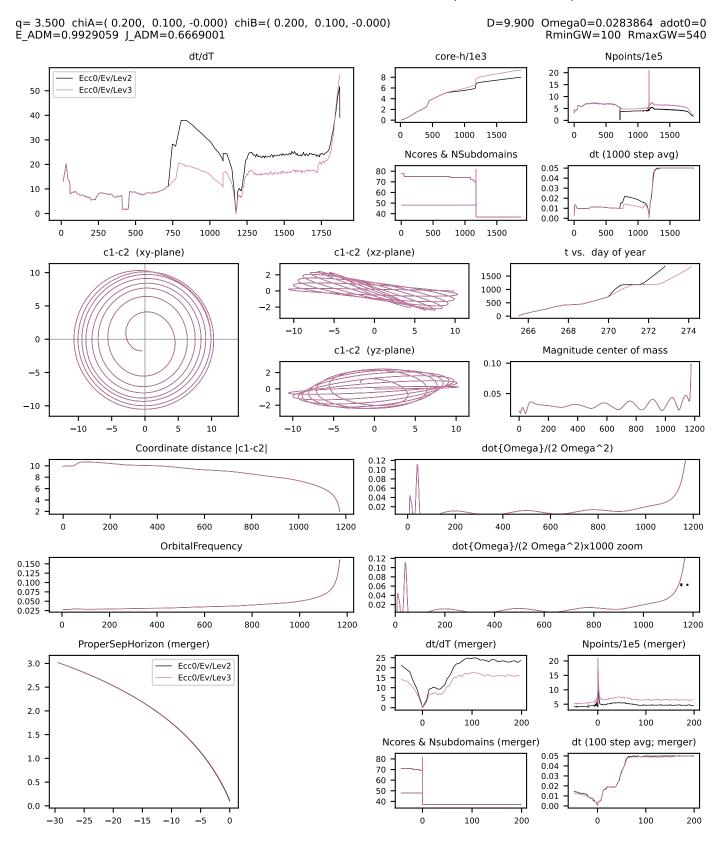


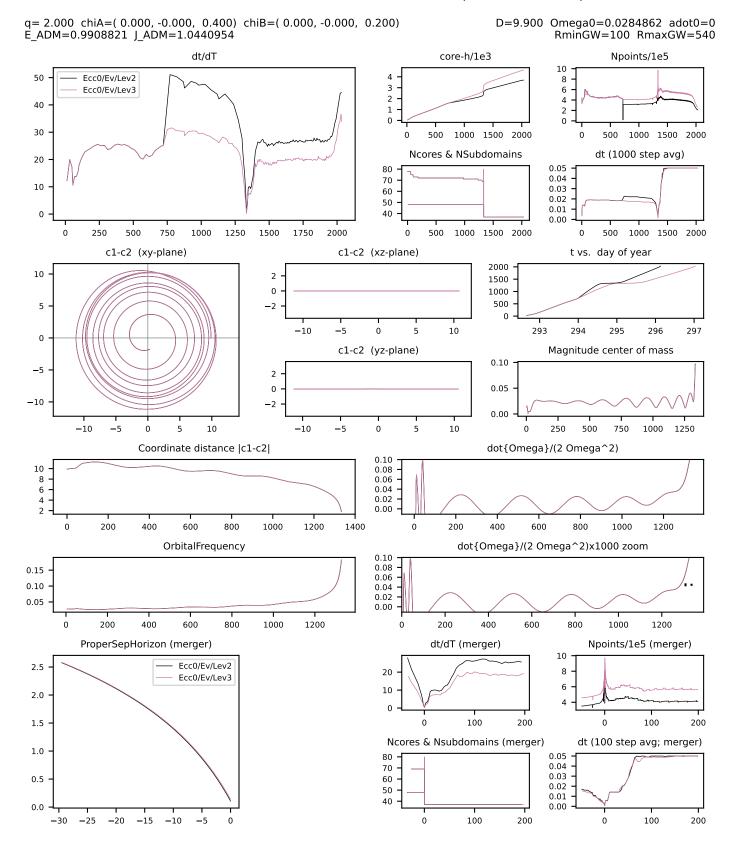


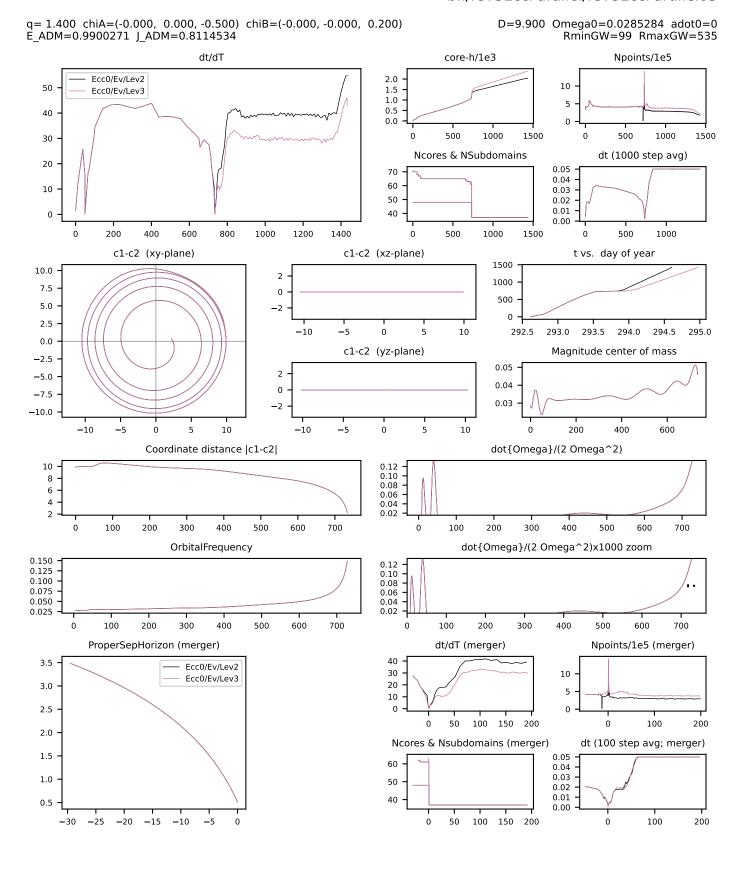












D=12.080 Omega0=0.0202785 adot0=-0.0013935

E_ADM=0.9964396 J_ADM=0.1915933 RminGW=100 RmaxGW=540 dt/dT core-h/1e3 Npoints/1e5 40 20 Ecc0/Ev/Lev2 15 20 35 Ecc0/Ev/Lev3 10 10 30 5 0 25 500 1000 1500 2000 500 1000 1500 2000 20 Ncores & NSubdomains dt (1000 step avg) 15 80 0.04 10 70 0.03 0.02 60 5 0.01 50 0 0.00 0 500 1000 1500 2000 500 1000 1500 2000 500 1000 1500 2000 c1-c2 (xy-plane) c1-c2 (xz-plane) t vs. day of year 2000 5.0 10 2.5 1500 0.0 1000 -2.5 500 5 -5.0 0 -20 -10 10 20 50 -50 0 c1-c2 (yz-plane) Magnitude center of mass 0.075 5.0 2.5 -5 0.050 0.0 -2.5 0.025 -10 -5.0 10 20 750 1000 1250 1500 -15-10-5 5 10 15 -20 -100 250 500 Coordinate distance |c1-c2| dot{Omega}/(2 Omega^2) 12 0.10 10 0.05 8 6 0.00 4 -0.05 2 0 200 400 600 800 1000 1200 1400 0 200 400 600 800 1000 1200 1400 dot{Omega}/(2 Omega^2)x1000 zoom OrbitalFrequency 0.125 0.10 0.100 0.05 0.075 0.00 0.050 -0.05 0.025 200 400 600 800 1000 200 400 600 800 1000 1200 1400 1200 1400 0 dt/dT (merger) ProperSepHorizon (merger) Npoints/1e5 (merger) 10 25 Ecc0/Ev/Lev2 8 3.0 Ecc0/Ev/Lev3 20 6 15 4 2.5 10 5 2.0 100 200 100 200 Ncores & Nsubdomains (merger) dt (100 step avg; merger) 1.5 80 0.04 70 0.03 1.0 60 0.02 0.01 50 0.5 0.00 100 -30 -25 -20 -15 -10 **-**5 0 100 200 200

q = 9.000 chiA = (0.100, -0.300, -0.200) chiB = (0.000, 0.000, 0.100)

100

100

dt (100 step avg; merger)

200

200

q=8.000 chiA=(-0.000, -0.000, 0.500) chiB=(0.000, 0.000, -0.200)D=10.790 Omega0=0.0245271 adot0=0.0014817 E_ADM=0.9959955 J_ADM=0.7673842 RminGW=99 RmaxGW=535 dt/dT core-h/1e3 Npoints/1e5 20 Ecc0/Ev/Lev2 15 20 40 Ecc0/Ev/Lev3 10 10 5 30 0 1000 2000 3000 4000 1000 2000 3000 4000 20 Ncores & NSubdomains dt (1000 step avg) 90 0.03 80 10 70 0.02 60 0.01 50 0 0.00 0 500 1000 1500 2000 2500 3000 3500 4000 0 1000 2000 3000 4000 1000 2000 3000 4000 c1-c2 (xy-plane) c1-c2 (xz-plane) t vs. day of year 4000 3000 10 2000 0 1000 -2 5 0 -10 0 10 -50 50 -5 0 c1-c2 (yz-plane) Magnitude center of mass 2 0.10 0 0.05 -10 0.00 10 500 1000 1500 2000 2500 3000 -15-10**-**5 5 10 -10-5 0 Coordinate distance |c1-c2| dot{Omega}/(2 Omega^2) 0.075 10 0.050 8 0.025 6 0.000 -0.025 2 0 500 1000 1500 2000 2500 3000 500 1000 1500 2000 2500 3000 OrbitalFrequency dot{Omega}/(2 Omega^2)x1000 zoom 0.04 0.15 0.02 0.10 0.00 -0.020.05 -0.04500 1000 1500 2000 2500 3000 250 500 750 1000 1250 1500 1750 Npoints/1e5 (merger) ProperSepHorizon (merger) dt/dT (merger) 10 20 Ecc0/Ev/Lev2 8 2.0 Ecc0/Ev/Lev3 15 6 10 1.5

1.0

0.5

0.0

-30

-25

-20

-15

-10

-5

0

100

100

Ncores & Nsubdomains (merger)

90

80

70

60

50

0

200

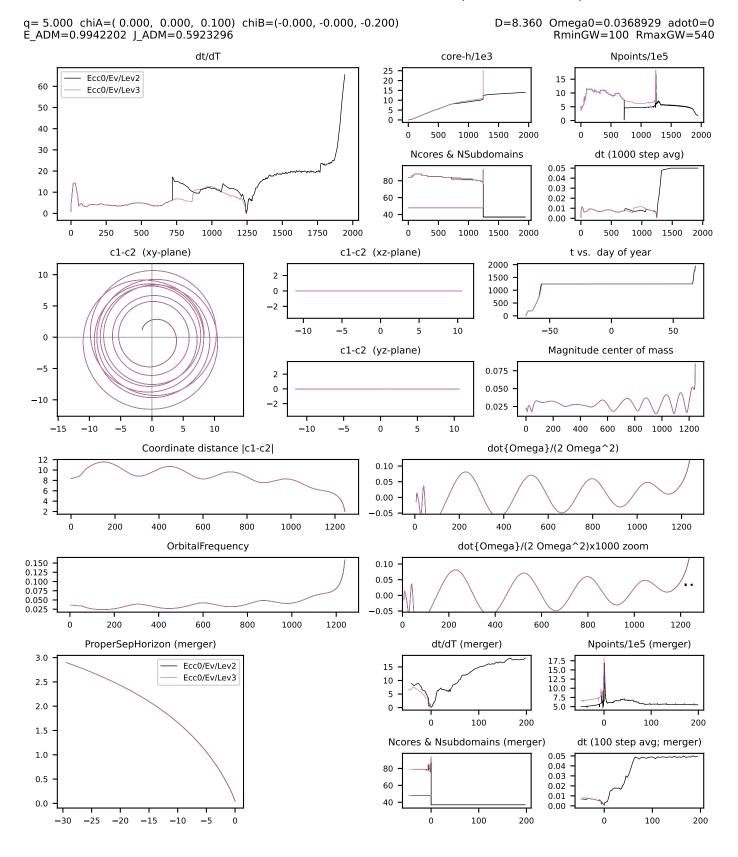
200

0.03

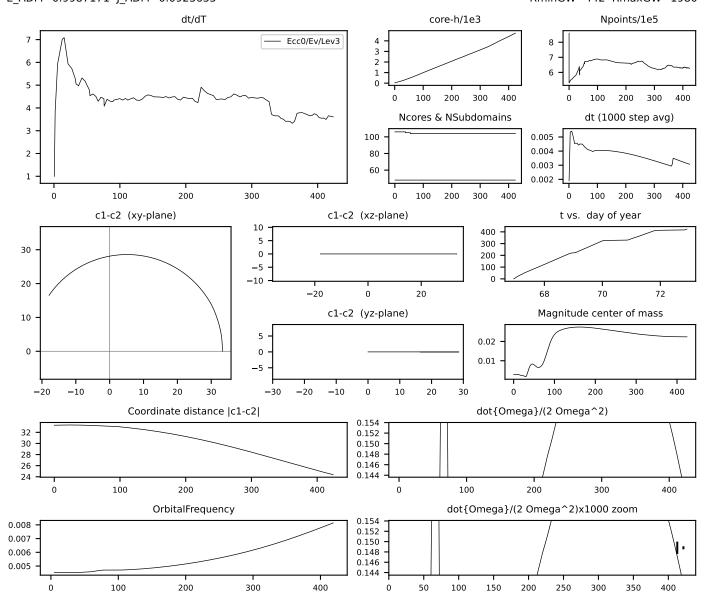
0.02

0.01

0.00



 $q\!=\!11.000$ chiA=(0.000, 0.000, -0.400) chiB=(-0.000, -0.000, 0.200) E_ADM=0.9987171 J_ADM=0.0923635 D=33.281 Omega0=0.0045636 adot0=0.0000947 RminGW=442 RmaxGW=1980



q=11.000 chiA=(0.000, 0.000, -0.400) chiB=(-0.000, -0.000, 0.200) D=14.323 Omega0=0.0171697 adot0=-0.0004566 E ADM=0.9978015 J ADM=0.0097696 RminGW=142 RmaxGW=635 dt/dT core-h/1e3 Npoints/1e5 30 60 20 40 20 10 20 0 15 5000 10000 5000 10000 10 Ncores & NSubdomains dt (1000 step avg) 0.008 70 MMMM 5 0.006 Ecc0/Ev/Lev2 60 0.004 Ecc0/Ev/Lev3 0.002 50 0 0 2000 4000 6000 8000 10000 12000 0 5000 10000 5000 10000 c1-c2 (xy-plane) c1-c2 (xz-plane) t vs. day of year 12500 15 10000 2 7500 0 10 5000 -2 2500 0 5 -10 10 25 50 75 0 c1-c2 (yz-plane) Magnitude center of mass 0.10 2 -10 0 0.05 -2 0.00 -10 0 10 2000 4000 6000 8000 10000 12000 -20 -10 10 Coordinate distance |c1-c2| dot{Omega}/(2 Omega^2) 15 0.10 10 0.05 5 0.00 0 2000 4000 6000 8000 10000 12000 2000 4000 6000 8000 10000 12000 OrbitalFrequency dot{Omega}/(2 Omega^2)x1000 zoom 0.125 0.100 0.02 0.075 0.00 0.050 -0.02 0.025 2000 4000 6000 8000 10000 12000 0 250 500 750 1000 1250 1500 1750 ProperSepHorizon (merger) dt/dT (merger) Npoints/1e5 (merger) 30 3.5 Ecc0/Ev/Lev2 25 6 Ecc0/Ev/Lev3 20 4 3.0 15 2 10 0 2.5 -40-20-40 -20 2.0 Ncores & Nsubdomains (merger) dt (100 step avg; merger) 1.5 0.005 70 0.004 1.0 0.003 60 0.002 0.5 0.001

-30

-25

-20

-15

-10

-5

-20

0

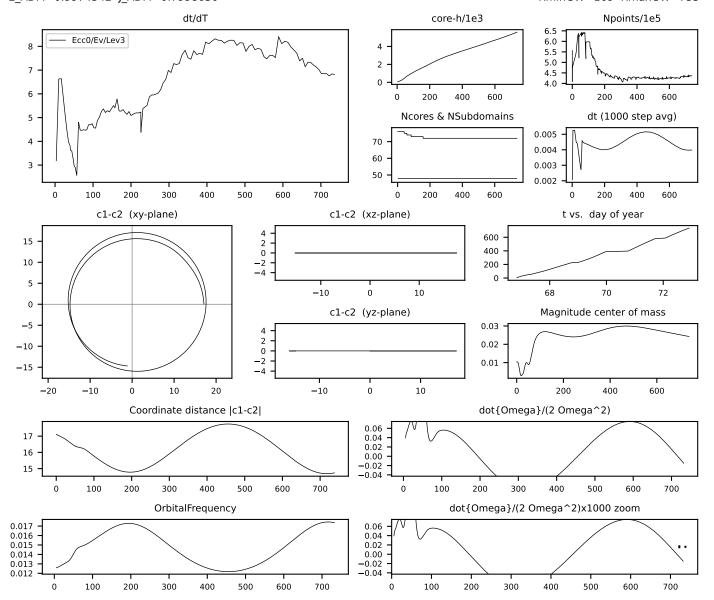
-40

-20

-40

 $q = 9.000 \ chiA = (-0.000, -0.000, 0.500) \ chiB = (0.000, 0.000, -0.400) \ E_ADM = 0.9974542 \ J_ADM = 0.7998630$

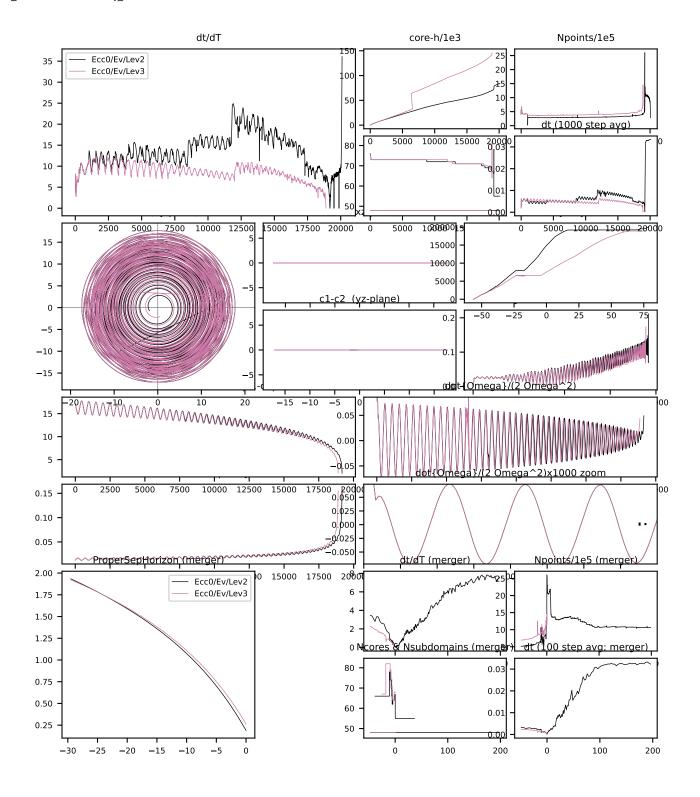
D=17.110 Omega0=0.0125784 adot0=-0.0007211 RminGW=169 RmaxGW=755



D=17.110 Omega0=0.0125772 adot0=-0.0007210

E_ADM=0.9975561 J_ADM=0.6309107 RminGW=169 RmaxGW=755 dt/dT core-h/1e3 Npoints/1e5 30 25 80 Ecc0/Ev/Lev2 60 20 Ecc0/Ev/Lev3 40 20 10 20 0 15 10000 15000 5000 5000 10000 15000 Ncores & NSubdomains dt (1000 step avg) 10 0.03 70 5 0.02 60 0.01 0 0.00 0 2500 5000 7500 10000 12500 15000 17500 5000 10000 15000 5000 10000 15000 c1-c2 (xy-plane) c1-c2 (xz-plane) t vs. day of year 15000 15 10000 0 10 **-**2 5000 0 -10 0 10 -50 50 75 0 c1-c2 (yz-plane) Magnitude center of mass **-**5 4 -100.1 0 -2 -150.0 -10 0 10 5000 10000 15000 -20 -1010 20 Coordinate distance |c1-c2| dot{Omega}/(2 Omega^2) 15 0.4 10 0.2 5 0.0 5000 0 2500 7500 10000 12500 15000 2500 5000 7500 10000 12500 15000 OrbitalFrequency dot{Omega}/(2 Omega^2)x1000 zoom 0.125 0.05 0.100 0.075 0.00 0.050 0.025 -0.05 0.000 2500 5000 7500 10000 12500 15000 250 500 750 1000 1250 1500 1750 0 dt/dT (merger) ProperSepHorizon (merger) Npoints/1e5 (merger) 2.5 10 8 30 Ecc0/Ev/Lev2 Ecc0/Ev/Lev3 6 20 2.0 10 1.5 100 200 100 200 Ncores & Nsubdomains (merger) dt (100 step avg; merger) 1.0 0.03 70 0.02 60 0.5 0.01 50 0.00 200 100 -30 **-**25 -20 -15-10**-**5 0 100 200

q = 9.500 chiA = (0.000, 0.000, 0.300) chiB = (-0.000, -0.000, 0.300)



q = 9.500 chiA = (0.000, -0.000, -0.600) chiB = (0.000, 0.000, -0.300)D=17.110 Omega0=0.0125772 adot0=-0.0007210 E_ADM=0.9975560 J_ADM=-0.1024788 RminGW=169 RmaxGW=755 dt/dT core-h/1e3 Npoints/1e5 30 60 Ecc0/Ev/Lev2 50 20 40 Ecc0/Ev/Lev3 20 10 40 0 0 30 2500 5000 7500 10000 2500 5000 7500 10000 Ncores & NSubdomains dt (1000 step avg) 20 0.04 0.03 10 60 0.02 0.01 50 0 0.00 0 2000 4000 6000 8000 10000 0 2500 5000 7500 10000 2500 5000 7500 10000 c1-c2 (xy-plane) c1-c2 (xz-plane) t vs. day of year 10000 8000 15 6000 0 4000 10 **-**2 2000 0 5 -10 0 10 -300 -200 -100 100 0 c1-c2 (yz-plane) Magnitude center of mass -5 0.10 -100 0.05 -2 0.00 -10 0 10 8000 -20 -10 10 20 2000 4000 6000 Coordinate distance |c1-c2| dot{Omega}/(2 Omega^2) 0.10 15 0.05 10 0.00 -0.05 5 -0.10 0 2000 4000 6000 8000 0 2000 4000 6000 8000 OrbitalFrequency dot{Omega}/(2 Omega^2)x1000 zoom 0.10 0.05 0.08 0.00 0.04 -0.05 2000 4000 6000 8000 250 500 750 1000 1250 1500 1750 0 Npoints/1e5 (merger) ProperSepHorizon (merger) dt/dT (merger) 30 15 4.0 Ecc0/Ev/Lev2 25 10 Ecc0/Ev/Lev3 20 3.5 15 10 3.0 2.5 100 200 200 2.0 Ncores & Nsubdomains (merger) dt (100 step avg; merger) 1.5 0.04

60

50

0

1.0

0.5

-30

-25

-20

-15

-10

-5

100

0.03

0.02 0.01

0.00

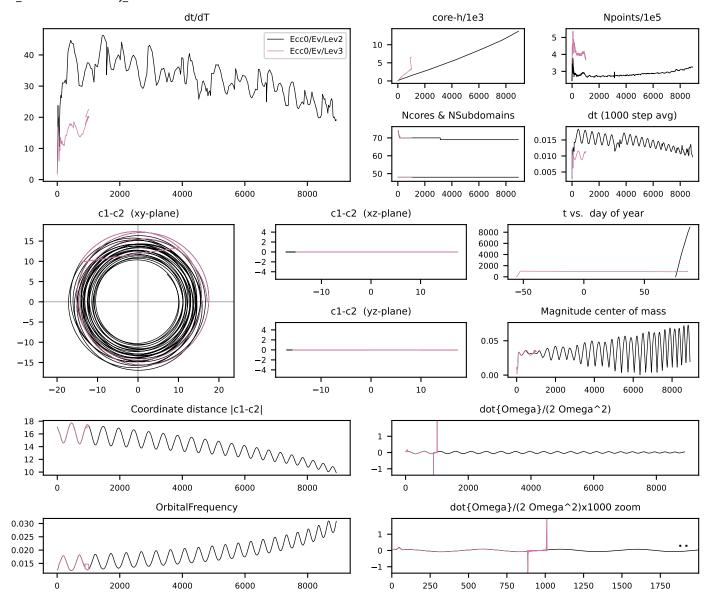
100

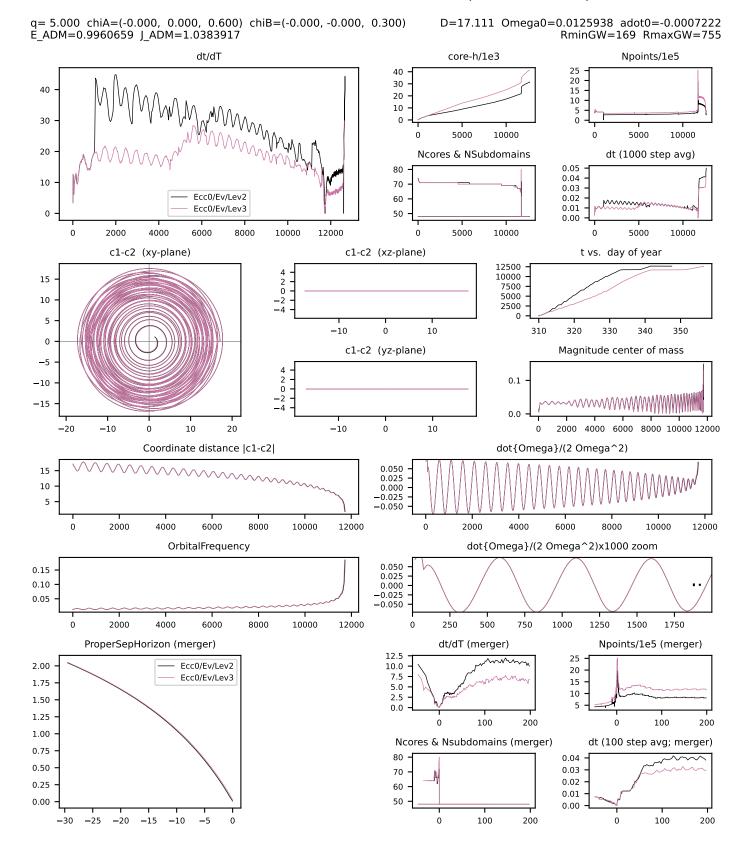
200

200

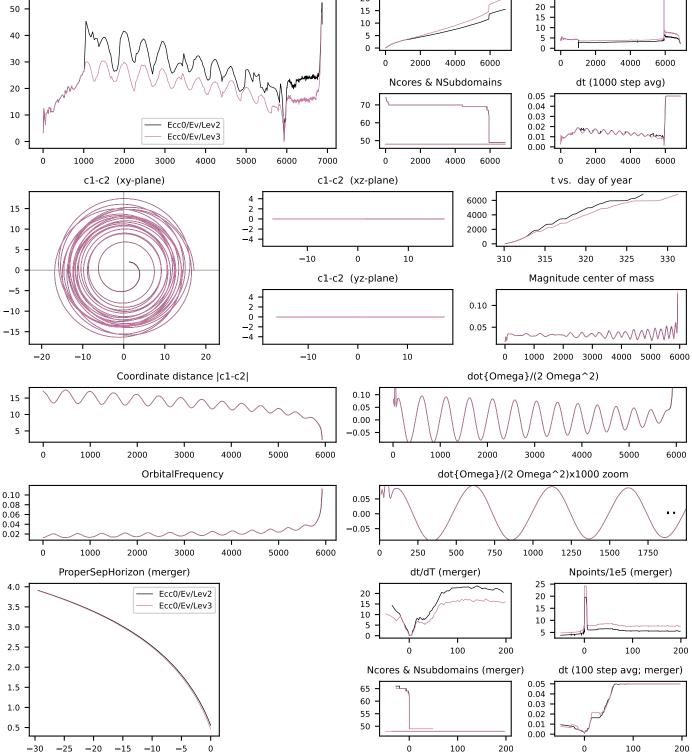
 $q = 5.000 \ chiA = (-0.000, -0.000, \ 0.300) \ chiB = (\ 0.000, \ 0.000, \ 0.300) \ E \ ADM = 0.9960549 \ J \ ADM = 0.8330001$

D=17.111 Omega0=0.0125938 adot0=-0.0007222 RminGW=169 RmaxGW=755





q = 5.000 chiA = (-0.000, 0.000, -0.600) chiB = (-0.000, -0.000, -0.300)D=17.111 Omega0=0.0125938 adot0=-0.0007222 E ADM=0.9960556 J ADM=0.2048252 RminGW=169 RmaxGW=755 dt/dT core-h/1e3 Npoints/1e5 Ncores & NSubdomains dt (1000 step avg) 0.05 0.04 0.03 Ecc0/Ev/Lev2 0.02 Ecc0/Ev/Lev3 0.01 0.00 c1-c2 (xy-plane) c1-c2 (xz-plane) t vs. day of year -10 c1-c2 (yz-plane) Magnitude center of mass -5 0.10 -10



q= 1.000 chiA=(0.064, -0.329, 0.092) chiB=(0.159, -0.421, -0.237) D=17.799 Omega0=0.0126716 adot0=0.0011171 E_ADM=0.9940678 J_ADM=1.1724999 RminGW=248 RmaxGW=935 dt/dT core-h/1e3 Npoints/1e5 100 1.0 5.0 Ecc8/Ev/Lev3 0.8 0.6 0.4 4.5 4.0 80 3.5 0.2 3.0 500 60 1000 1500 500 1000 1500 dt (1000 step avg) Ncores & NSubdomains 40 70 0.05 65 0.04 60 0.03 20 55 0.02 50 0.01 200 400 600 800 1000 1200 1400 1600 500 1000 1500 500 1000 1500 c1-c2 (xz-plane) c1-c2 (xy-plane) t vs. day of year 5.0 2.5 1500 20 1000 0.0 -2.5 500 10 -5.0 0 -20 -10 0 10 20 234.6 234.8 235.0 235.2 235.4 0 c1-c2 (yz-plane) Magnitude center of mass 0.011 5.0 2.5 -100.010 0.0 -2.5 0.009 -20 -5.0 -20 -10 -10 0 10 20 1000 1500 -30 10 20 -20 500 Coordinate distance |c1-c2| dot{Omega}/(2 Omega^2) 22 21 20 0.05 0.00 19 -0.05 0 250 500 750 1000 1250 1500 0 200 400 600 800 1000 1200 1400 1600

0.05

0.00 -0.05

0

200

400

600

OrbitalFrequency

800

1000

1200

1400

1600

0.014

0.012

0.010

0

200

400

600

dot{Omega}/(2 Omega^2)x1000 zoom

800

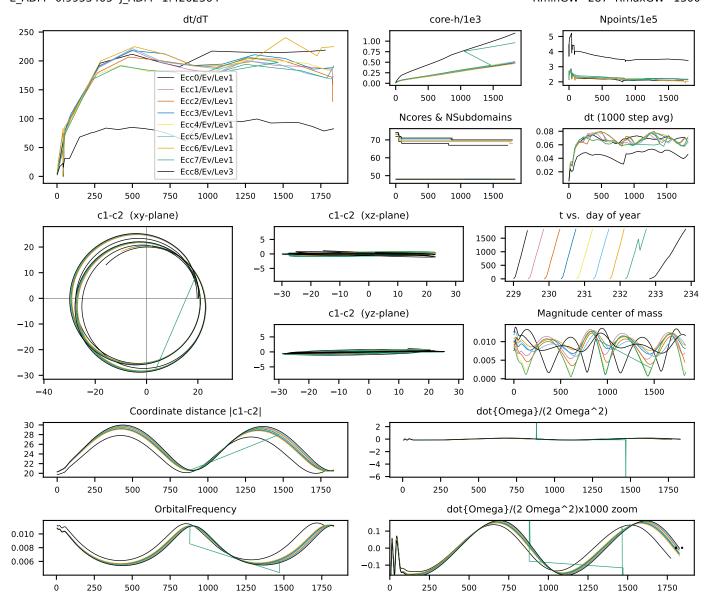
1000

1200

1400

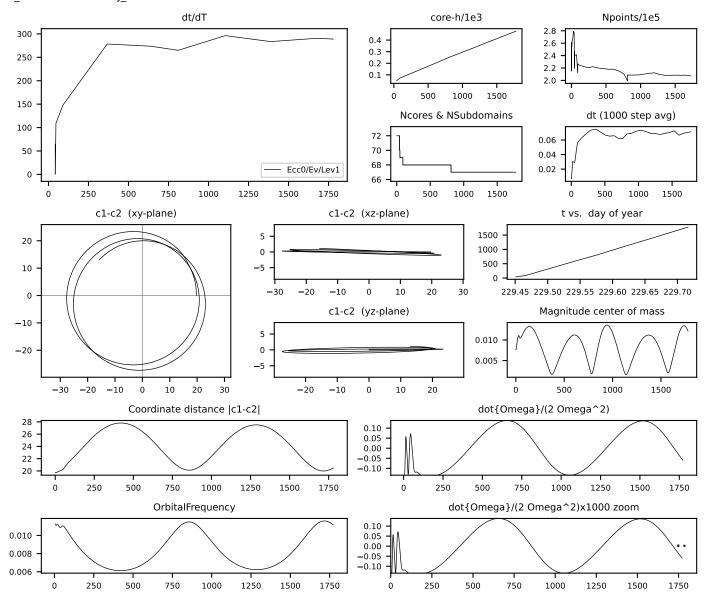
1600

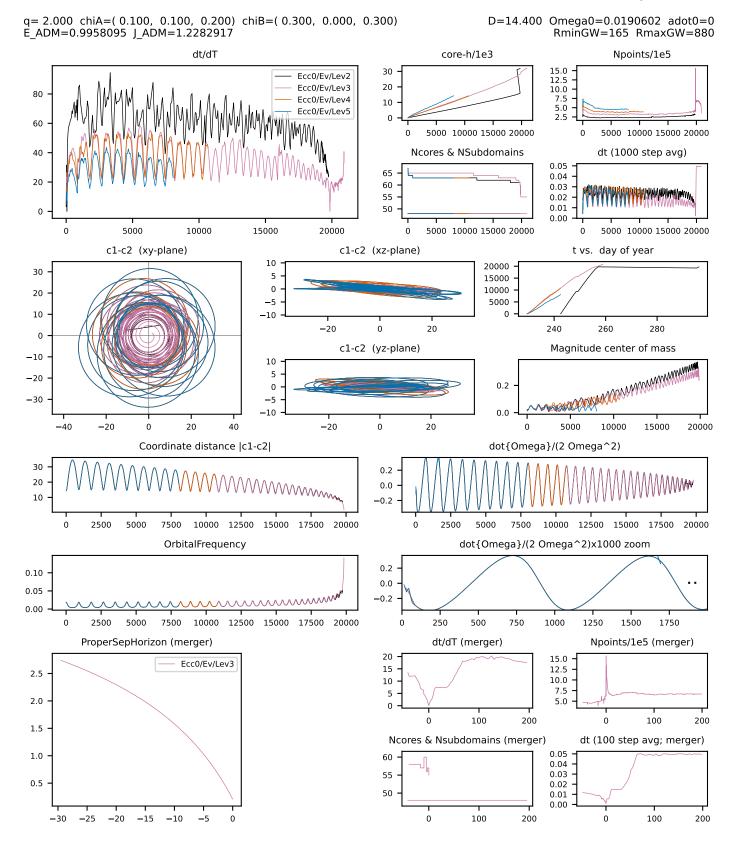
 $q=1.000 \text{ chiA}=(0.300,\ 0.004,\ 0.390) \text{ chiB}=(0.000,\ 0.000,\ -0.000)$ $E_ADM=0.9953405\ J_ADM=1.4262364$ D=20.305 Omega0=0.0109471 adot0=0.0004514 RminGW=287 RmaxGW=1300



 $q\!=\!1.000$ chiA=(0.300, 0.400, 0.000) chiB=(0.000, -0.000, 0.000) E_ADM=0.9951092 J_ADM=1.3085217

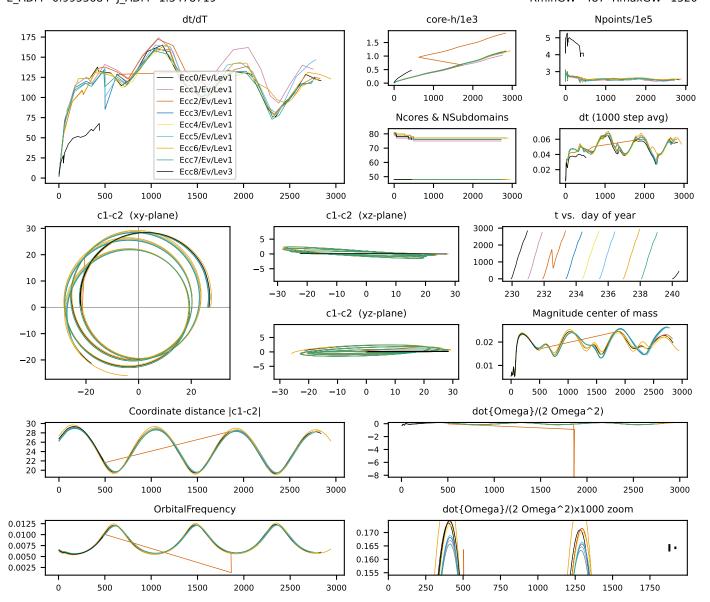
D=19.710 Omega0=0.0113827 adot0=0.0002115 RminGW=276 RmaxGW=1220





q=1.500 chiA=(0.292, 0.315, 0.175) chiB=(0.092, 0.016, 0.199) $E_ADM=0.9953684 \text{ J_ADM}=1.3478719$

D=26.737 Omega0=0.0064601 adot0=0.0010291 RminGW=487 RmaxGW=1520



 $q = 1.250 \text{ chiA} = (-0.006, 0.328, 0.150) \text{ chiB} = (0.094, 0.031, 0.197) \\ \text{E_ADM} = 0.9963110 \text{ J_ADM} = 1.5542598$

D=33.013 Omega0=0.0049397 adot0=0.0004287 RminGW=636 RmaxGW=2275

