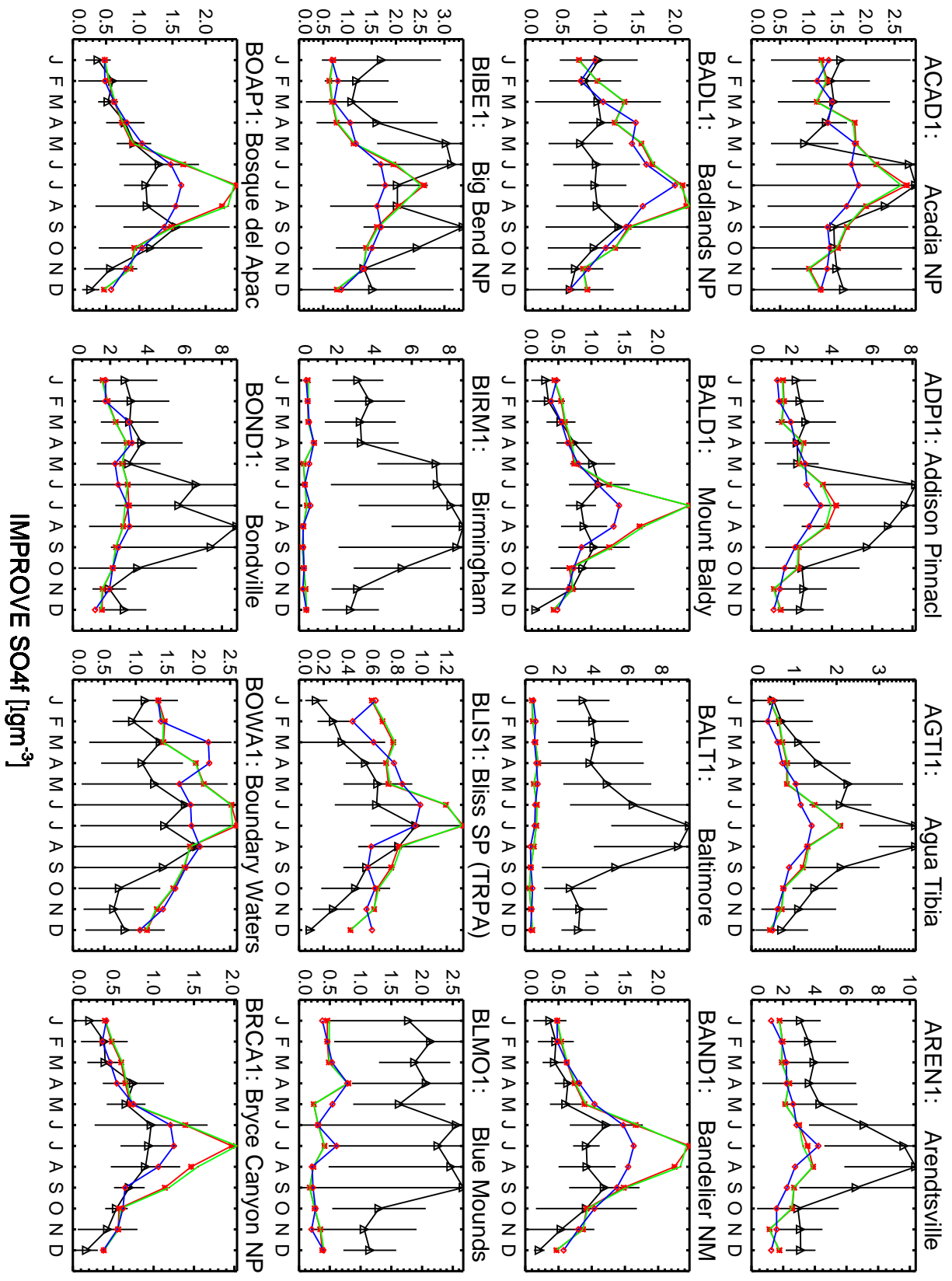


Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

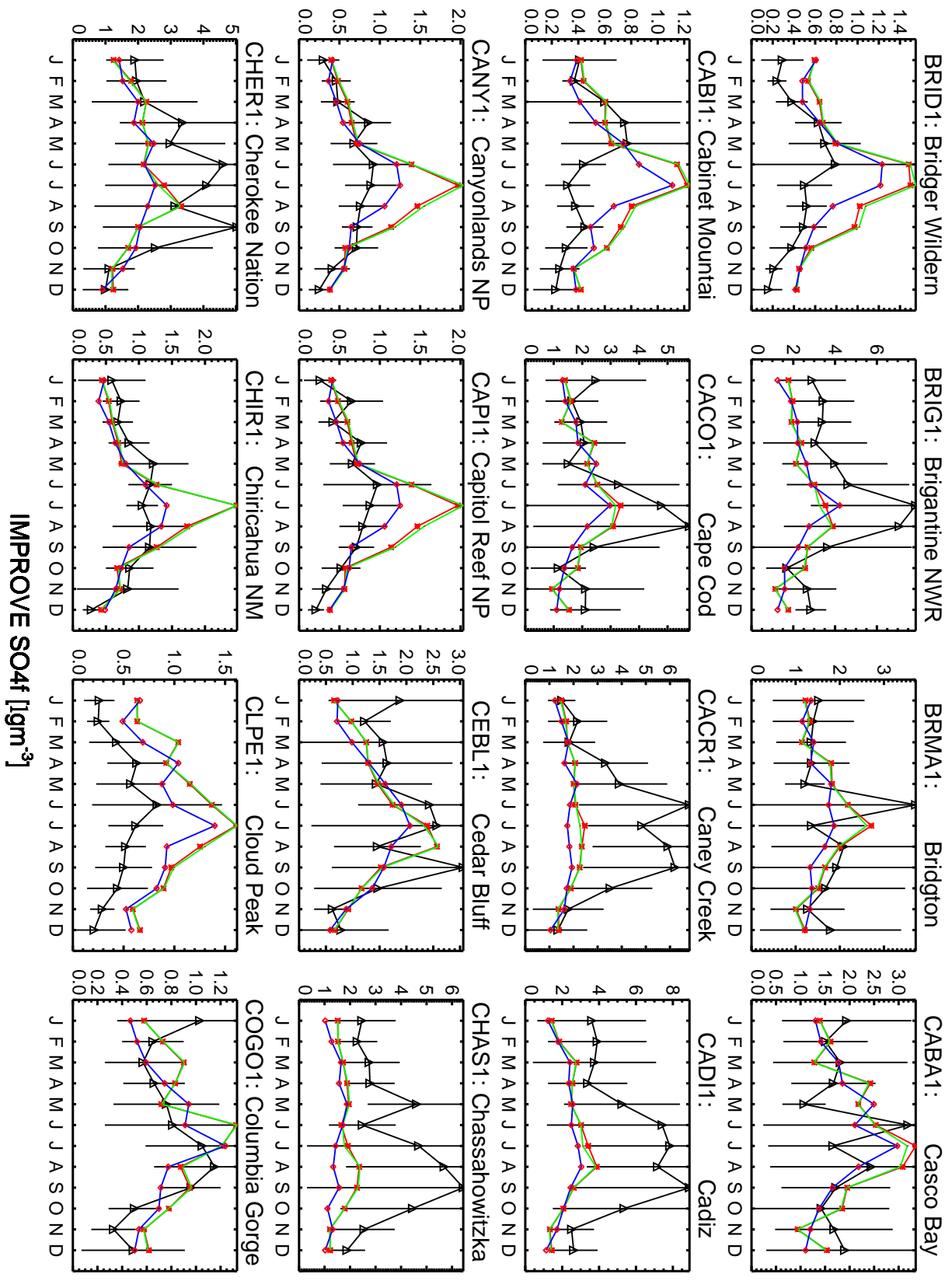
GEOS-Chem SO₄f [$\mu\text{g m}^{-3}$]



IMPROVE SO₄f [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

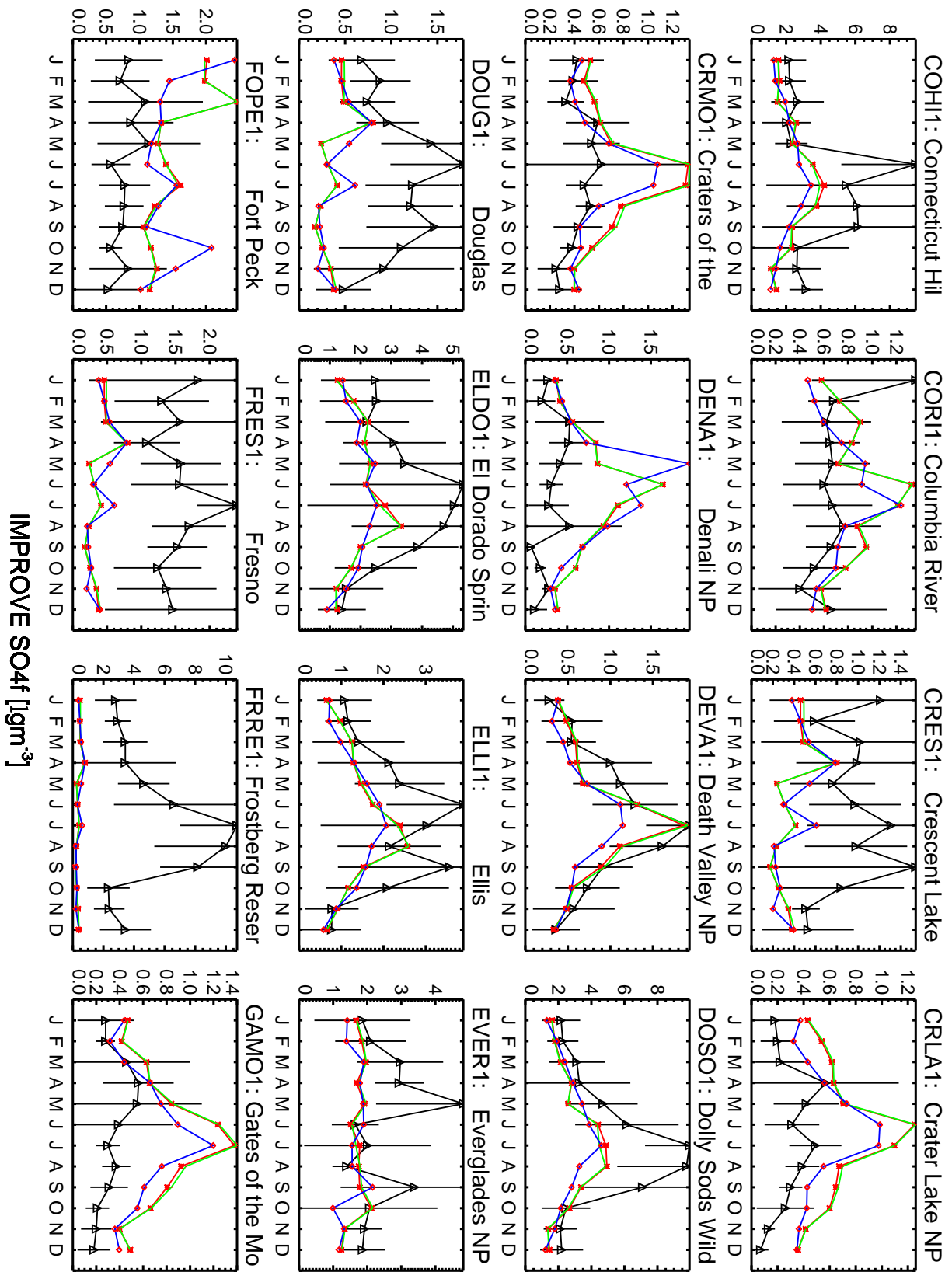
GEOS-Chem SO4f [$\mu\text{g m}^{-3}$]



IMPROVE SO4f [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

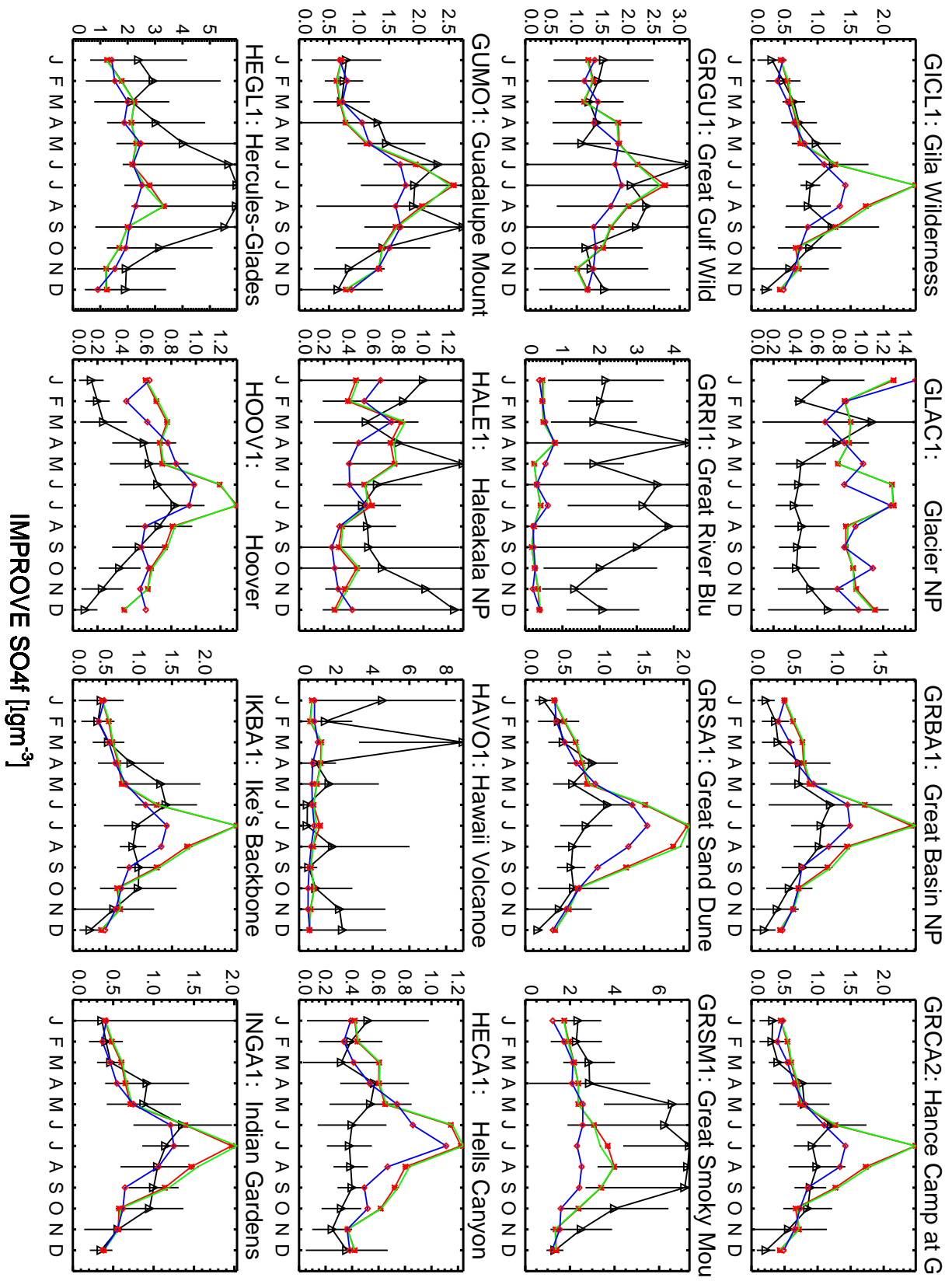
GEOS-Chem SO4f [$\mu\text{g m}^{-3}$]



IMPROVE SO4f [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

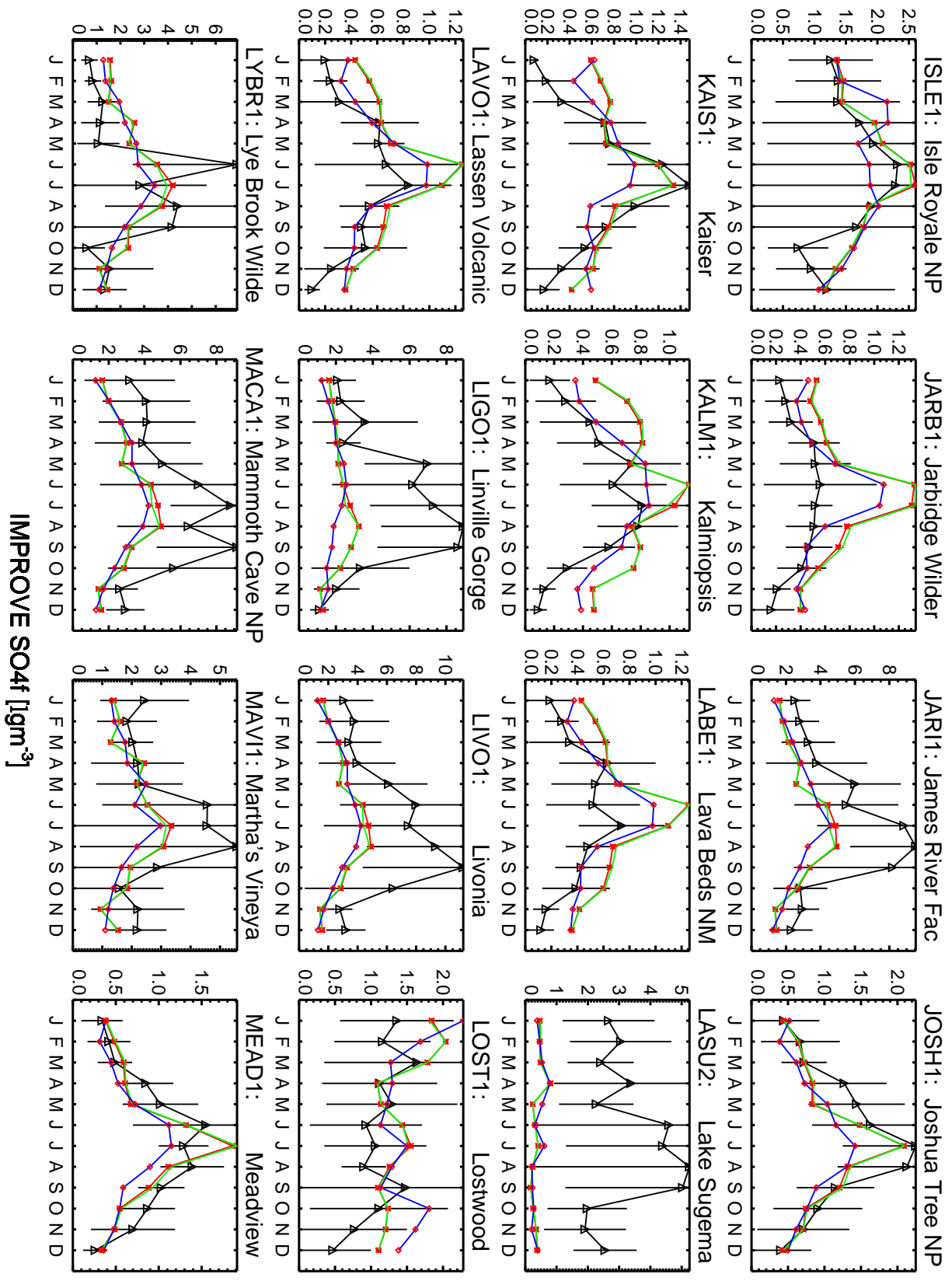
GEOS-Chem SO₄f [lgm⁻³]



IMPROVE SO₄f [lgm⁻³]

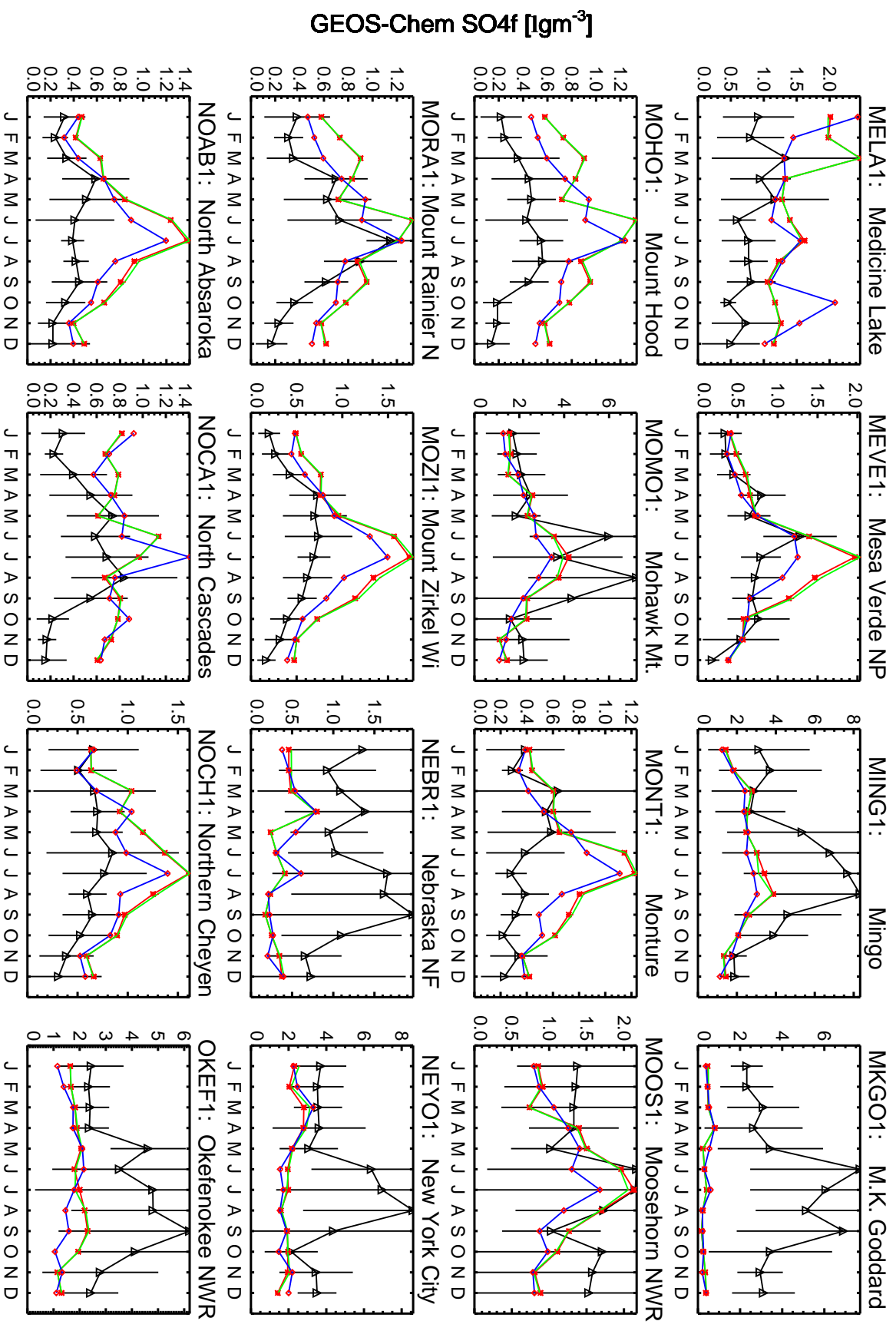
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

GEOS-Chem SO4f [$\mu\text{g m}^{-3}$]



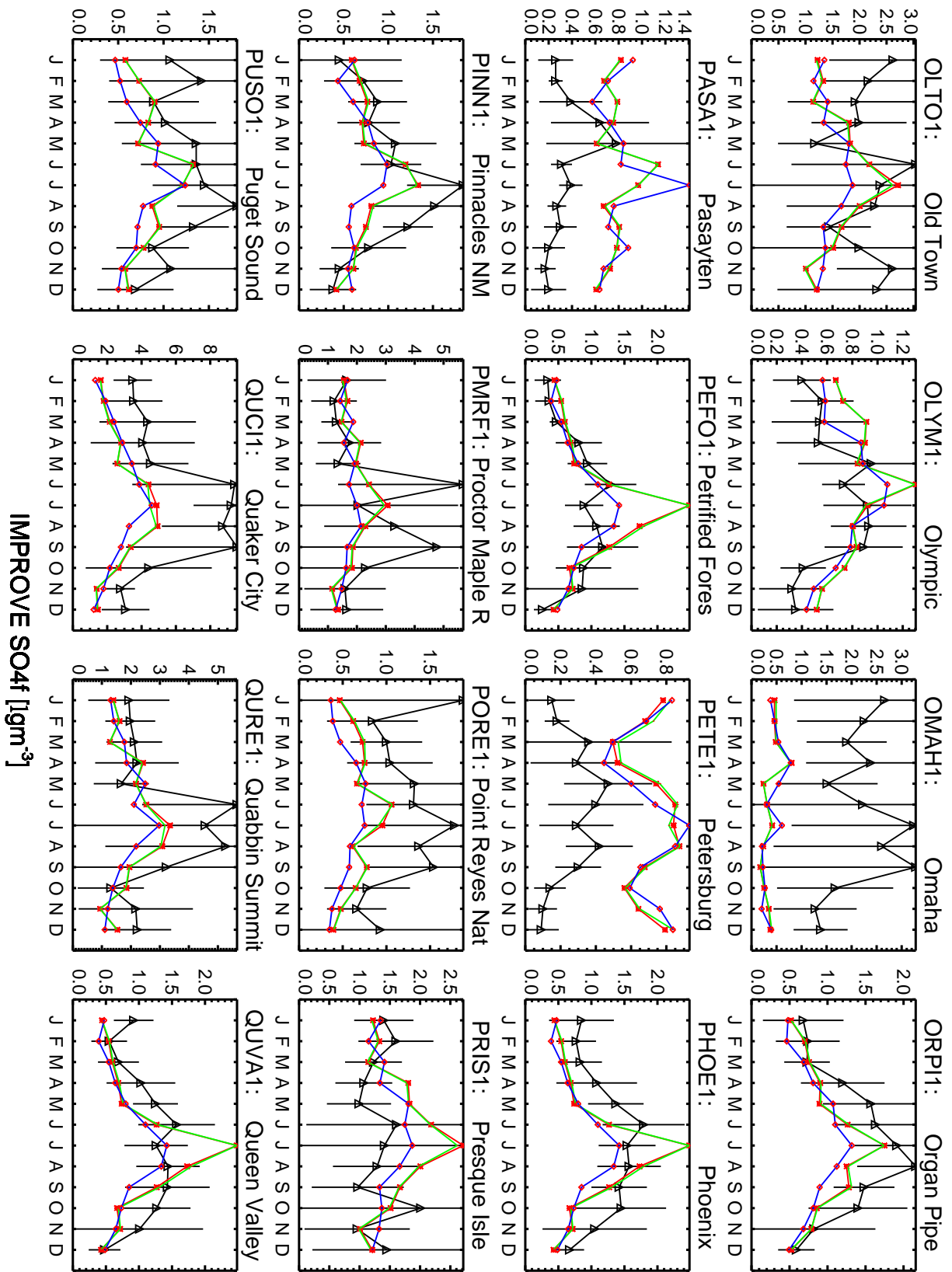
IMPROVE SO4f [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

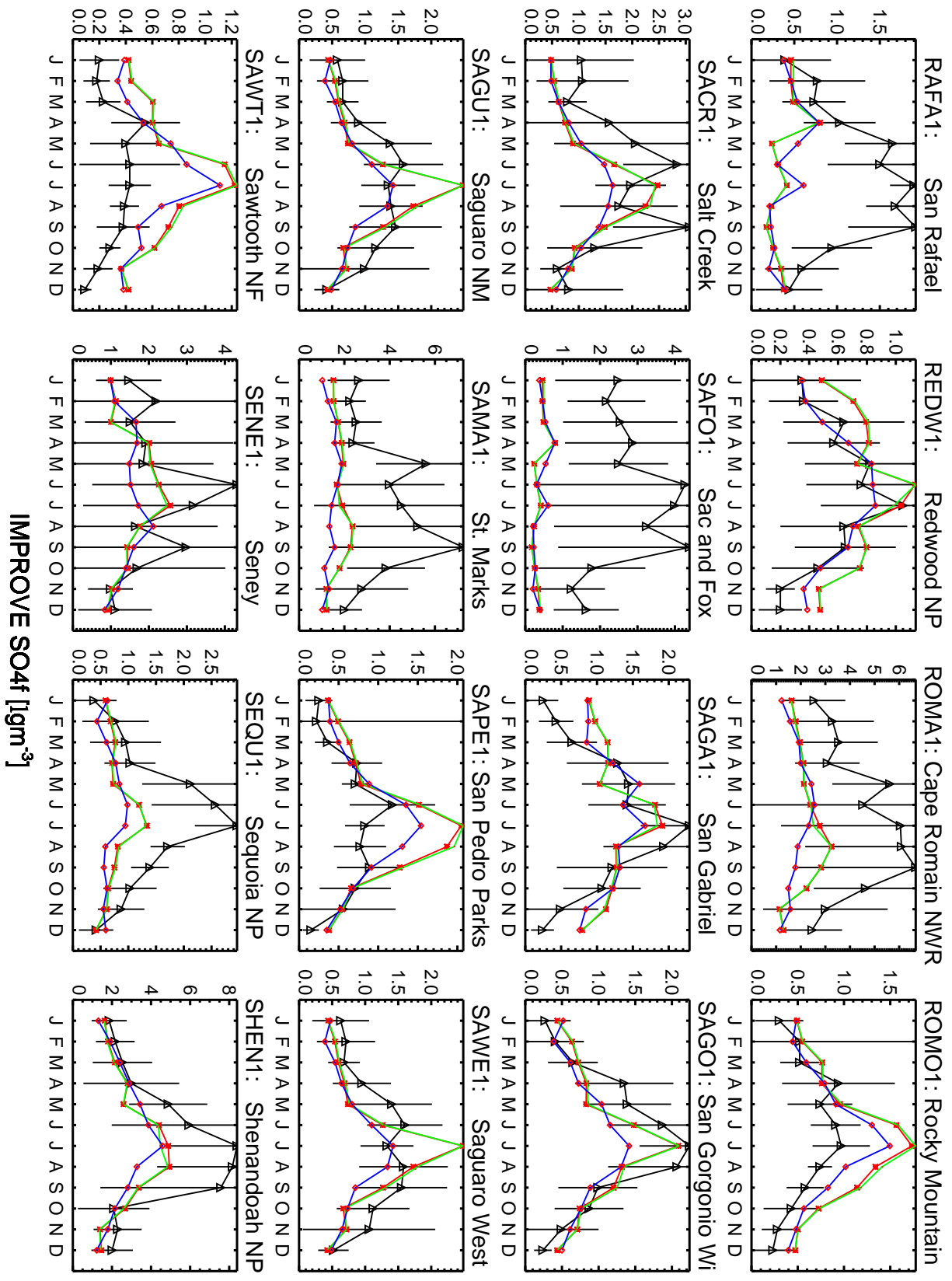
GEOS-Chem SO₄f [µg m⁻³]



IMPROVE SO₄f [µg m⁻³]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

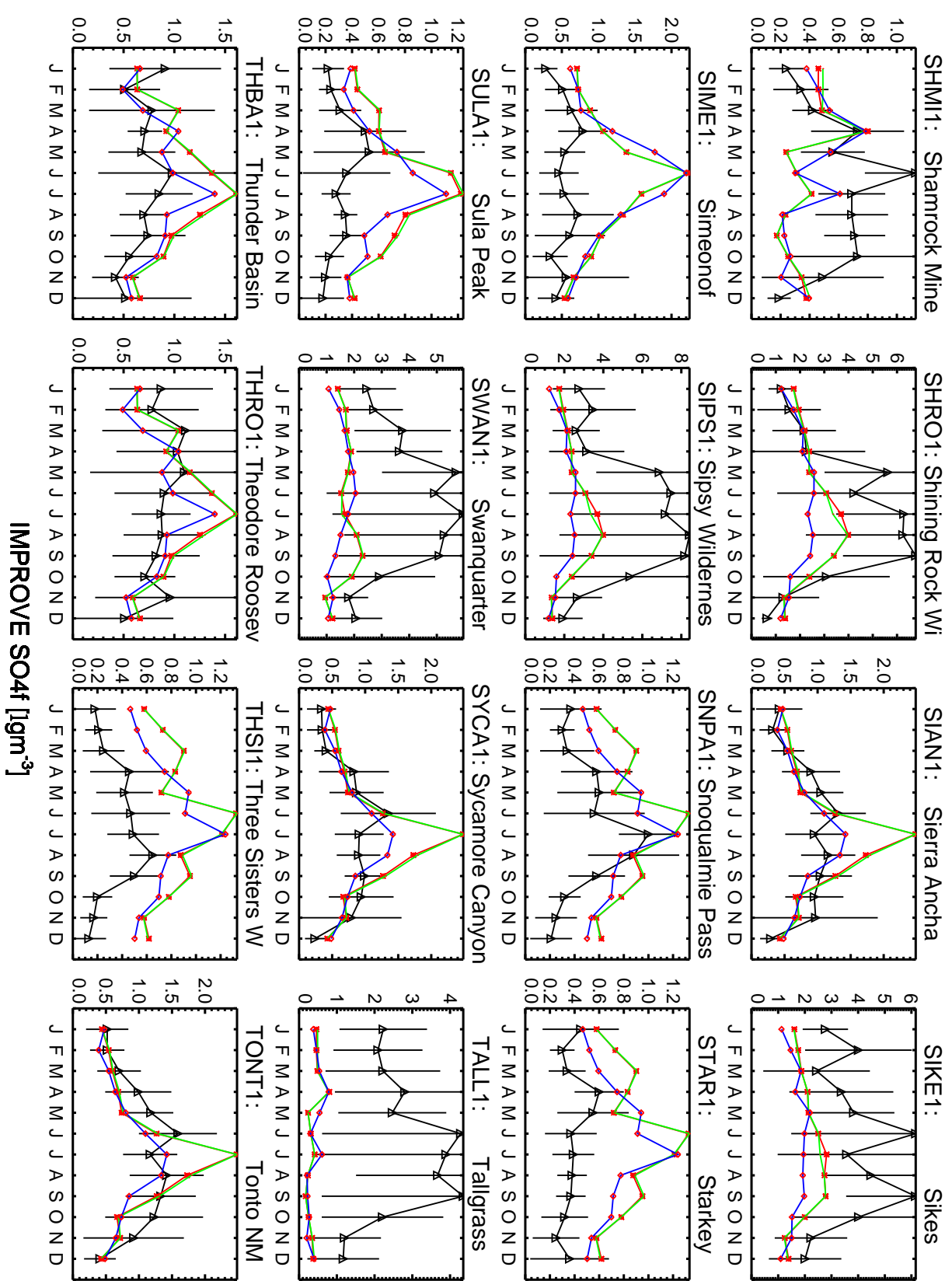
GEOS-Chem SO₄f [lgm⁻³]



IMPROVE SO₄f [lgm⁻³]

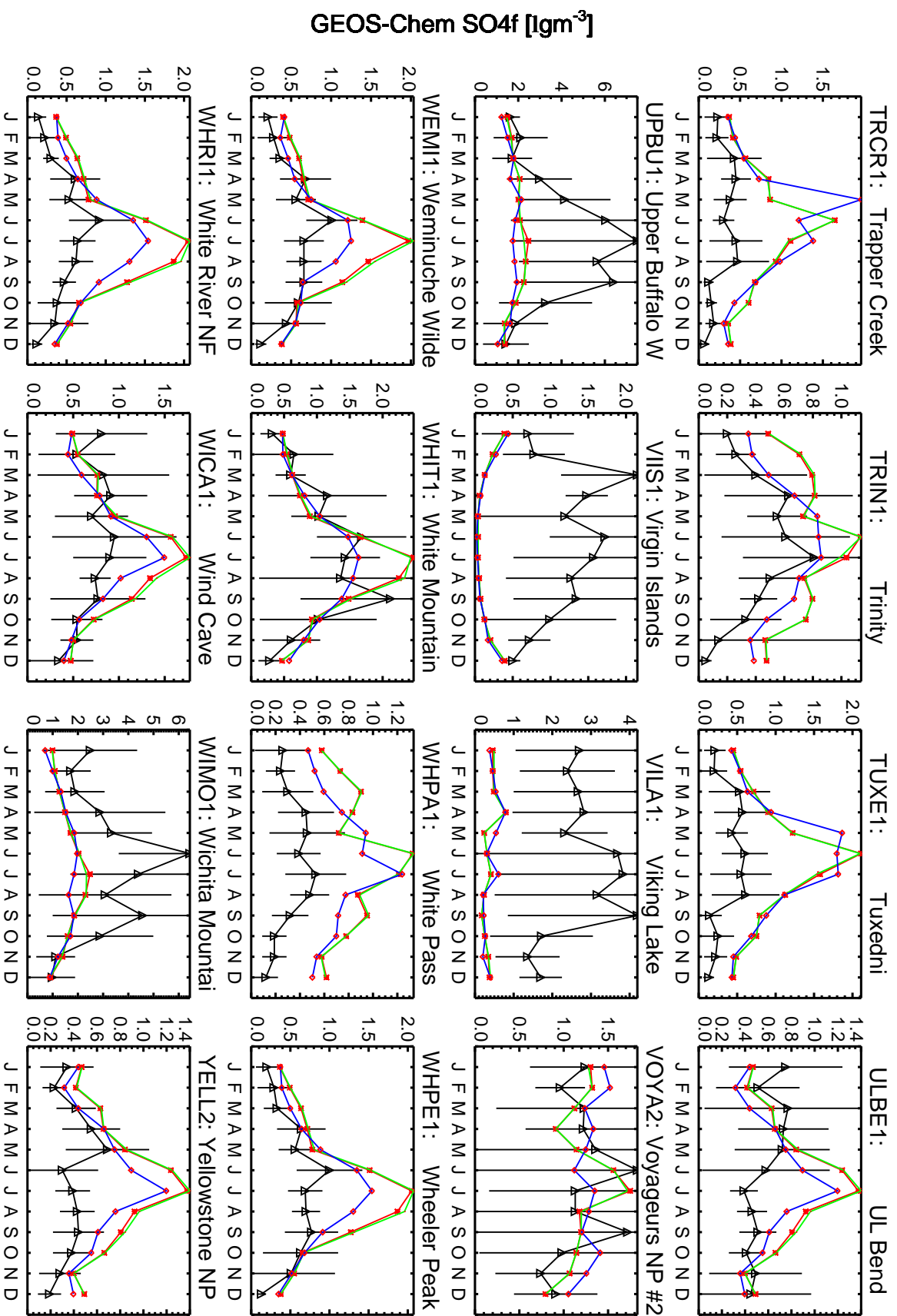
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

GEOS-Chem SO4f [$\mu\text{g m}^{-3}$]



IMPROVE SO4f [$\mu\text{g m}^{-3}$]

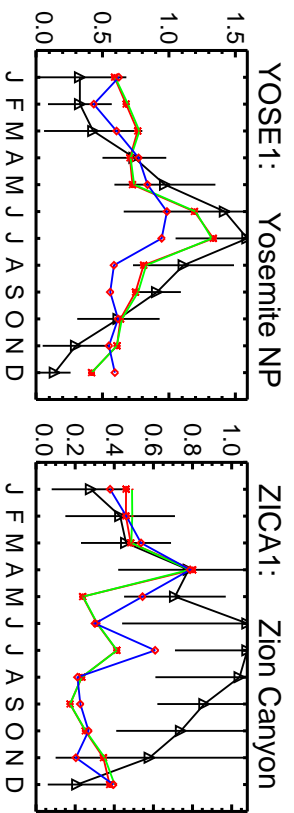
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



GEOS-Chem SO_4f [$\mu\text{g m}^{-3}$]

IMPROVE SO_4f [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

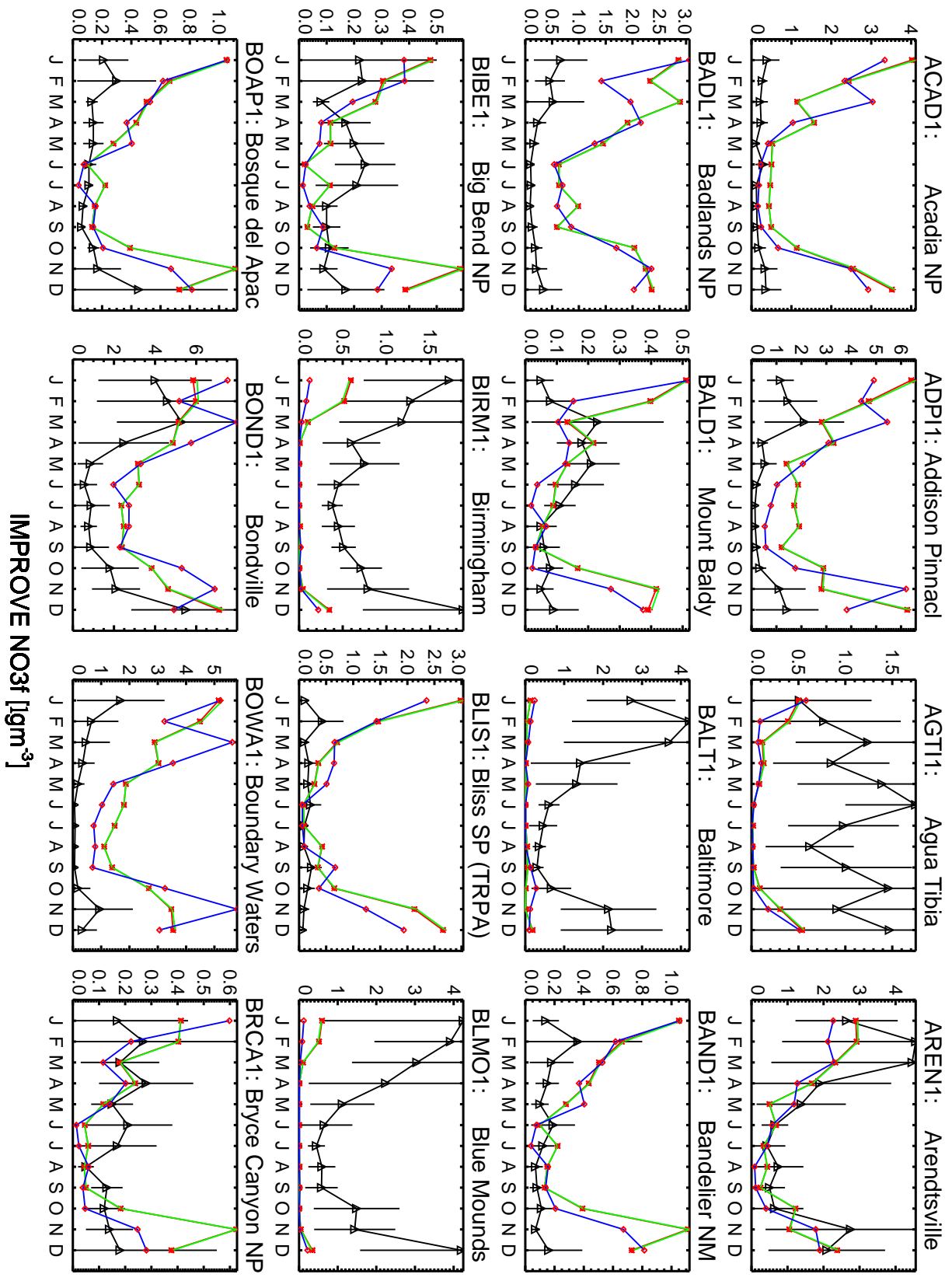


GEOS-Chem SO4f [$\mu\text{g m}^{-3}$]

IMPROVE SO4f [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

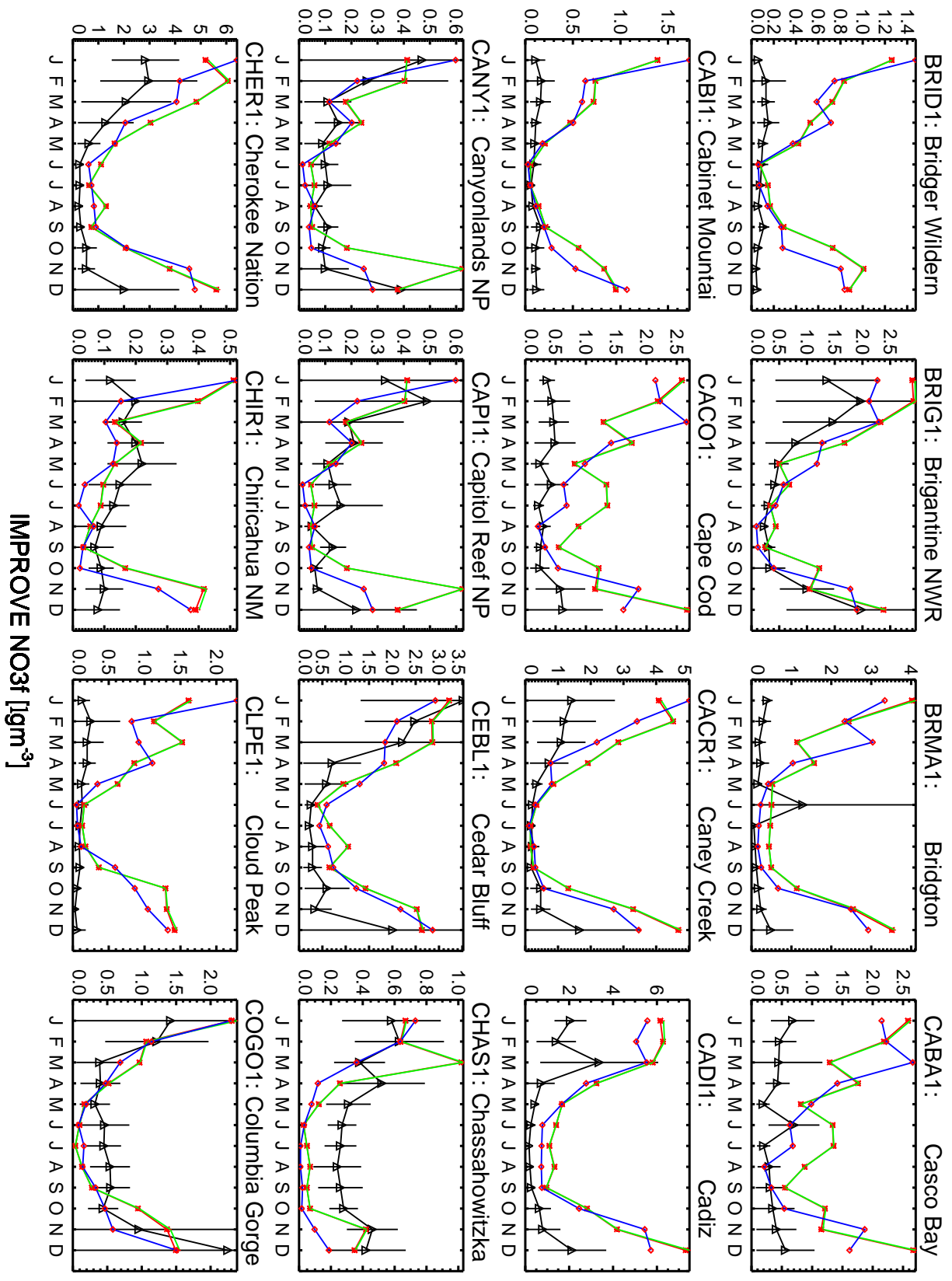
GEOS-Chem NO3f [$\mu\text{g m}^{-3}$]



IMPROVE NO3f [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

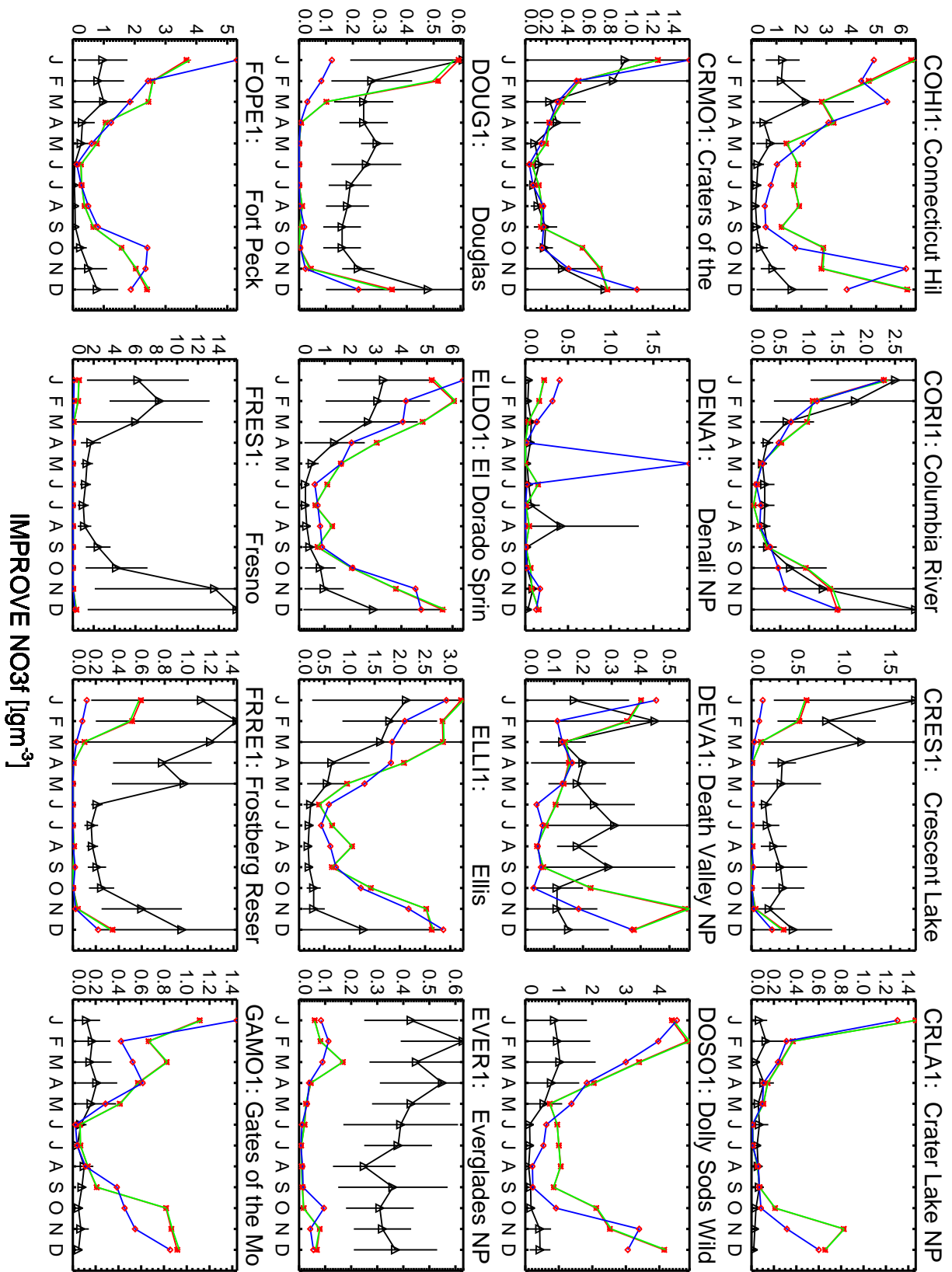
GEOS-Chem NO3f [$\mu\text{g m}^{-3}$]



IMPROVE NO3f [$\mu\text{g m}^{-3}$]

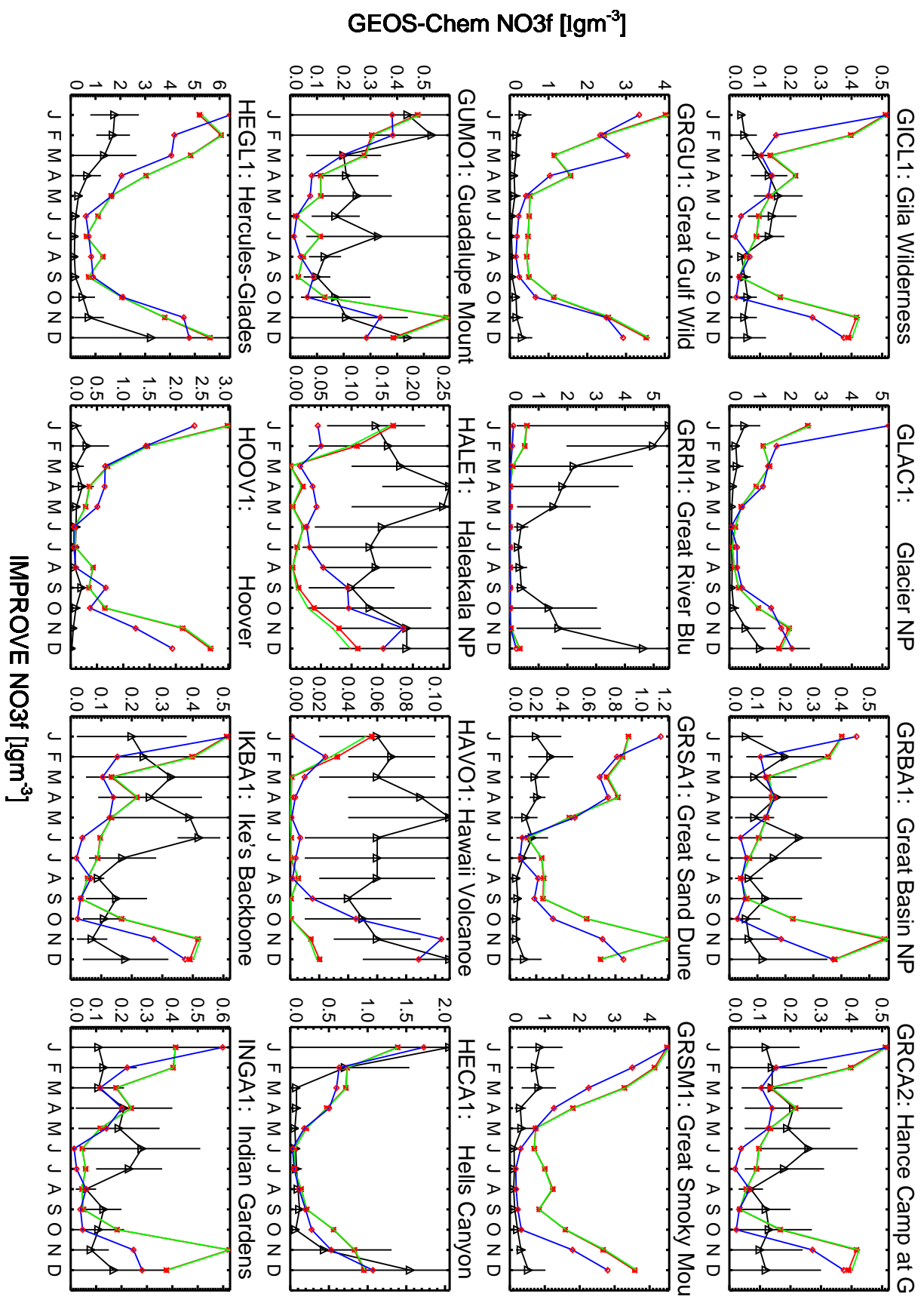
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

GEOS-Chem NO₃f [$\mu\text{g m}^{-3}$]



IMPROVE NO₃f [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

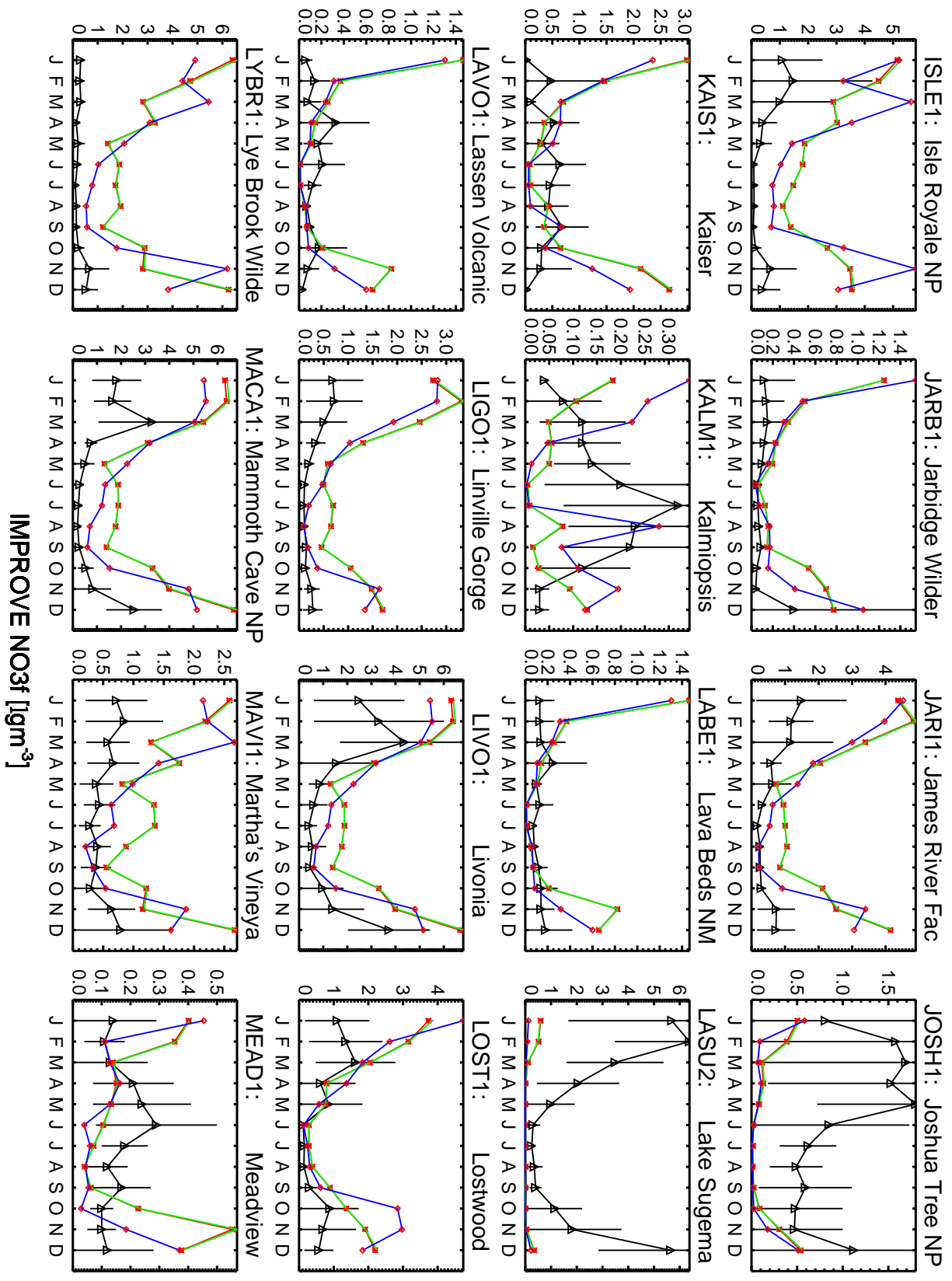


GEOS-Chem NO3f [μgm^{-3}]

IMPROVE NO3f [μgm^{-3}]

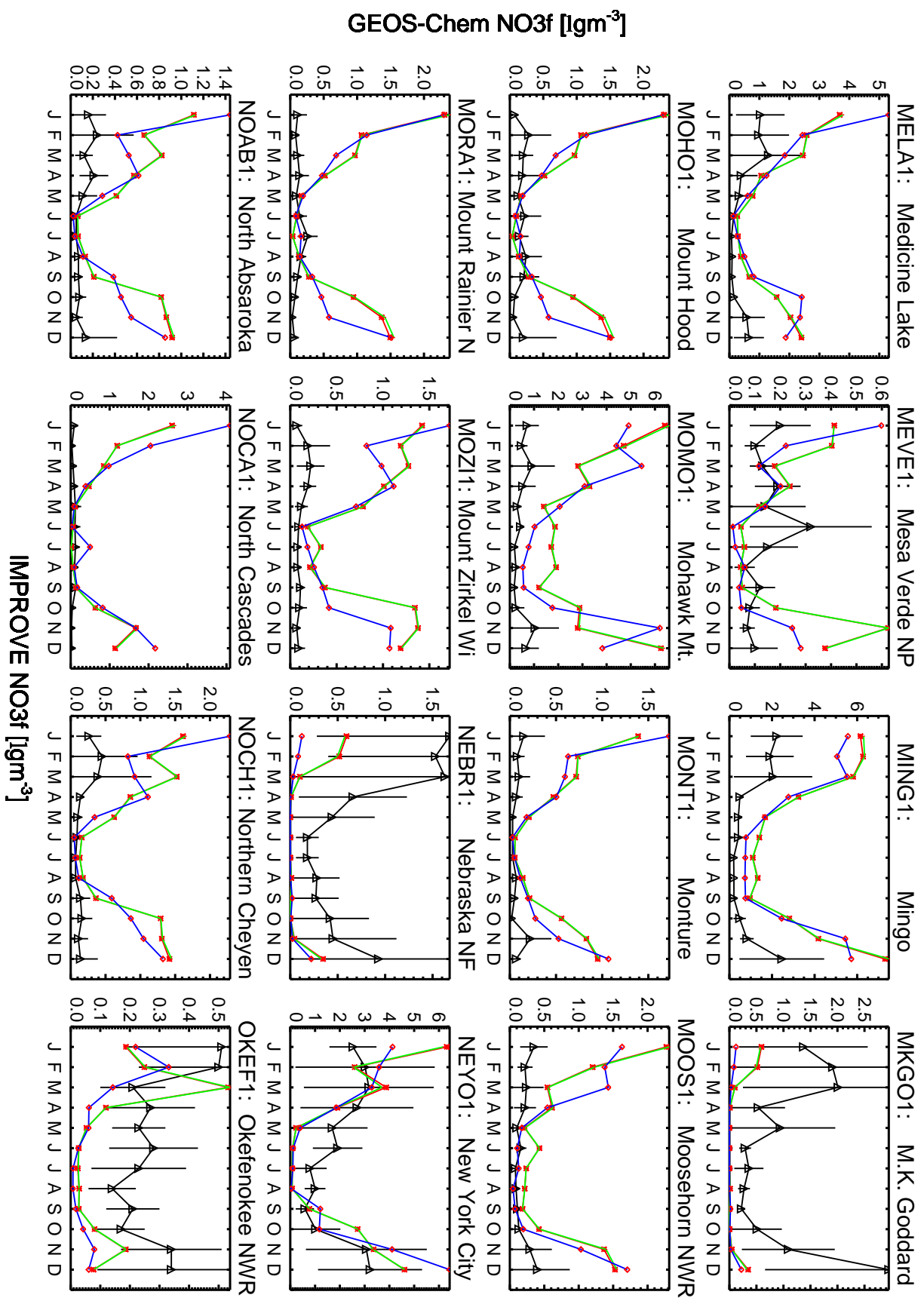
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

GEOS-Chem NO3f [$\mu\text{g m}^{-3}$]

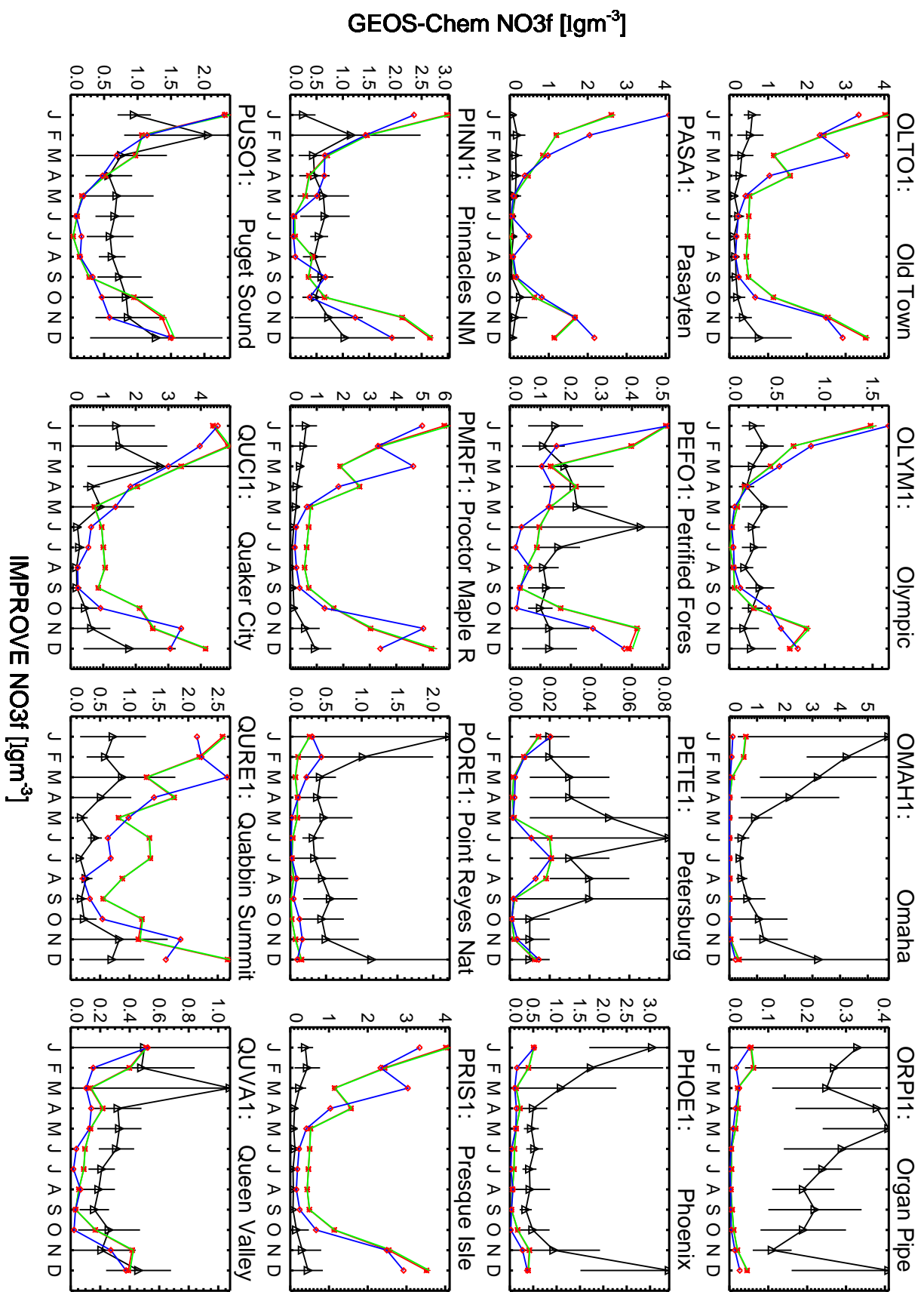


IMPROVE NO3f [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

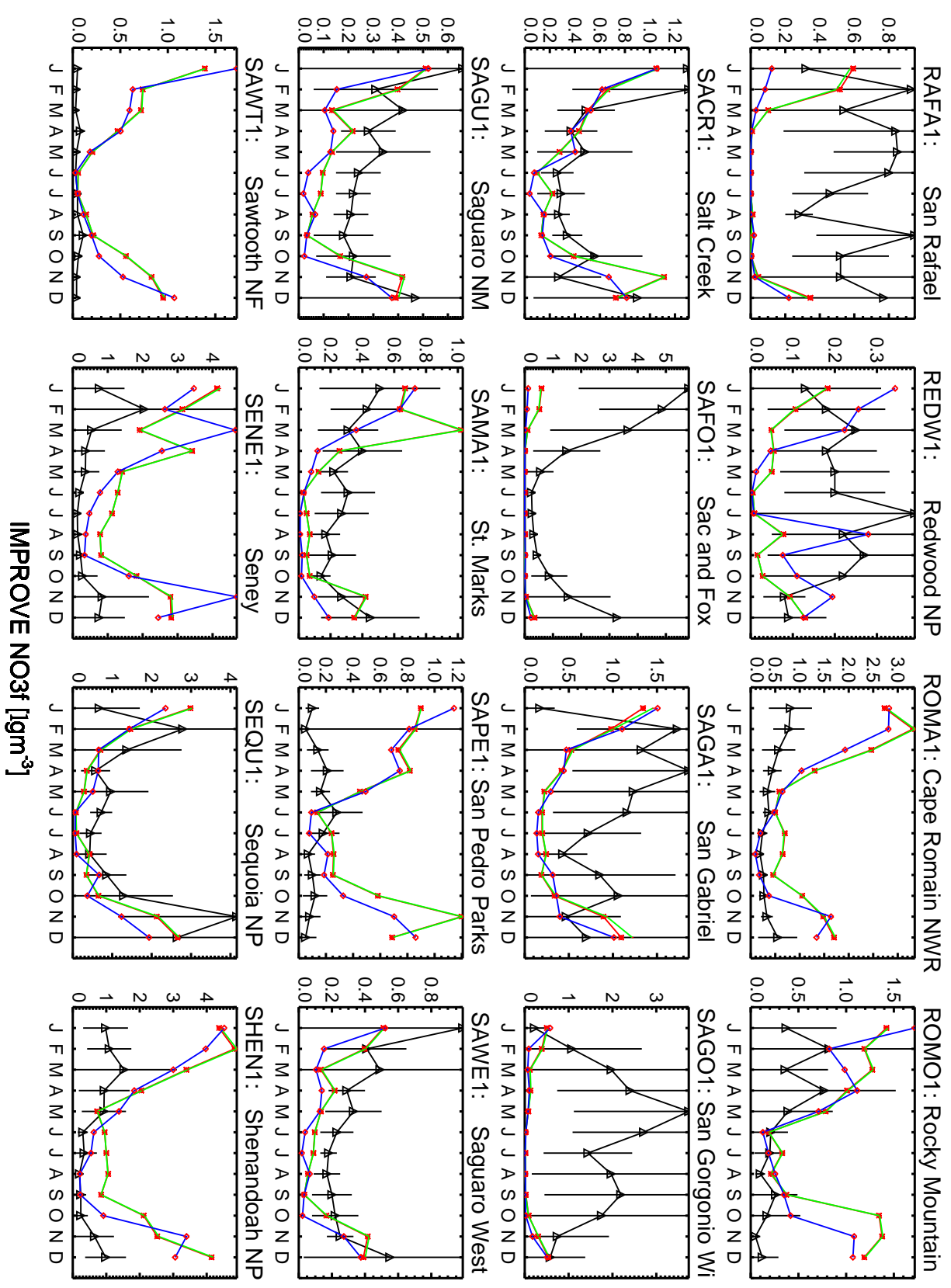


Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



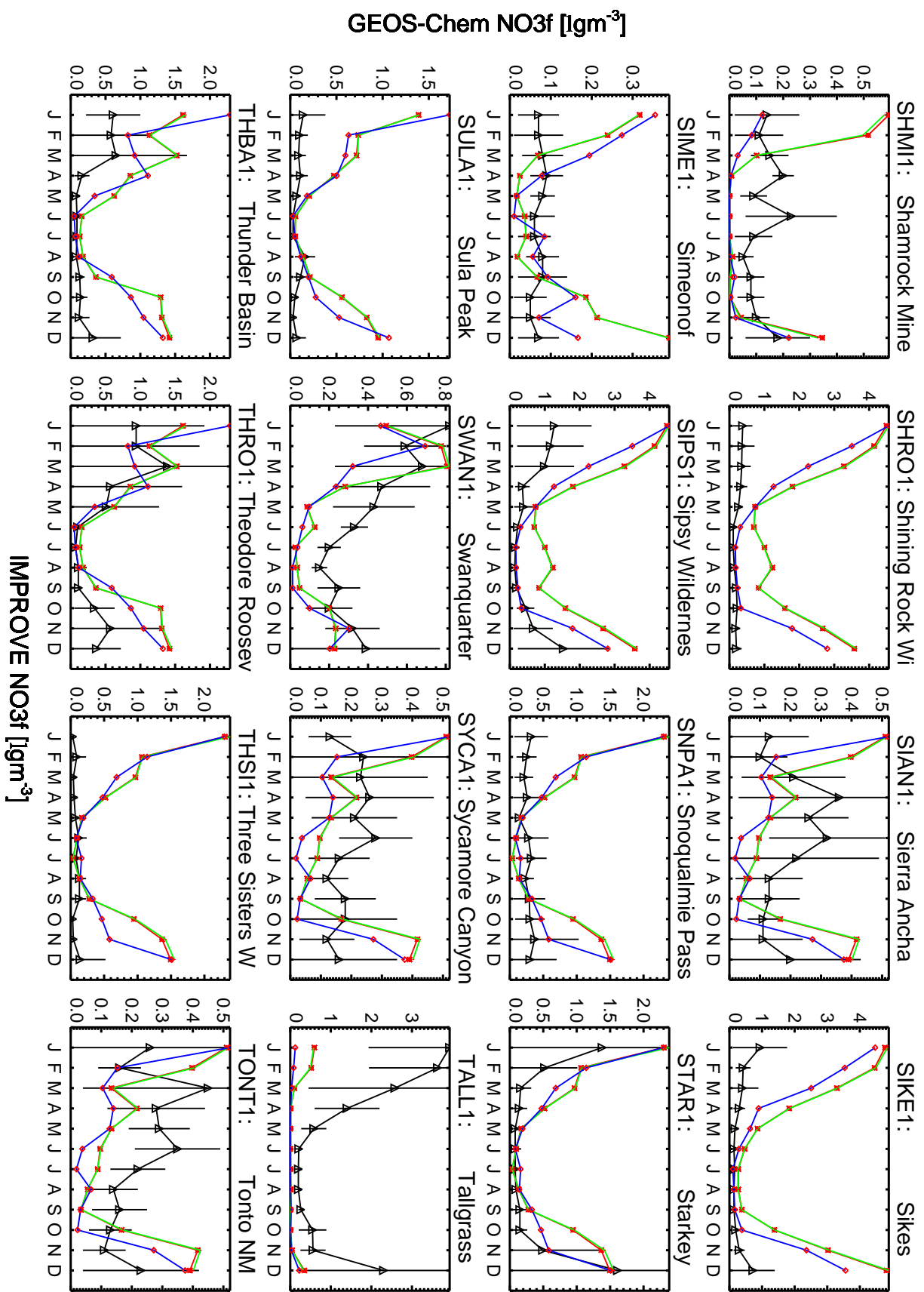
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

GEOS-Chem NO3f [$\mu\text{g m}^{-3}$]



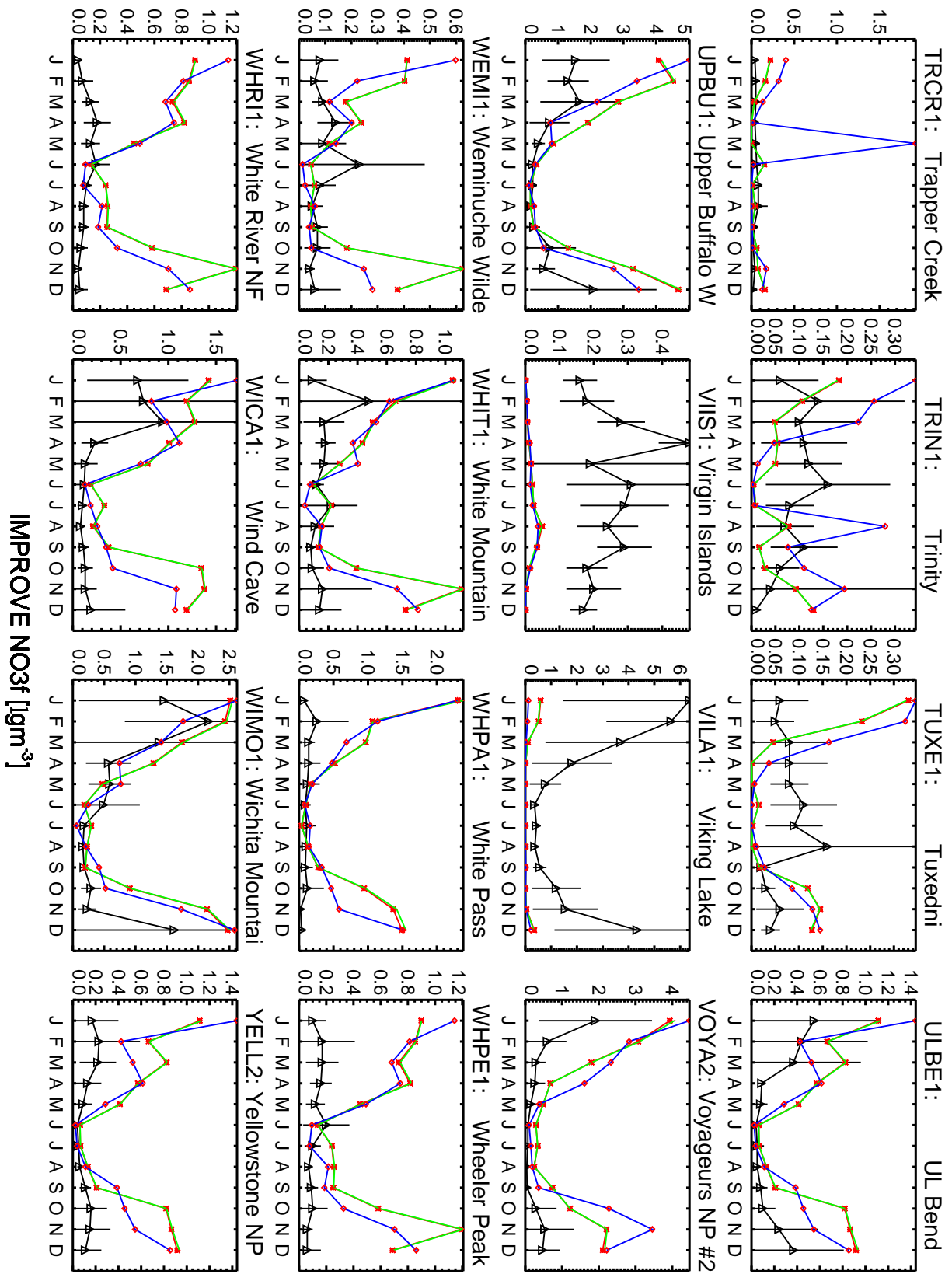
IMPROVE NO3f [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



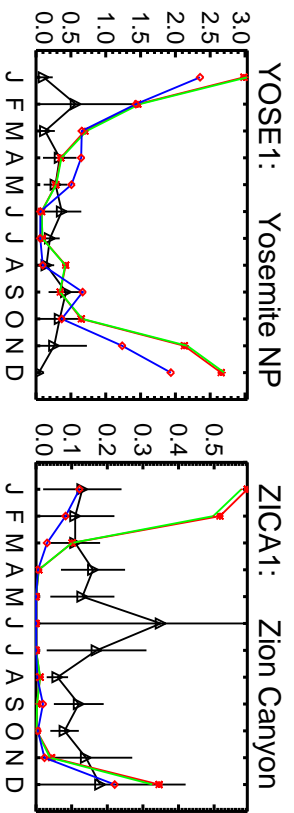
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

GEOS-Chem NO₃f [$\mu\text{g m}^{-3}$]



IMPROVE NO₃f [$\mu\text{g m}^{-3}$]

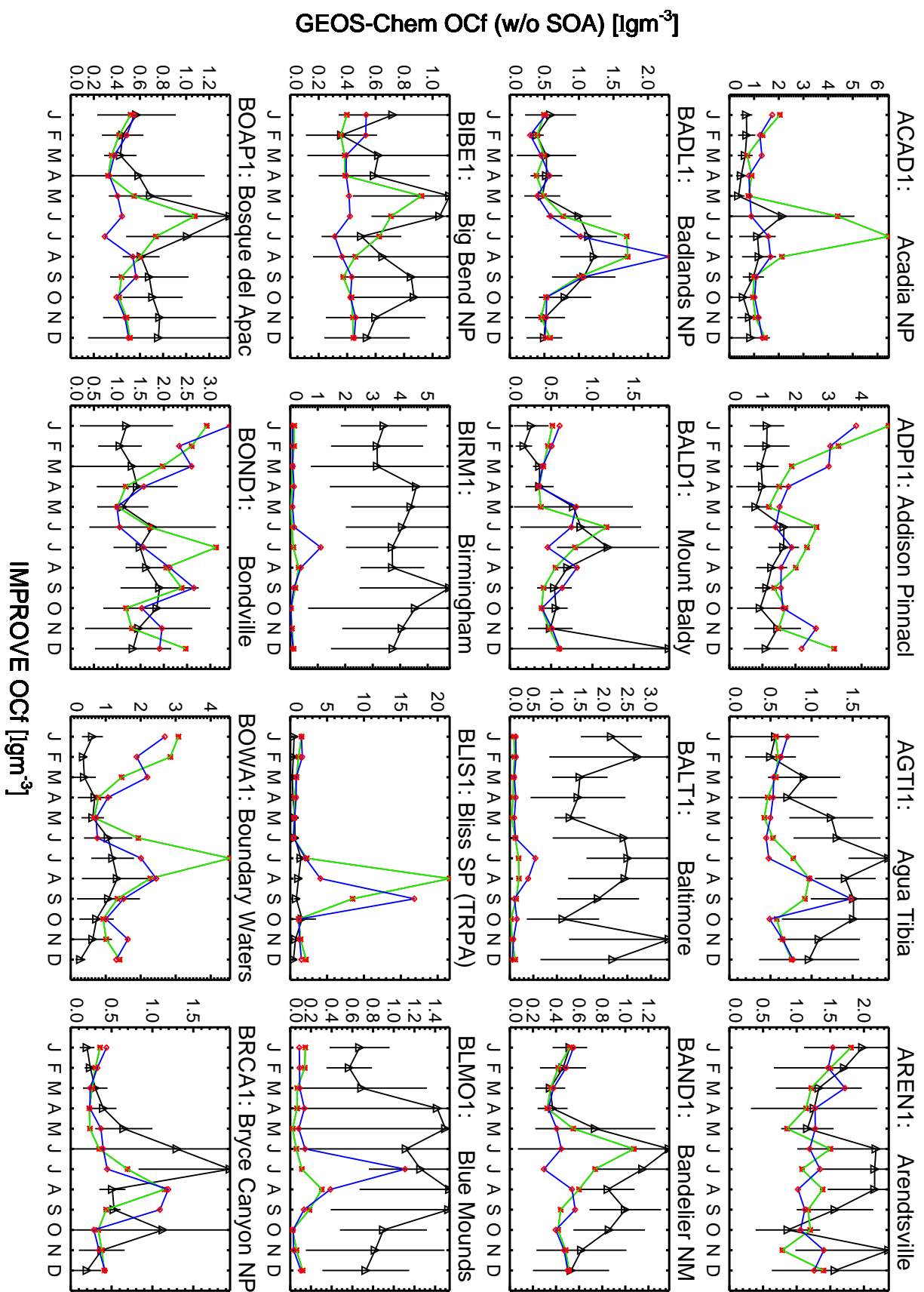
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



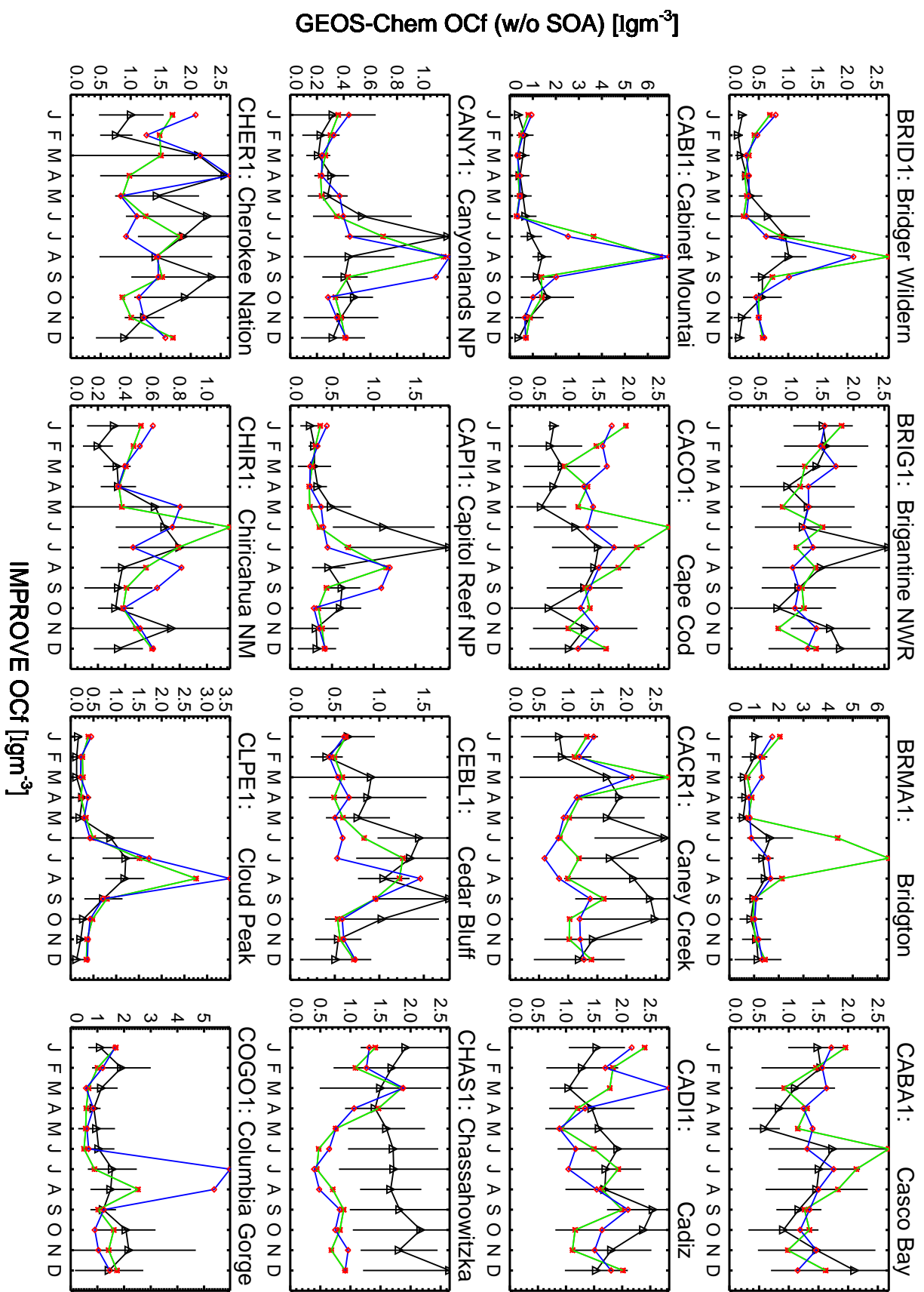
GEOS-Chem NO3f [$\mu\text{g m}^{-3}$]

IMPROVE NO3f [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

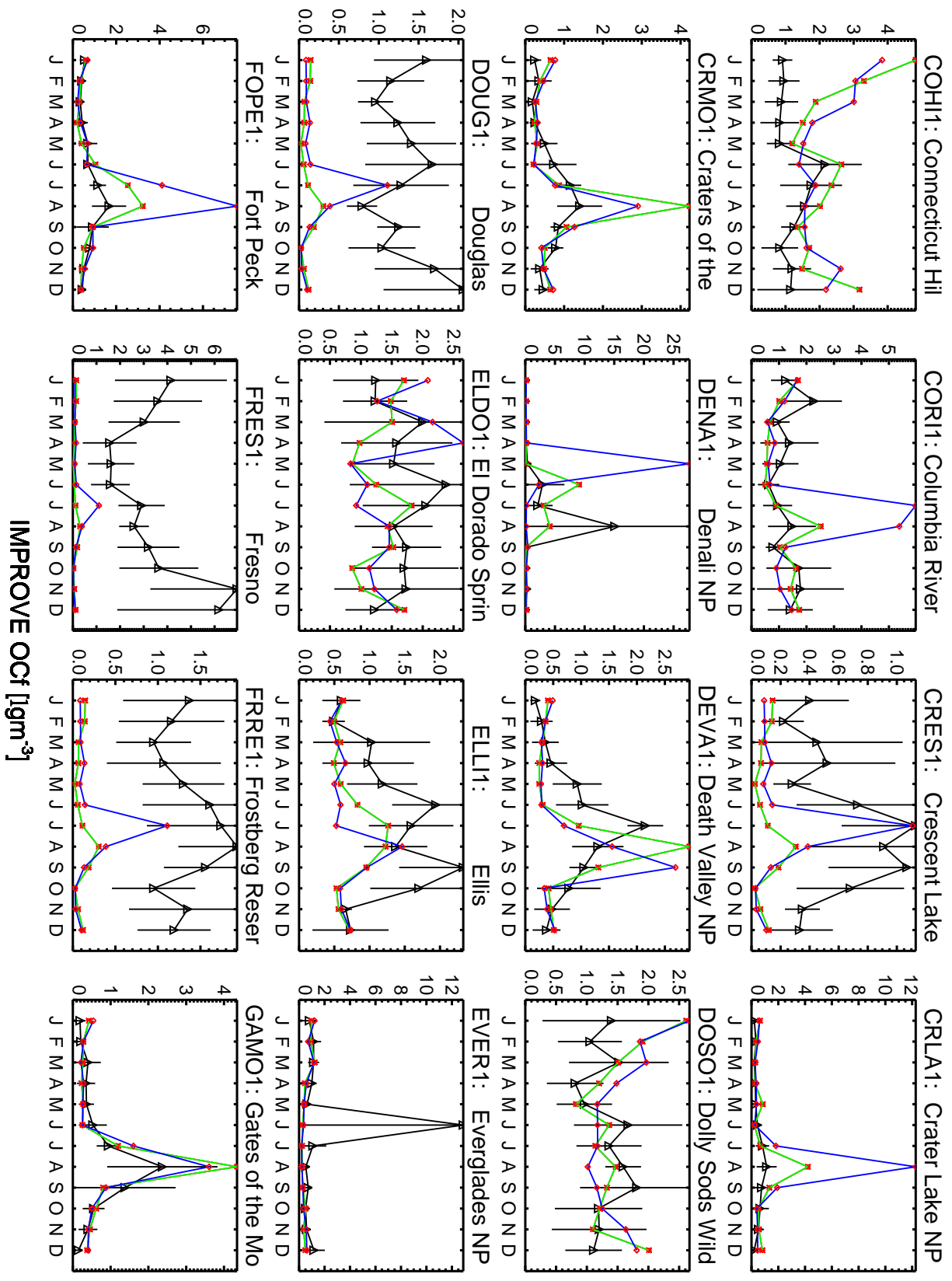


Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



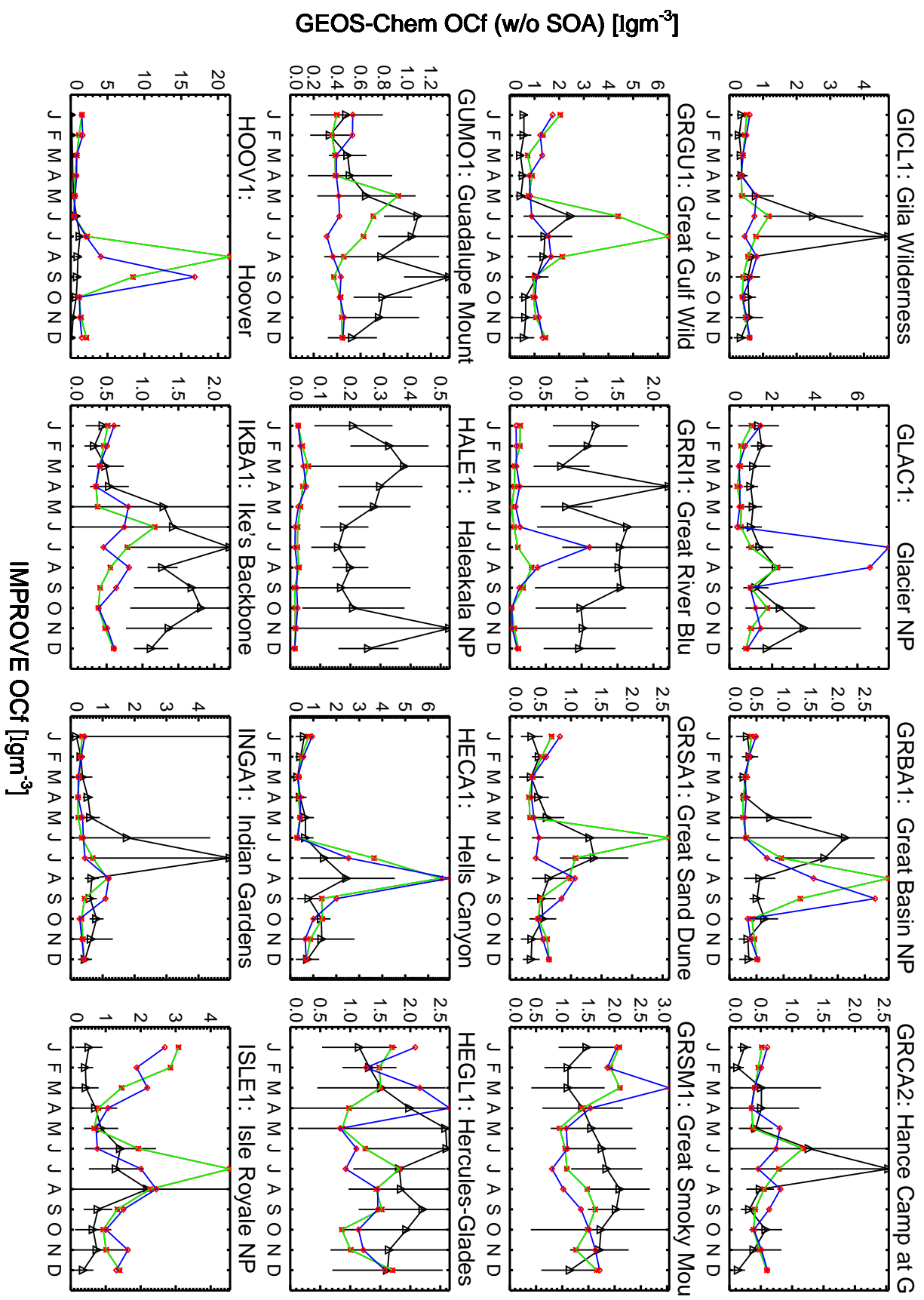
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

GEOS-Chem OCf (w/o SOA) [$\mu\text{g m}^{-3}$]

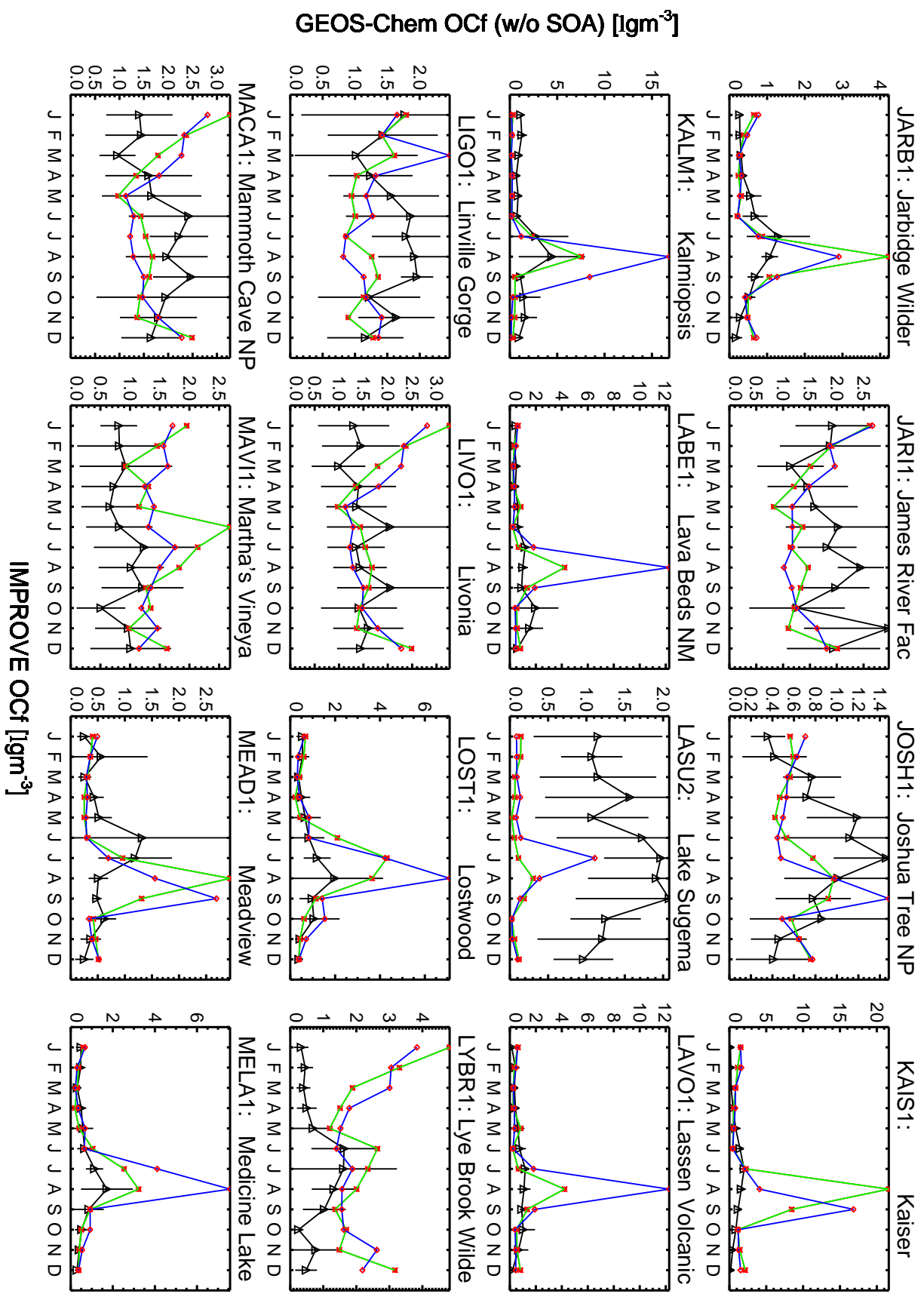


IMPROVE OCf [$\mu\text{g m}^{-3}$]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

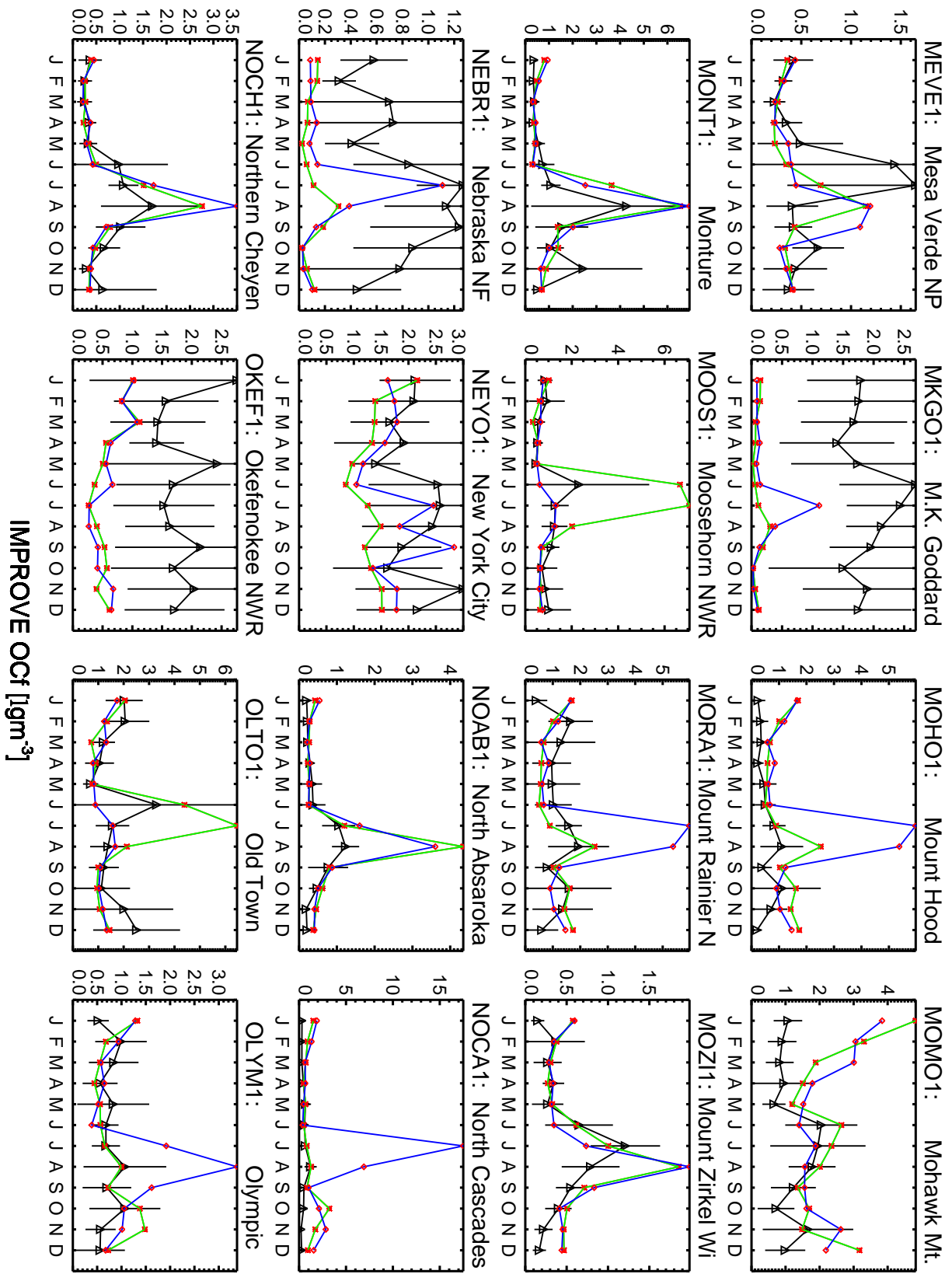


Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



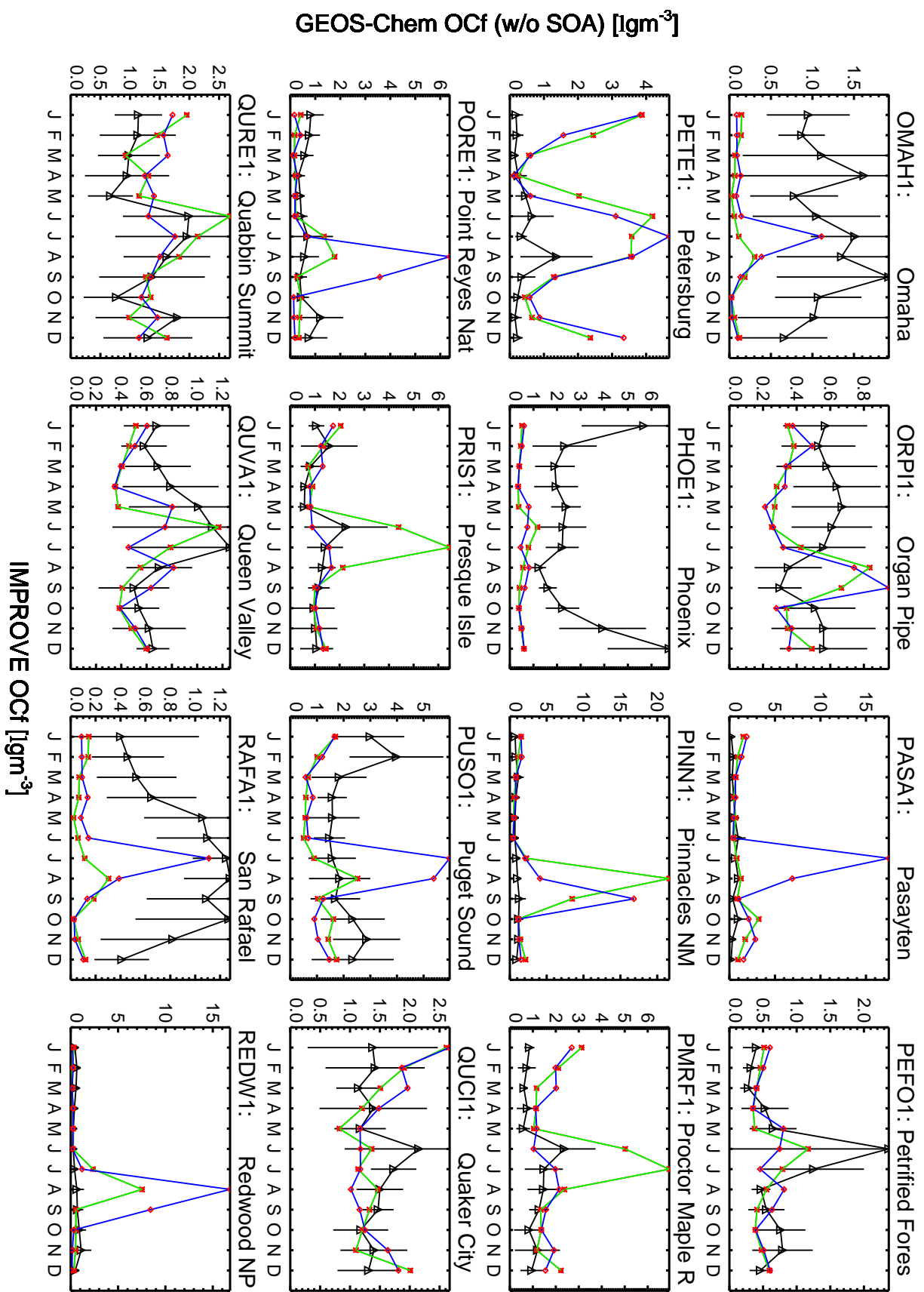
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

GEOS-Chem OCf (w/o SOA) [μgm^{-3}]



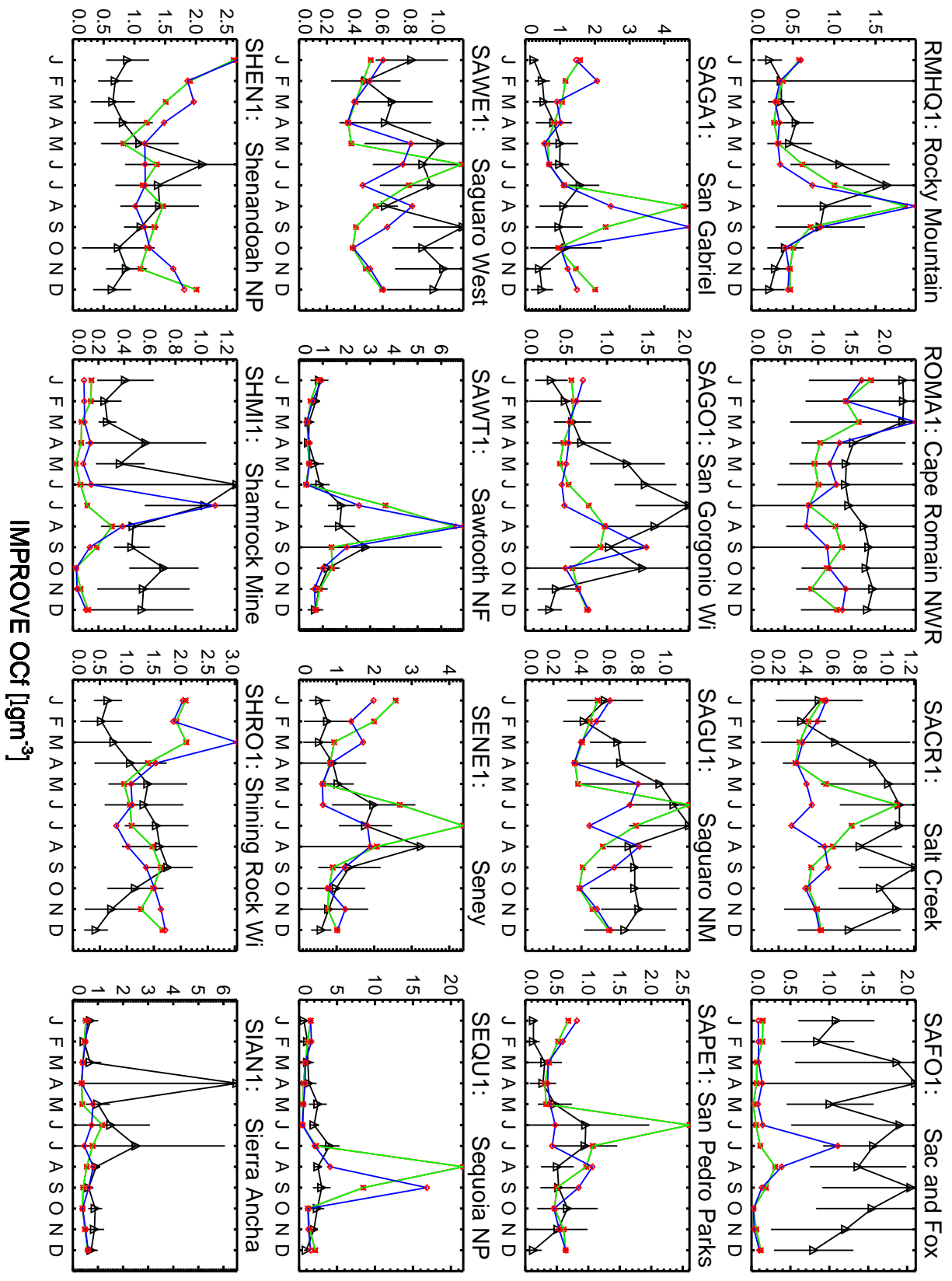
IMPROVE OCf [μgm^{-3}]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



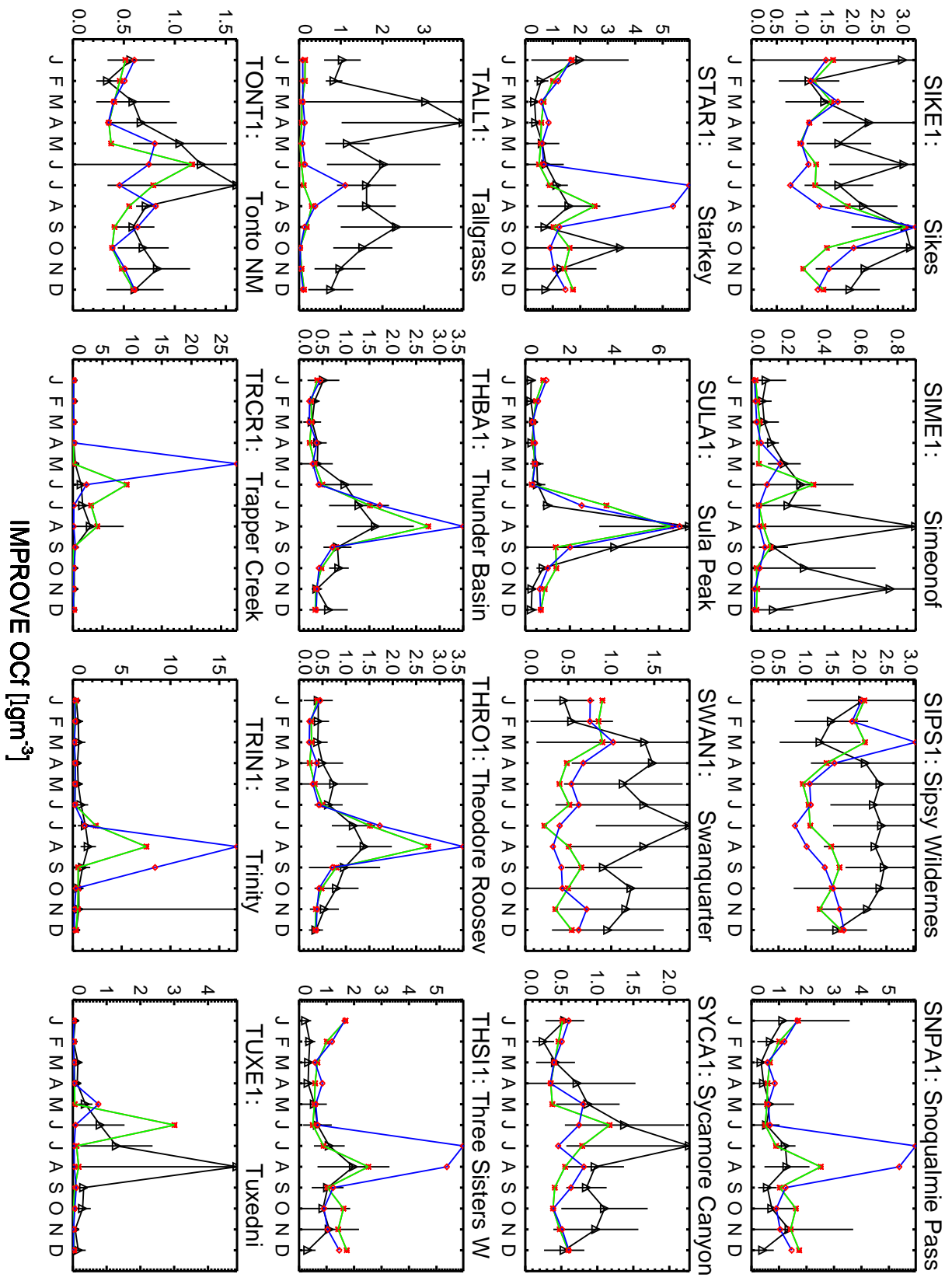
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

GEOS-Chem OCf (w/o SOA) [$\mu\text{g m}^{-3}$]



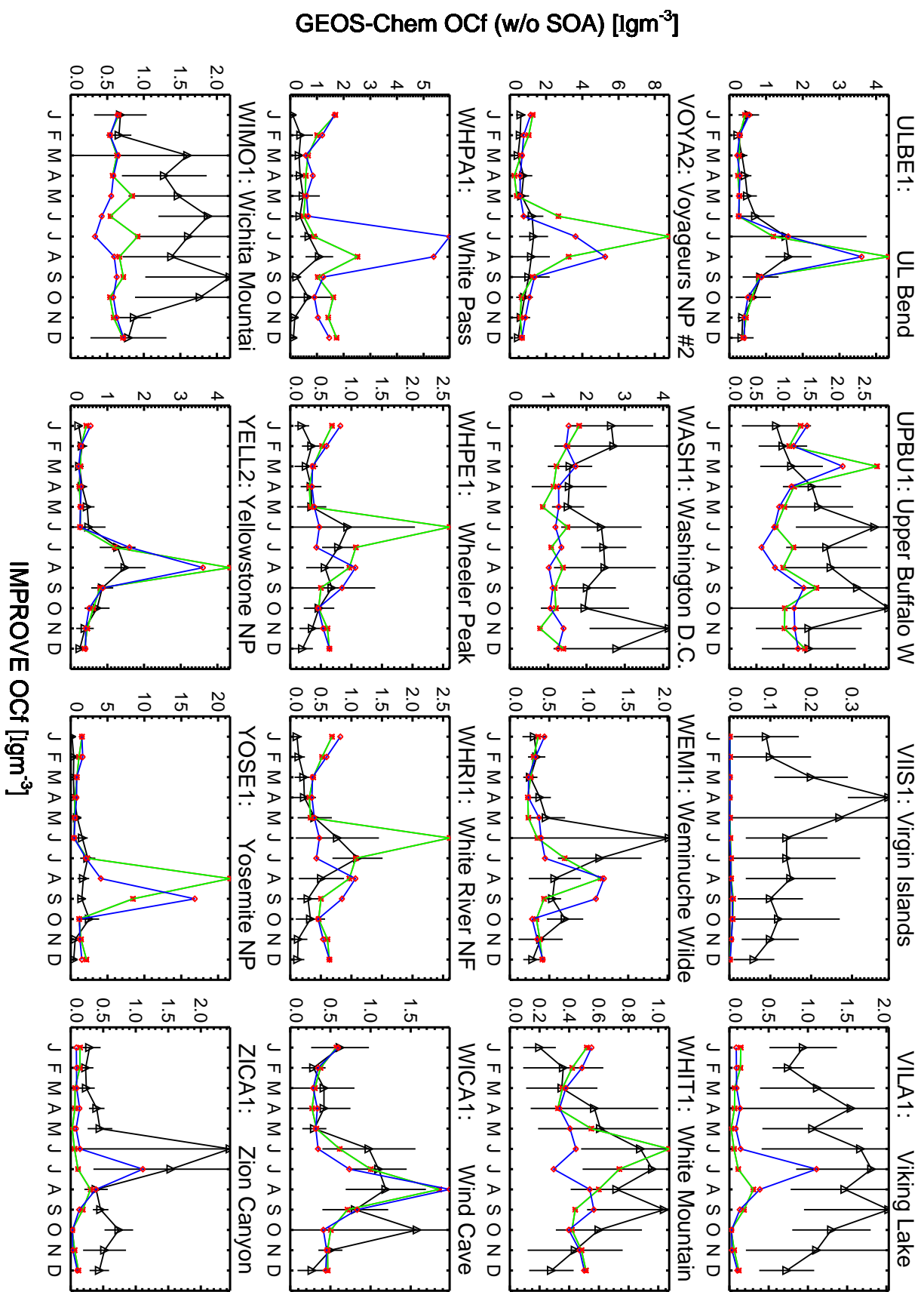
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

GEOS-Chem OCf (w/o SOA) [$\mu\text{g m}^{-3}$]



IMPROVE OCf [$\mu\text{g m}^{-3}$]

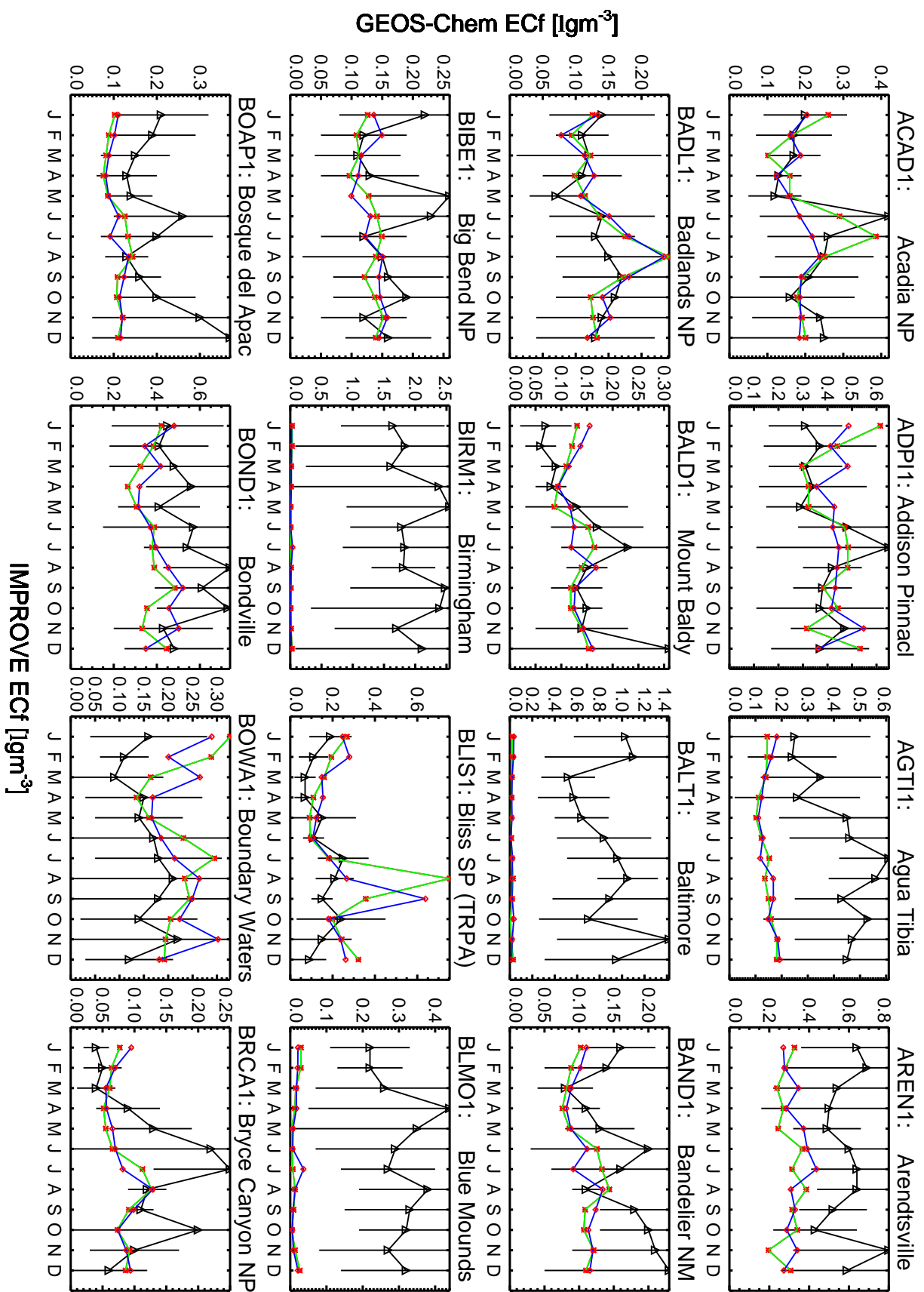
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



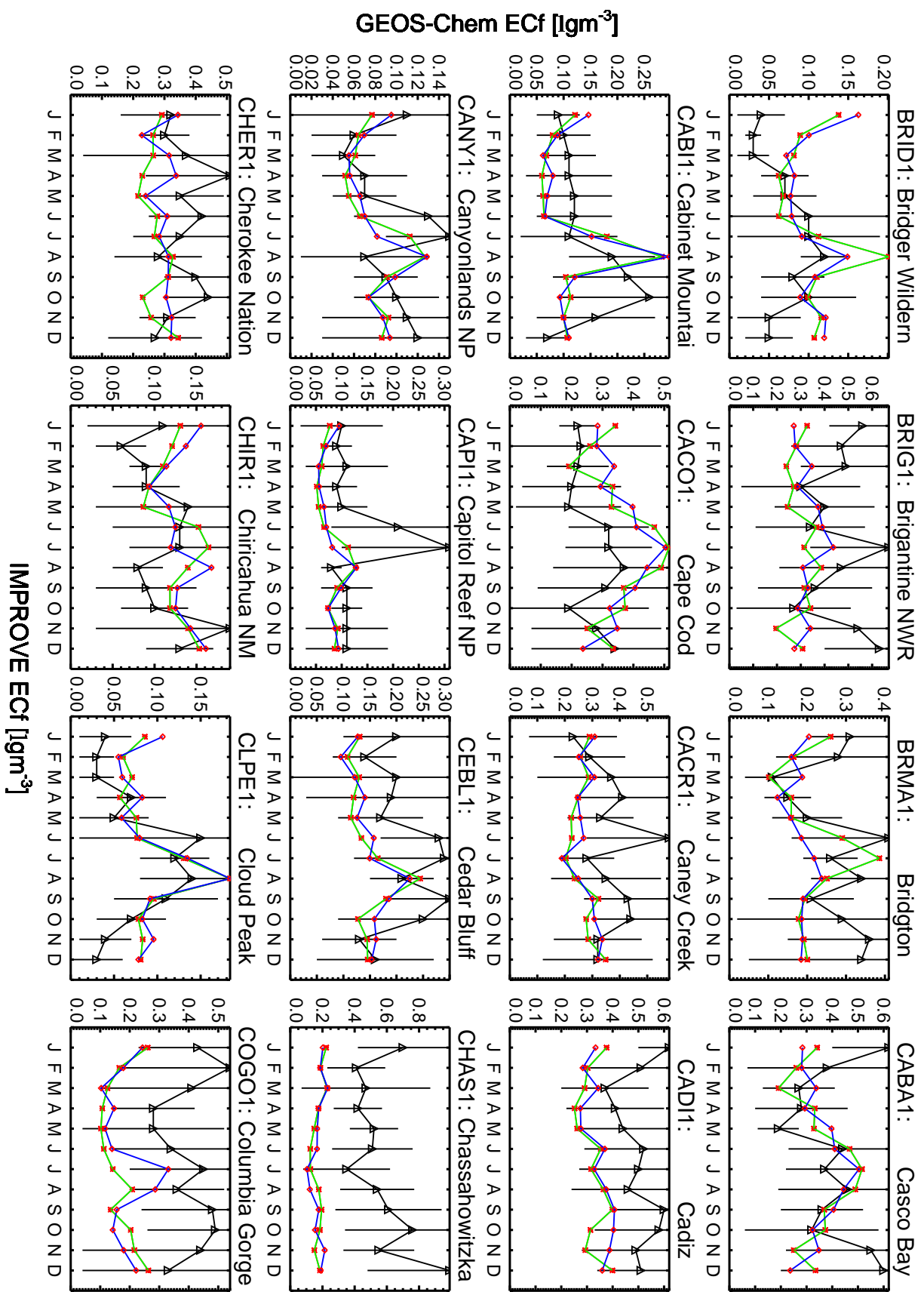
GEOS-Chem OCf (w/o SOA) [lgm^{-3}]

IMPROVE OCf [lgm^{-3}]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



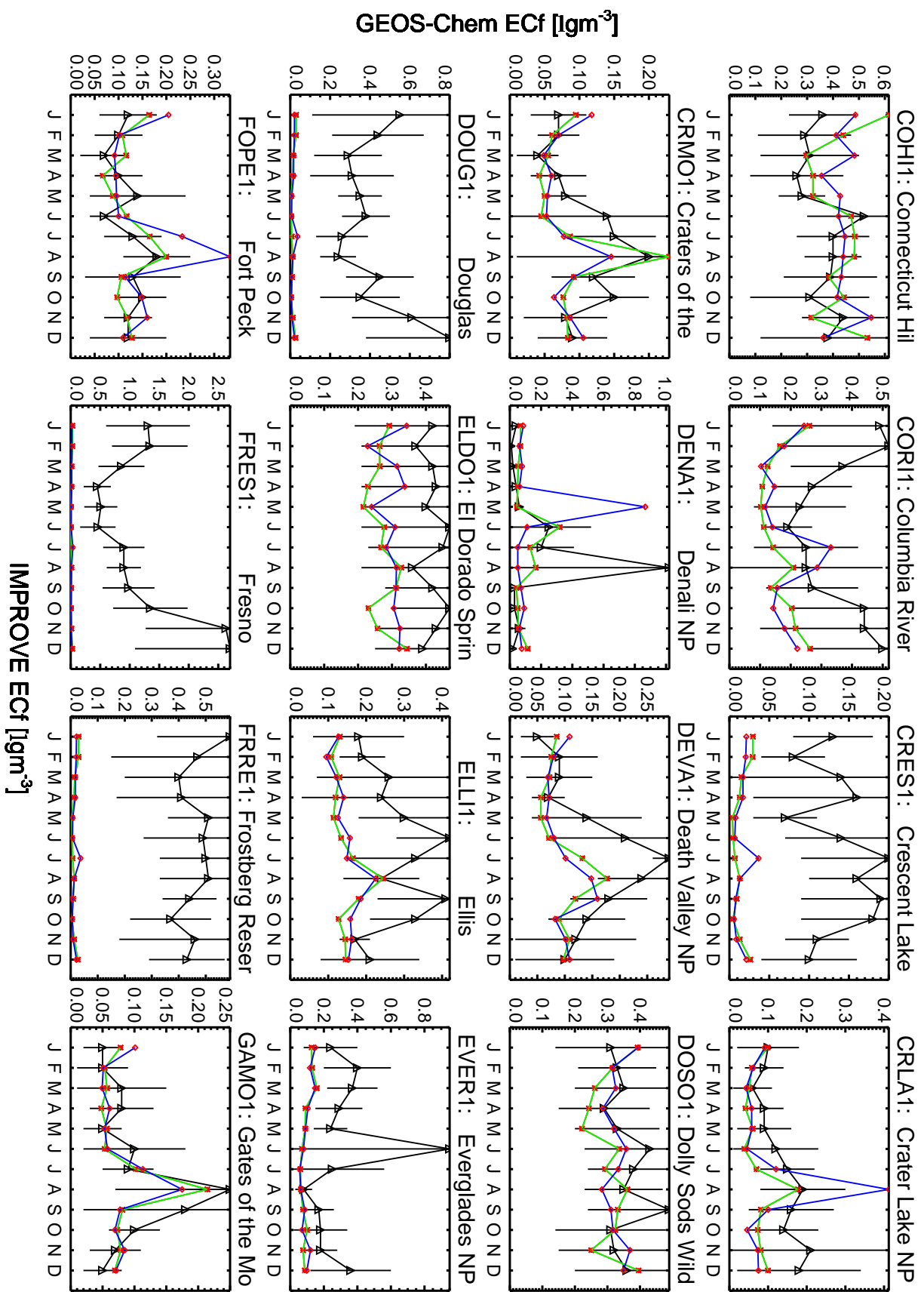
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



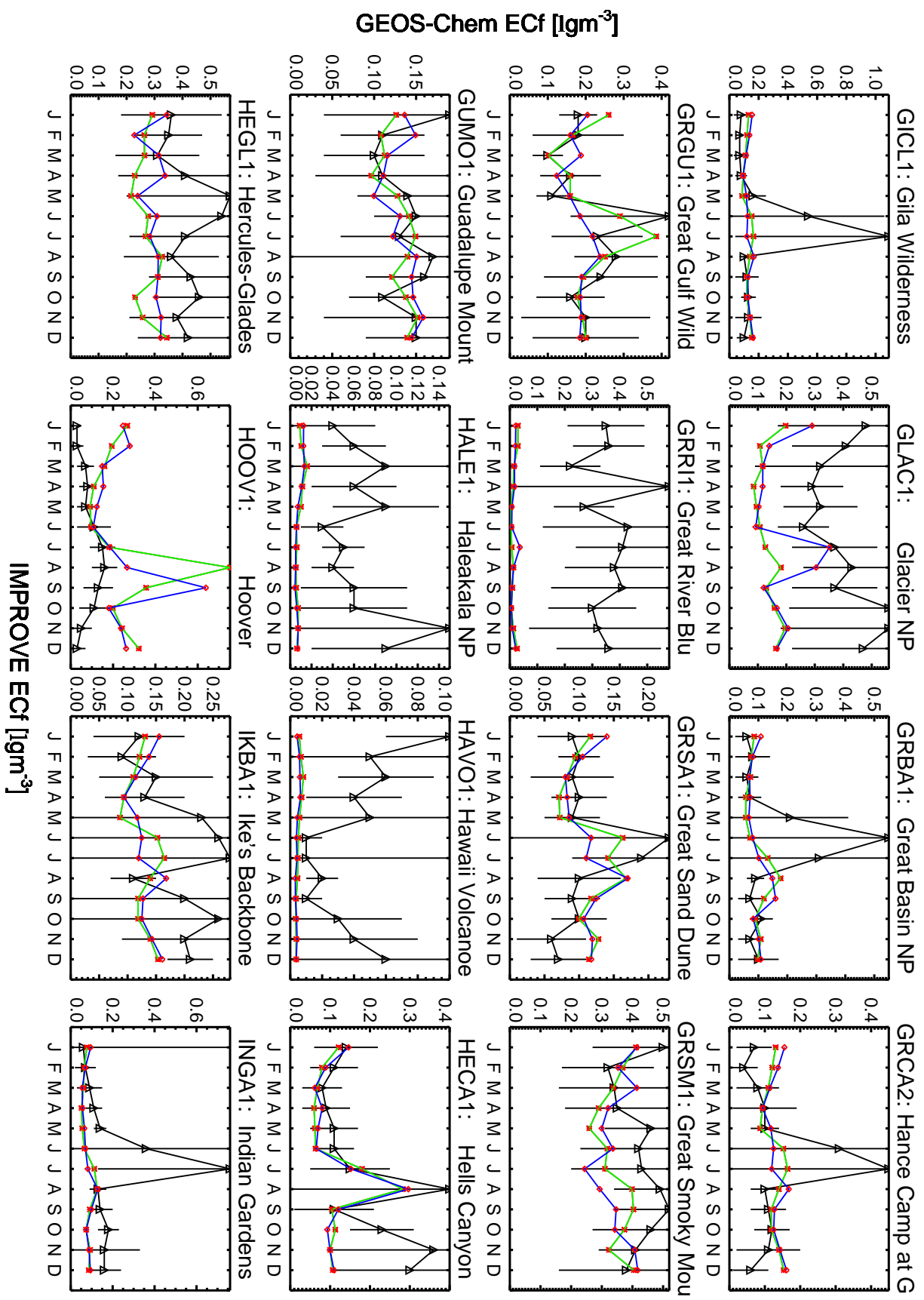
GEOS-Chem ECf [lgm⁻³]

IMPROVE ECf [lgm⁻³]

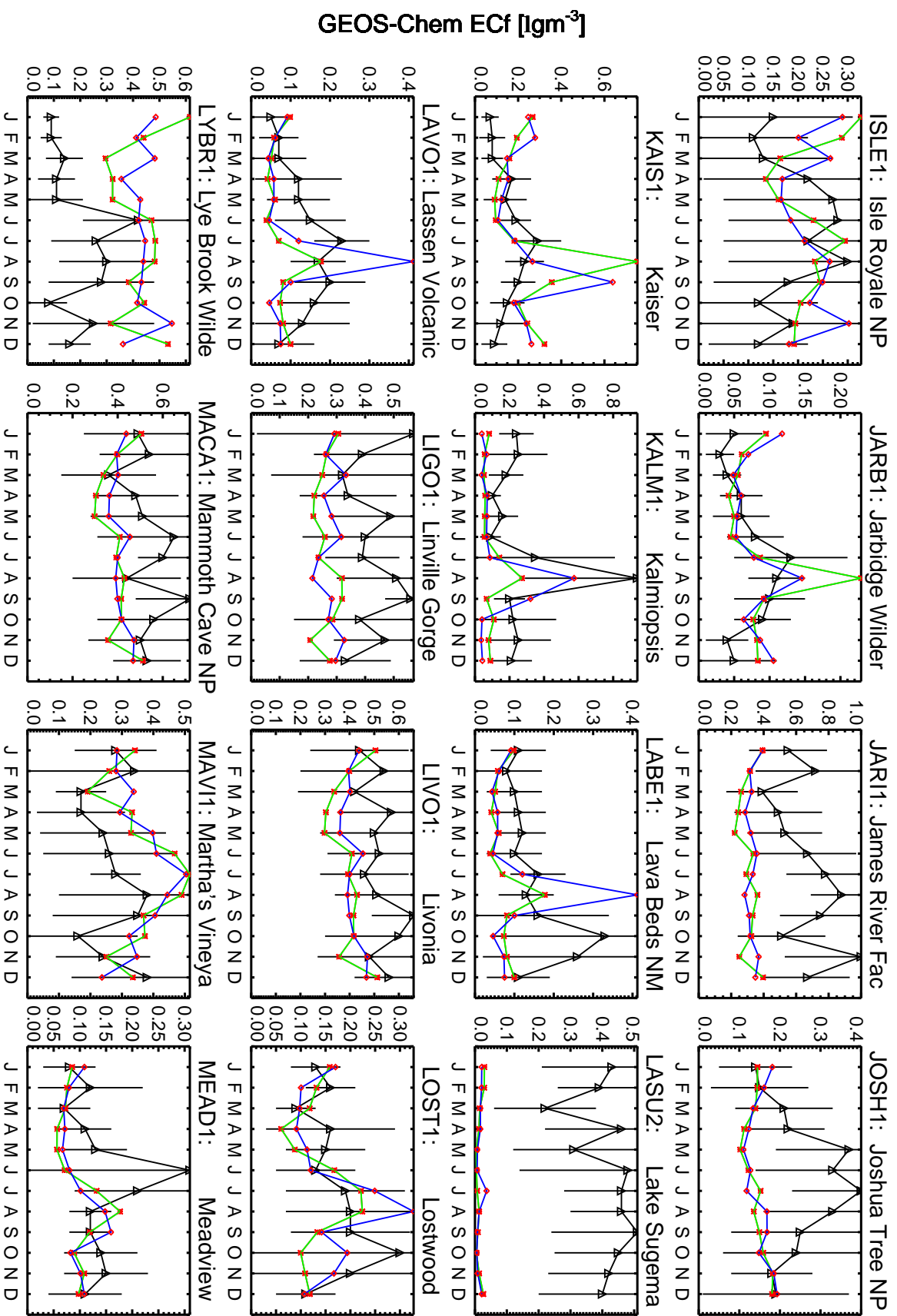
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

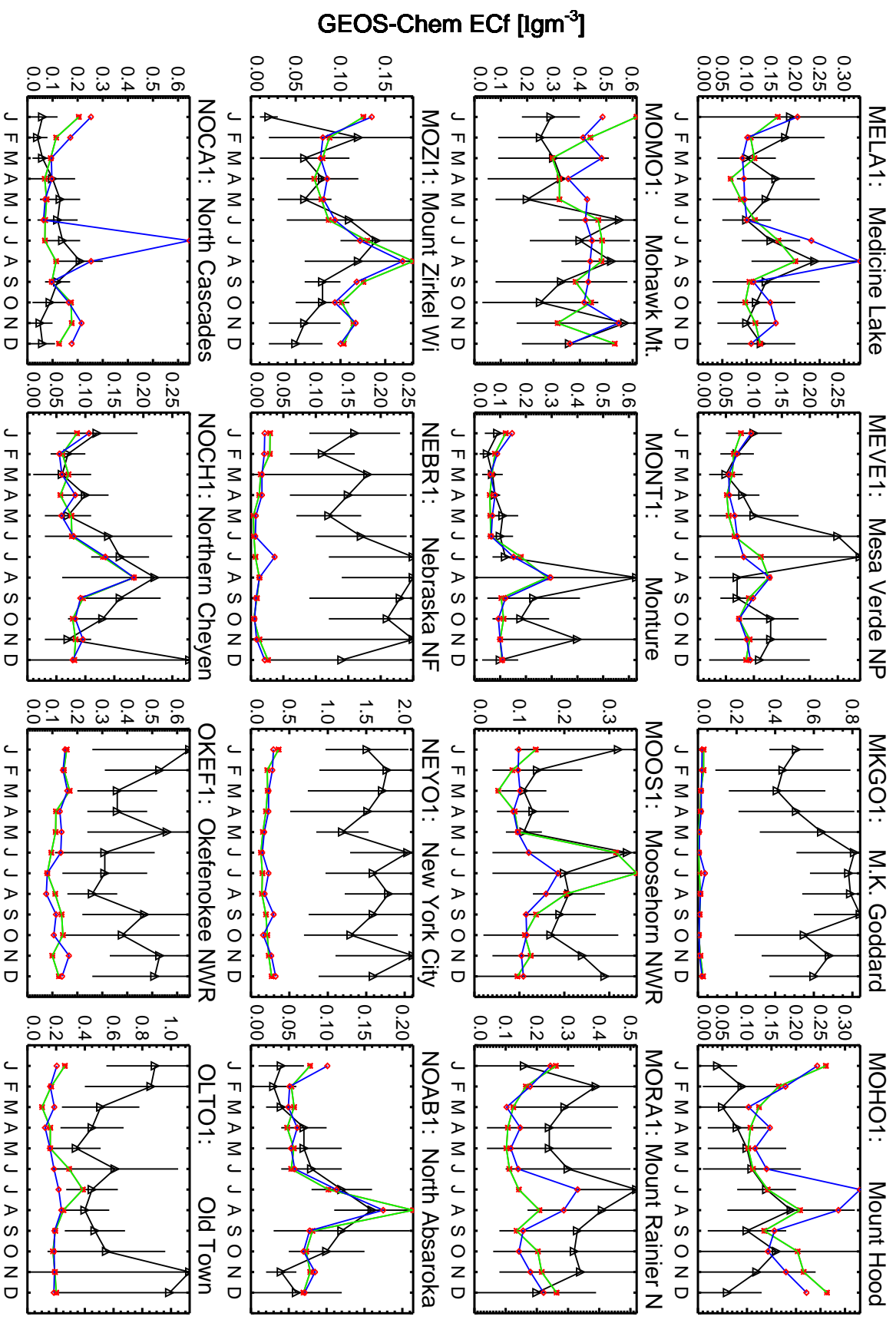


Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



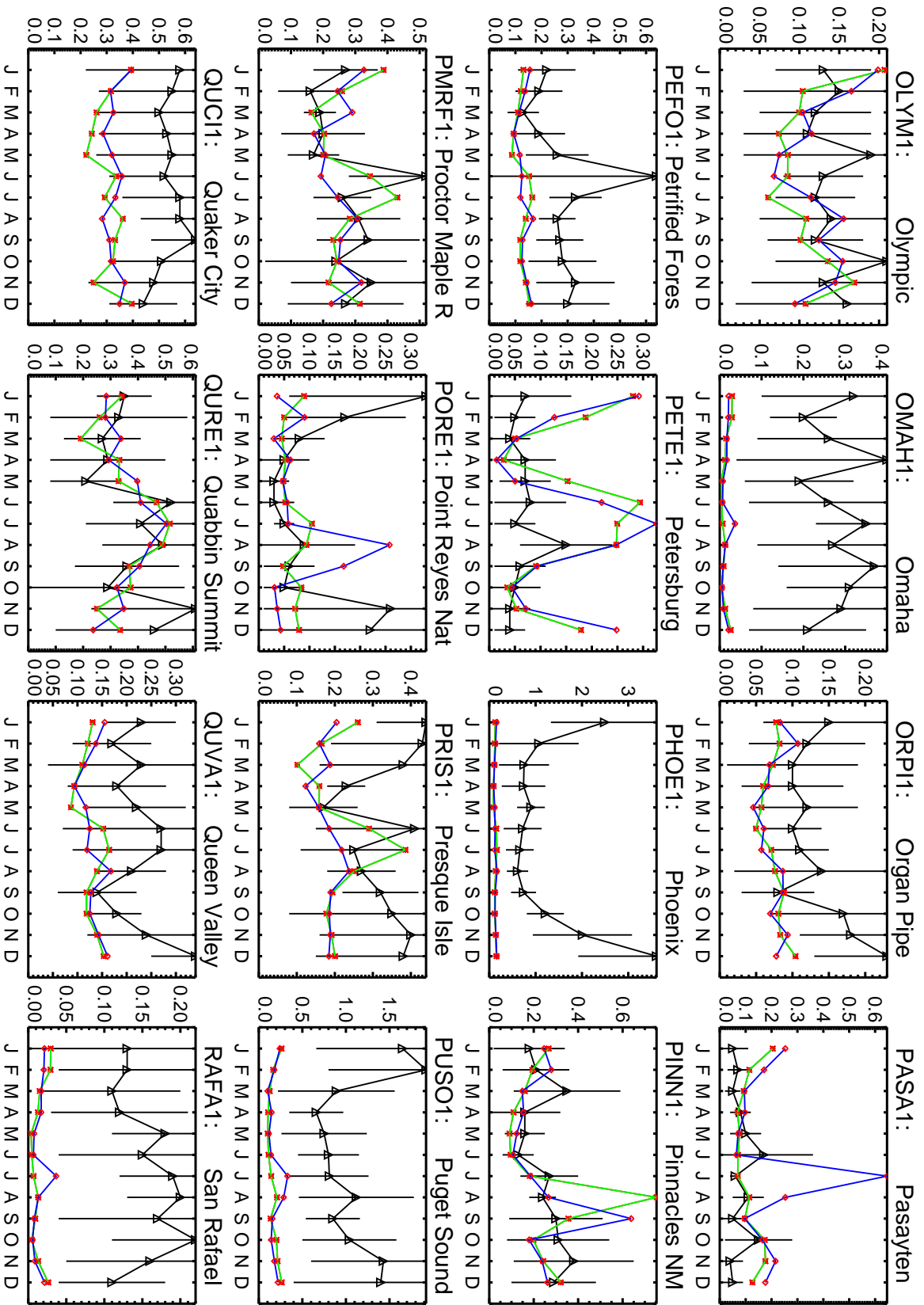
IMPROVE ECf [lgm⁻³]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



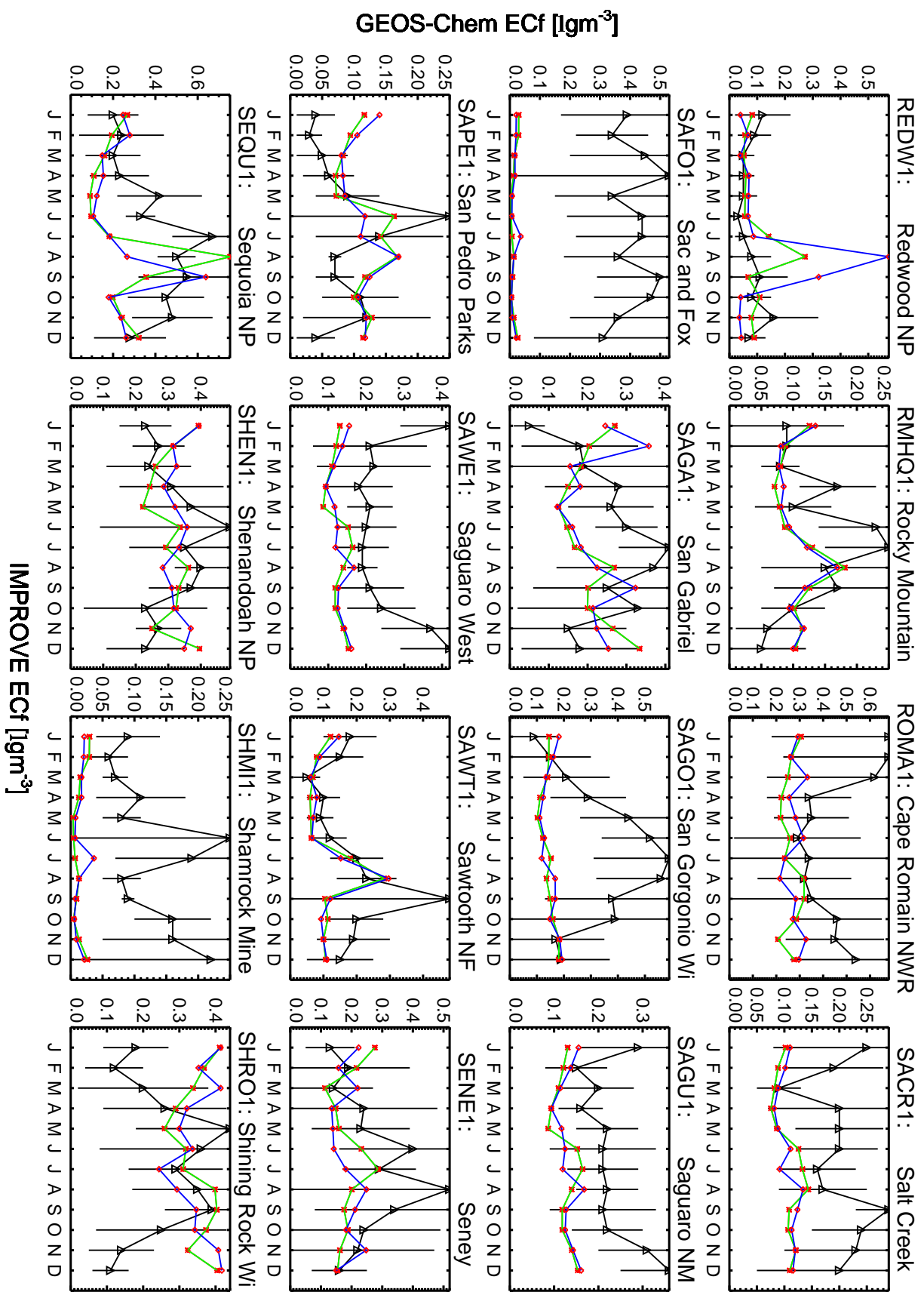
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)

GEOS-Chem ECf [$\mu\text{g m}^{-3}$]

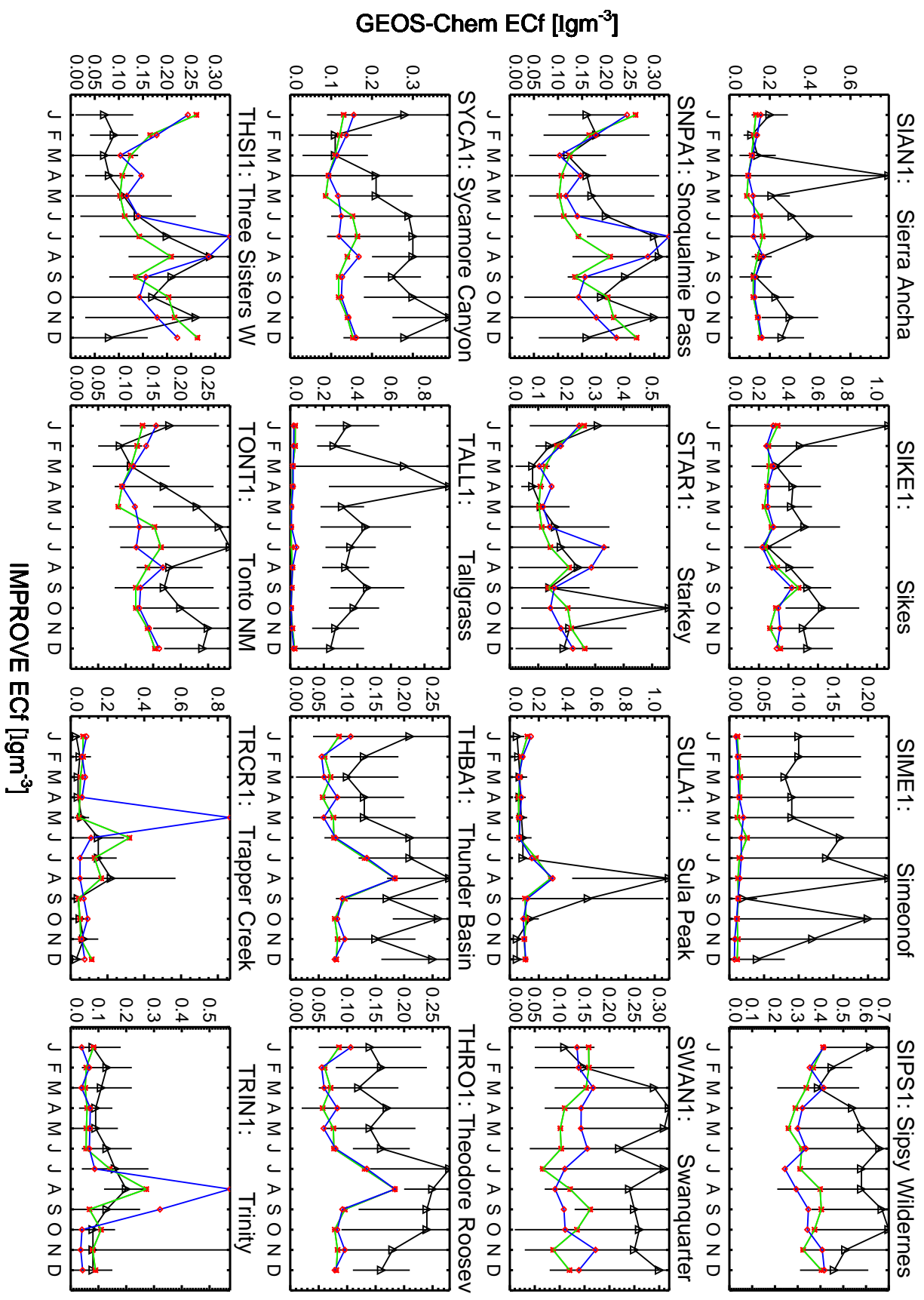


IMPROVE ECf [$\mu\text{g m}^{-3}$]

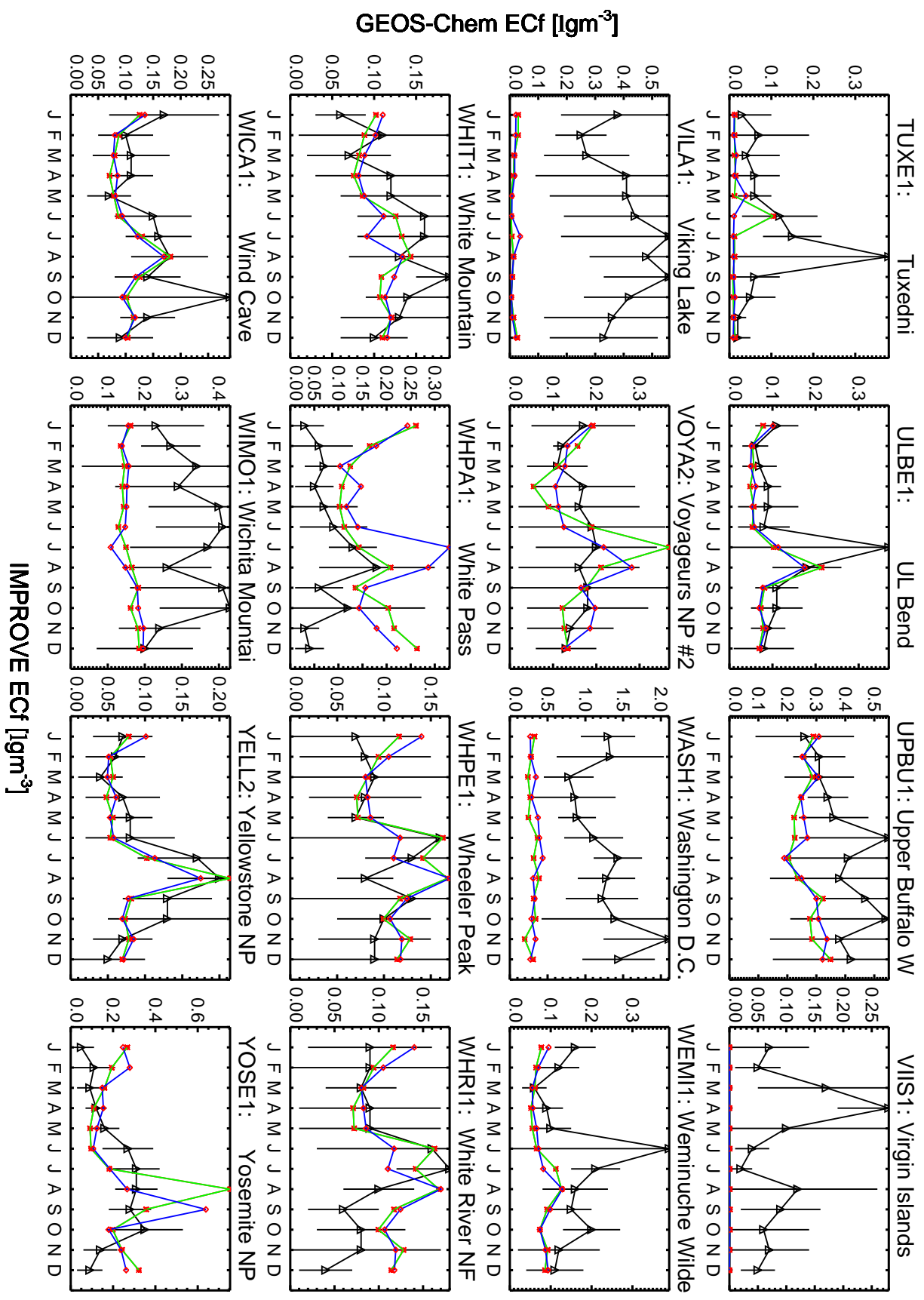
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



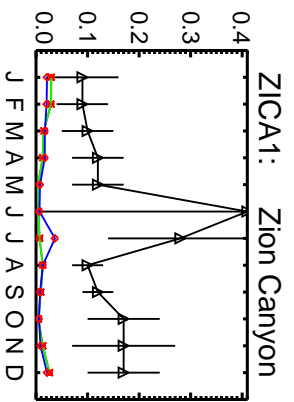
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



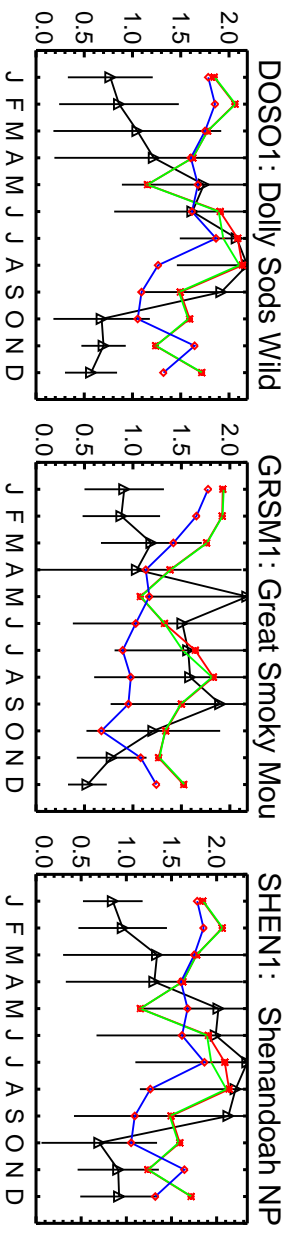
Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



GEOS-Chem ECf [lgm⁻³]

IMPROVE ECf [lgm⁻³]

Red: v11-02d-Run1 (2013); Green: v11-02e-Run0 (2013); Blue: v11-02e-Run1 (2016)



GEOS-Chem NH4f [$\mu\text{g m}^{-3}$]

IMPROVE NH4f [$\mu\text{g m}^{-3}$]