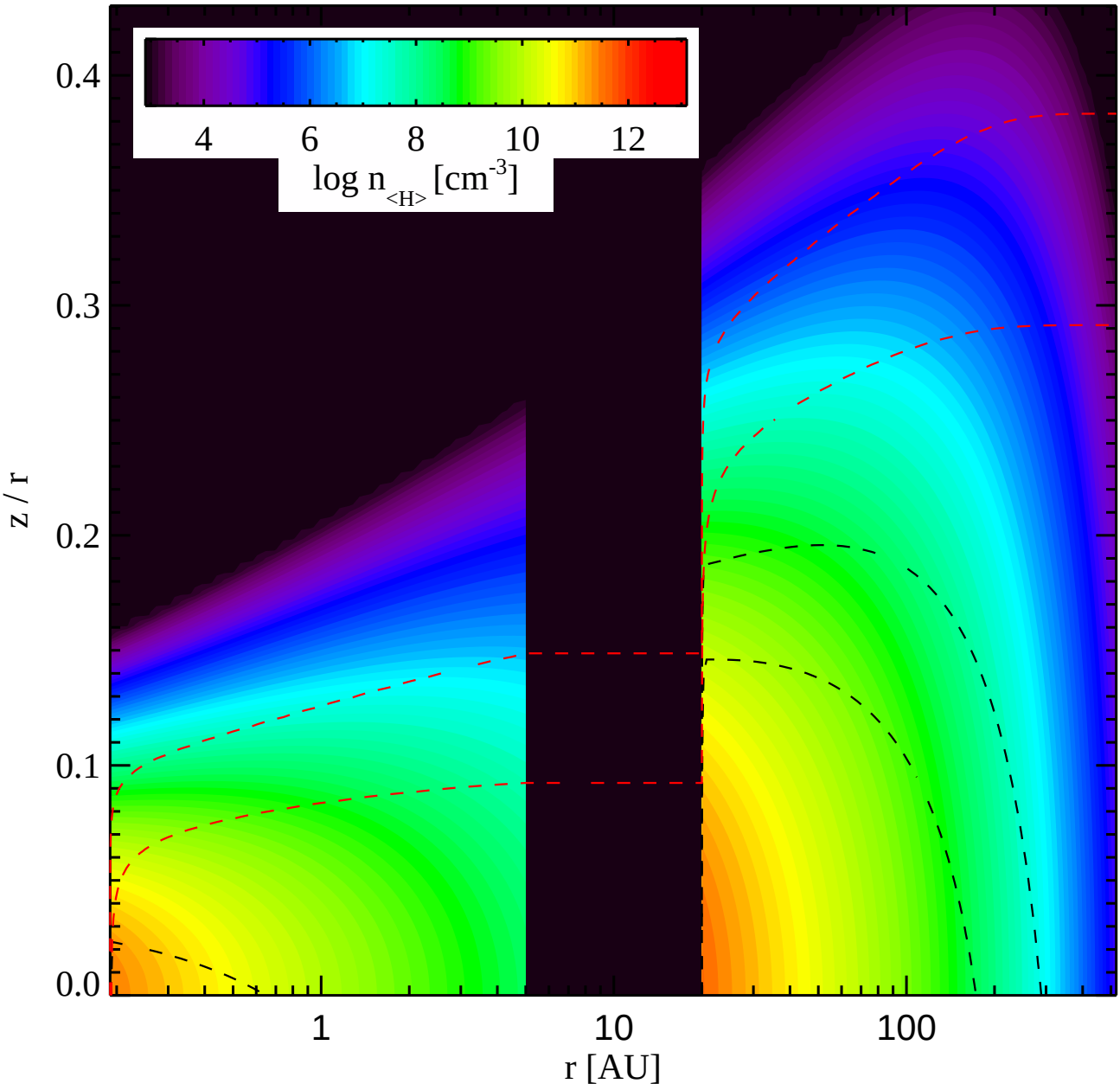
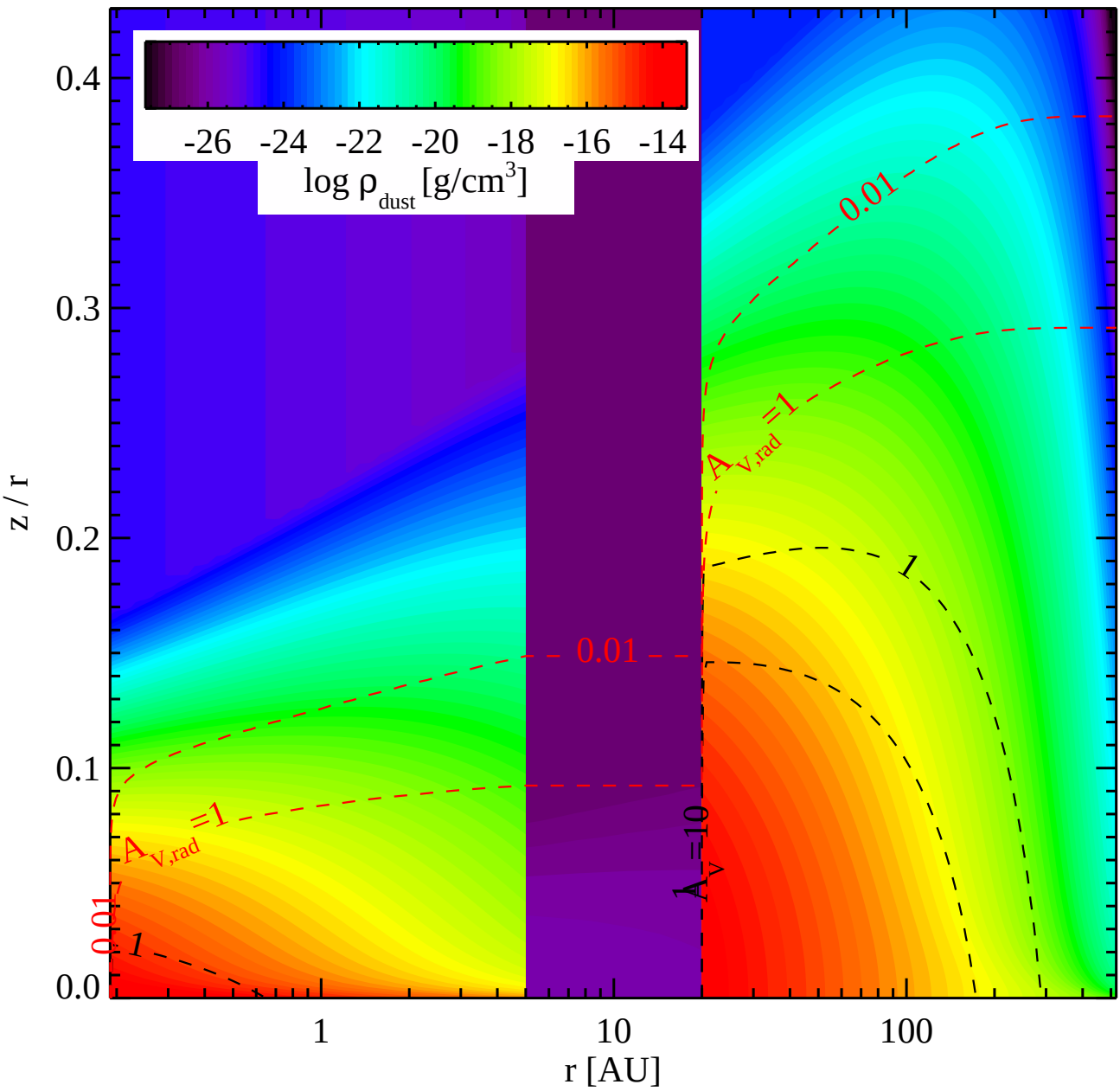
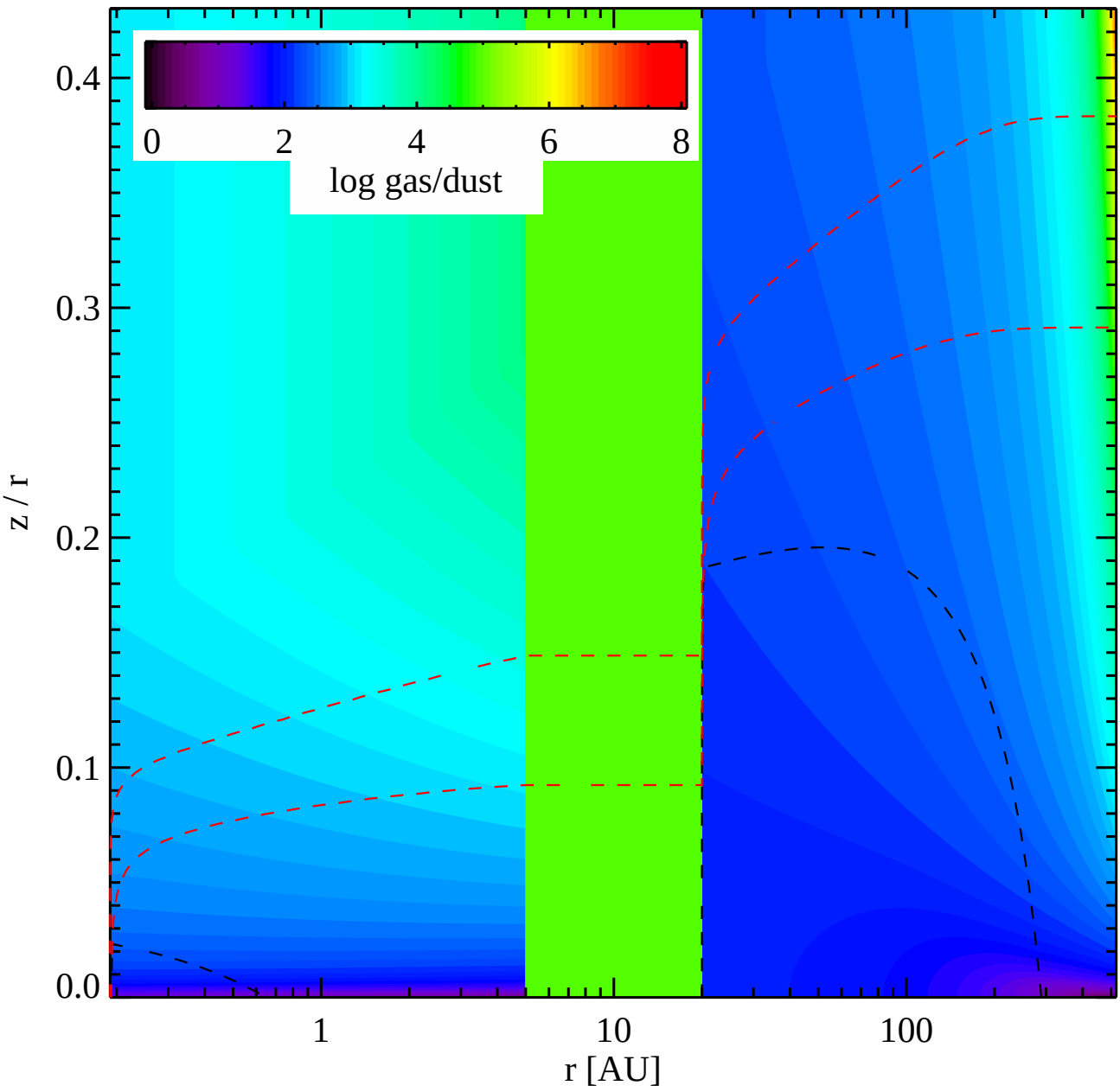
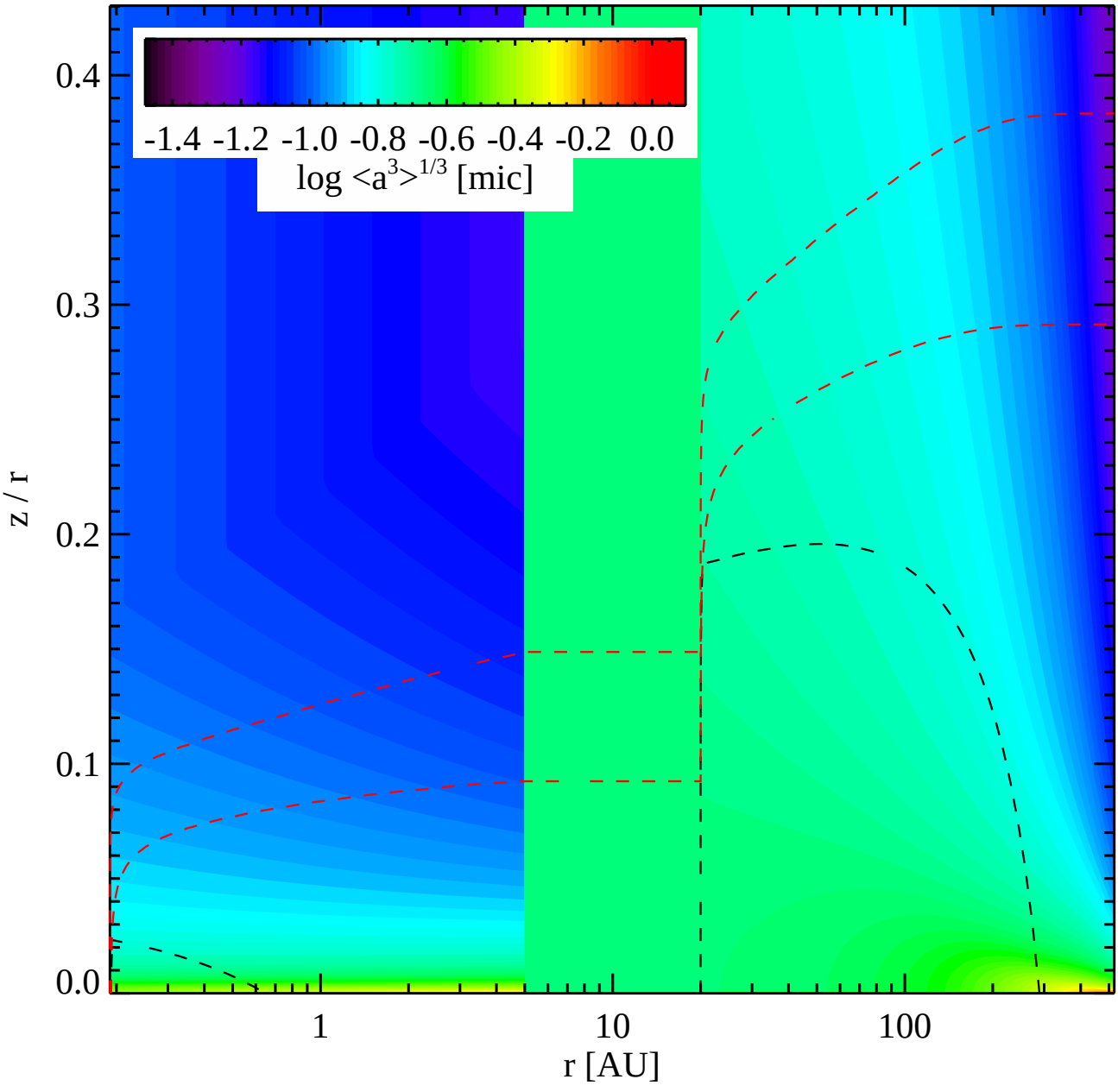
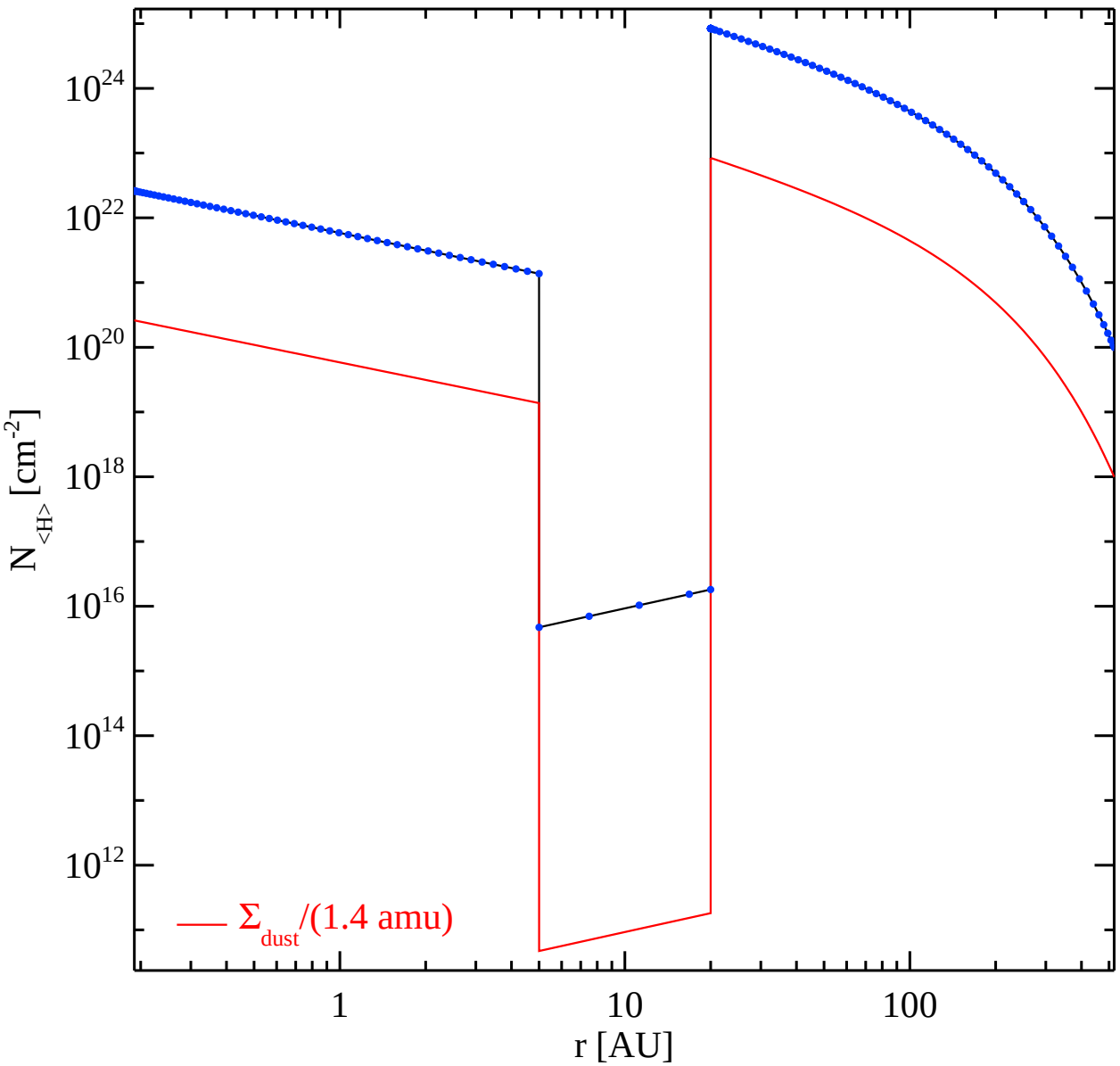

4
6
8
10
12
log n<H> [cm-3]
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

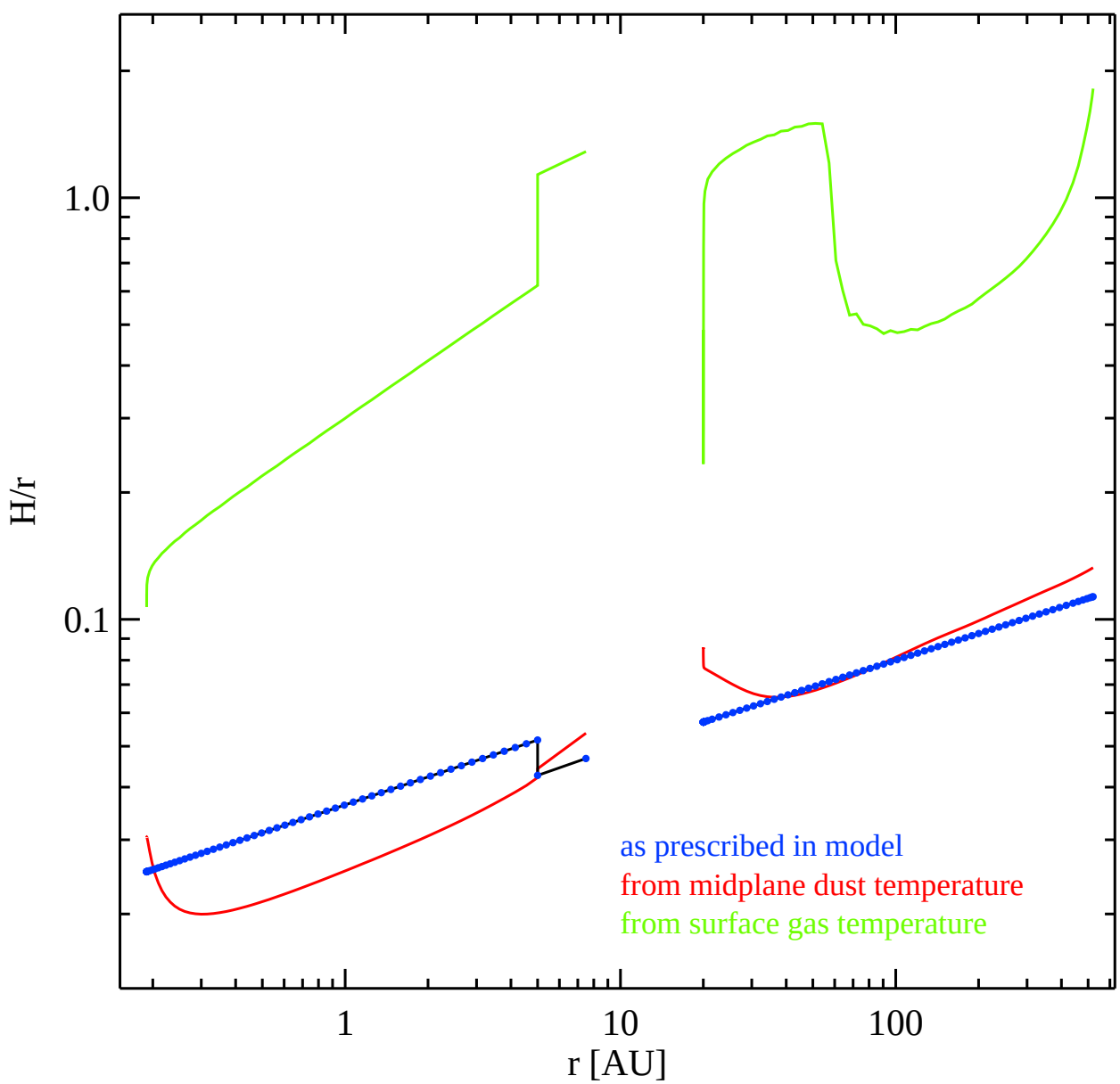


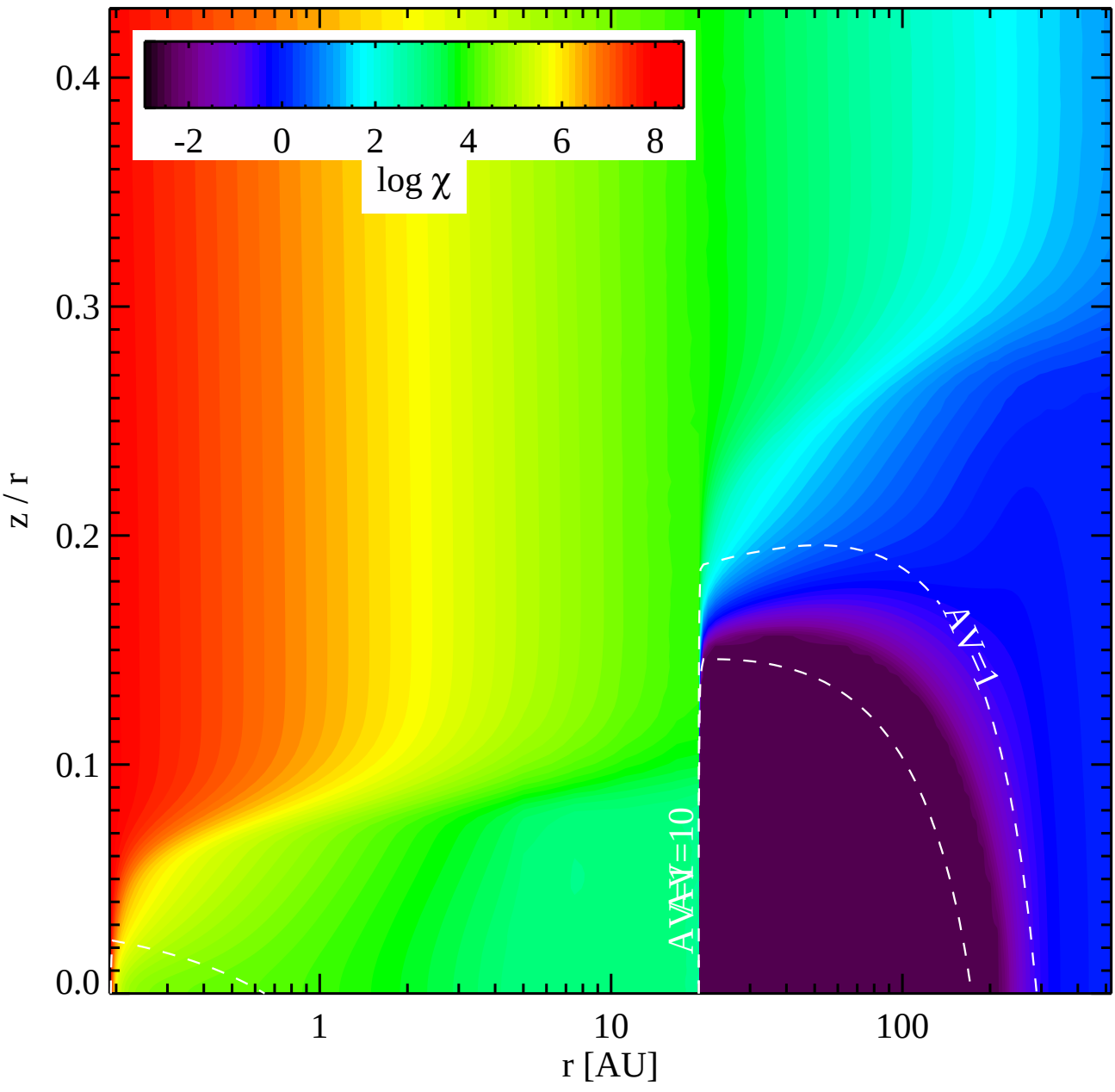
-26 -24 -22 -20 -18 -16 -14
log ρ_dust [g/cm^3]
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]
0.01
A_V,rad =1
1
A_V =10

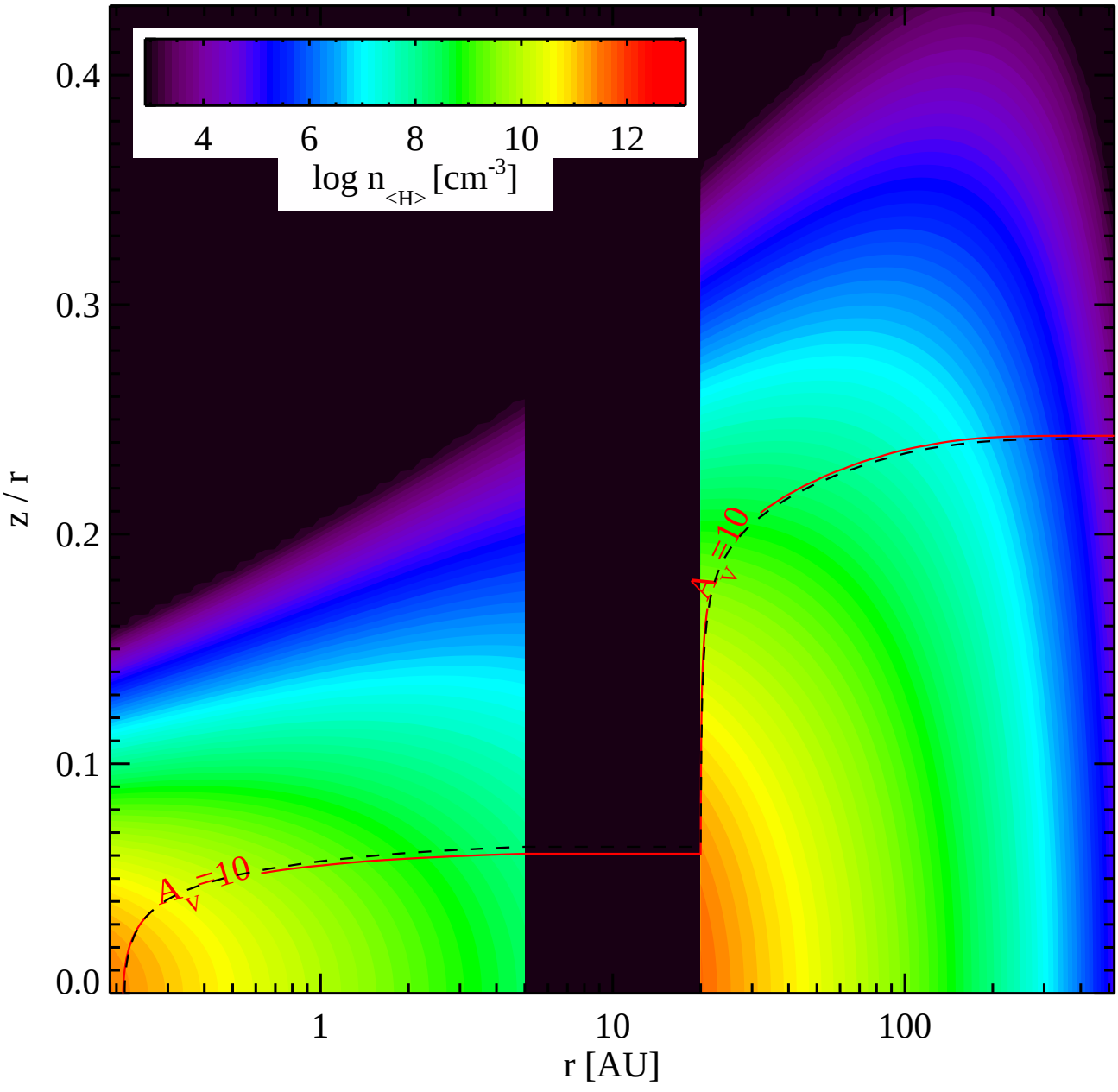

0
2
4
6
8
log gas/dust
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

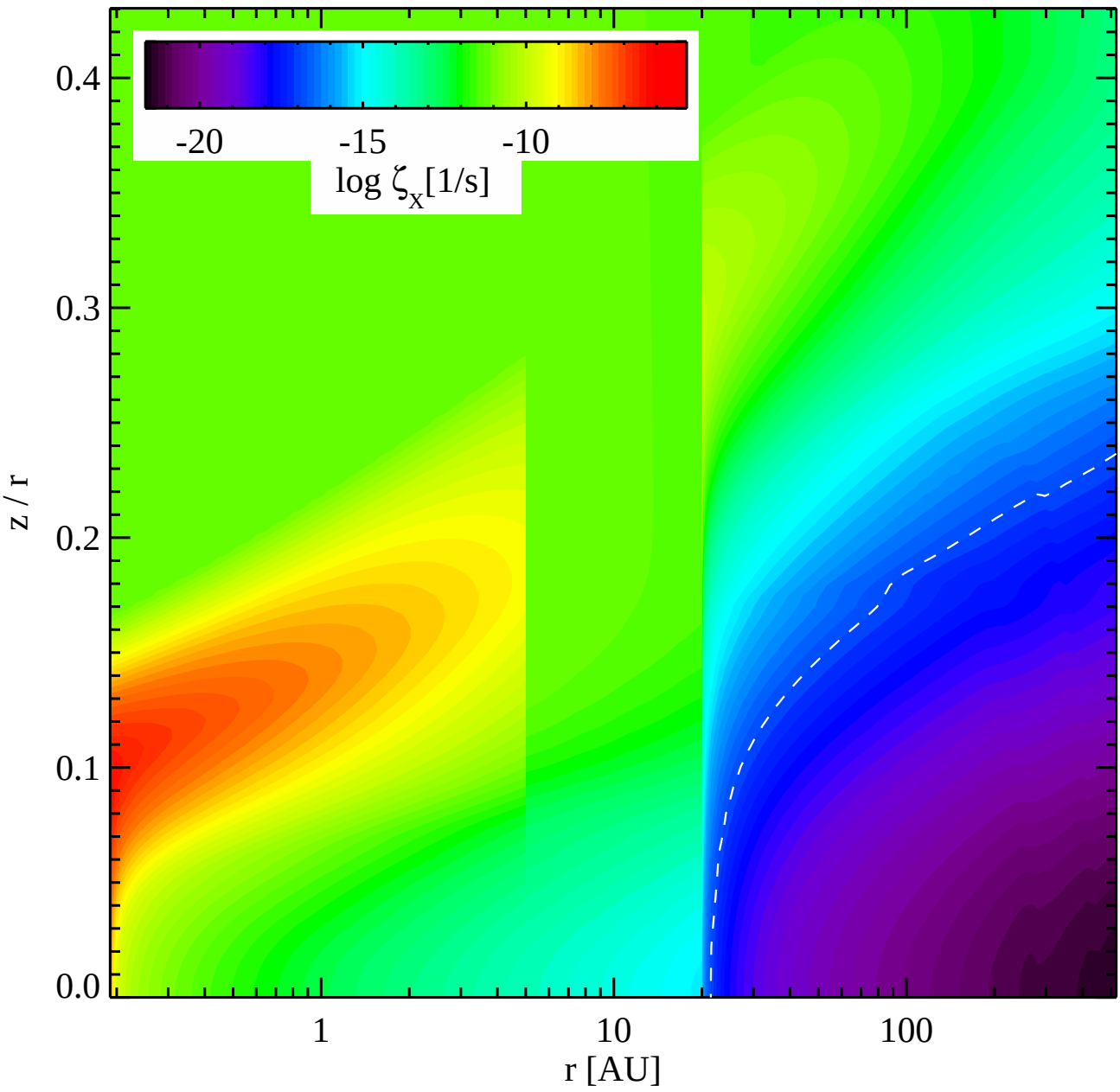

-1.4 -1.2 -1.0 -0.8 -0.6 -0.4 -0.2 0.0
log <a^3>^1/3 [mic]
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

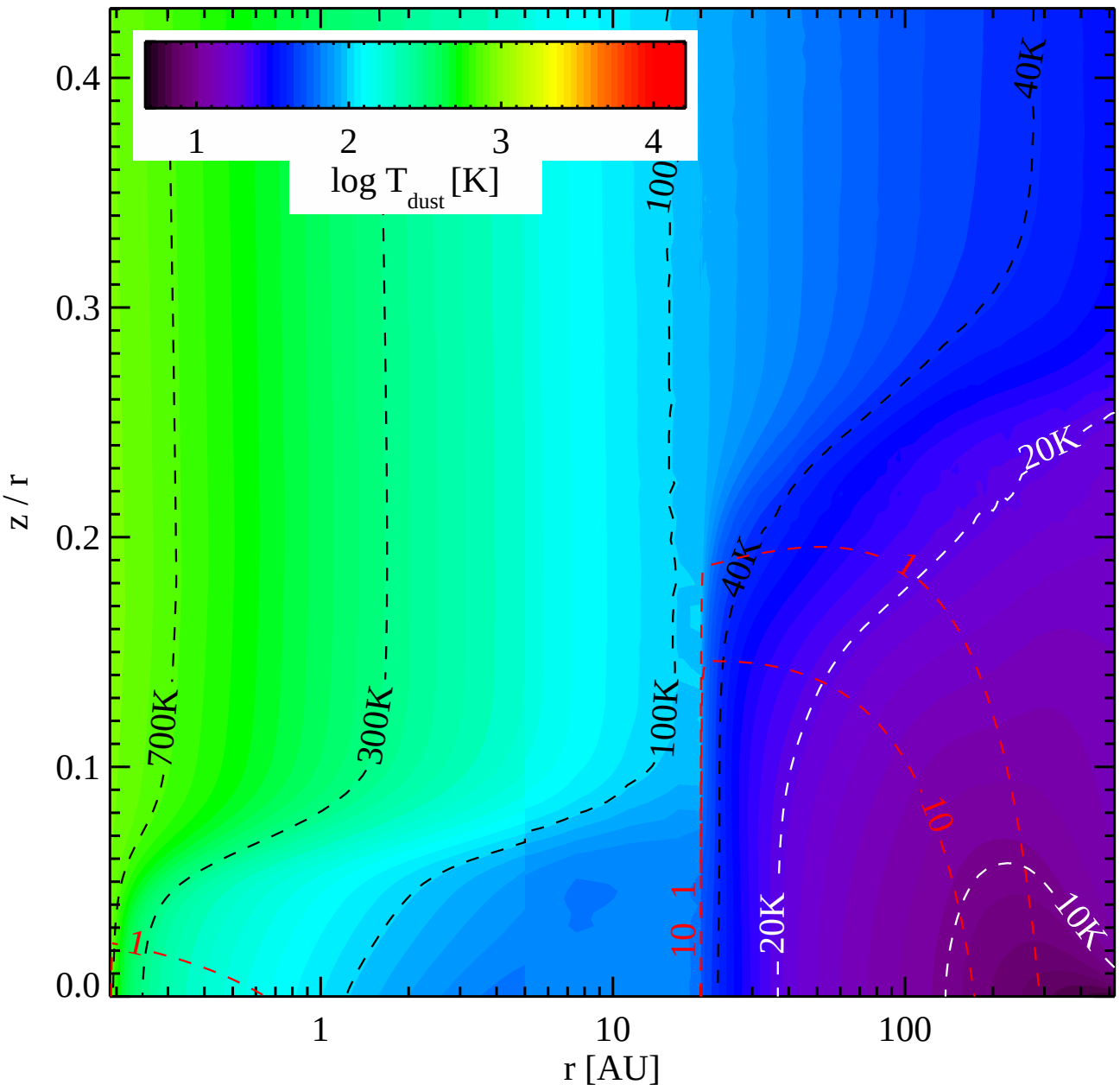

10^{24}
10^{22}
10^{20}
10^{18}
10^{16}
10^{14}
10^{12}
$N_{<H>}$ [cm^{-2}]
1
10
100
r [AU]
Σ_{dust}/(1.4 amu)

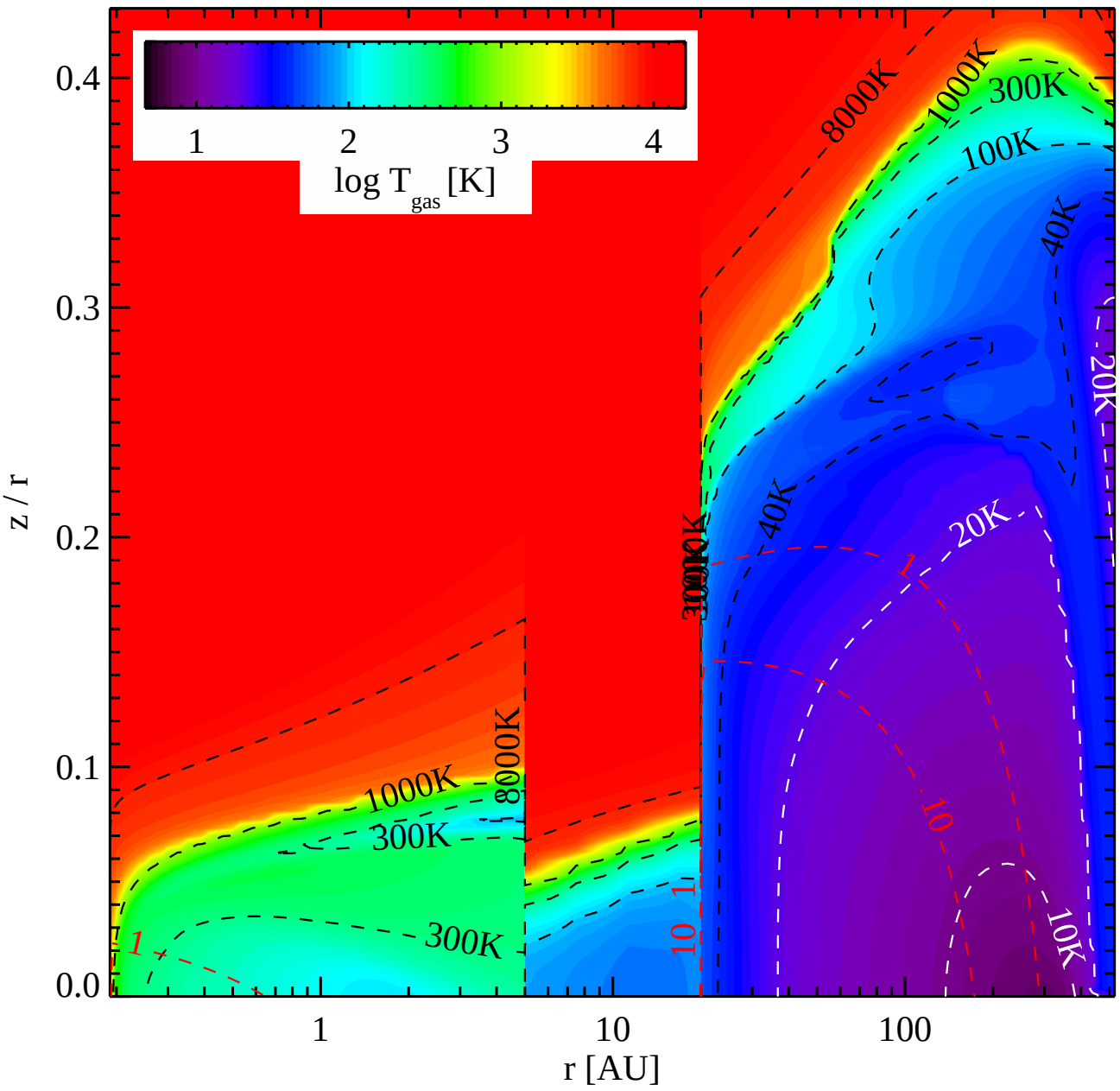

1.0
0.1
H/r
1
10
100
r [AU]
as prescribed in model
from midplane dust temperature
from surface gas temperature

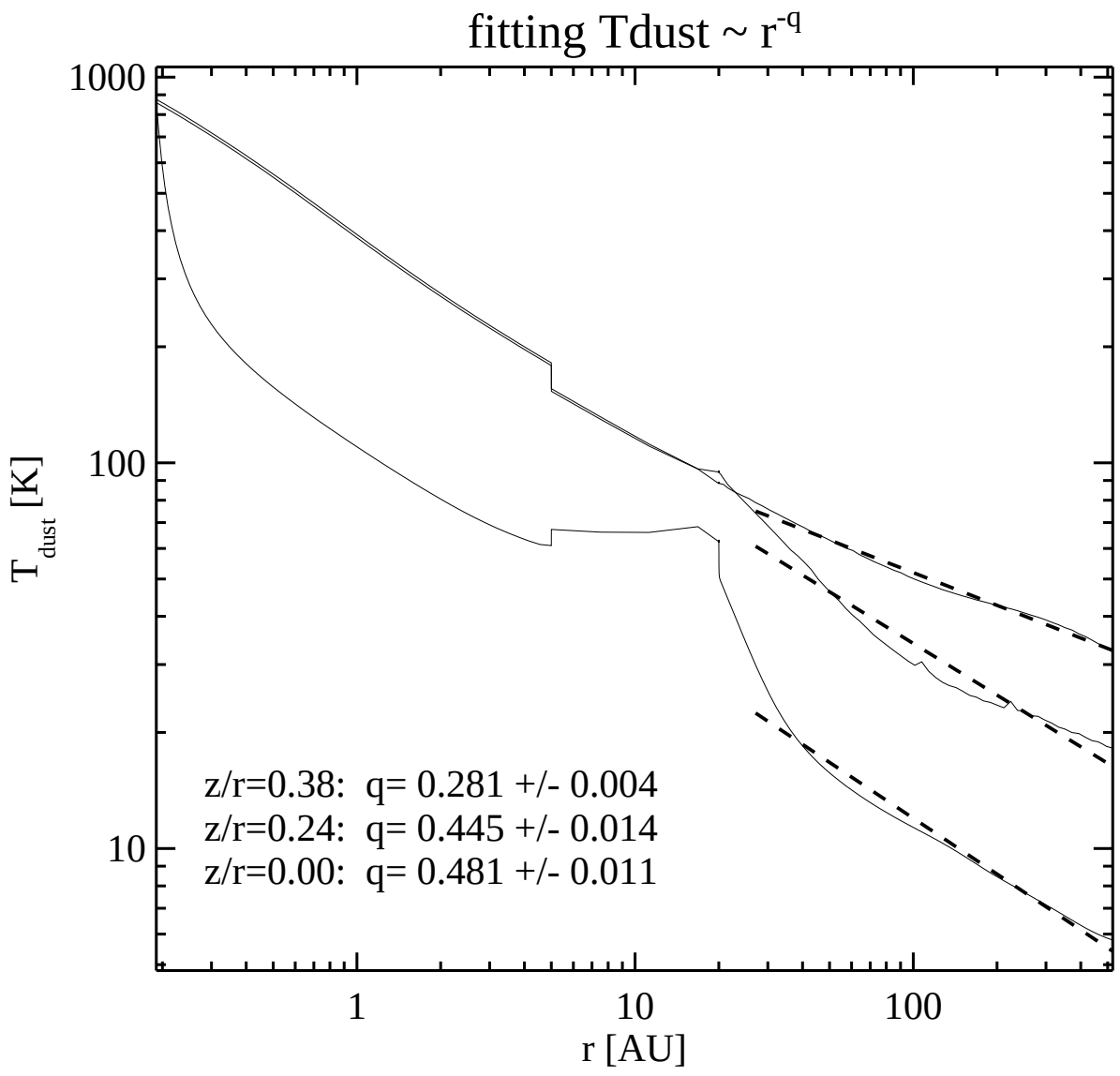

-2
0
2
4
6
8
log χ
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]
AV=1
AV=10

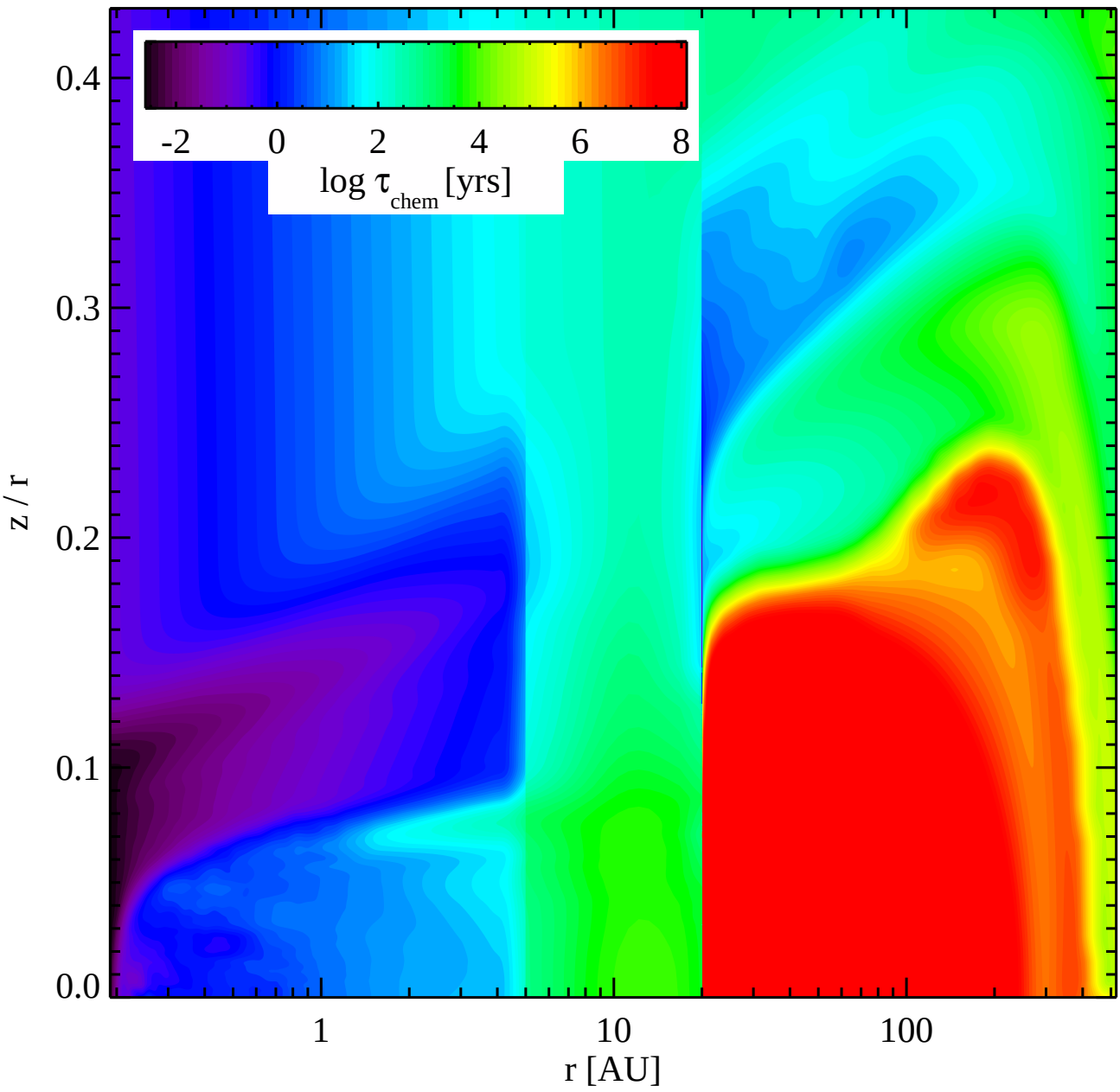

4
6
8
10
12
log n<H> [cm-3]
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]
AV=10
AV=10

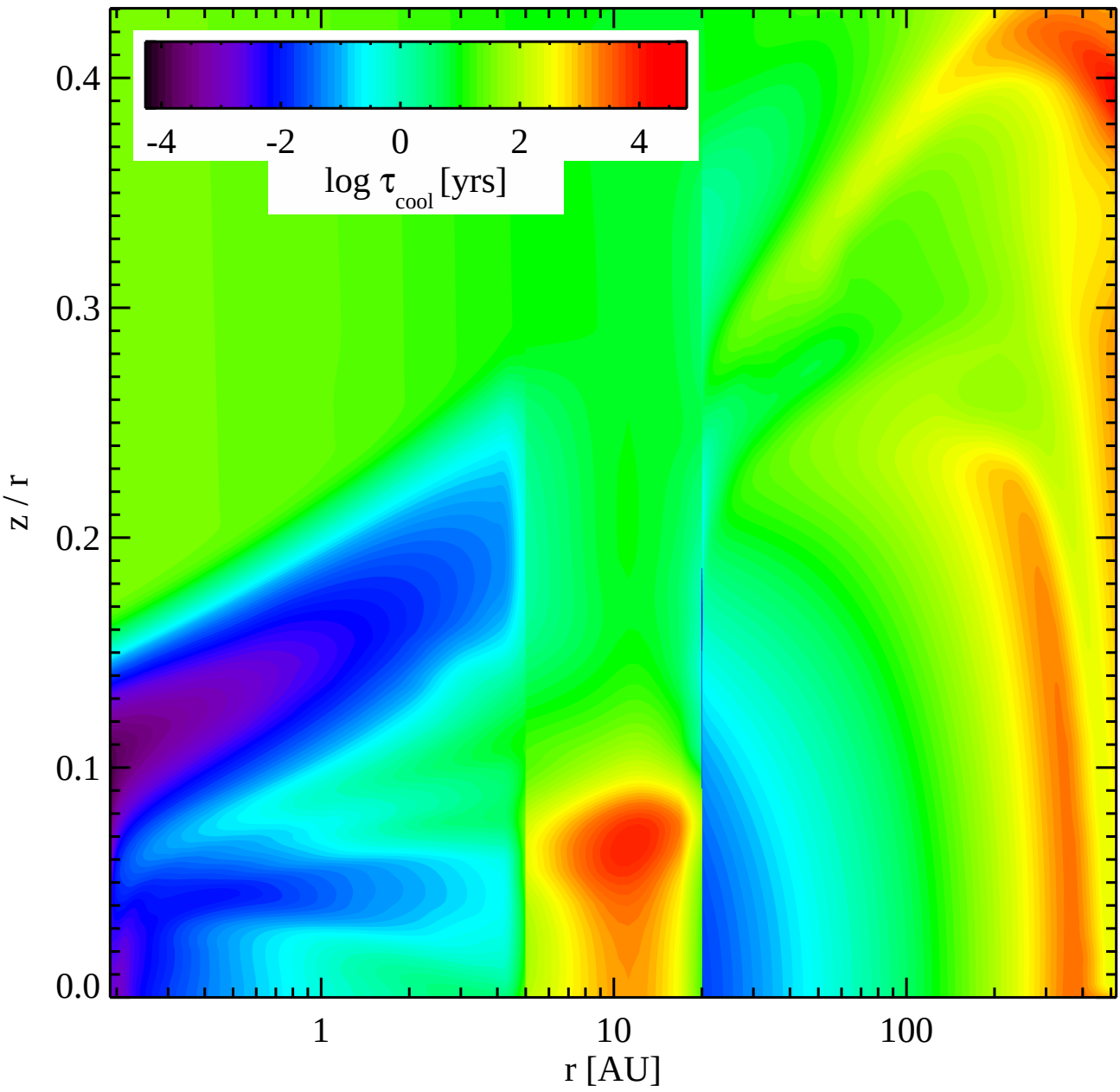

-20
-15
-10
log ζ_X[1/s]
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

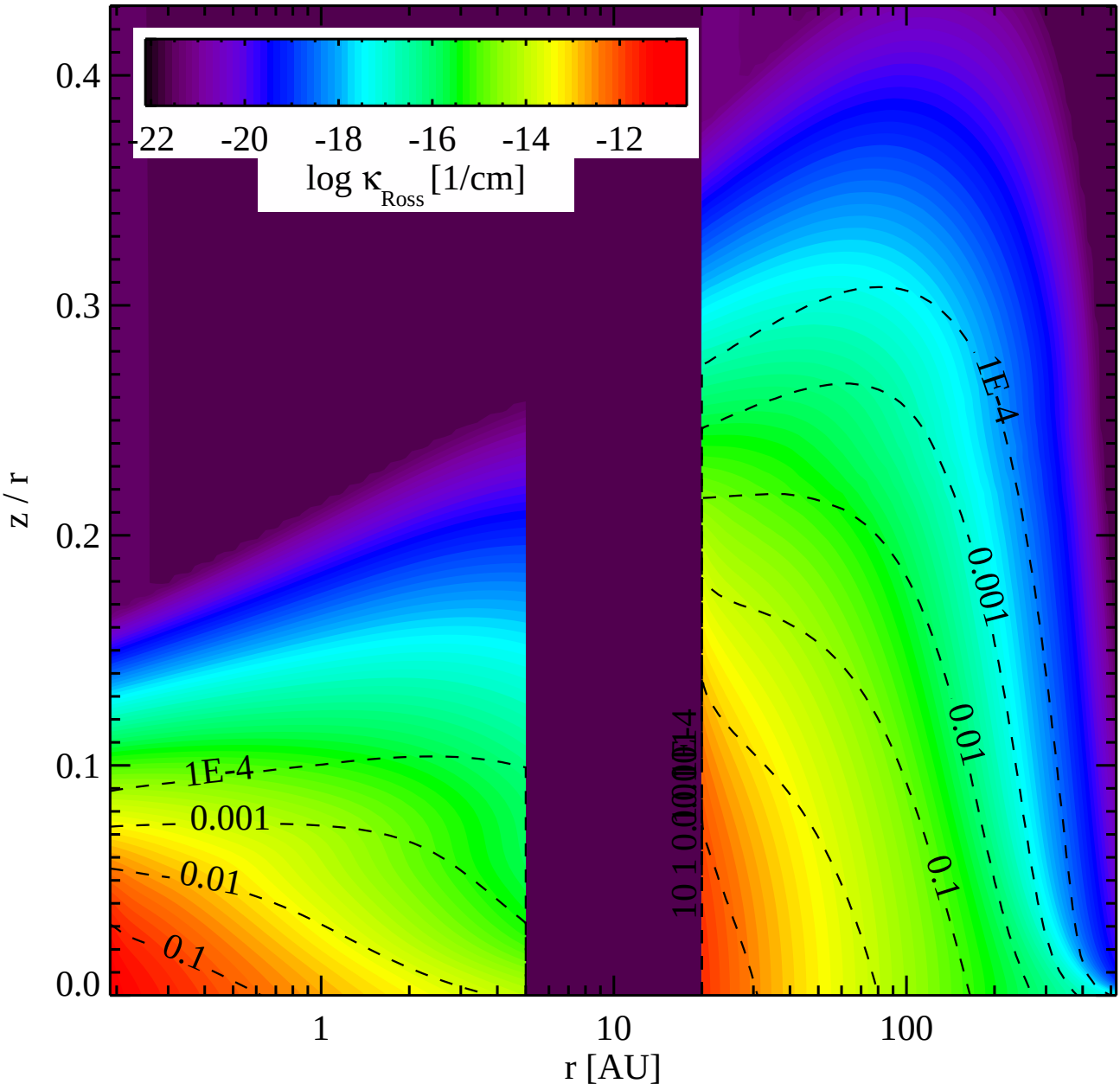

1
2
3
4
log T dust [K]
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]
700K
300K
100K
40K
20K
10K
1
10
100
40K
20K
1
10
20K
10K

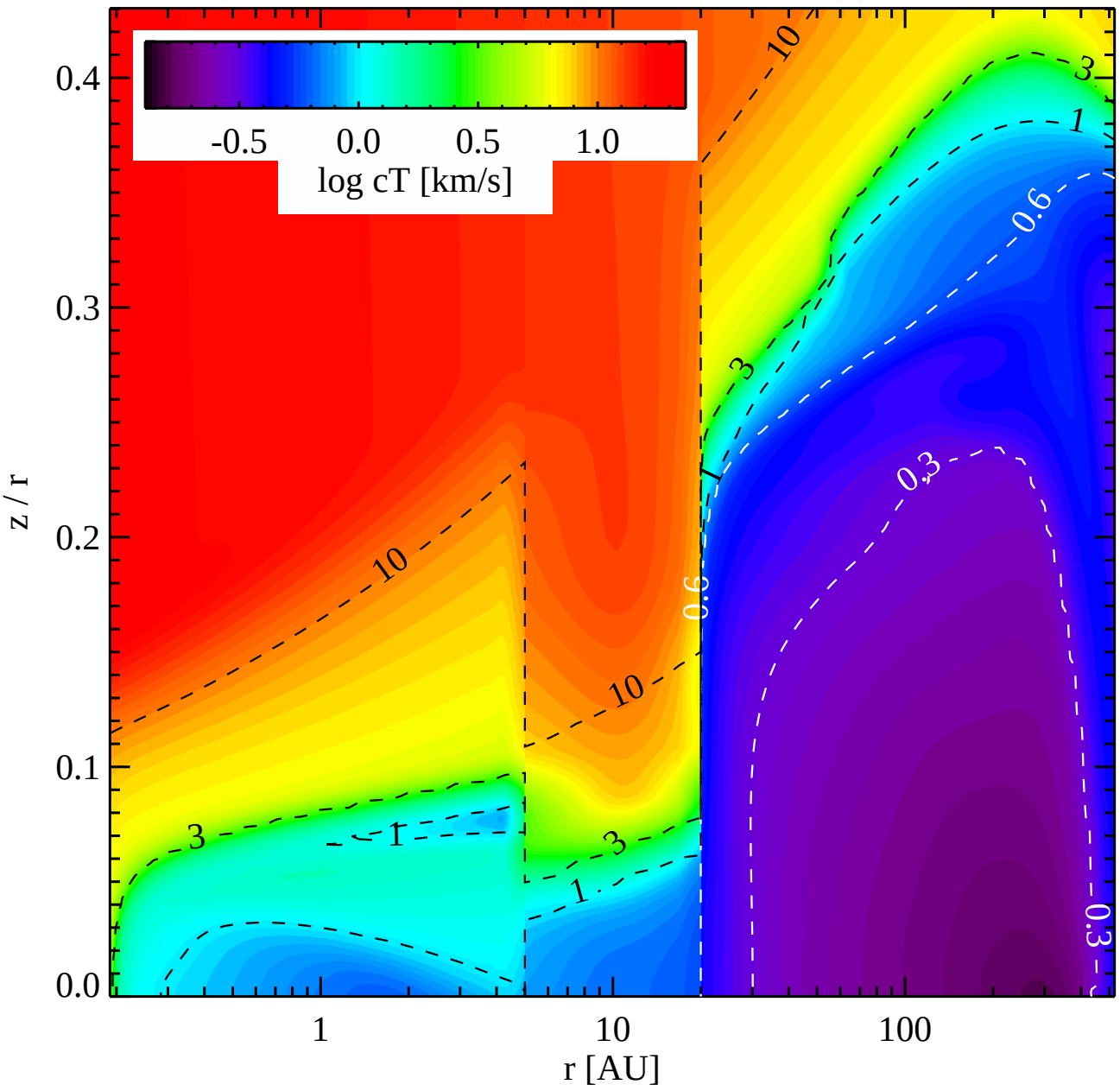

1
2
3
4
log T gas [K]
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]
8000K
1000K
300K
100K
40K
20K
10K
1

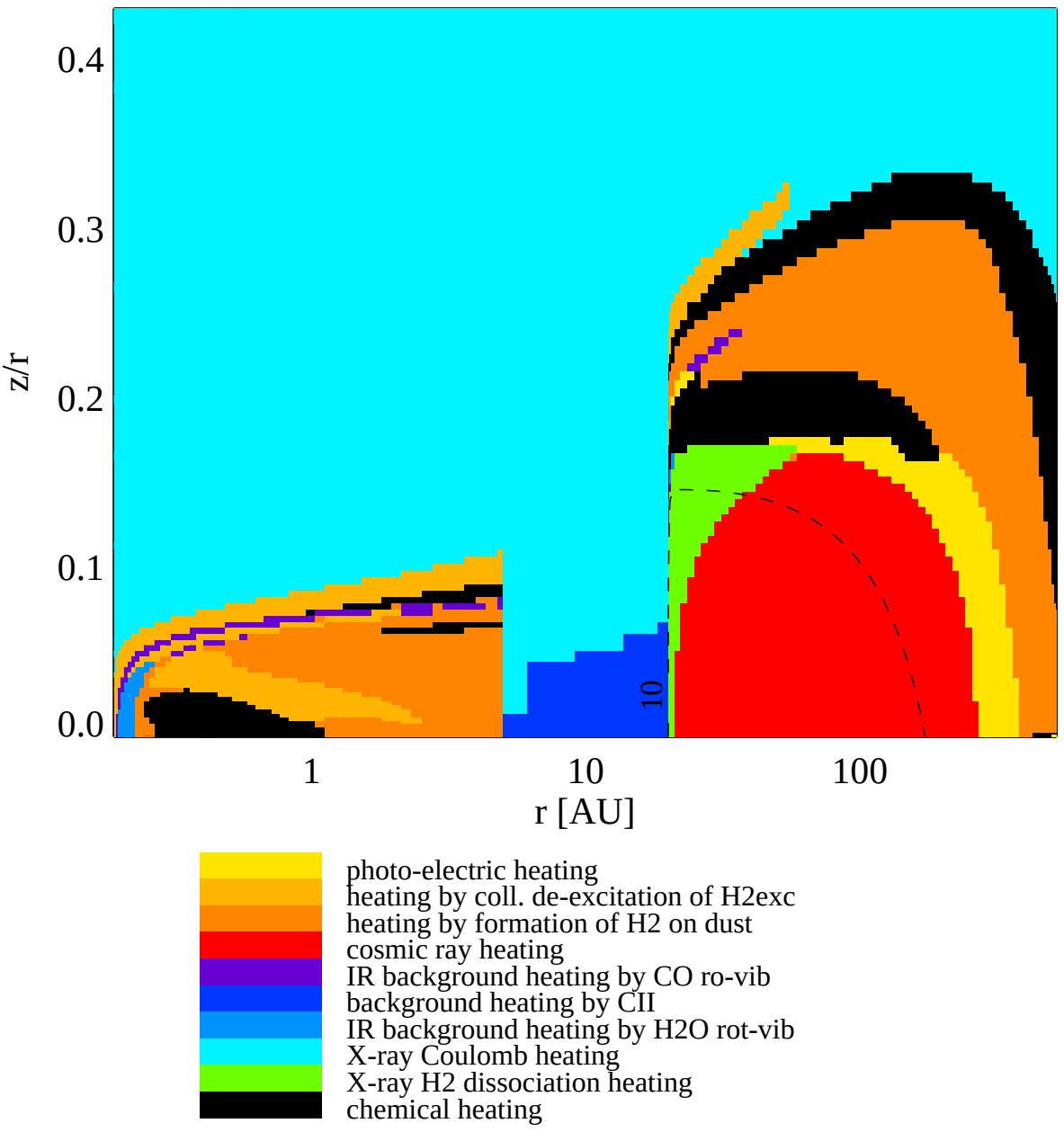

fitting Tdust ~ r^-q
1000
100
10
T dust [K]
1
10
100
r [AU]
z/r=0.38: q= 0.281 +/- 0.004
z/r=0.24: q= 0.445 +/- 0.014
z/r=0.00: q= 0.481 +/- 0.011

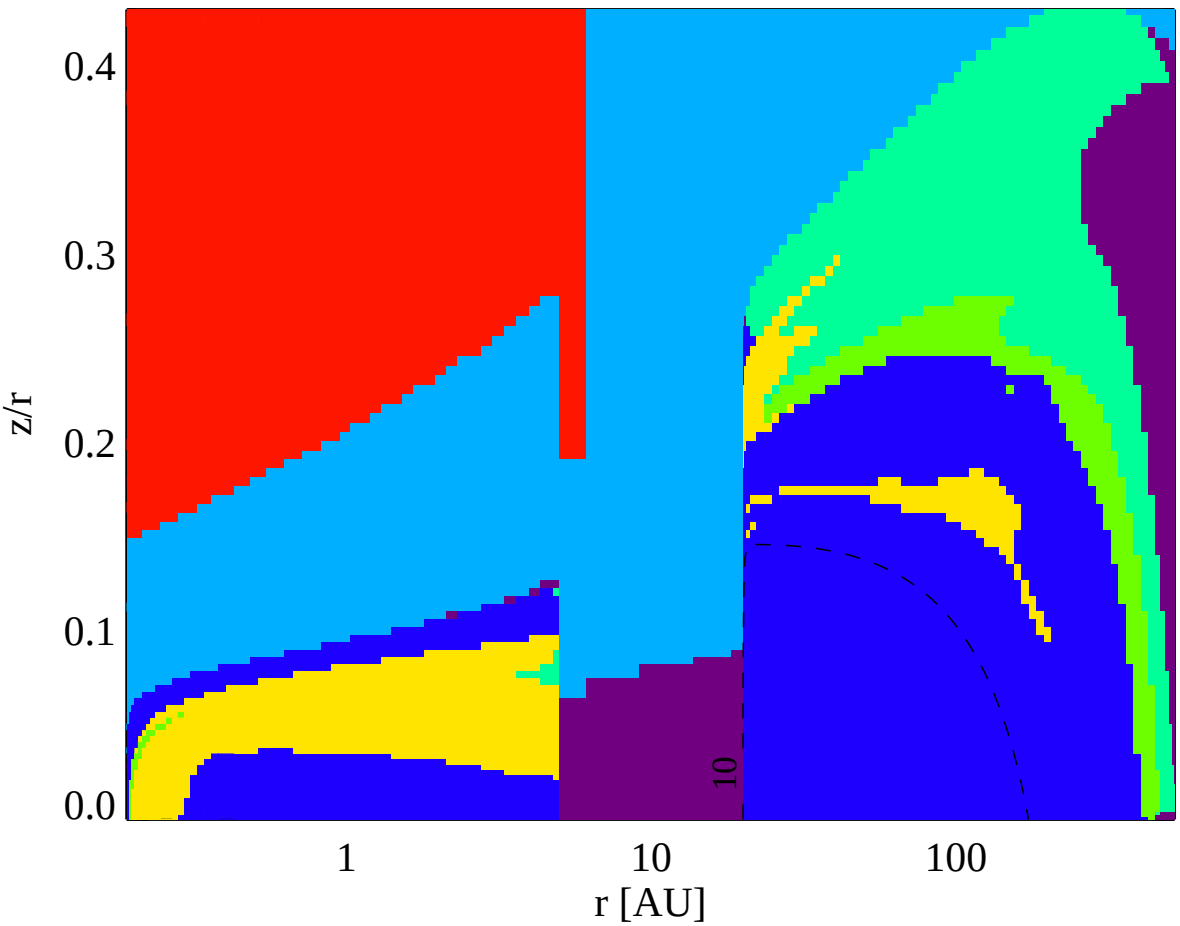

-2
0
2
4
6
8
log τ chem [yrs]
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]


-4
-2
0
2
4
log τ cool [yrs]
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

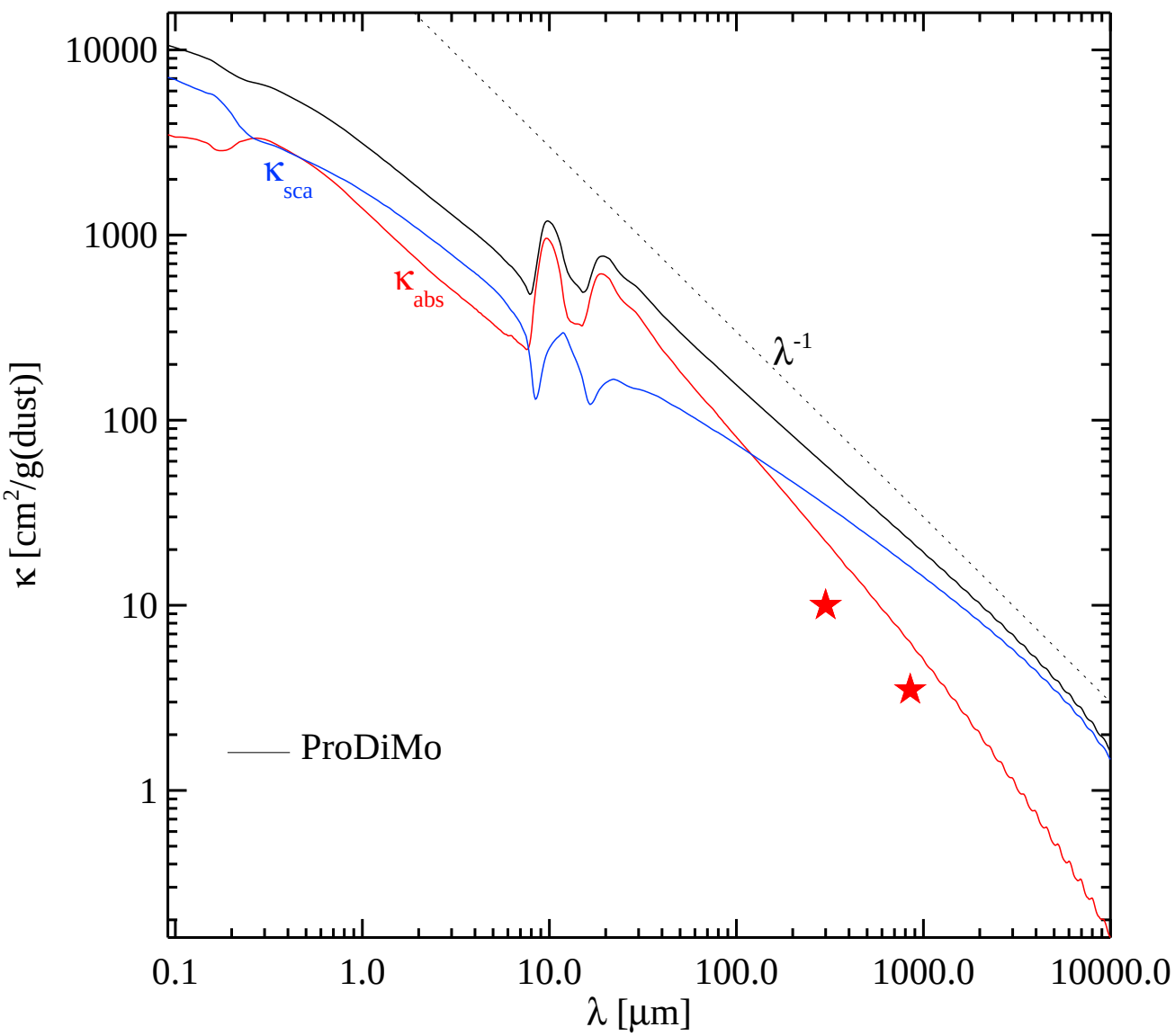

-22
-20
-18
-16
-14
-12
log κ Ross [1/cm]
0.4
0.3
0.2
0.1
0.0
z / r
1E-4
0.001
0.01
0.1
1
10
100
r [AU]

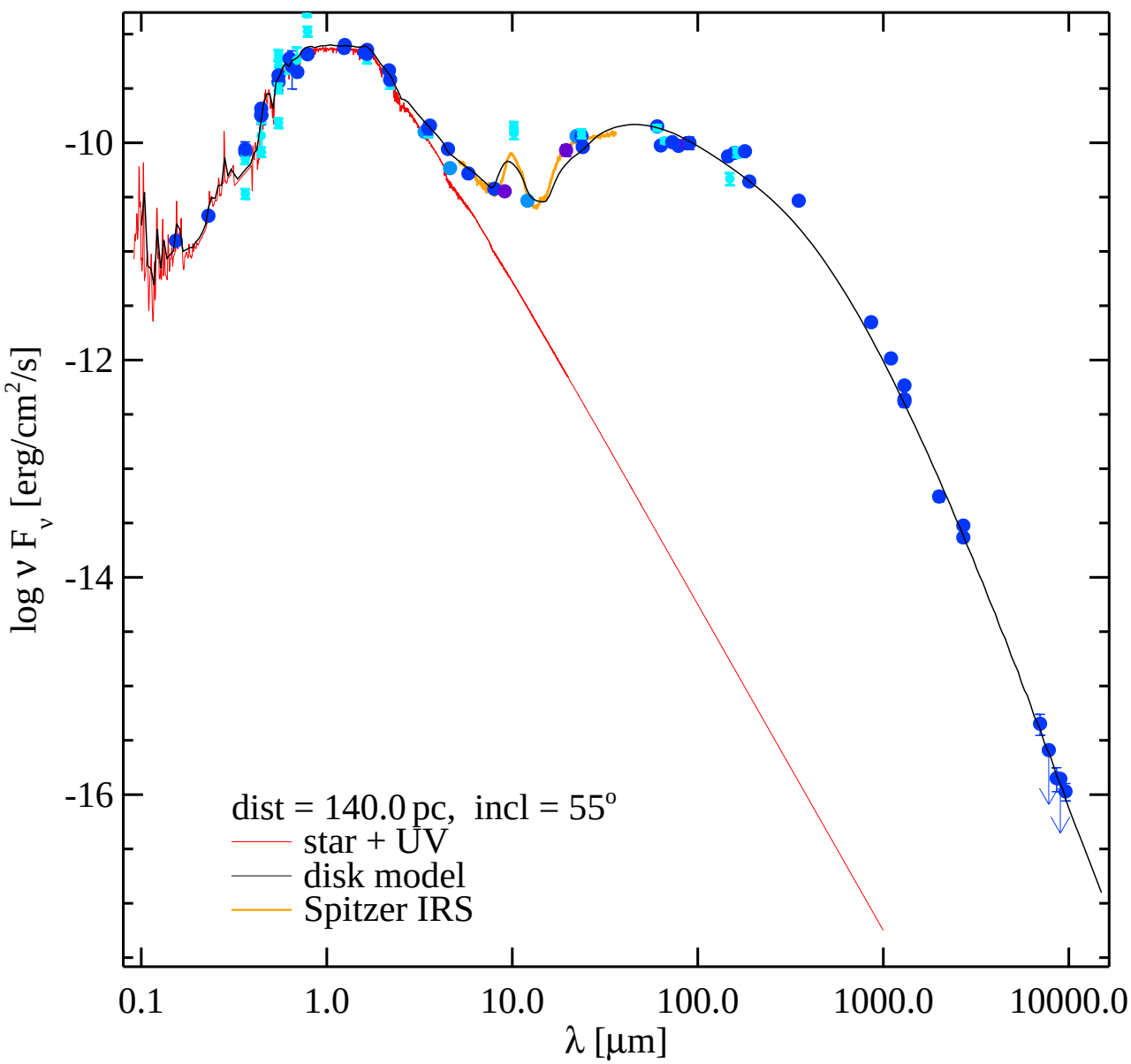

-0.5
0.0
0.5
1.0
log cT [km/s]
z / r
0.0
0.1
0.2
0.3
0.4
1
10
100
r [AU]
10
3
1
0.6
0.3

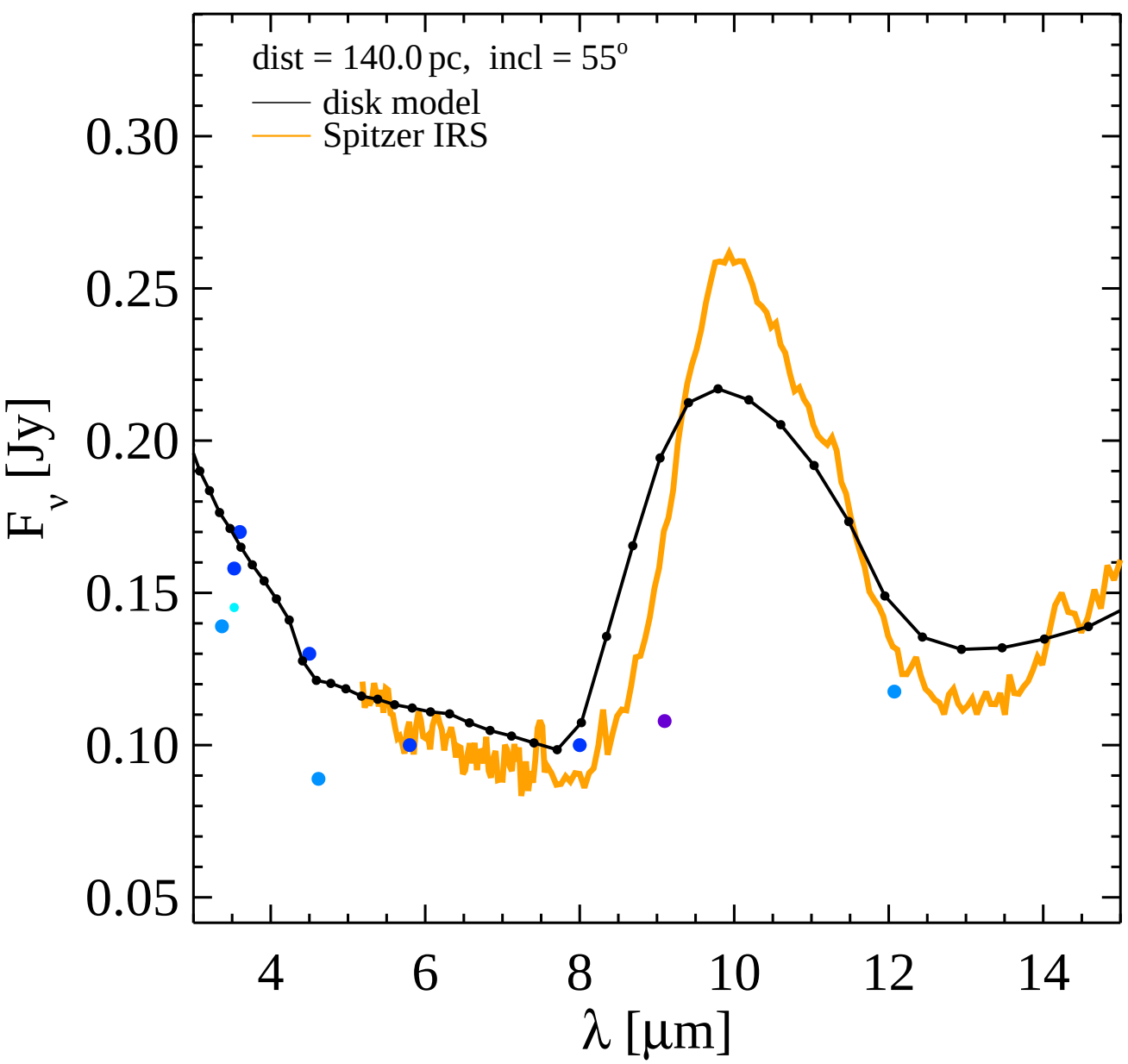

0.4
0.3
0.2
0.1
0.0
z/r
1
10
100
r [AU]
10
photo-electric heating
heating by coll. de-excitation of H2exc
heating by formation of H2 on dust
cosmic ray heating
IR background heating by CO ro-vib
background heating by CII
IR background heating by H2O rot-vib
X-ray Coulomb heating
X-ray H2 dissociation heating
chemical heating

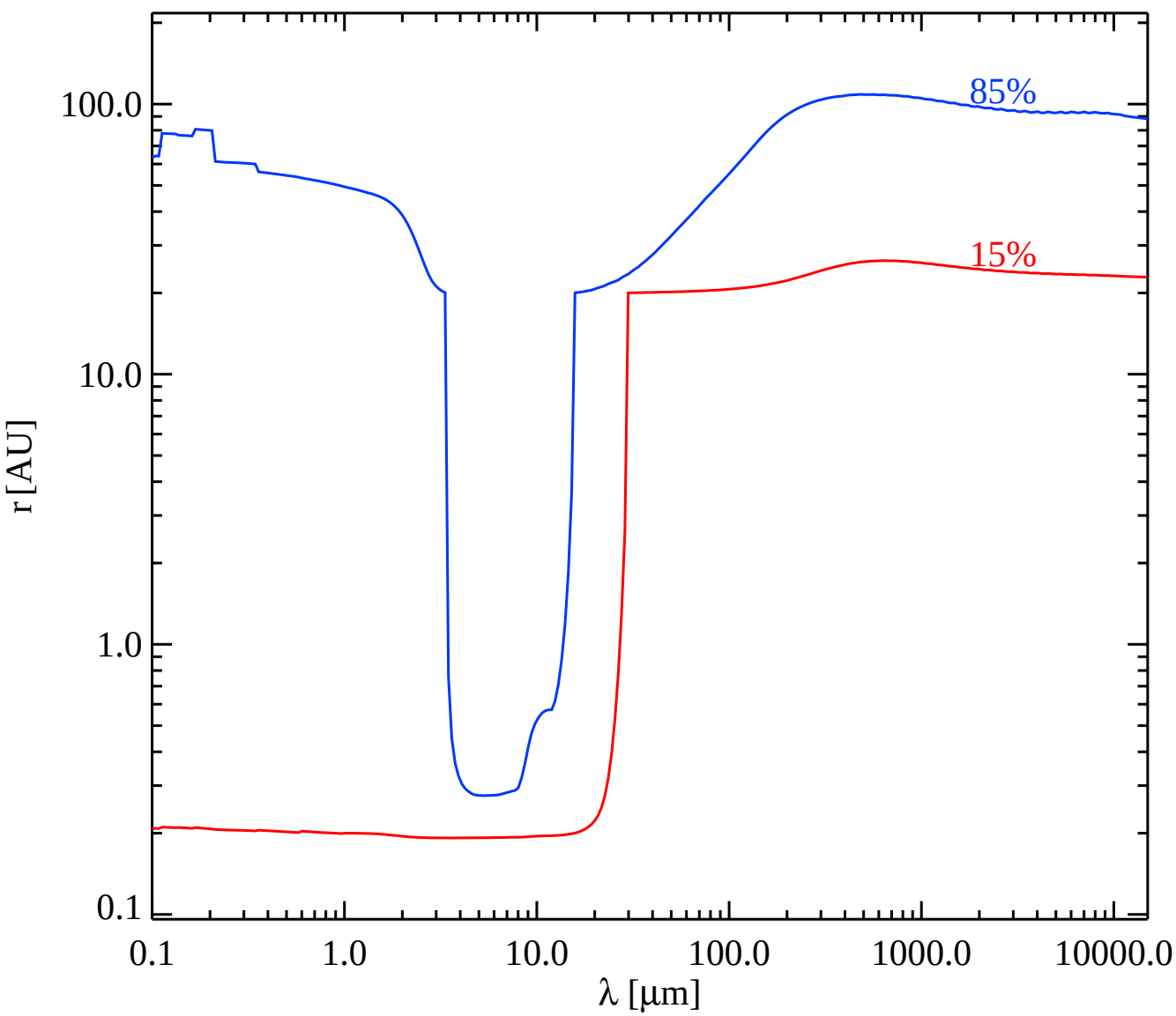


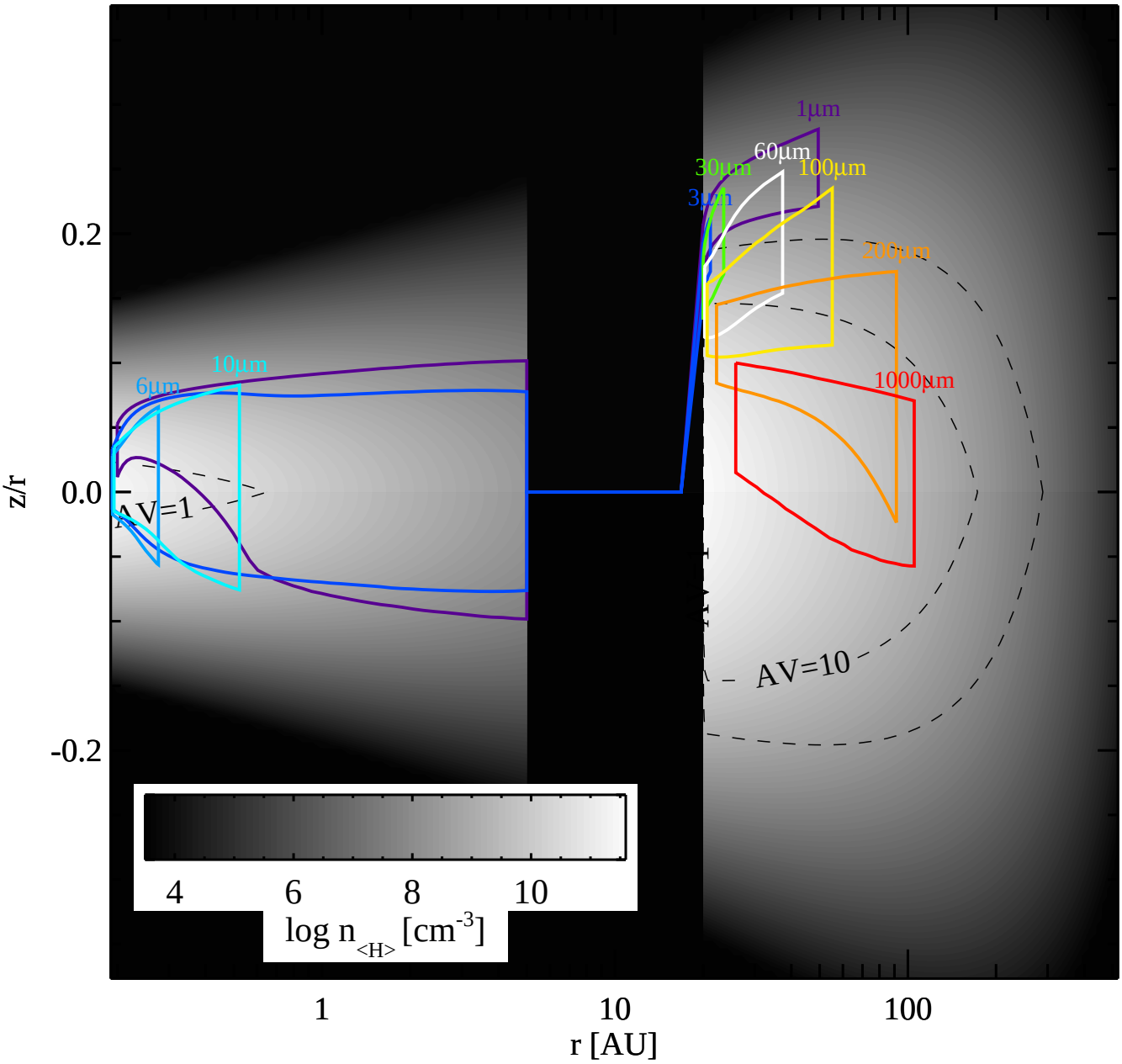
CII line cooling
cooling by thermal accomodation on grains
Ly-alpha line cooling
OI line cooling
CO rot & ro-vib cooling
H2O rot and rovib cooling
OIII line cooling

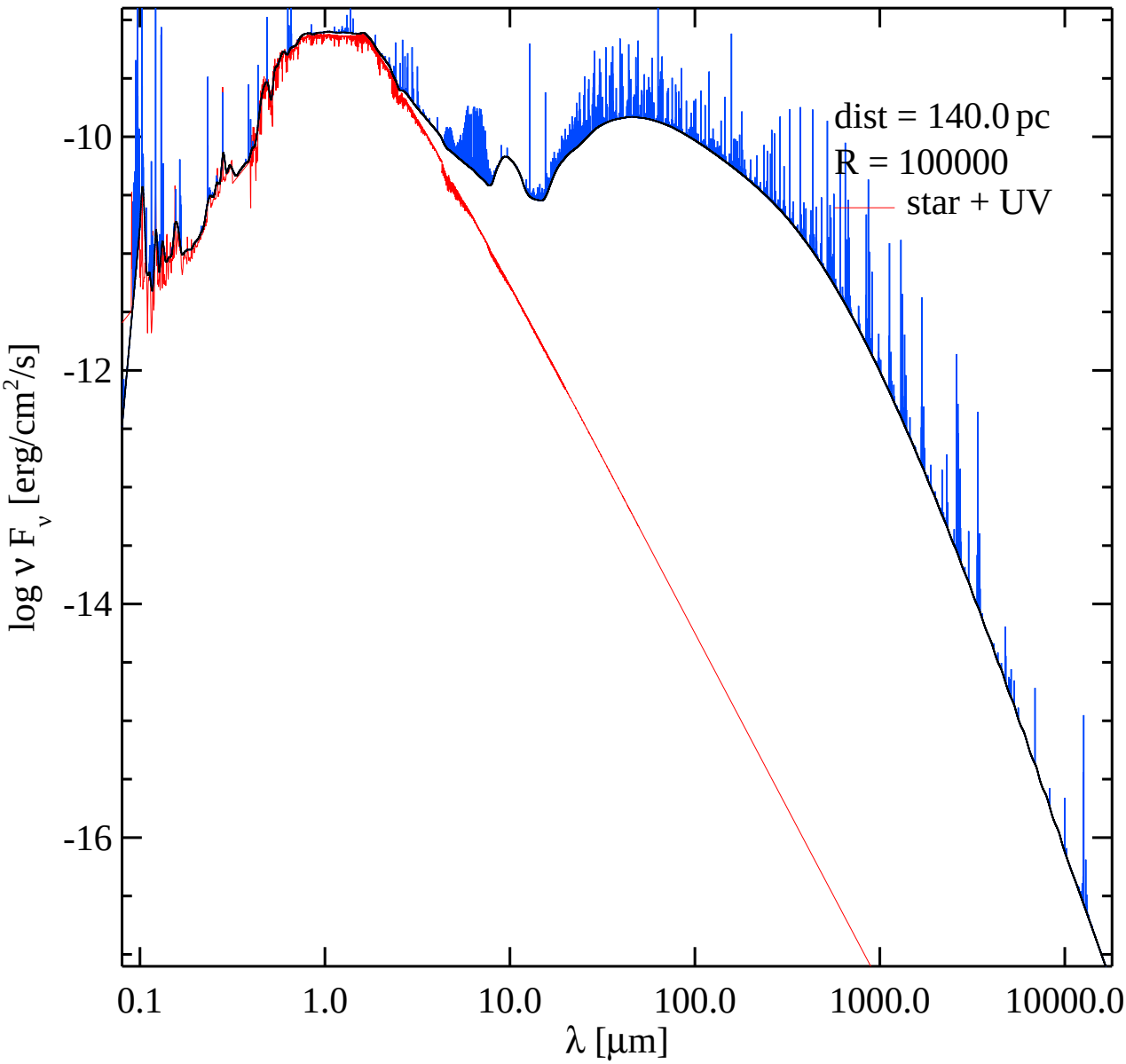

10000
1000
100
10
1
κ [cm²/g(dust)]
κsca
κabs
λ-1
ProDiMo
0.1
1.0
10.0
100.0
1000.0
10000.0
λ [μm]

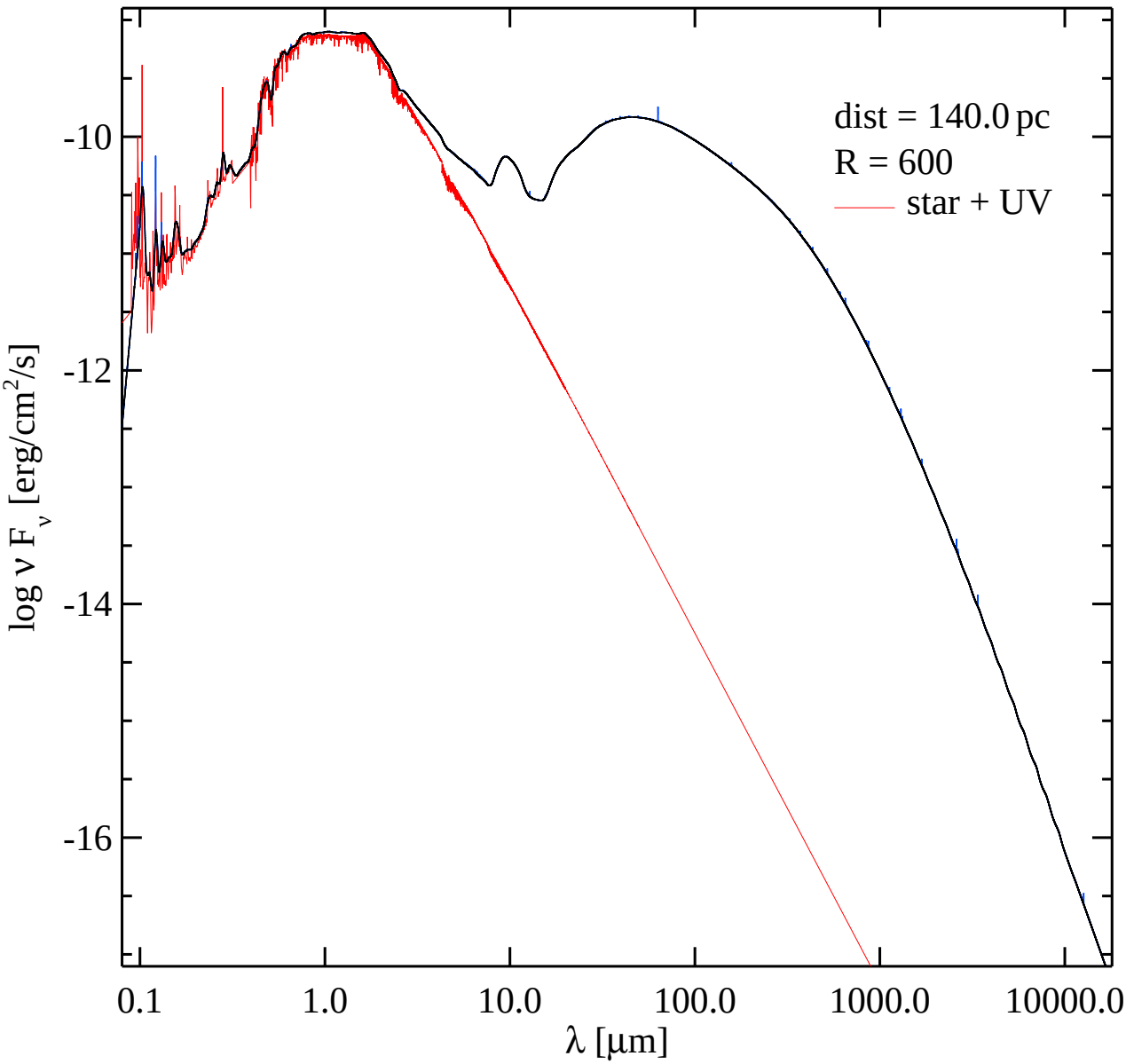

-10
-12
-14
-16
log ν F_ν [erg/cm²/s]
0.1
1.0
10.0
100.0
1000.0
10000.0
λ [μm]
dist = 140.0 pc, incl = 55°
star + UV
disk model
Spitzer IRS

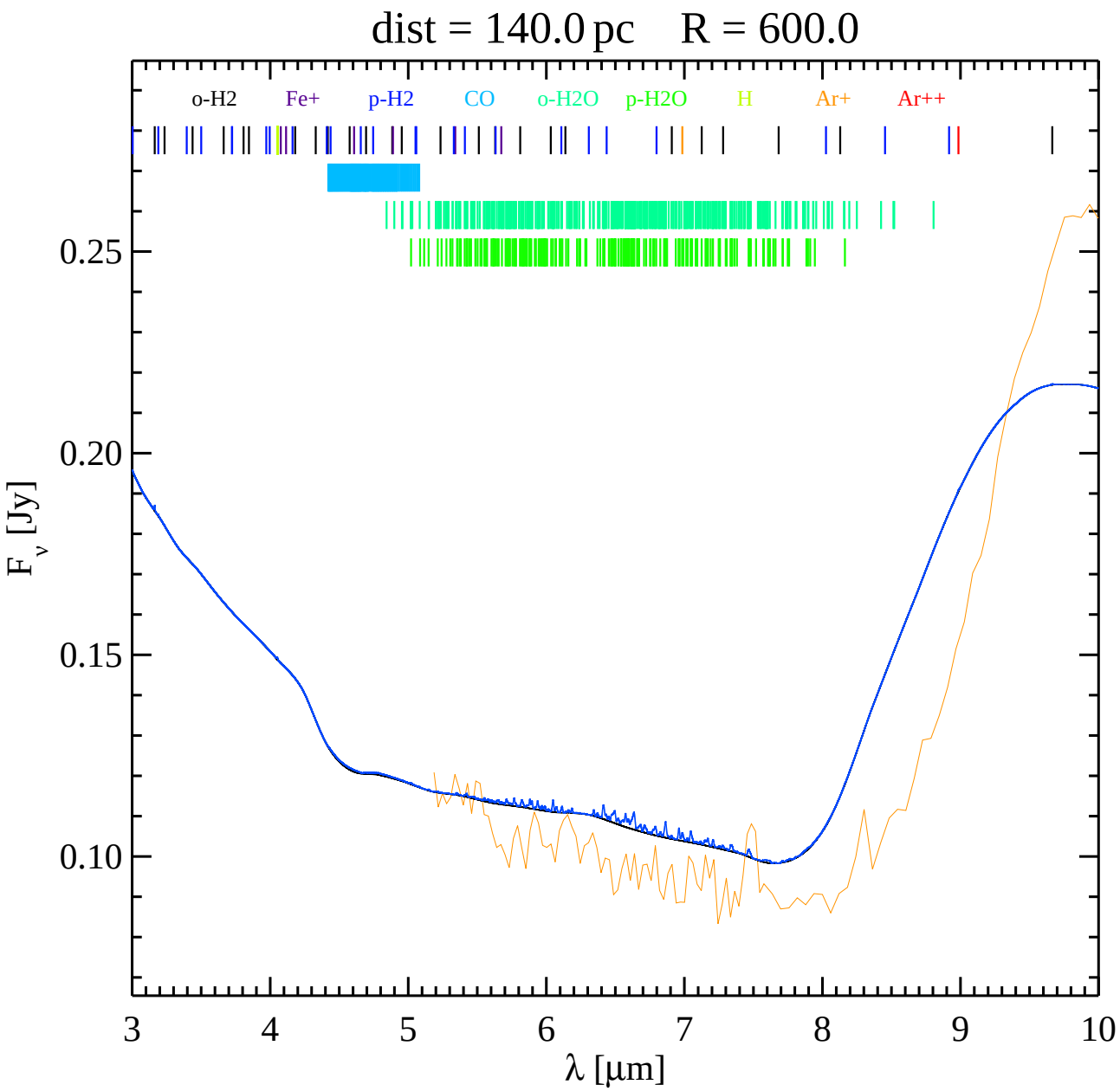

dist = 140.0 pc, incl = 55°
disk model
Spitzer IRS
0.30
0.25
0.20
0.15
0.10
0.05
F_ν [Jy]
4
6
8
10
12
14
λ [μm]

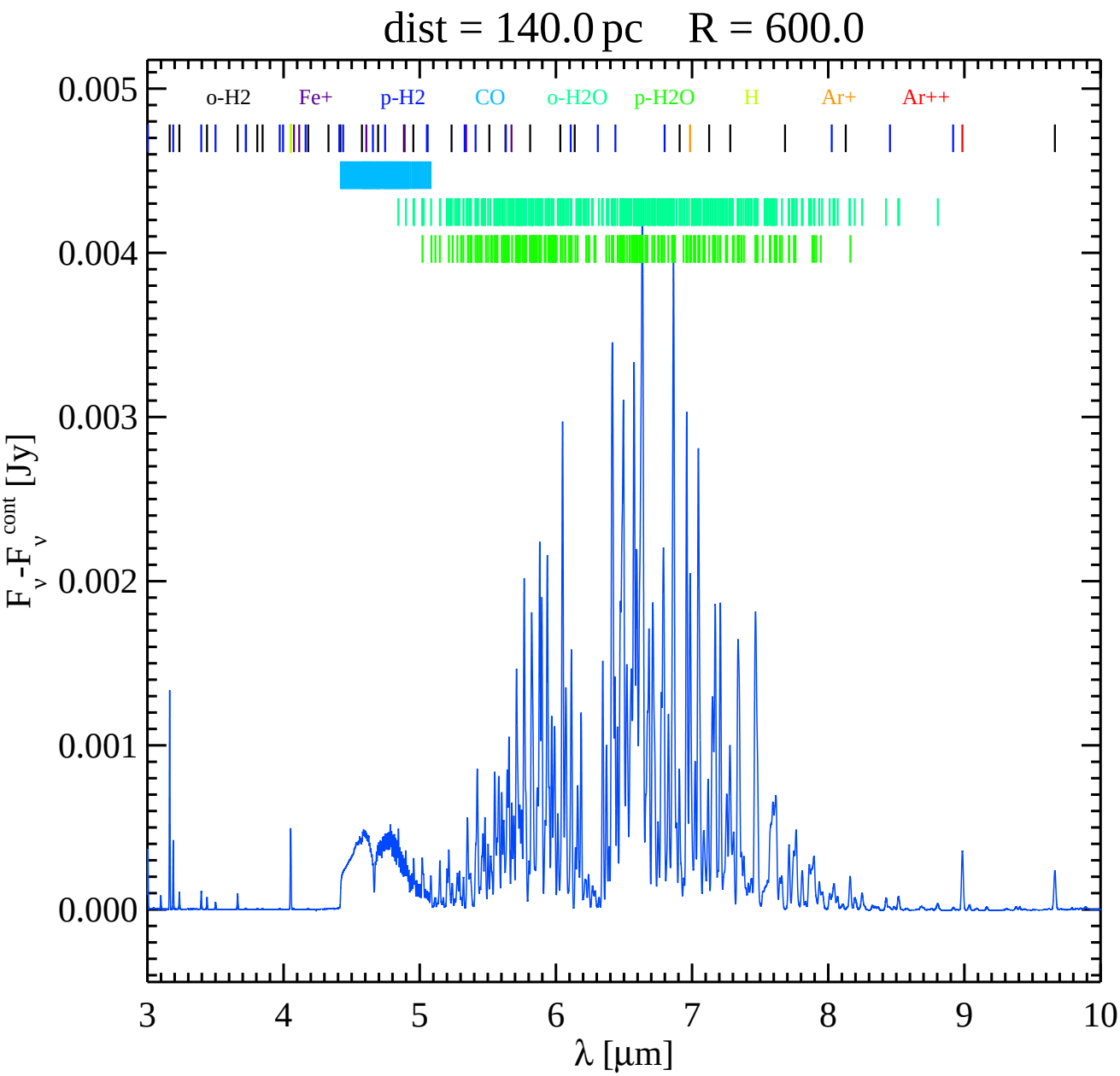

100.0
10.0
1.0
0.1
r [AU]
0.1
1.0
10.0
100.0
1000.0
10000.0
λ [μm]
85%
15%

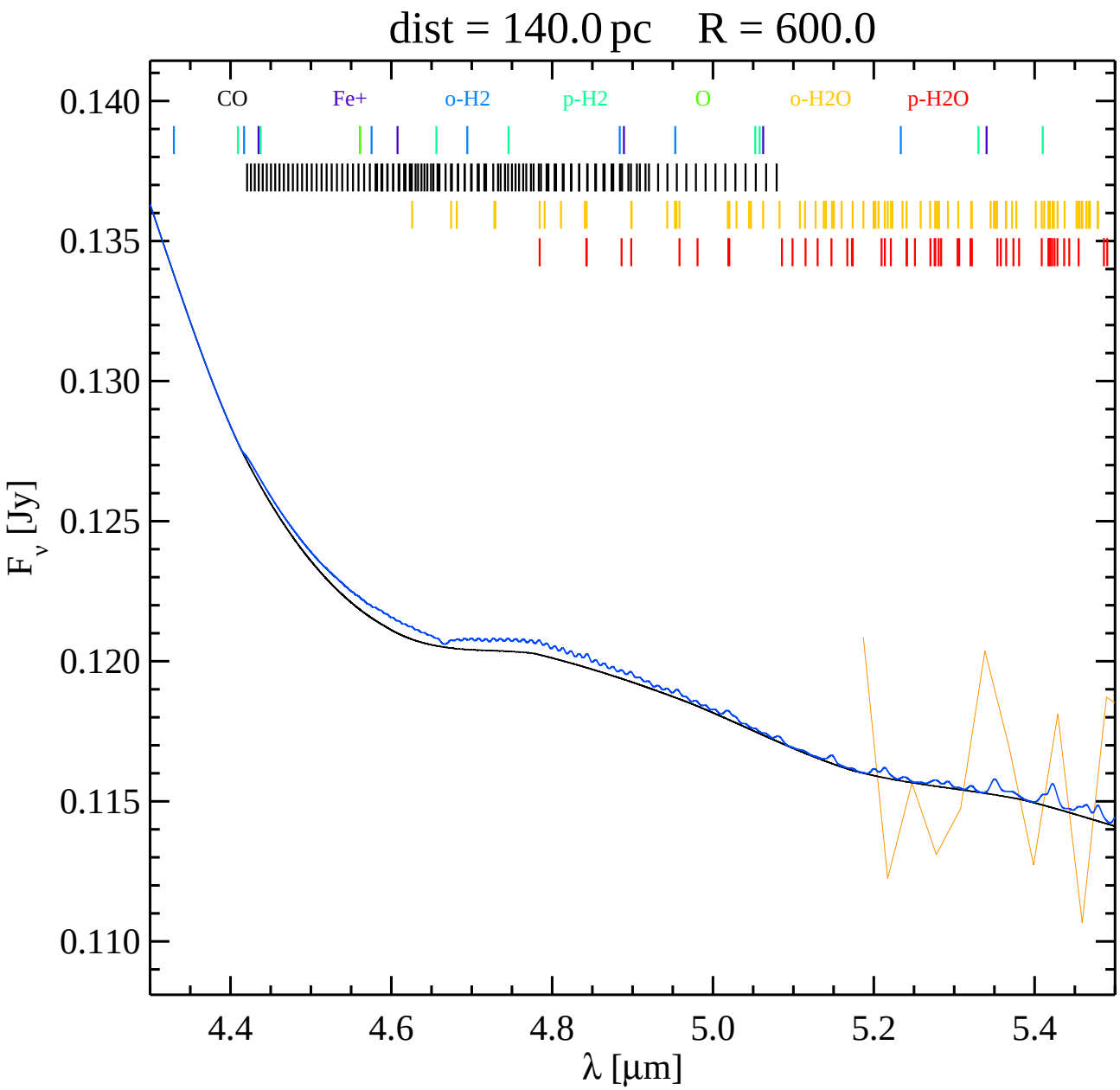

1µm
60µm
30µm
100µm
3µm
200µm
1000µm
10µm
6µm
AV=1
AV=10
0.2
0.0
-0.2
z/r
4
6
8
10
log n<H> [cm-3]
1
10
100
r [AU]

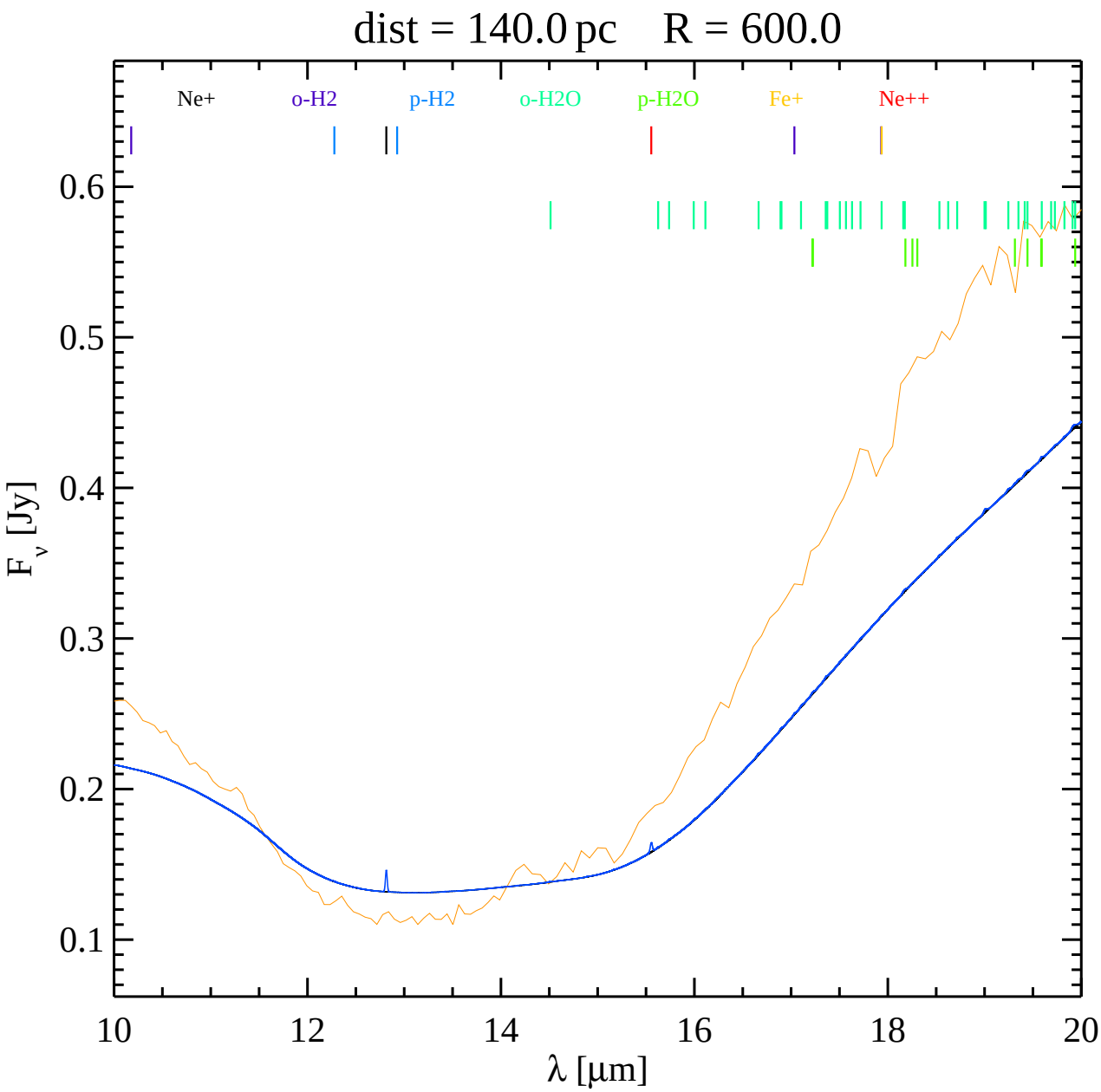

dist = 140.0 pc
R = 100000
star + UV
-10
-12
-14
-16
log ν F_ν [erg/cm²/s]
0.1
1.0
10.0
100.0
1000.0
10000.0
λ [μm]

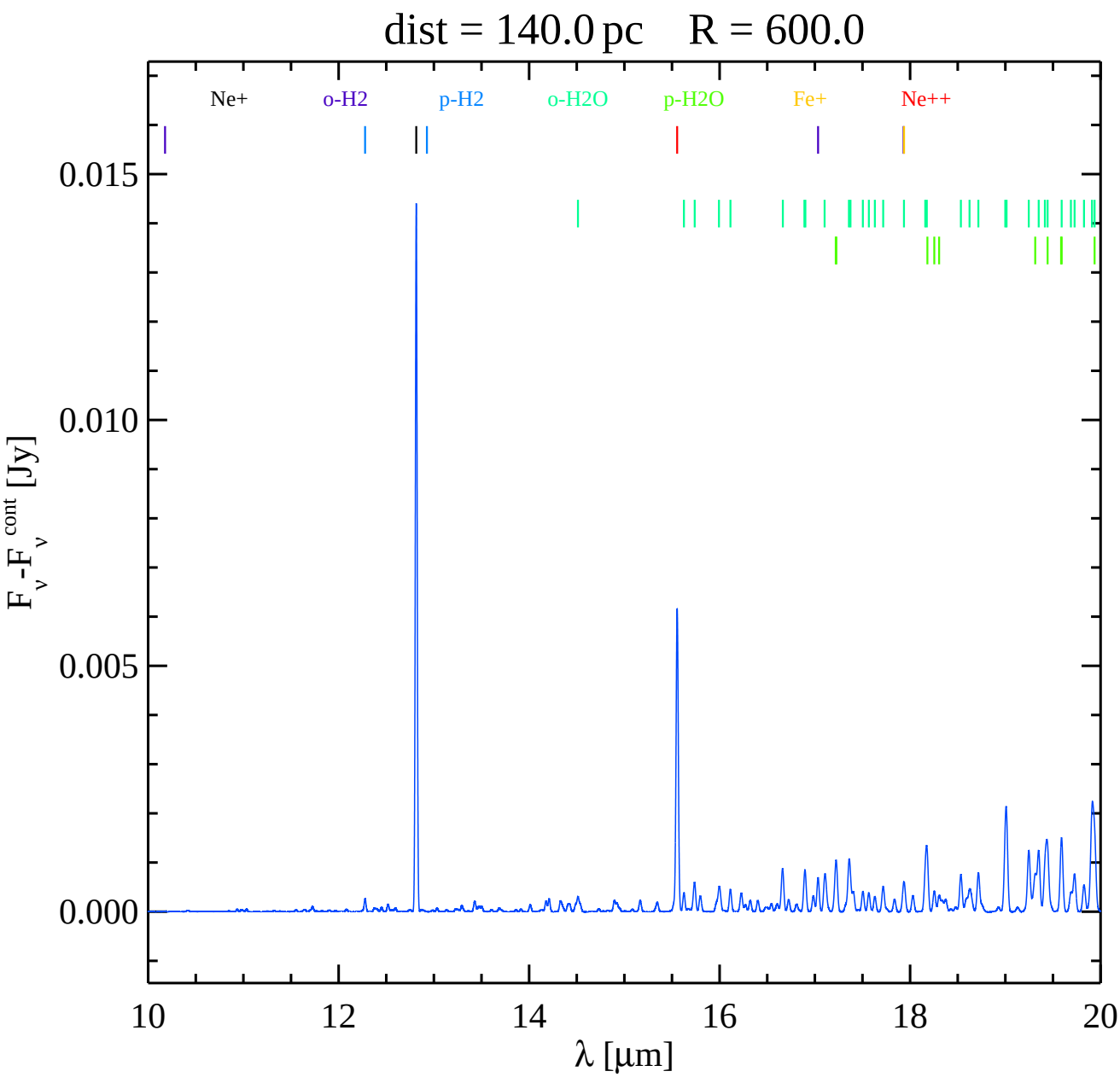

dist = 140.0 pc
R = 600
star + UV
-10
-12
-14
-16
log ν F_ν [erg/cm²/s]
0.1
1.0
10.0
100.0
1000.0
10000.0
λ [μm]

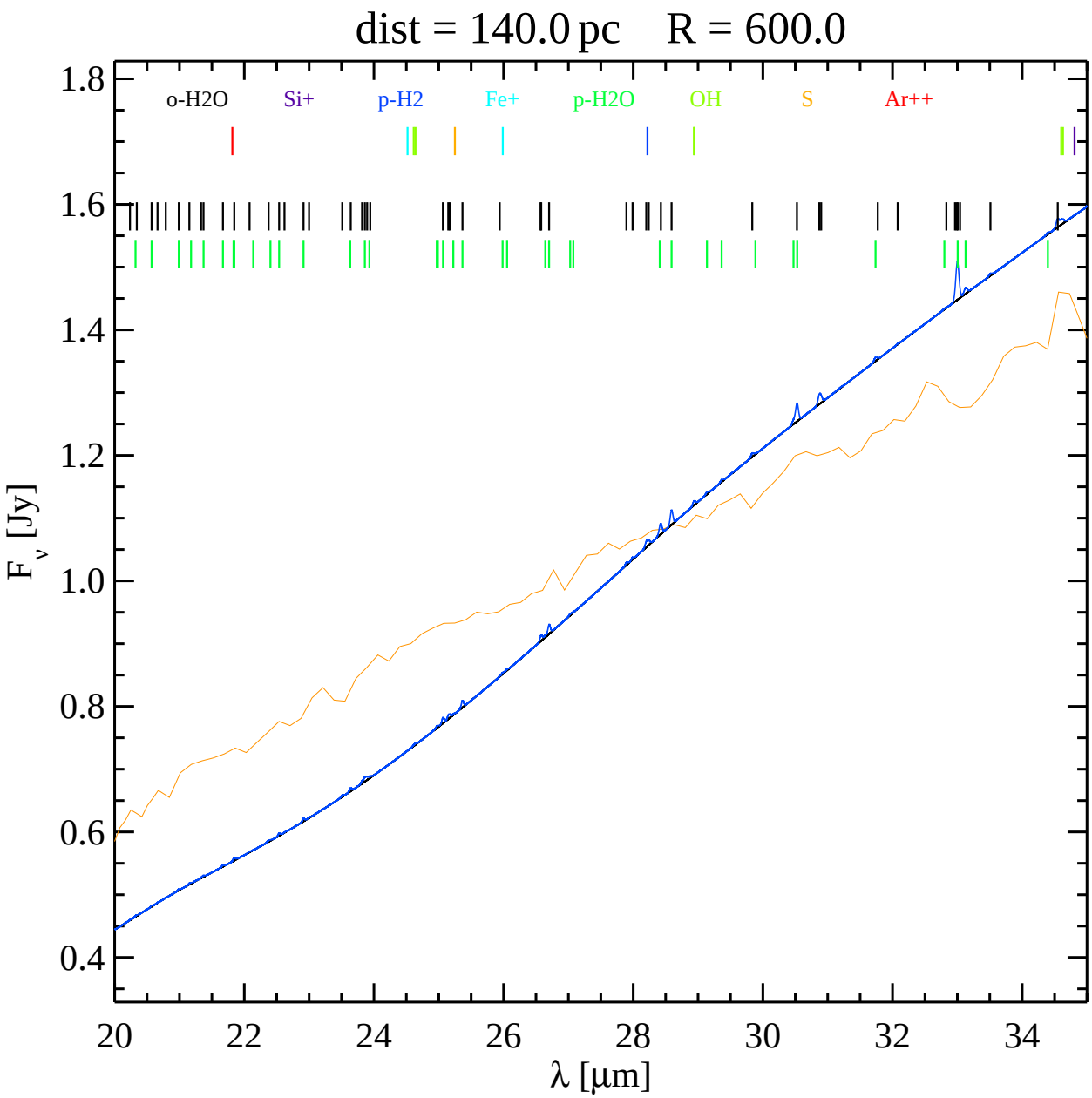

dist = 140.0 pc R = 600.0
o-H2
Fe+
p-H2
CO
o-H2O
p-H2O
H
Ar+
Ar++
0.25
0.20
0.15
0.10
F_ν [Jy]
3
4
5
6
7
8
9
10
λ [μm]

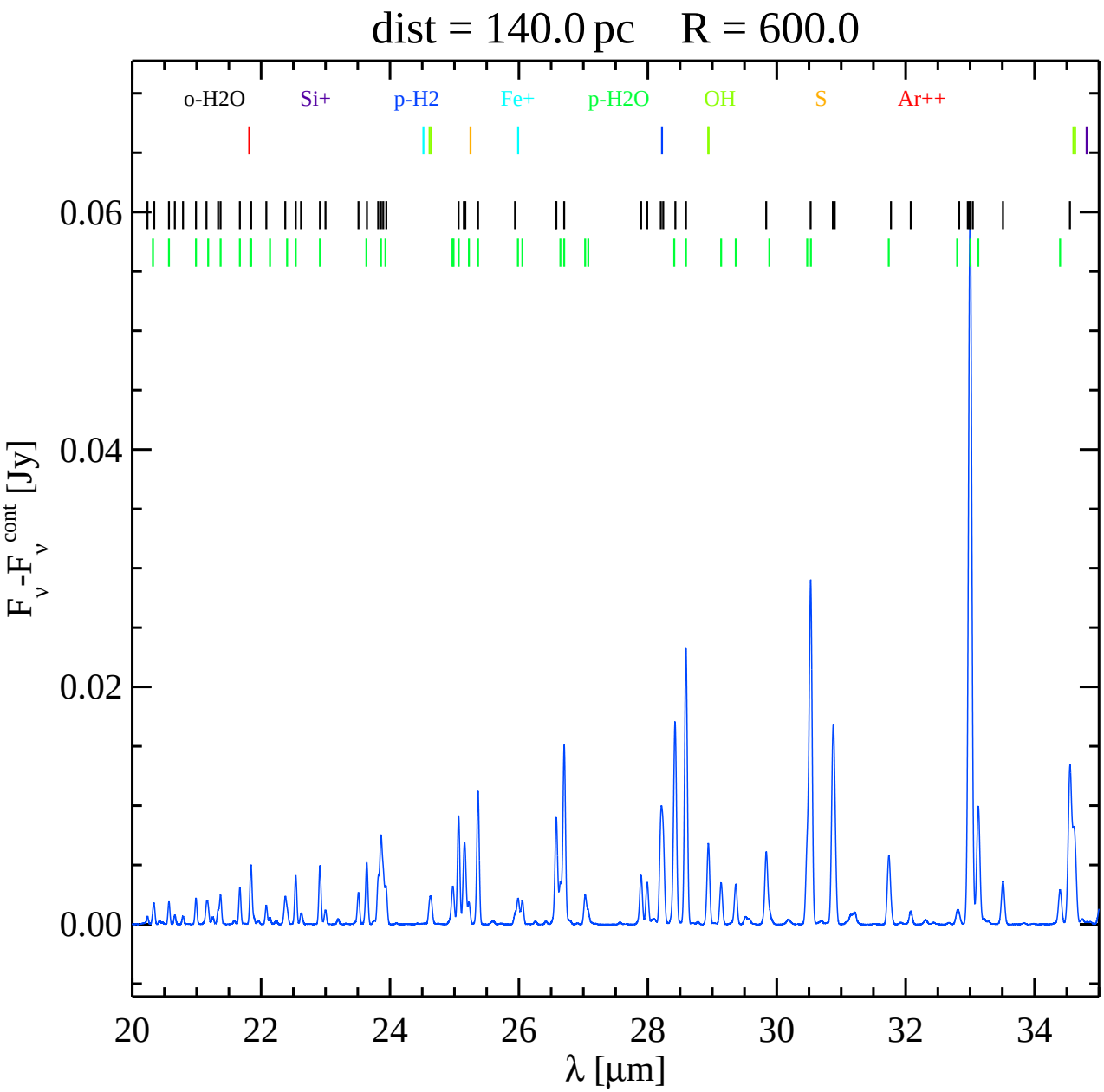

dist = 140.0 pc R = 600.0
o-H2
Fe+
p-H2
CO
o-H2O
p-H2O
H
Ar+
Ar++
0.005
0.004
0.003
0.002
0.001
0.000
F_ν - F_ν^cont [Jy]
3
4
5
6
7
8
9
10
λ [μm]

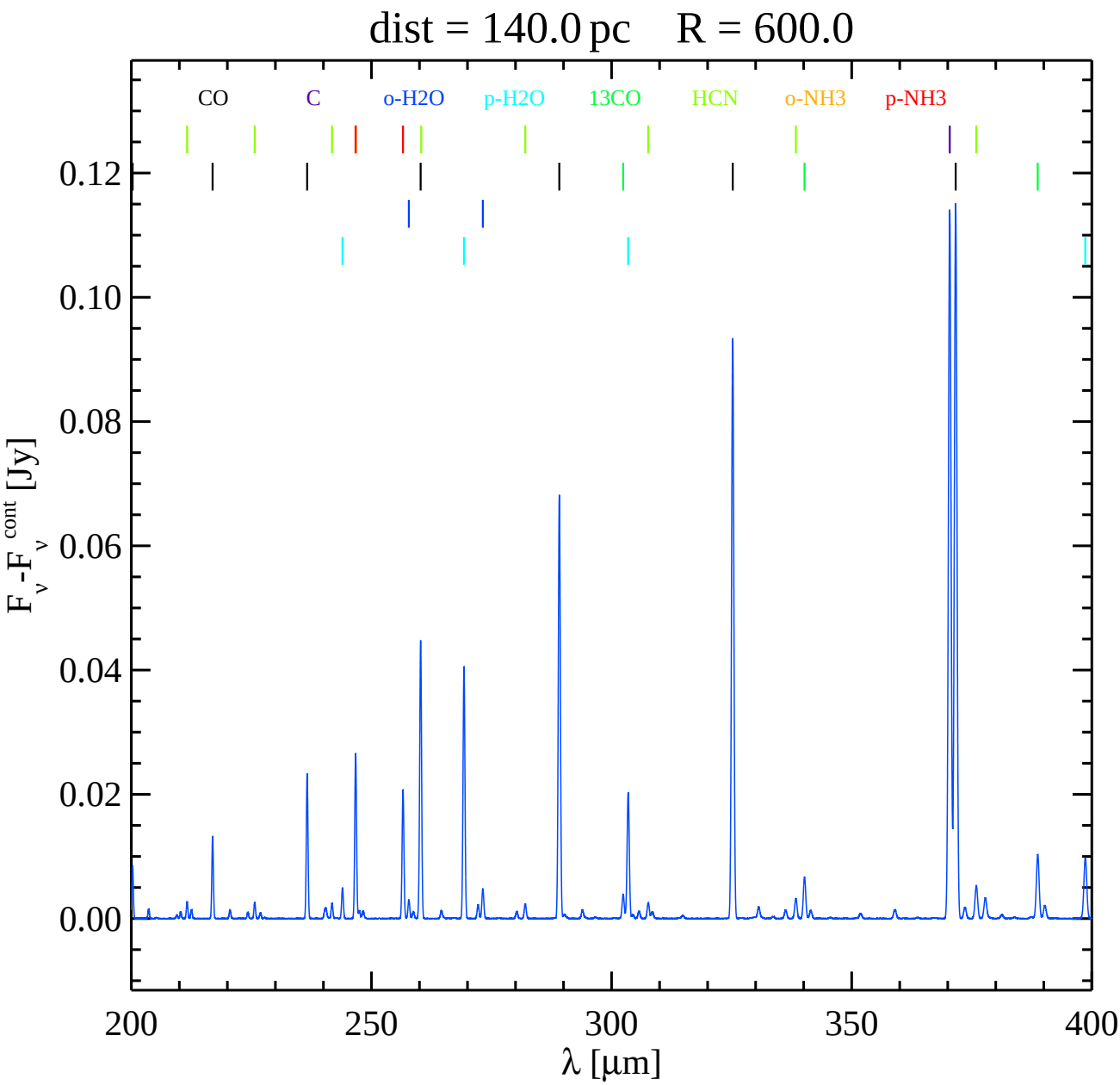

dist = 140.0 pc R = 600.0
CO
Fe+
o-H2
p-H2
O
o-H2O
p-H2O
0.140
0.135
0.130
0.125
0.120
0.115
0.110
F_ν [Jy]
4.4
4.6
4.8
5.0
5.2
5.4
λ [μm]

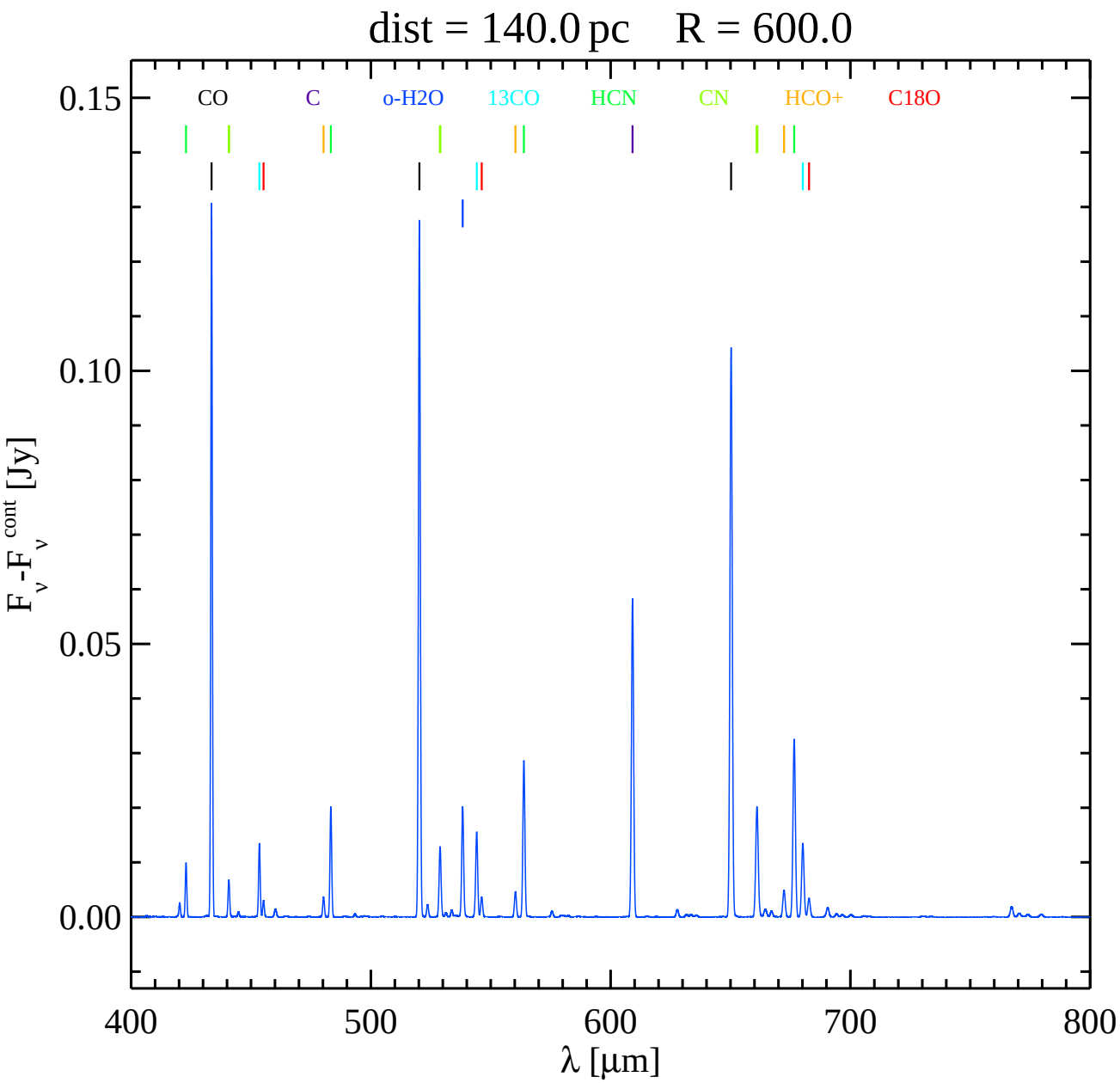

dist = 140.0 pc R = 600.0
Ne+
o-H2
p-H2
o-H2O
p-H2O
Fe+
Ne++
0.6
0.5
0.4
0.3
0.2
0.1
F_ν [Jy]
10
12
14
16
18
20
λ [μm]

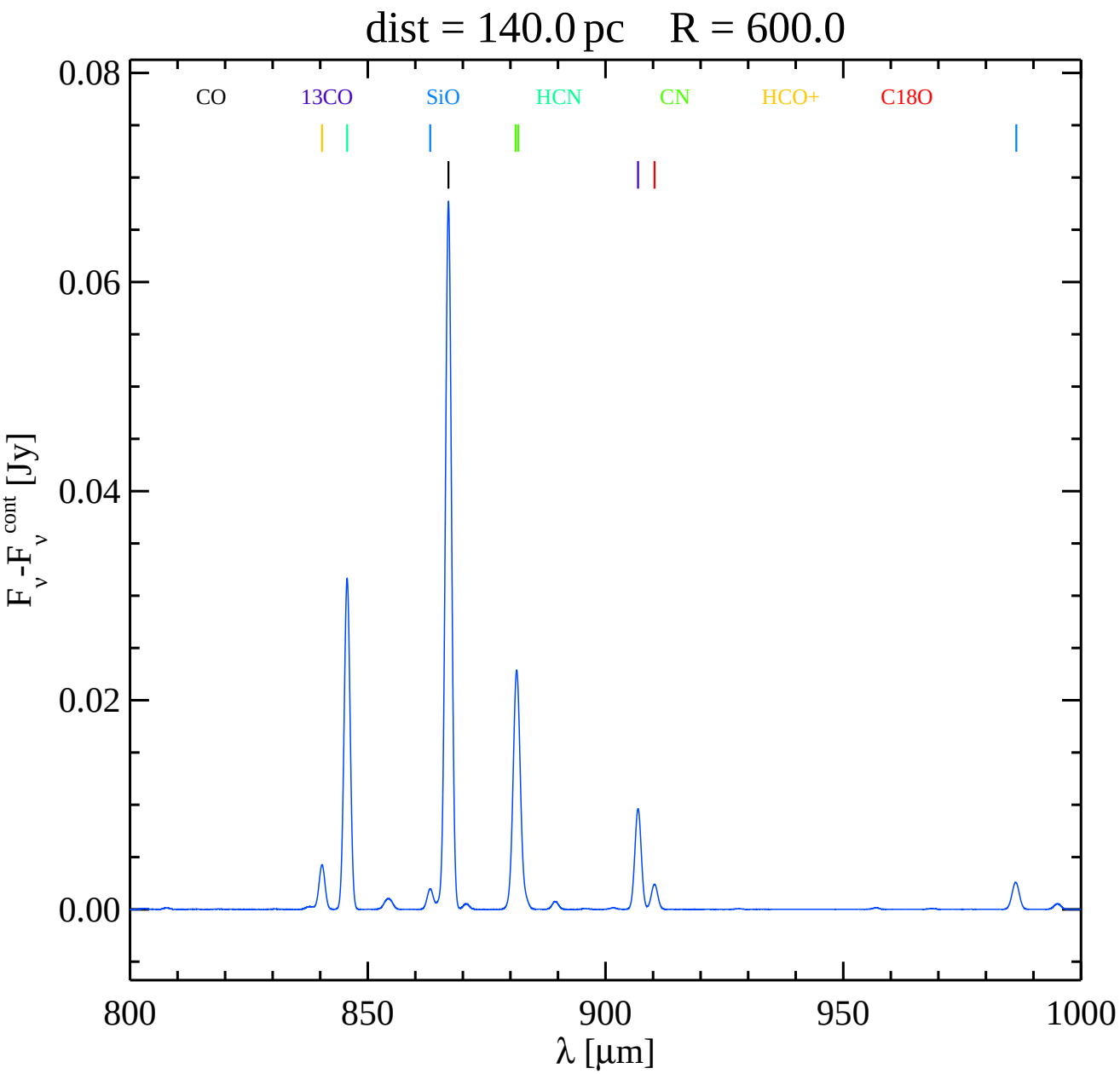

dist = 140.0 pc R = 600.0
Ne+
o-H2
p-H2
o-H2O
p-H2O
Fe+
Ne++
0.015
0.010
0.005
0.000
F_ν -F_ν^cont [Jy]
10
12
14
16
18
20
λ [μm]

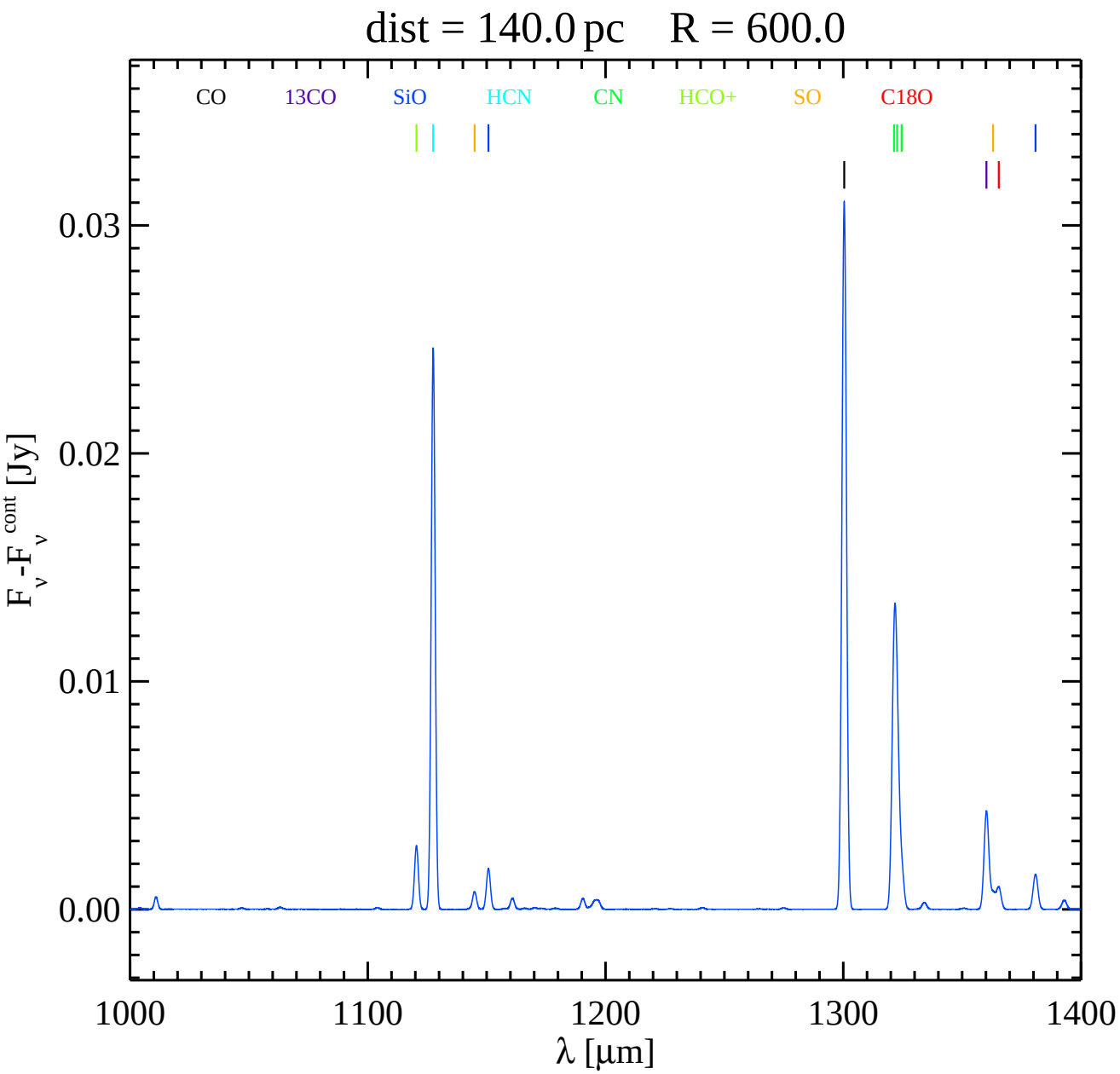

dist = 140.0 pc R = 600.0
o-H2O
Si+
p-H2
Fe+
p-H2O
OH
S
Ar++
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
F_ν [Jy]
20
22
24
26
28
30
32
34
λ [μm]

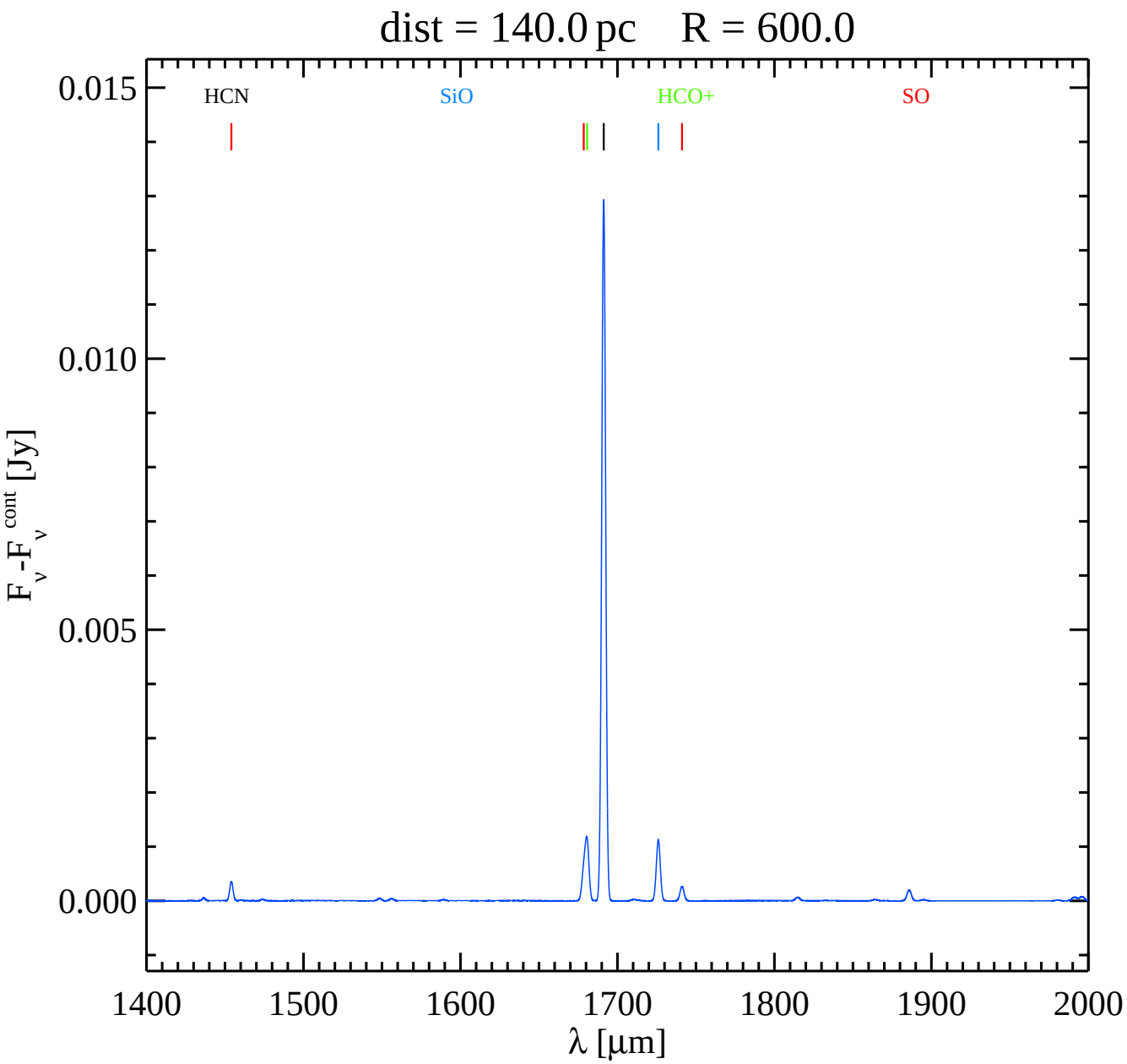

dist = 140.0 pc R = 600.0
o-H2O
Si+
p-H2
Fe+
p-H2O
OH
S
Ar++
0.06
0.04
0.02
0.00
F_ν -F_ν^cont [Jy]
20
22
24
26
28
30
32
34
λ [μm]

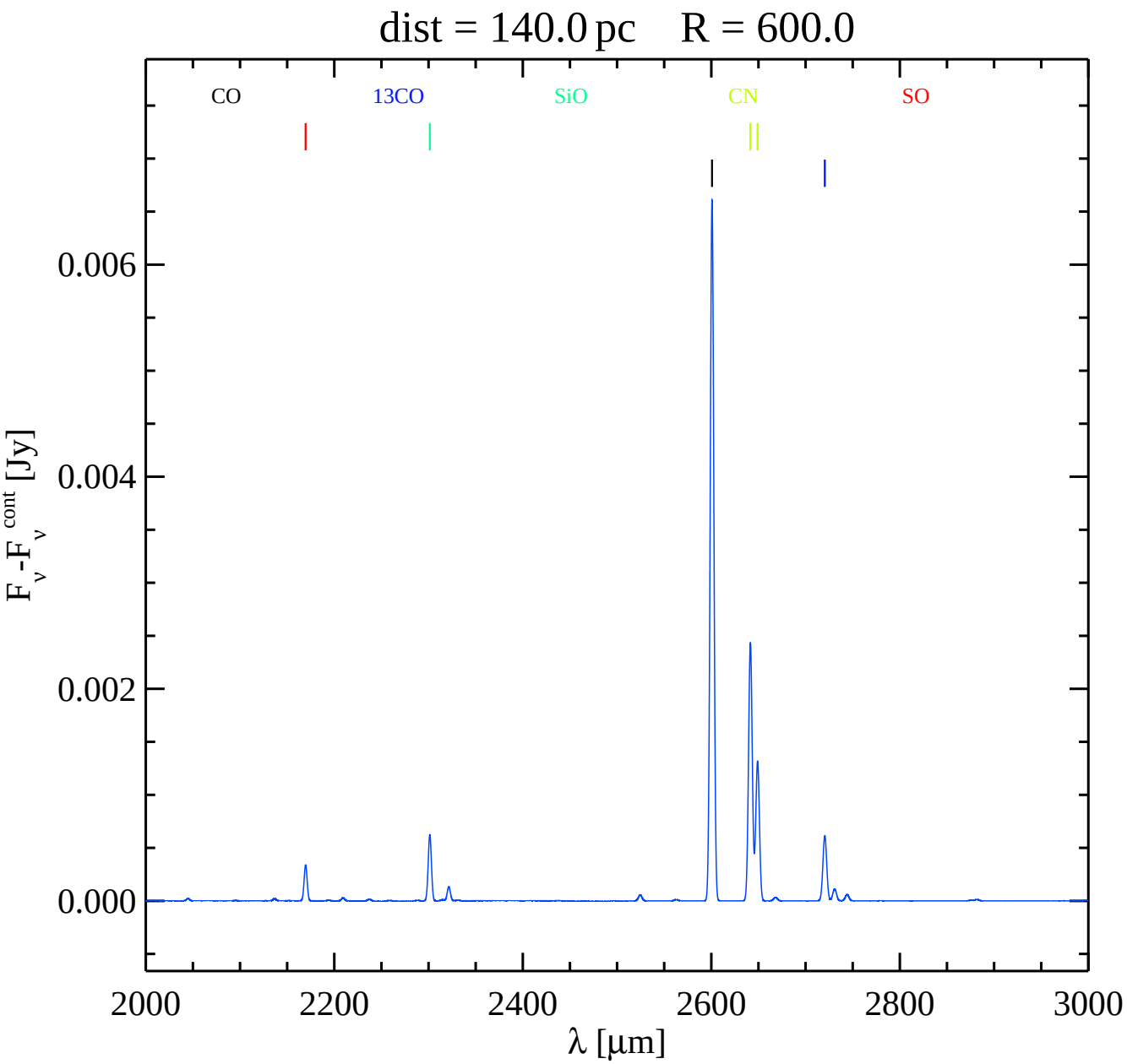

dist = 140.0 pc R = 600.0
CO
C
o-H2O
p-H2O
13CO
HCN
o-NH3
p-NH3
0.12
0.10
0.08
0.06
0.04
0.02
0.00
F_ν -F_ν^cont [Jy]
200
250
300
350
400
λ [μm]

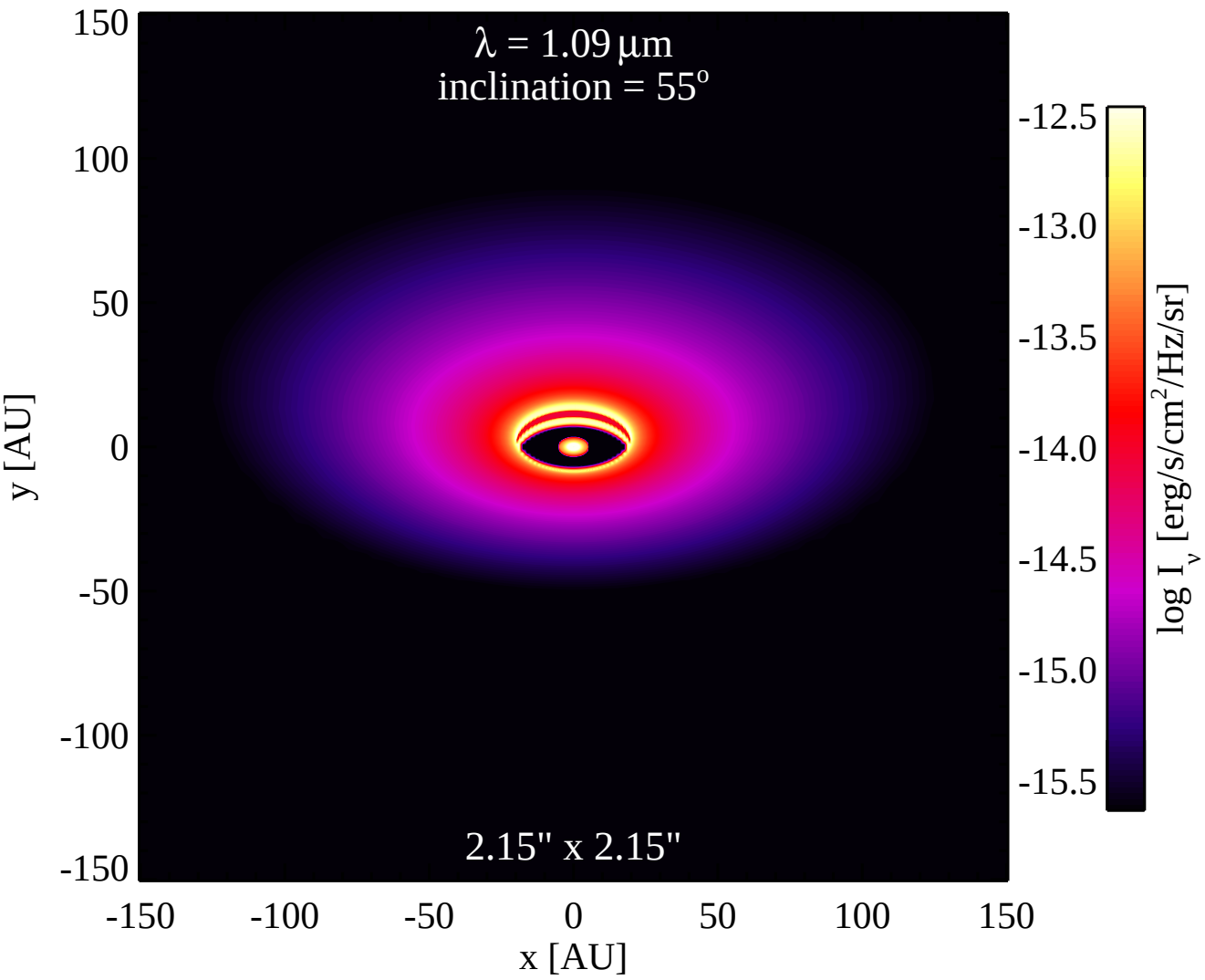

dist = 140.0 pc R = 600.0
CO
C
o-H2O
13CO
HCN
CN
HCO+
C18O
0.15
0.10
0.05
0.00
F_ν -F_ν^cont [Jy]
400
500
600
700
800
λ [μm]

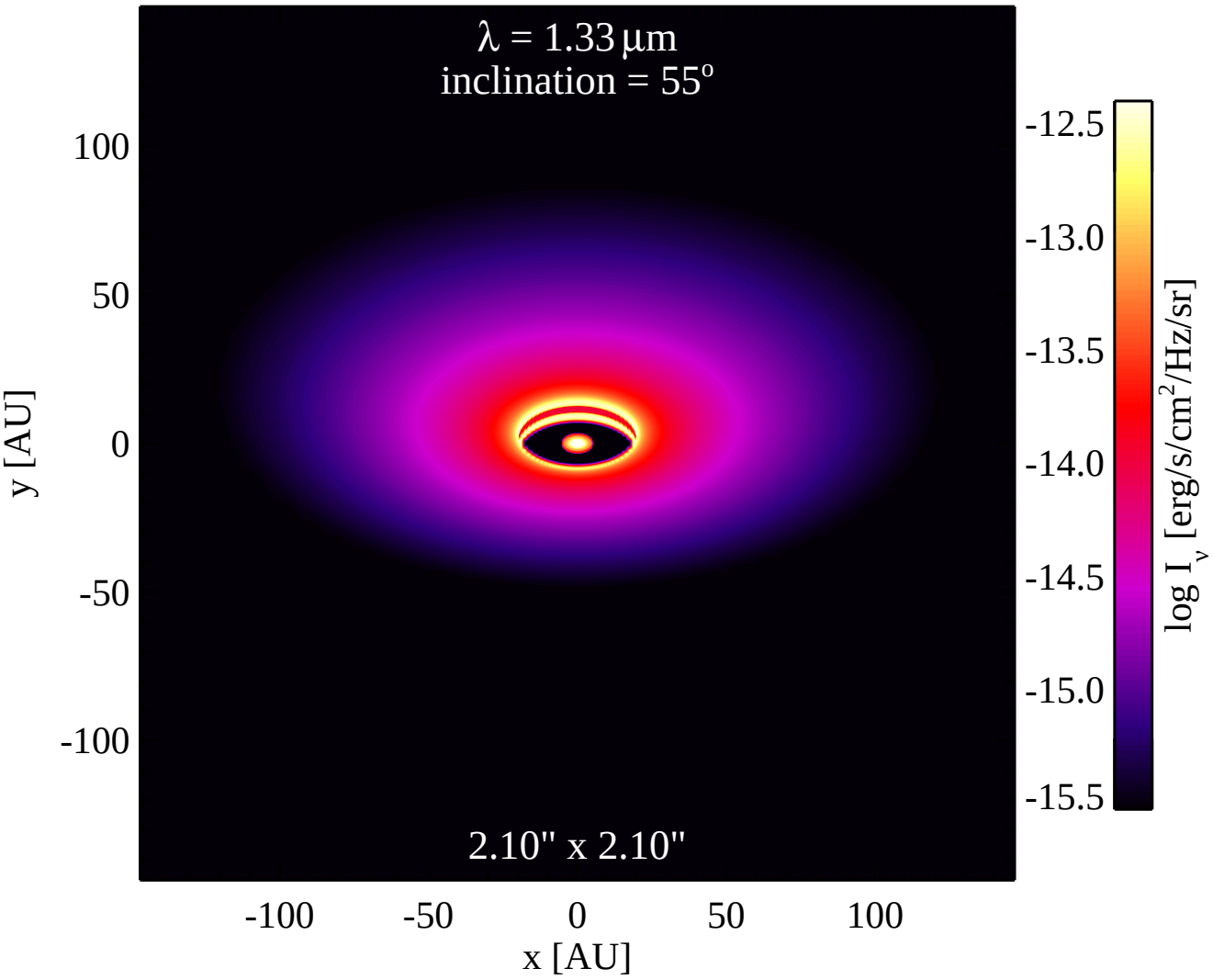

dist = 140.0 pc R = 600.0
CO
13CO
SiO
HCN
CN
HCO+
C18O
0.08
0.06
0.04
0.02
0.00
F_ν -F_ν^cont [Jy]
800
850
900
950
1000
λ [μm]

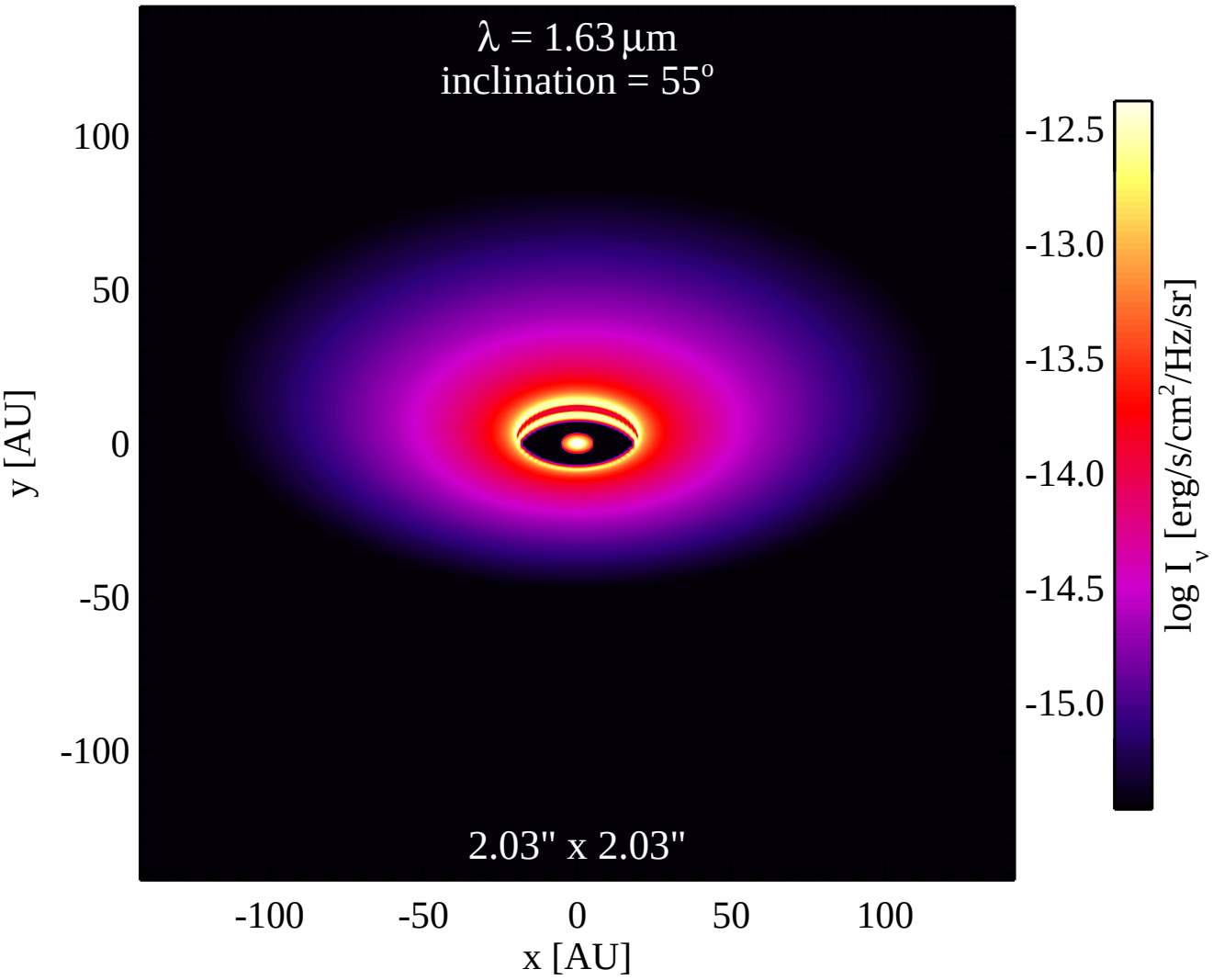

dist = 140.0 pc R = 600.0
CO
13CO
SiO
HCN
CN
HCO+
SO
C18O
0.03
0.02
0.01
0.00
F_ν -F_ν^cont [Jy]
1000
1100
1200
1300
1400
λ [μm]

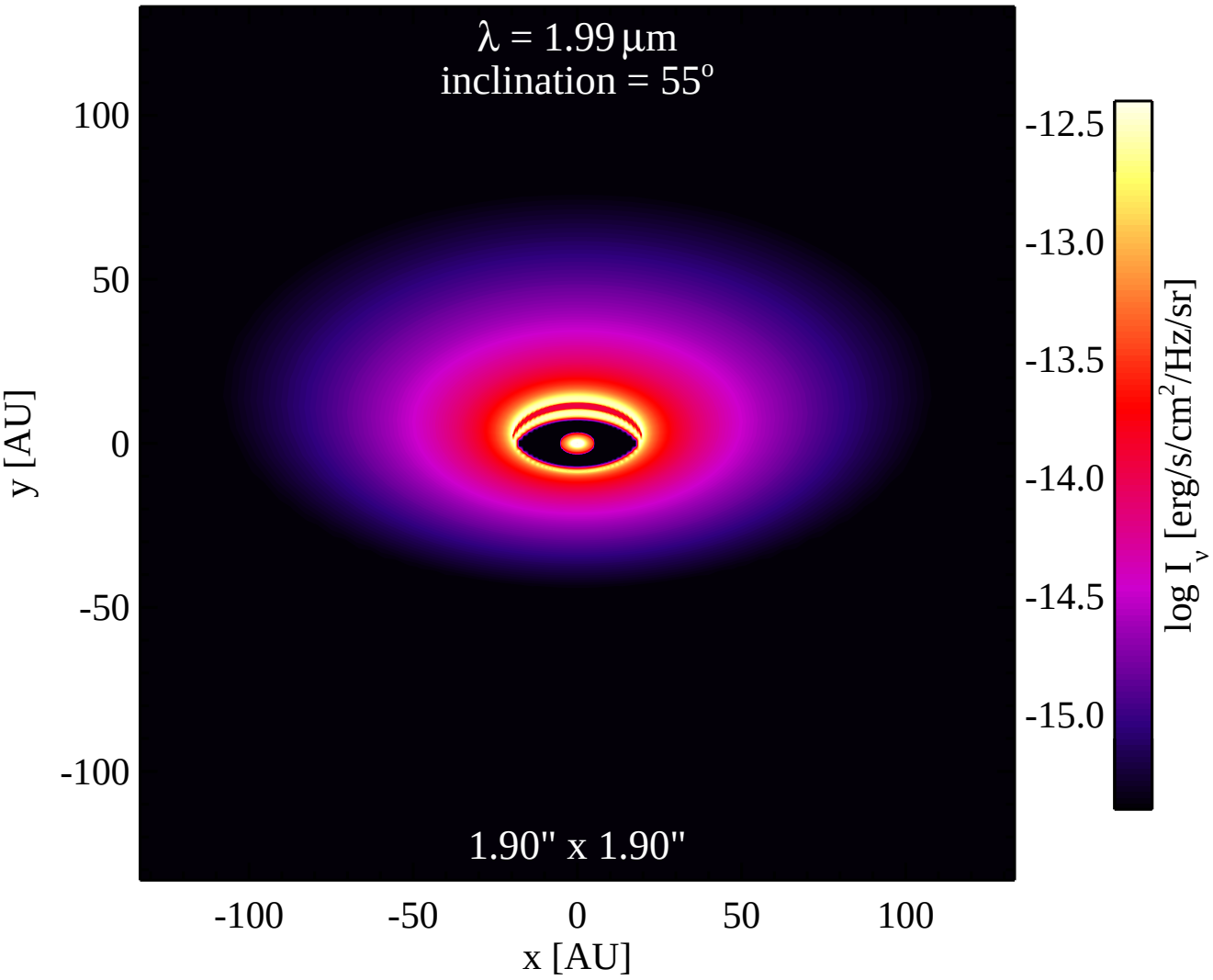

dist = 140.0 pc R = 600.0
HCN
SiO
HCO+
SO
0.015
0.010
0.005
0.000
F_ν - F_ν^cont [Jy]
1400
1500
1600
1700
1800
1900
2000
λ [μm]

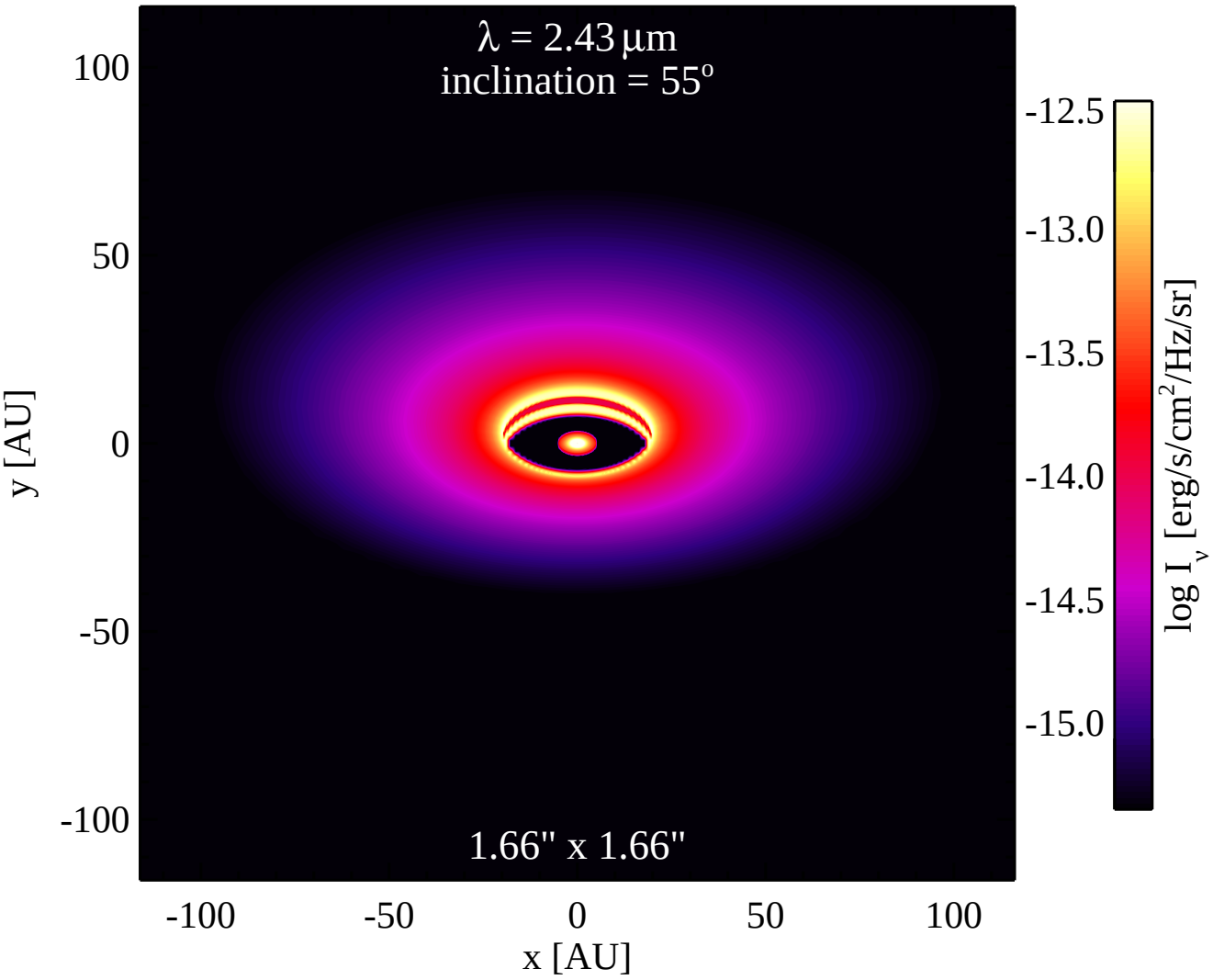

dist = 140.0 pc R = 600.0
CO
13CO
SiO
CN
SO
0.006
0.004
0.002
0.000
F_ν - F_ν^cont [Jy]
2000
2200
2400
2600
2800
3000
λ [μm]

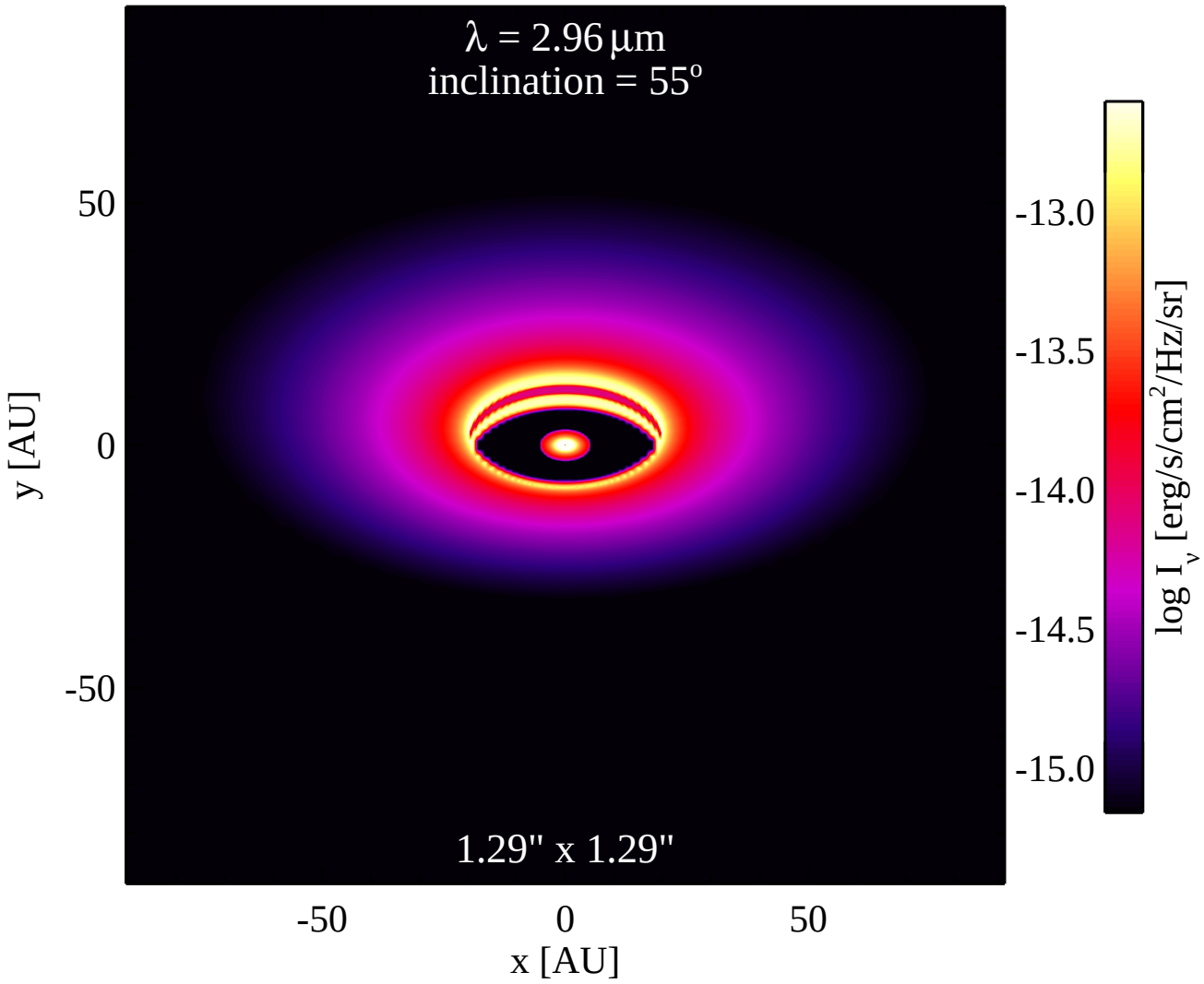

λ = 1.09 μm
inclination = 55°
2.15" x 2.15"
150
100
50
0
-50
-100
-150
y [AU]
-150
-100
-50
0
50
100
150
x [AU]
-12.5
-13.0
-13.5
-14.0
-14.5
-15.0
-15.5
log I_ν [erg/s/cm²/Hz/sr]

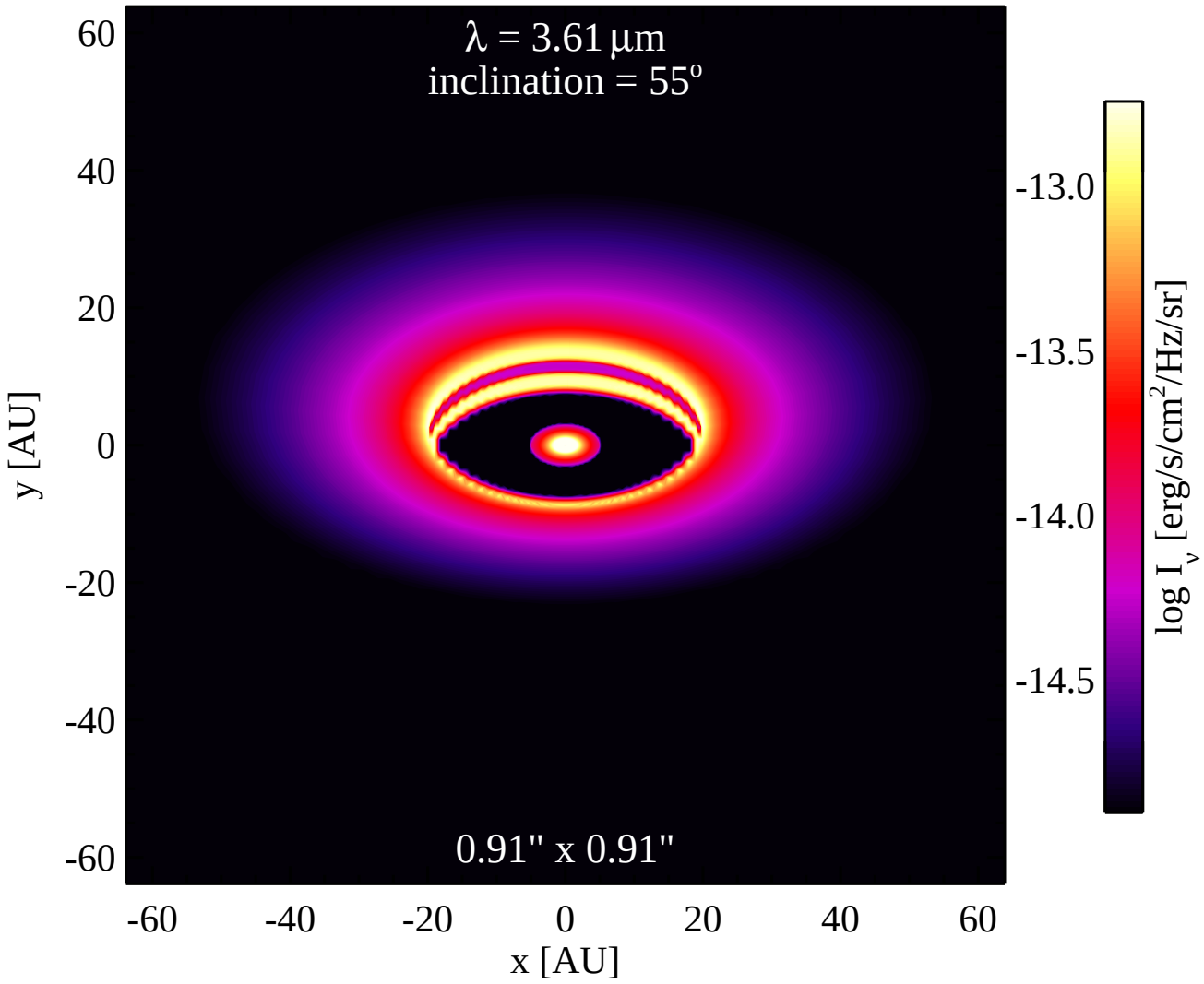

λ = 1.33 μm
inclination = 55°
2.10" x 2.10"
100
50
0
-50
-100
y [AU]
-100
-50
0
50
100
x [AU]
-12.5
-13.0
-13.5
-14.0
-14.5
-15.0
-15.5
log I_ν [erg/s/cm²/Hz/sr]

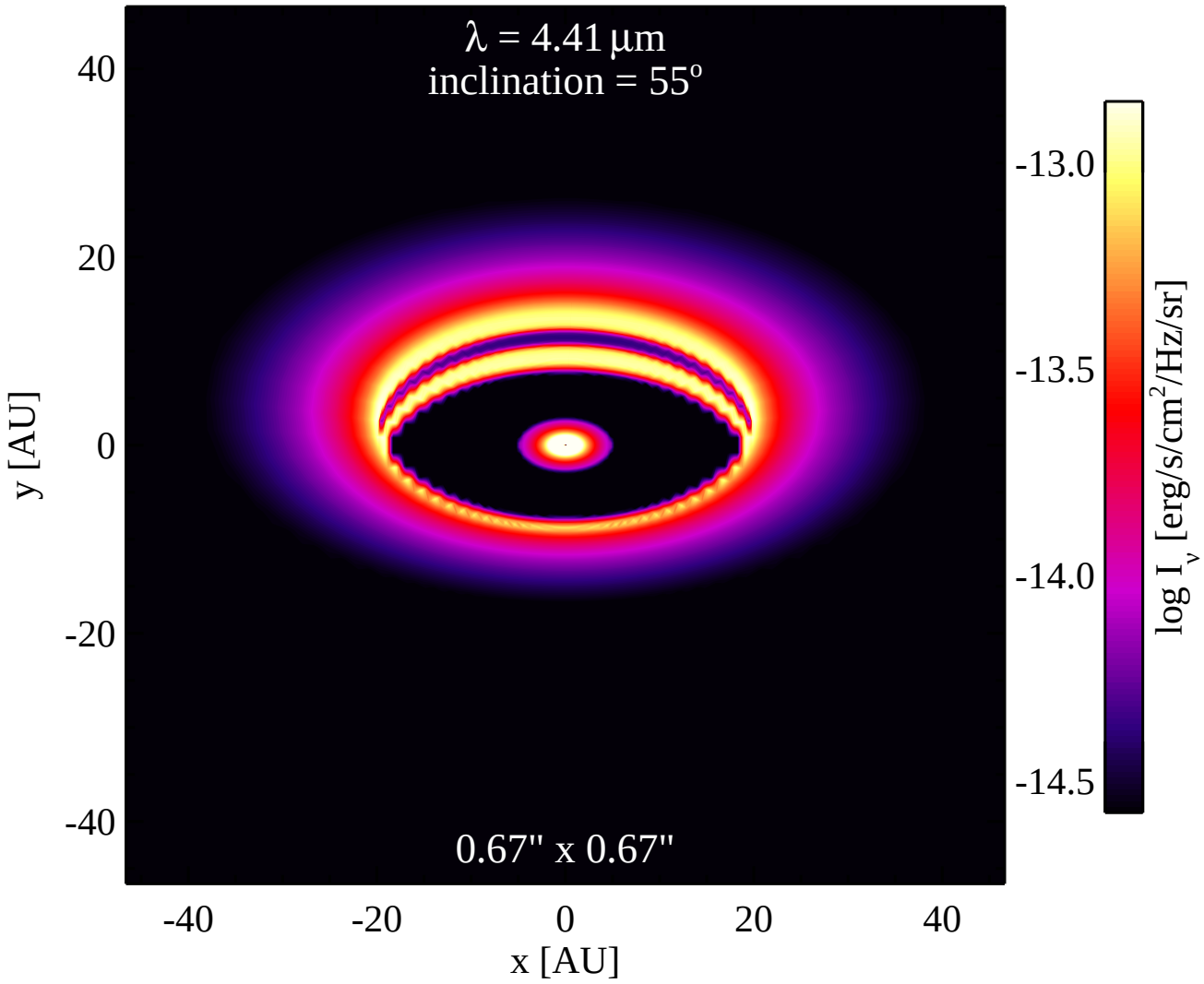

λ = 1.63 μm
inclination = 55°
2.03" x 2.03"
100
50
0
-50
-100
y [AU]
-100
-50
0
50
100
x [AU]
-12.5
-13.0
-13.5
-14.0
-14.5
-15.0
log I_ν [erg/s/cm²/Hz/sr]

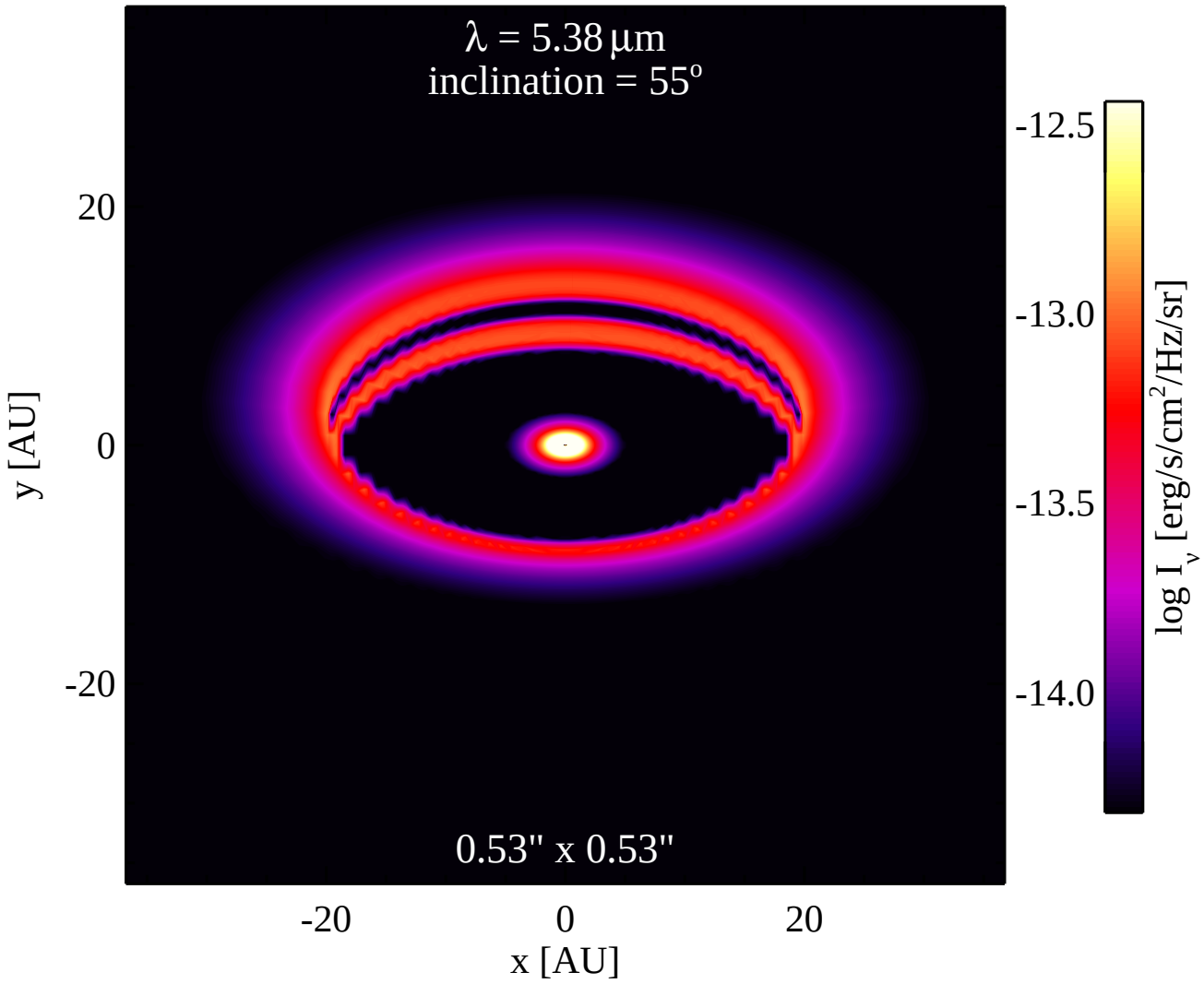

λ = 1.99 μm
inclination = 55°
1.90" x 1.90"
100
50
0
-50
-100
y [AU]
-100
-50
0
50
100
x [AU]
-12.5
-13.0
-13.5
-14.0
-14.5
-15.0
log I_ν [erg/s/cm²/Hz/sr]

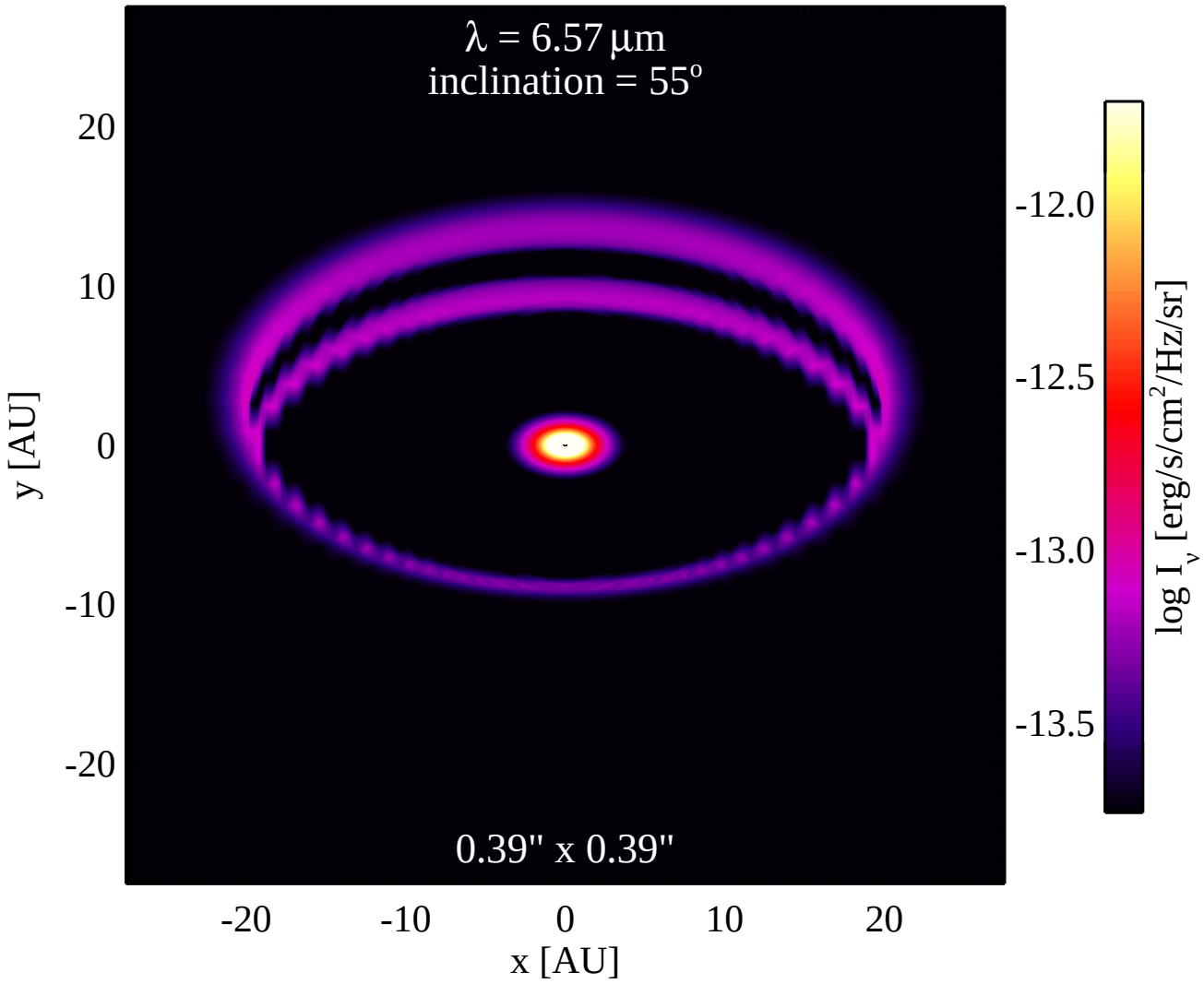

λ = 2.43 μm
inclination = 55°
1.66" x 1.66"
100
50
0
-50
-100
y [AU]
-100
-50
0
50
100
x [AU]
-12.5
-13.0
-13.5
-14.0
-14.5
-15.0
log I_ν [erg/s/cm²/Hz/sr]

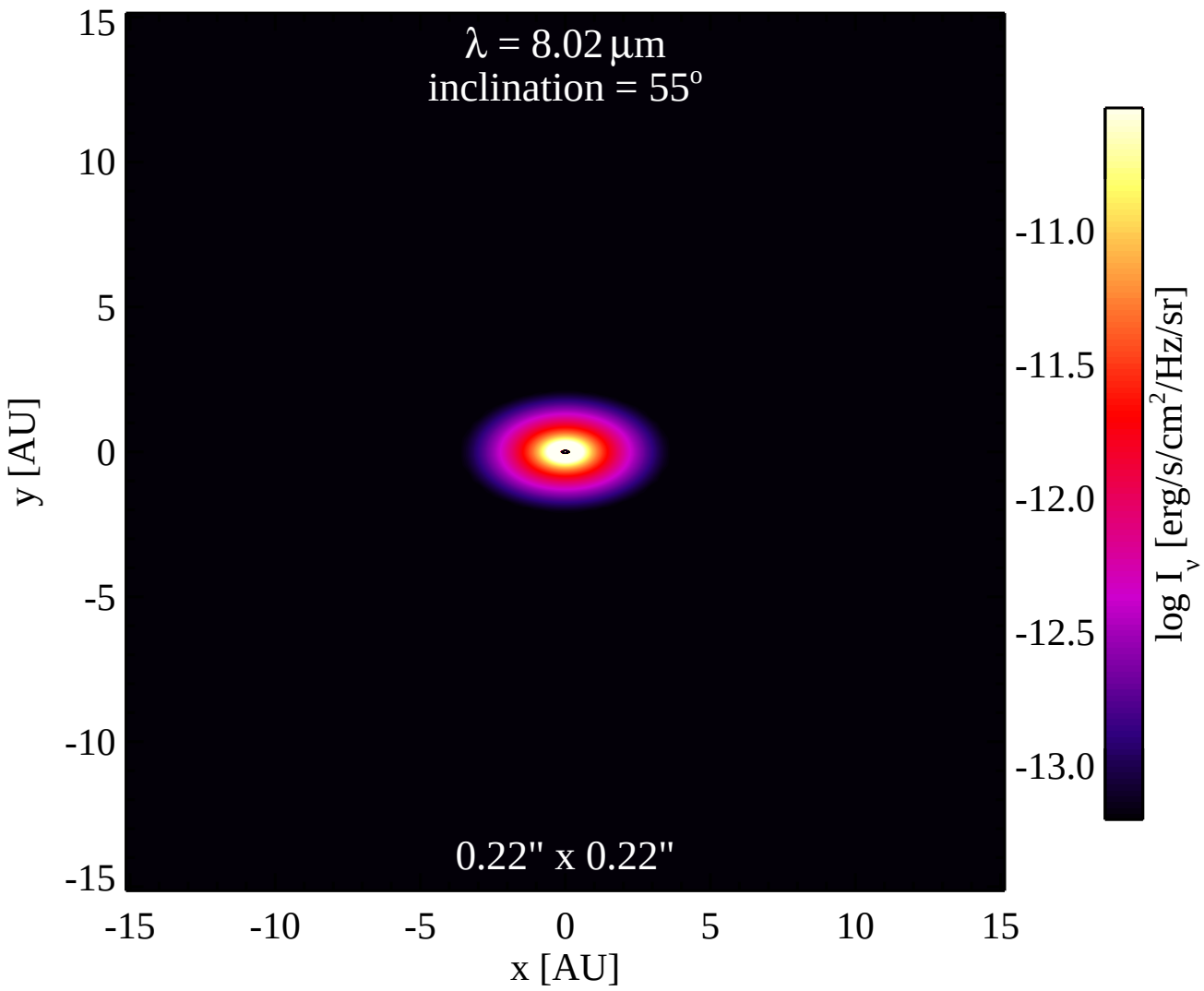

λ = 2.96 μm
inclination = 55°
1.29" x 1.29"
50
0
-50
y [AU]
-50
0
50
x [AU]
-13.0
-13.5
-14.0
-14.5
-15.0
log I_ν [erg/s/cm²/Hz/sr]

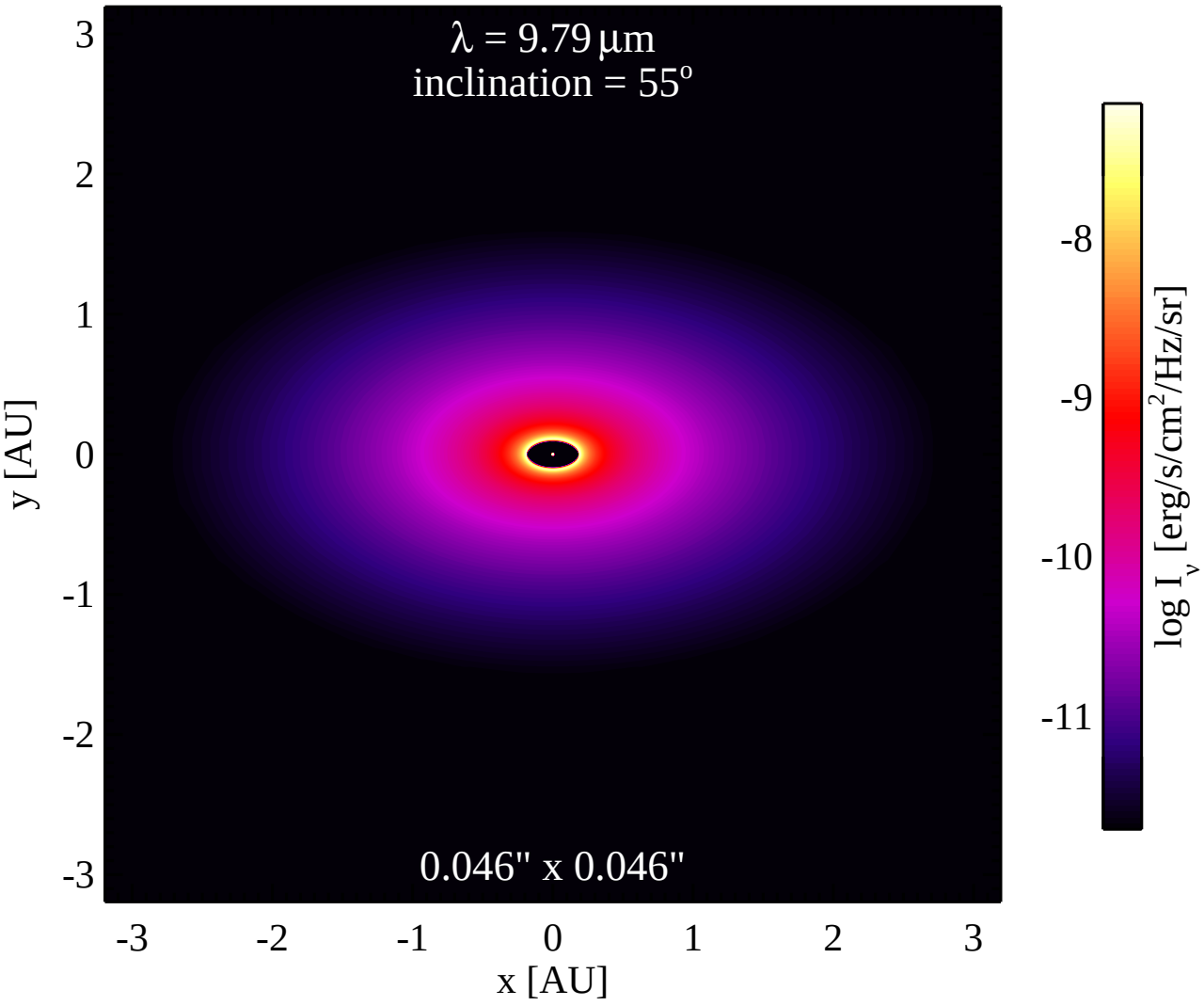

λ = 3.61 μm
inclination = 55°
0.91" x 0.91"
60
40
20
0
-20
-40
-60
y [AU]
-60
-40
-20
0
20
40
60
x [AU]
-13.0
-13.5
-14.0
-14.5
log I_ν [erg/s/cm²/Hz/sr]

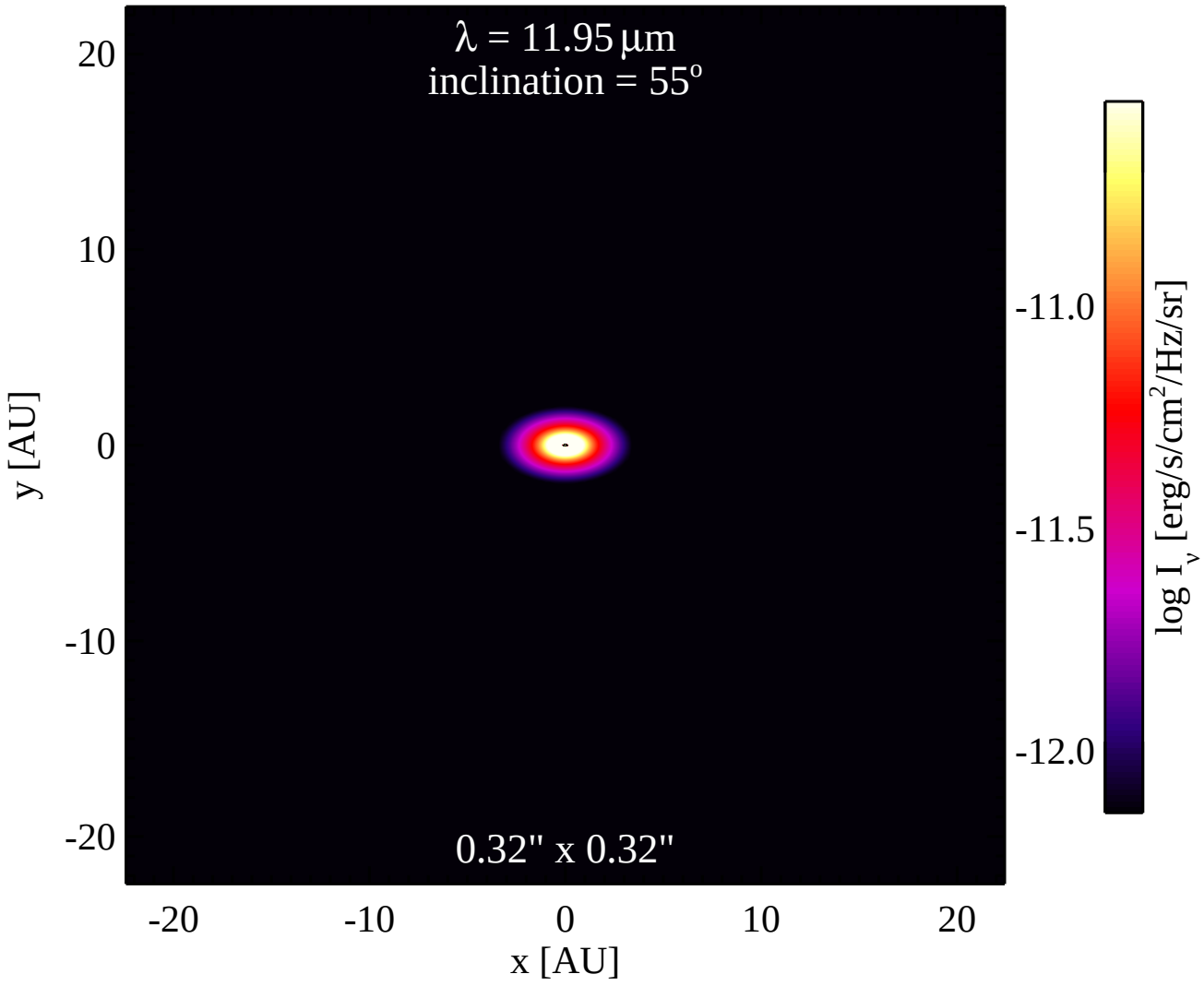

λ = 4.41 μm
inclination = 55°
0.67" x 0.67"
40
20
0
-20
-40
y [AU]
-40
-20
0
20
40
x [AU]
-13.0
-13.5
-14.0
-14.5
log I_ν [erg/s/cm²/Hz/sr]

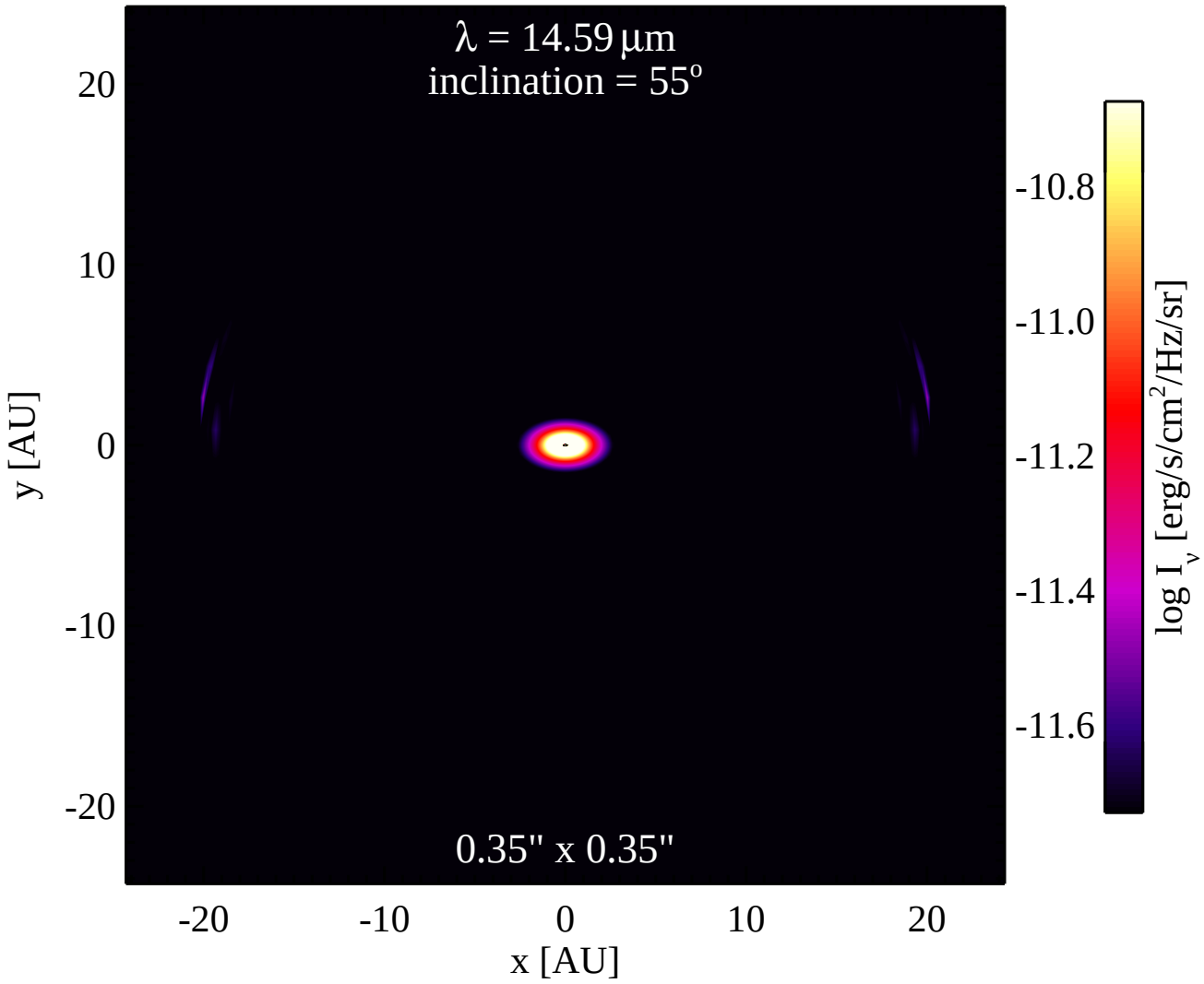

λ = 5.38 μm
inclination = 55°
0.53" x 0.53"
20
0
-20
y [AU]
-20
0
20
x [AU]
-12.5
-13.0
-13.5
-14.0
log I_ν [erg/s/cm²/Hz/sr]

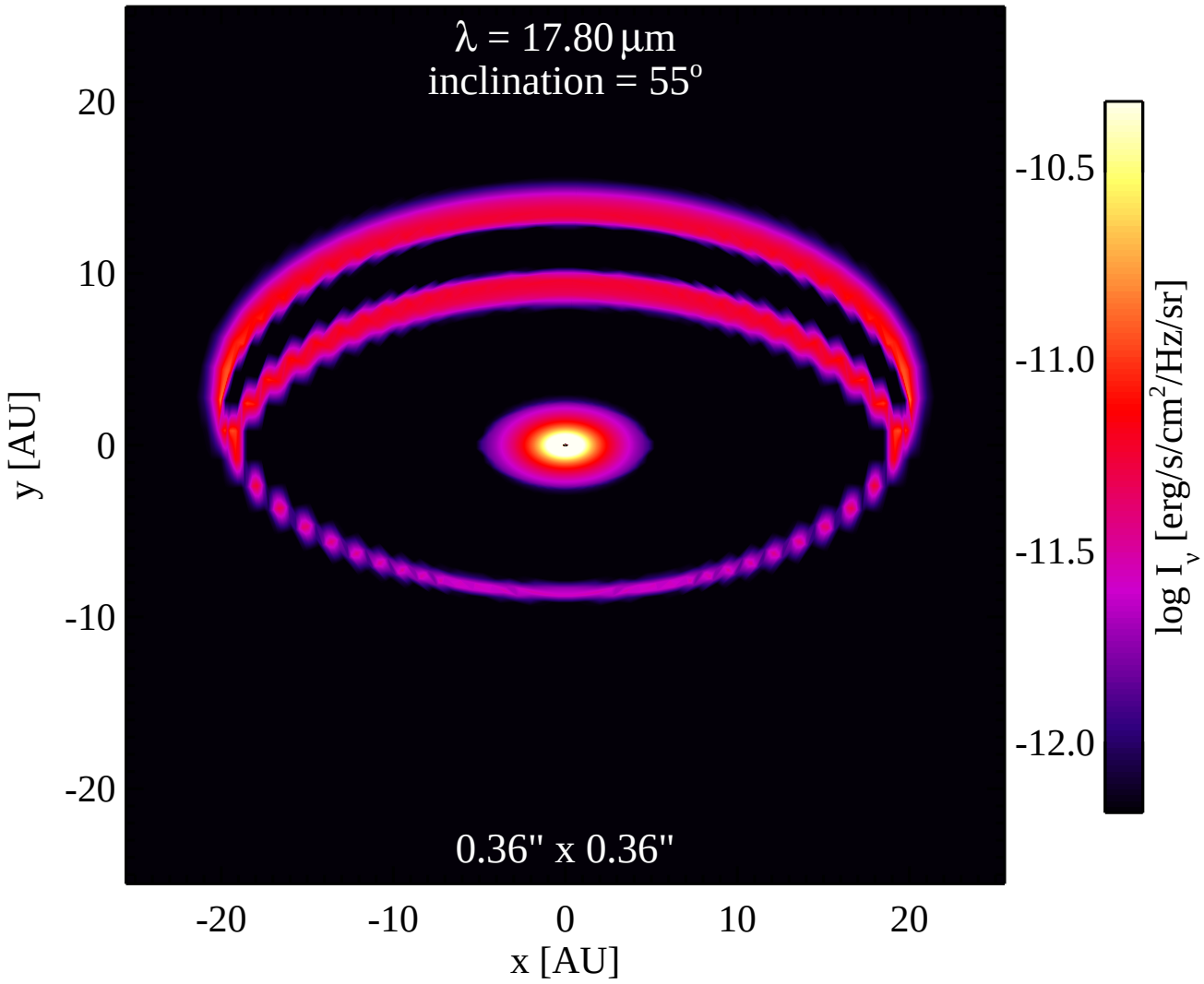

λ = 6.57 μm
inclination = 55°
0.39" x 0.39"
20
10
0
-10
-20
y [AU]
-20
-10
0
10
20
x [AU]
-12.0
-12.5
-13.0
-13.5
log I_ν [erg/s/cm²/Hz/sr]

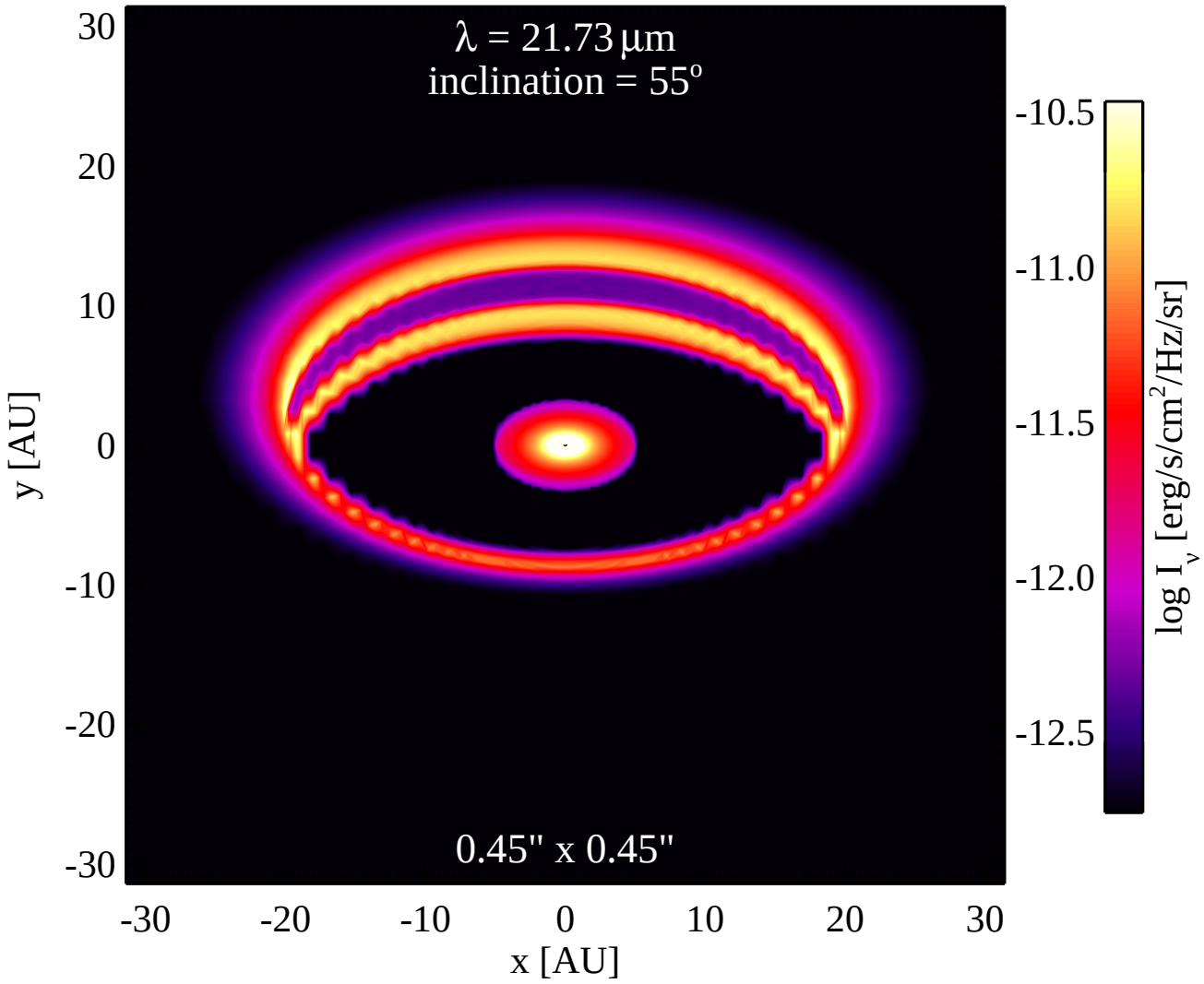

λ = 8.02 μm
inclination = 55°
0.22" x 0.22"
15
10
5
0
-5
-10
-15
y [AU]
-15
-10
-5
0
5
10
15
x [AU]
-11.0
-11.5
-12.0
-12.5
-13.0
log I_ν [erg/s/cm²/Hz/sr]

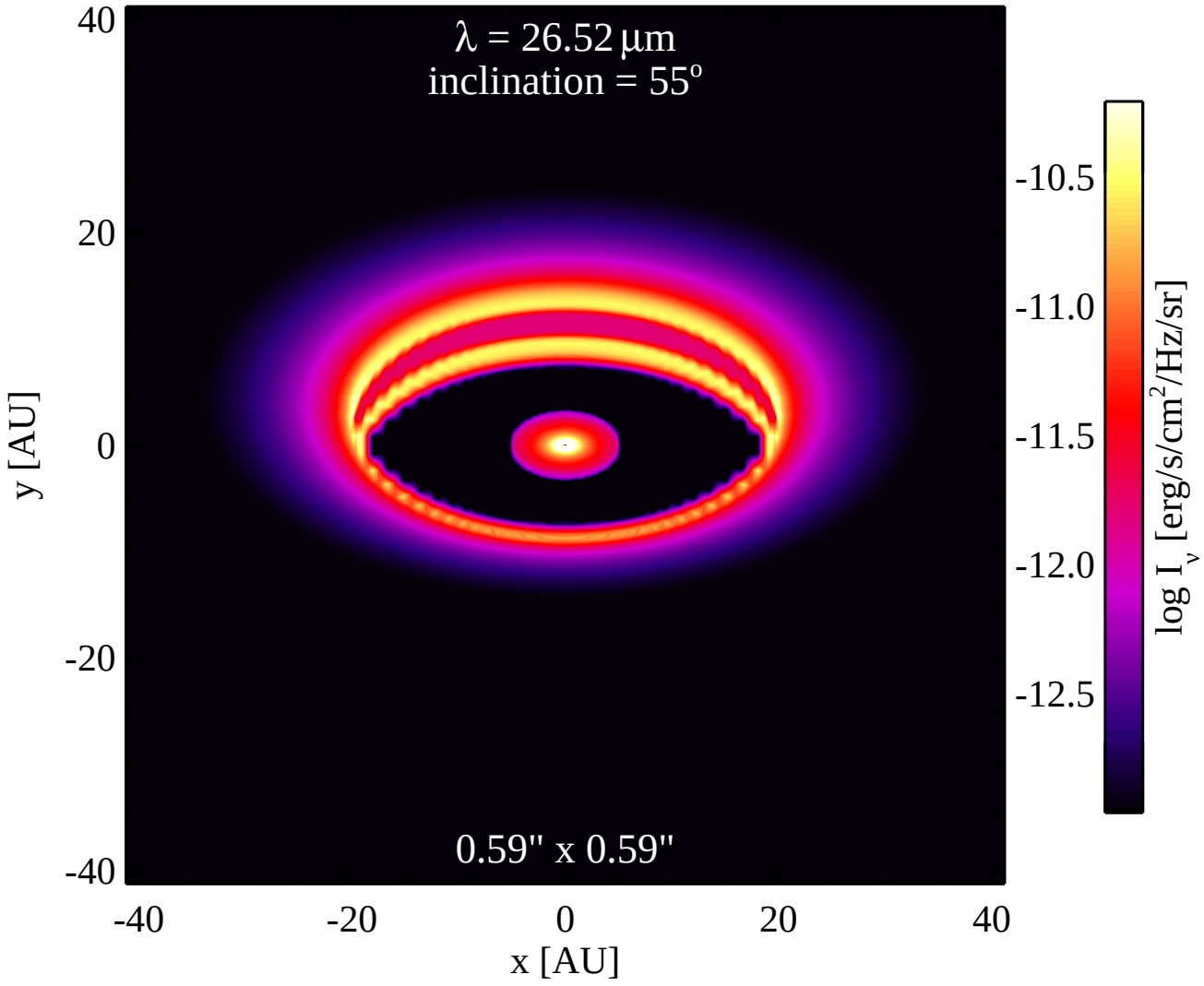

λ = 9.79 μm
inclination = 55°
0.046" x 0.046"
y [AU]
x [AU]
3
2
1
0
-1
-2
-3
-3
-2
-1
0
1
2
3
-8
-9
-10
-11
log I_ν [erg/s/cm²/Hz/sr]

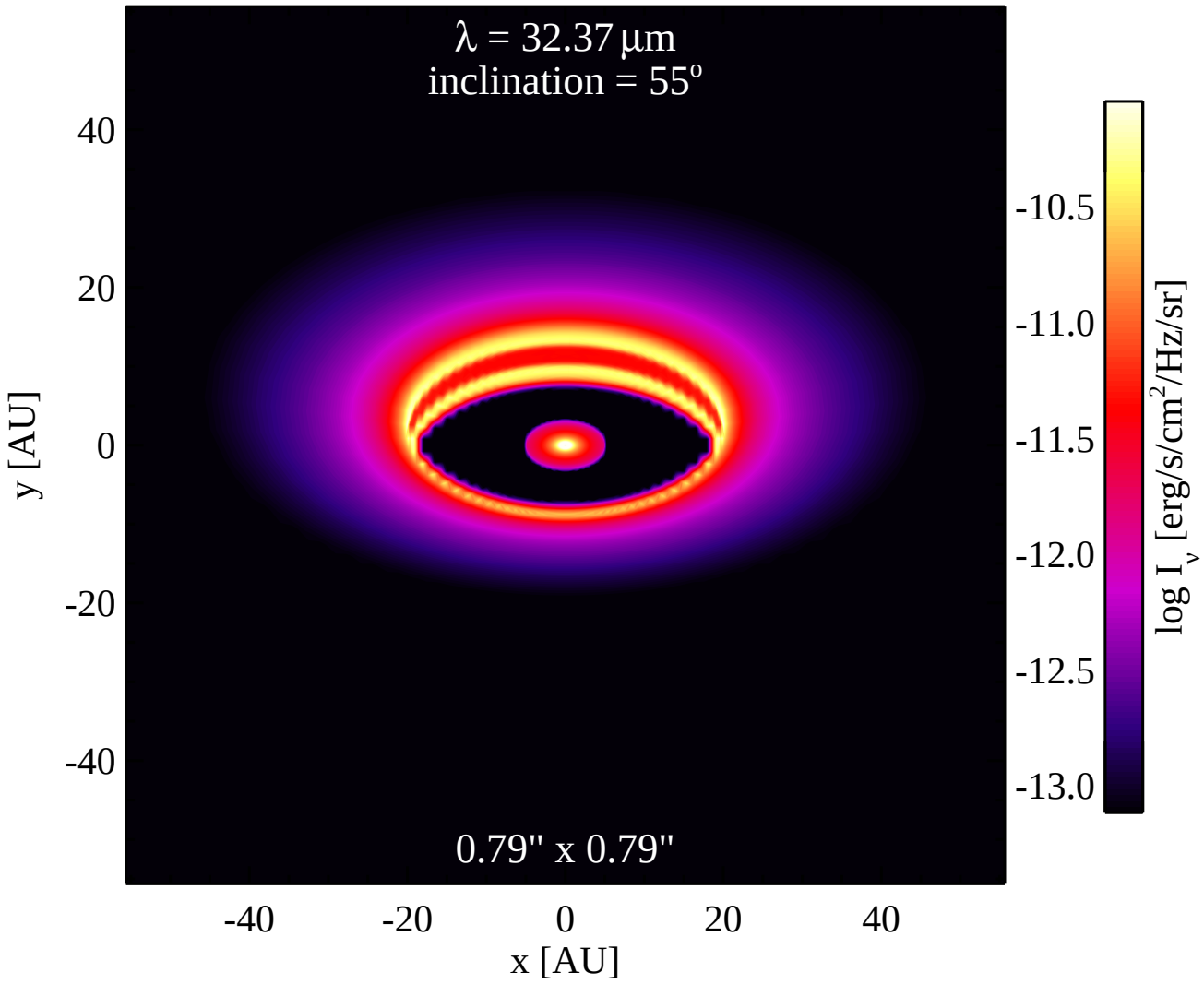

λ = 11.95 μm
inclination = 55°
0.32" x 0.32"
20
10
0
-10
-20
y [AU]
-20
-10
0
10
20
x [AU]
-11.0
-11.5
-12.0
log I_ν [erg/s/cm²/Hz/sr]

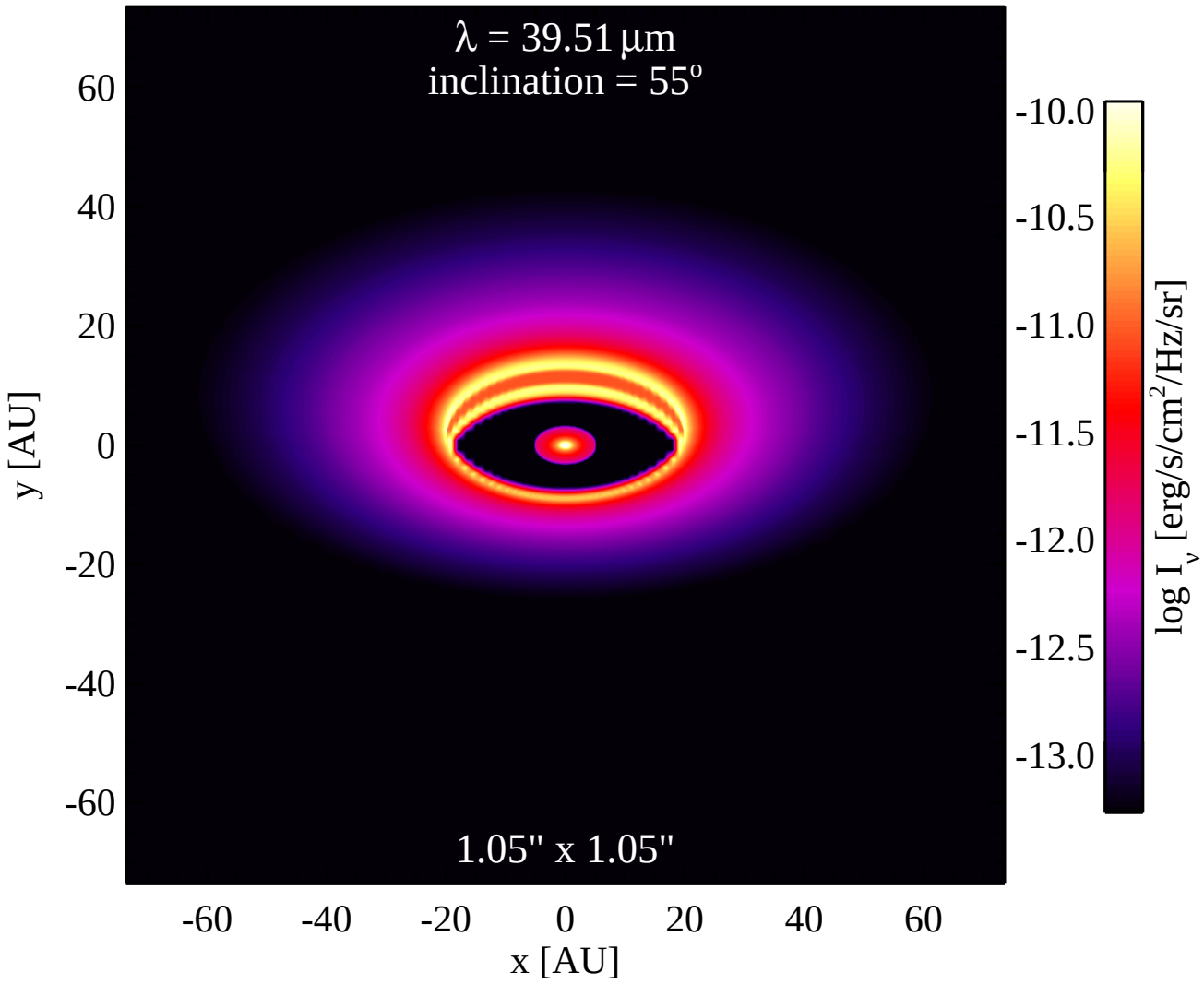

λ = 14.59 μm
inclination = 55°
0.35" x 0.35"
20
10
0
-10
-20
y [AU]
-20
-10
0
10
20
x [AU]
-10.8
-11.0
-11.2
-11.4
-11.6
log I_ν [erg/s/cm²/Hz/sr]

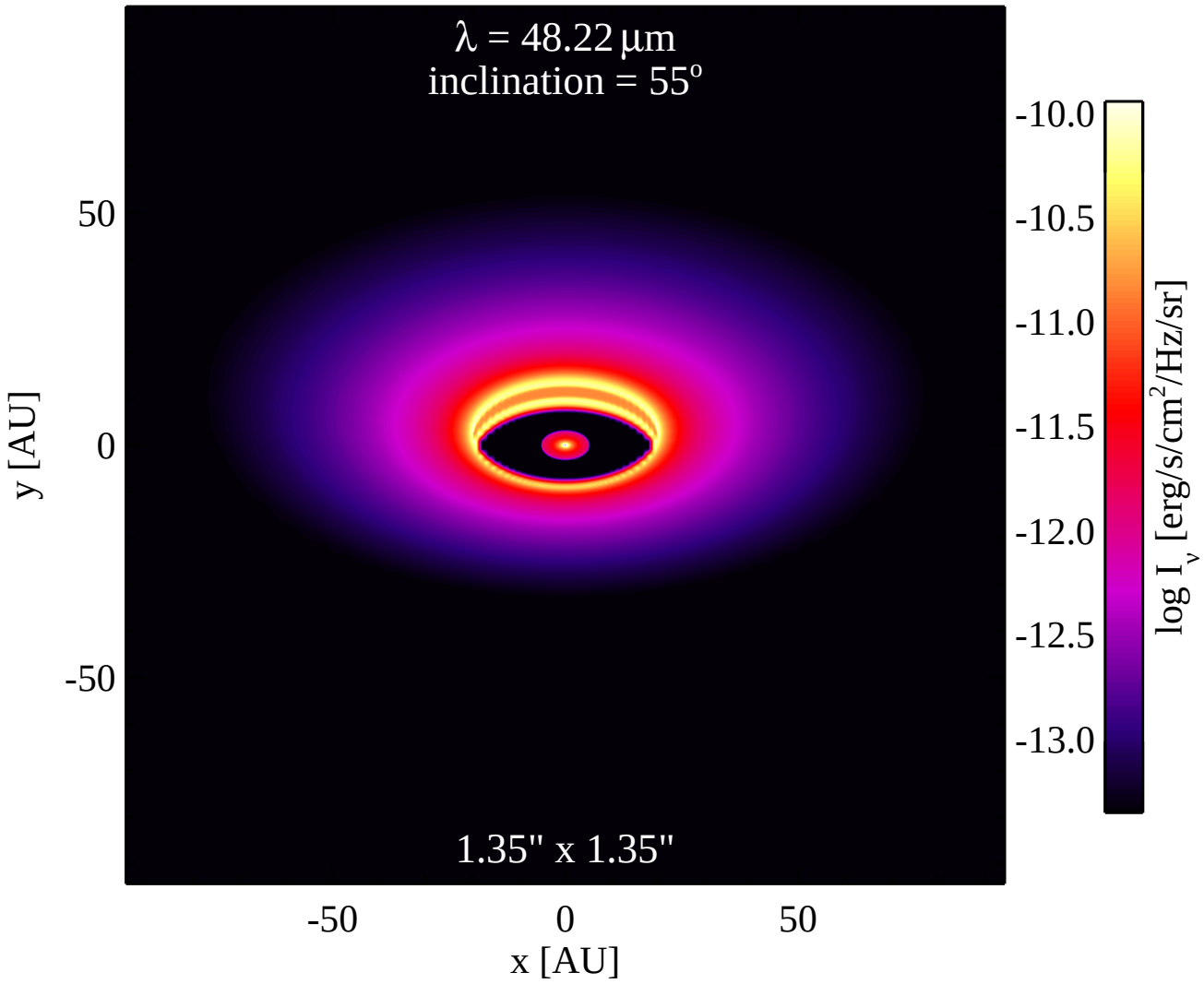

λ = 17.80 μm
inclination = 55°
0.36" x 0.36"
20
10
0
-10
-20
y [AU]
-20
-10
0
10
20
x [AU]
-10.5
-11.0
-11.5
-12.0
log I_ν [erg/s/cm²/Hz/sr]

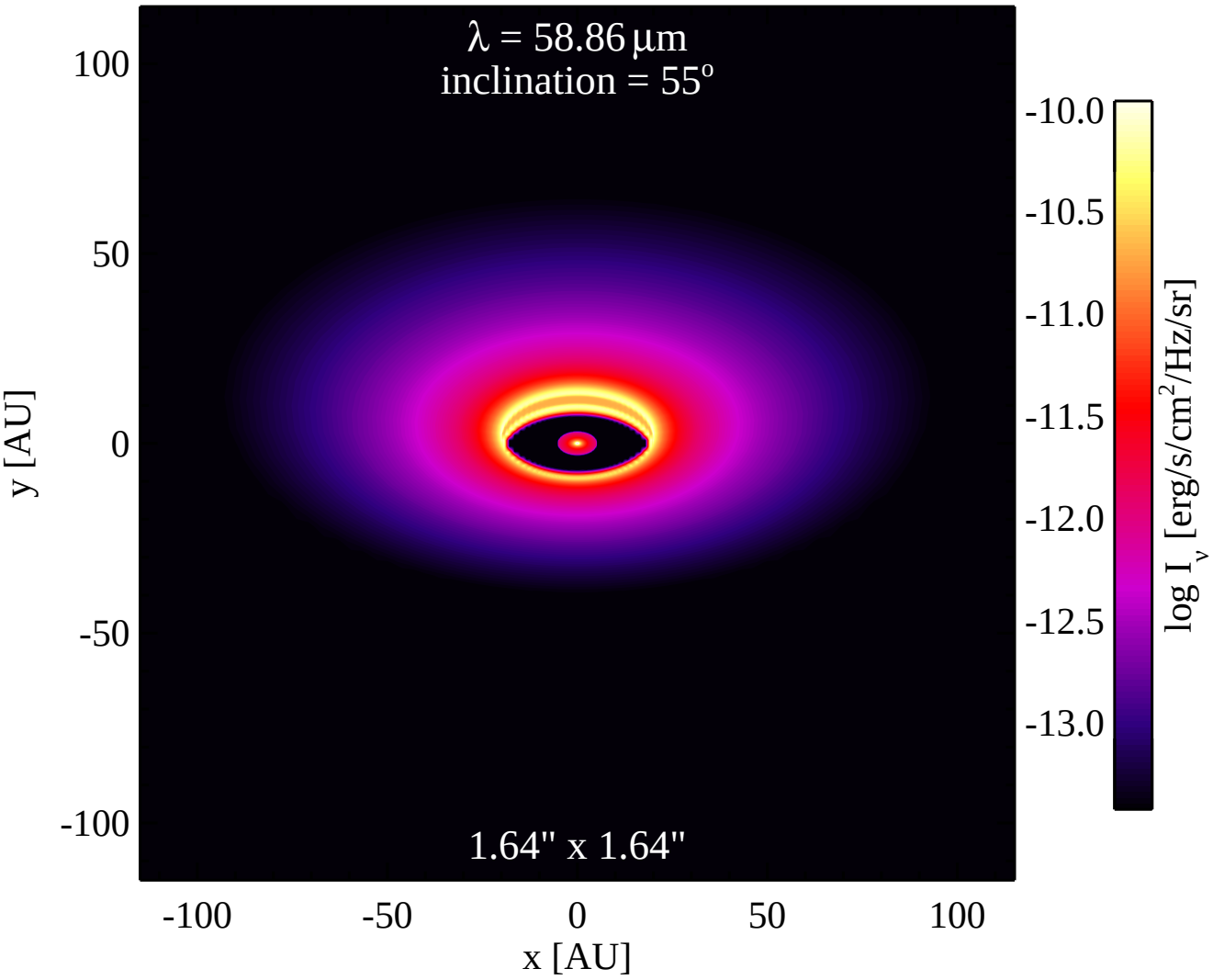

λ = 21.73 μm
inclination = 55°
0.45" x 0.45"
30
20
10
0
-10
-20
-30
y [AU]
-30
-20
-10
0
10
20
30
x [AU]
-10.5
-11.0
-11.5
-12.0
-12.5
log I_ν [erg/s/cm²/Hz/sr]

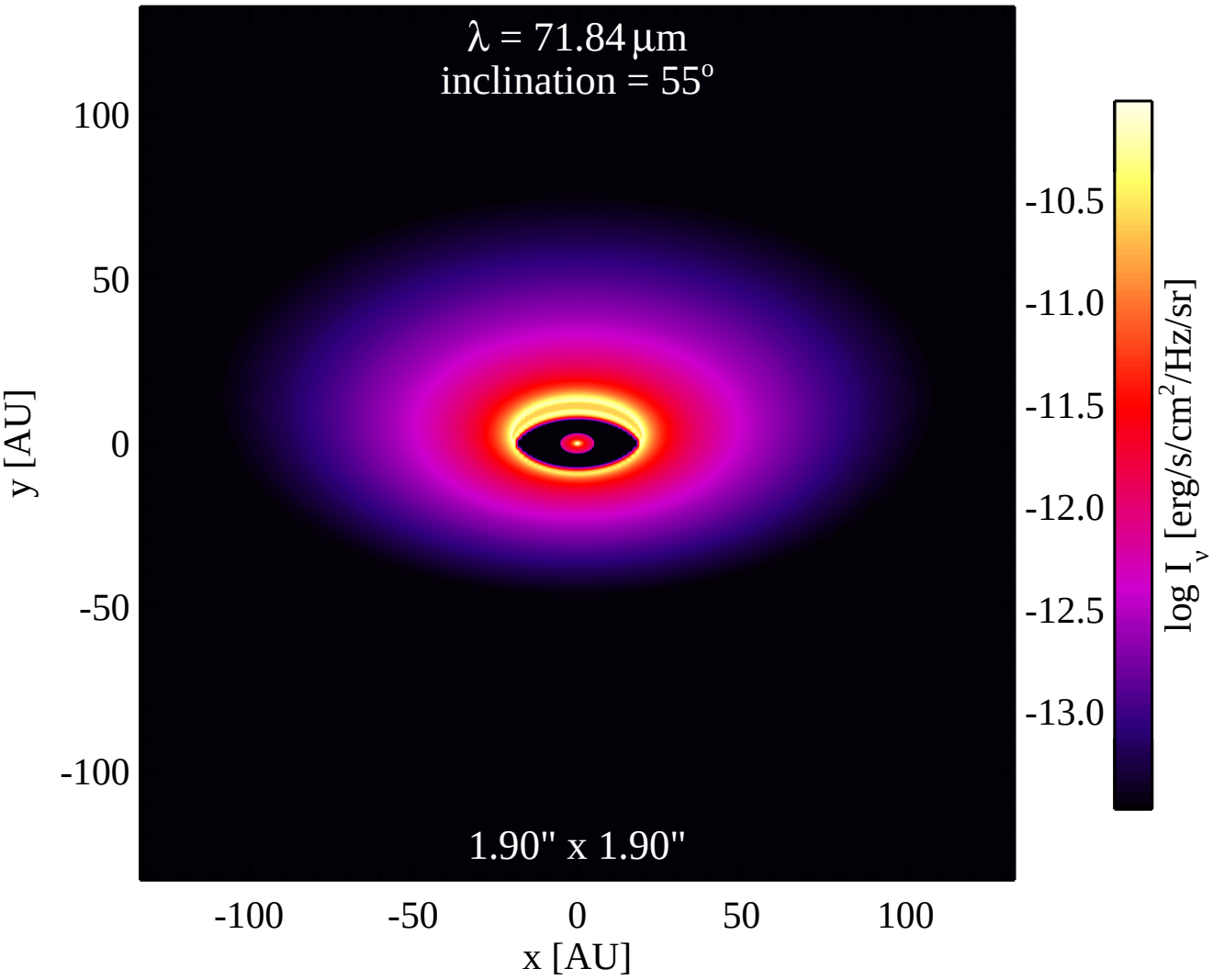

λ = 26.52 μm
inclination = 55°
0.59" x 0.59"
40
20
0
-20
-40
y [AU]
-40
-20
0
20
40
x [AU]
-10.5
-11.0
-11.5
-12.0
-12.5
log I_ν [erg/s/cm²/Hz/sr]

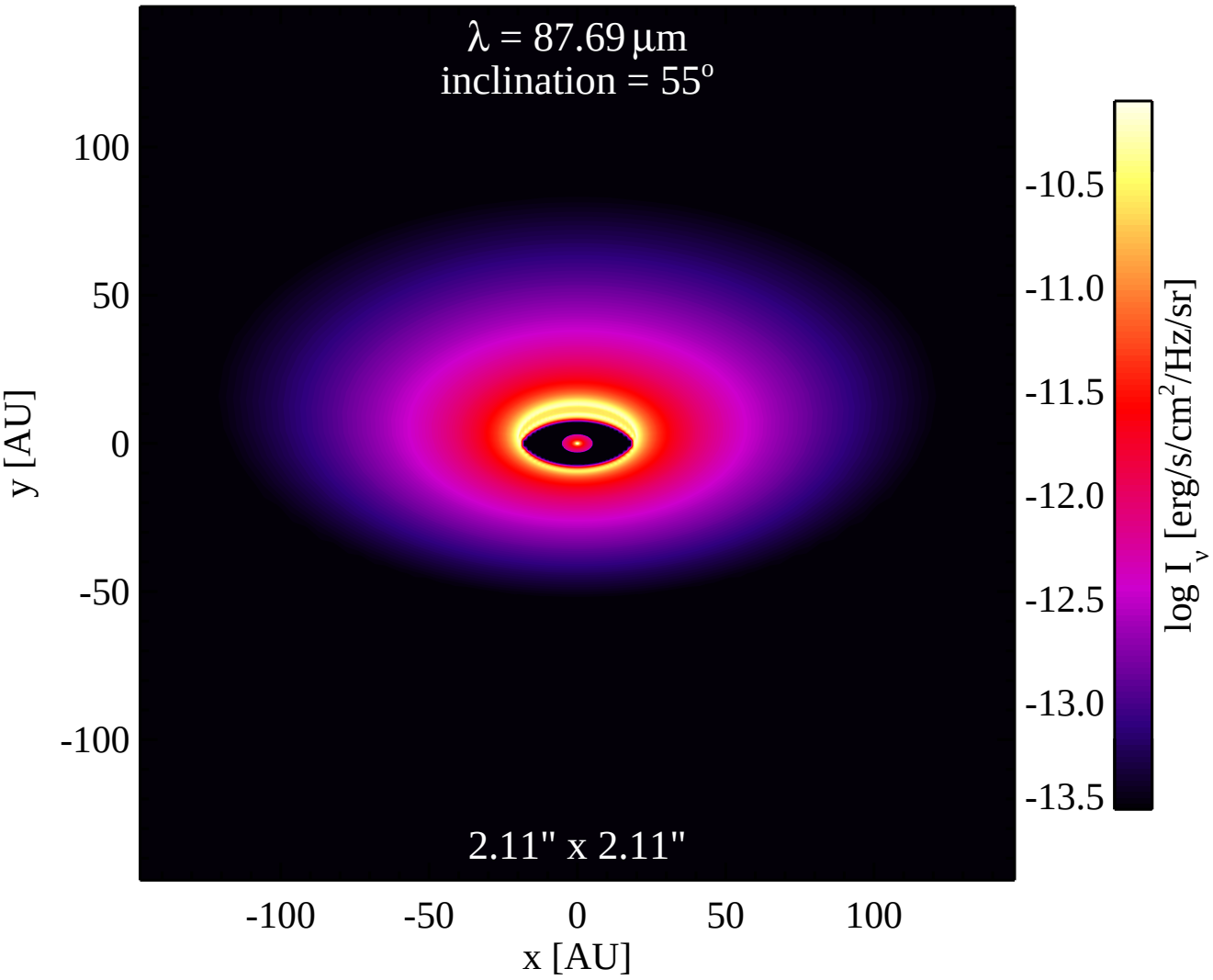

λ = 32.37 μm
inclination = 55°
0.79" x 0.79"
40
20
0
-20
-40
y [AU]
-40
-20
0
20
40
x [AU]
-10.5
-11.0
-11.5
-12.0
-12.5
-13.0
log I_ν [erg/s/cm²/Hz/sr]

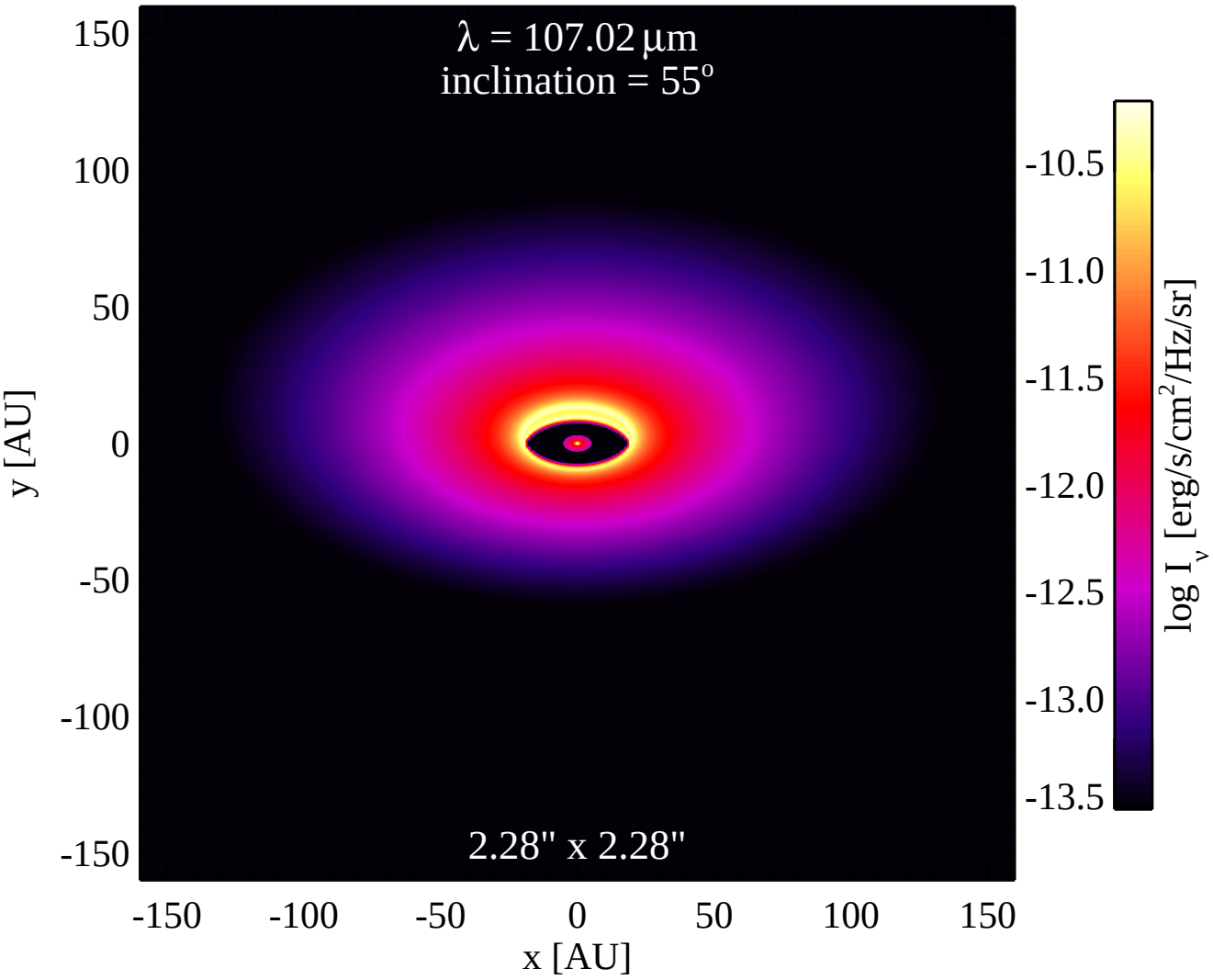

λ = 39.51 μm
inclination = 55°
1.05" x 1.05"
60
40
20
0
-20
-40
-60
y [AU]
-60
-40
-20
0
20
40
60
x [AU]
-10.0
-10.5
-11.0
-11.5
-12.0
-12.5
-13.0
log I_ν [erg/s/cm²/Hz/sr]

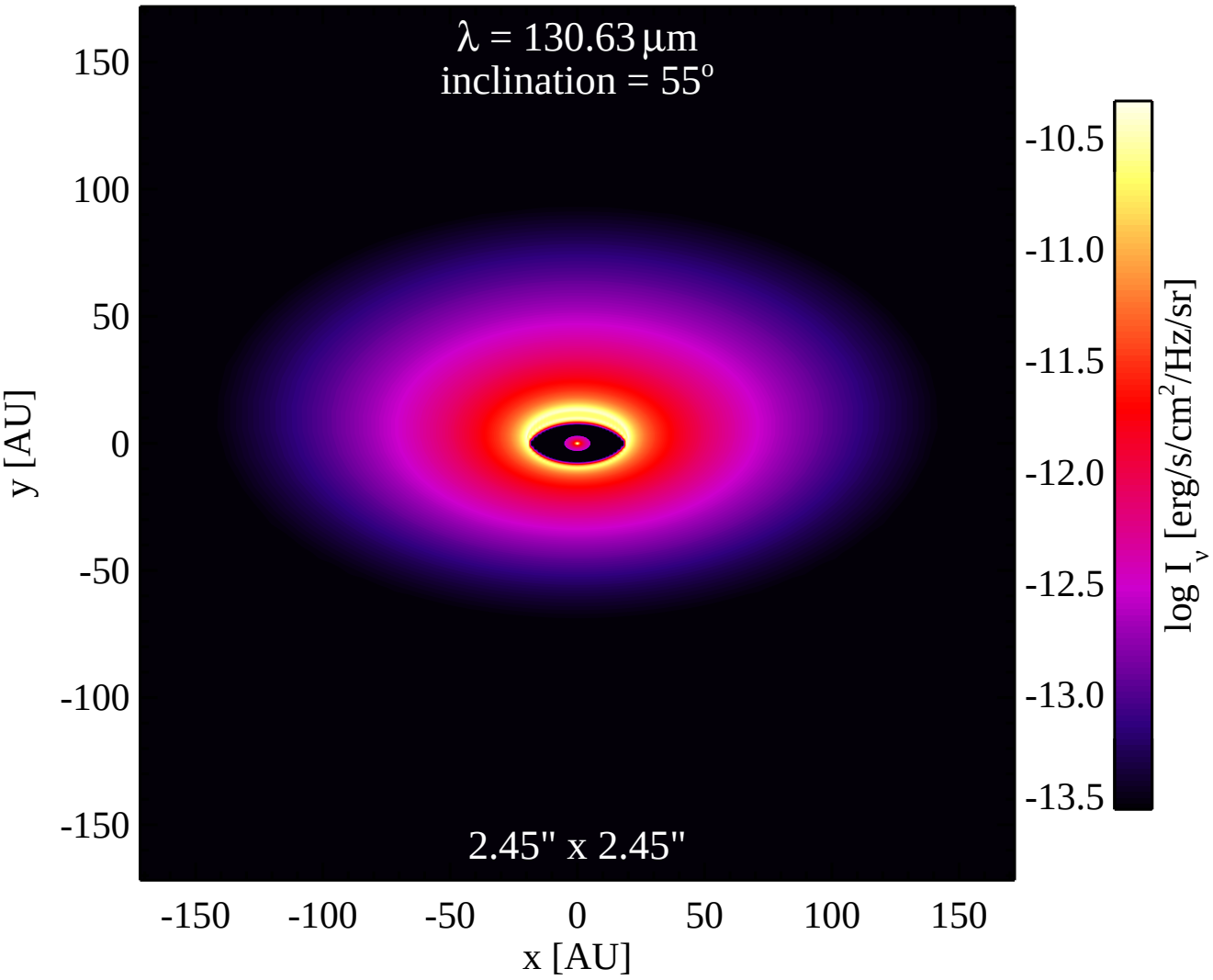

λ = 48.22 μm
inclination = 55°
1.35" x 1.35"
50
0
-50
y [AU]
-50
0
50
x [AU]
-10.0
-10.5
-11.0
-11.5
-12.0
-12.5
-13.0
log I_ν [erg/s/cm²/Hz/sr]

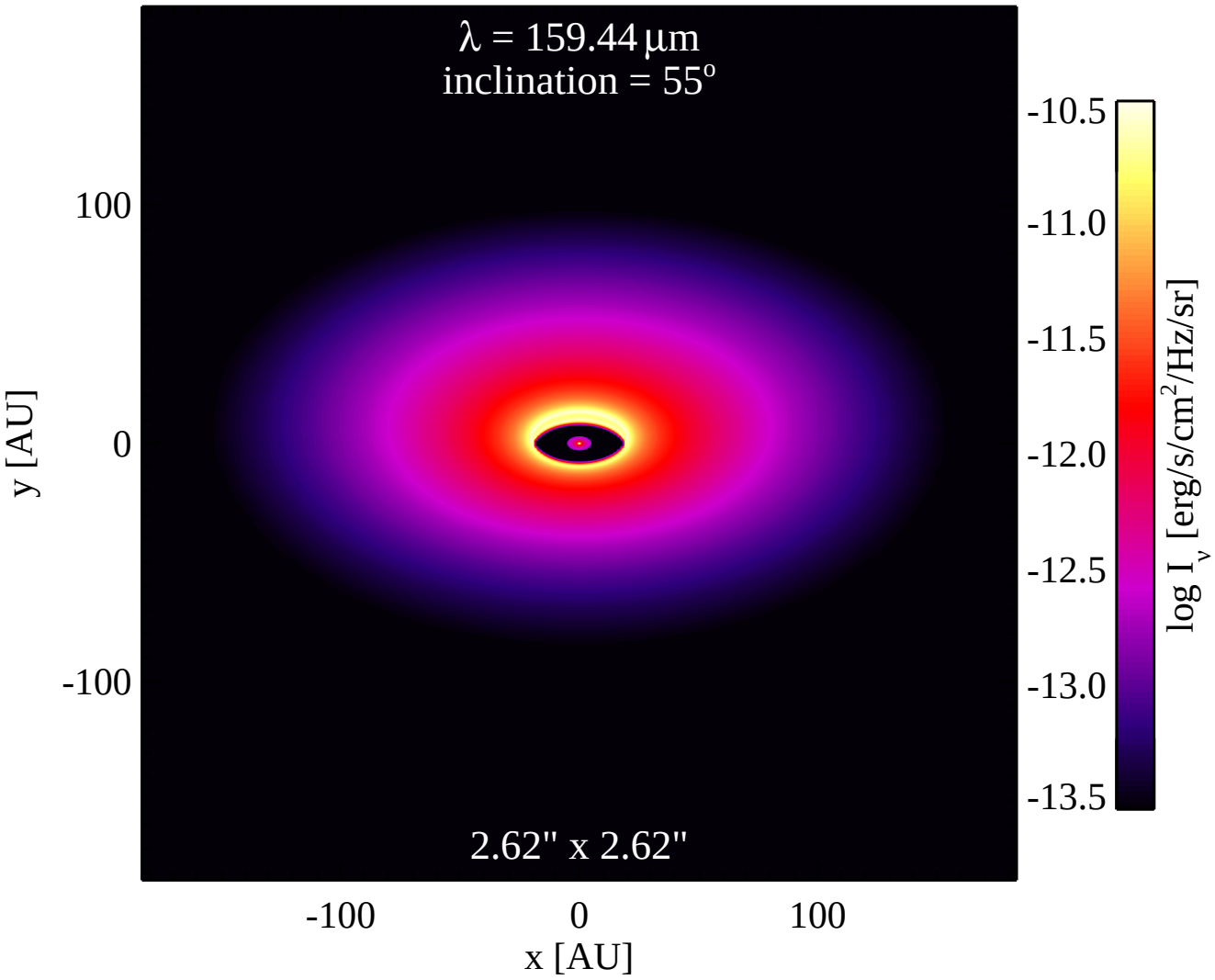

λ = 58.86 μm
inclination = 55°
1.64" x 1.64"
100
50
0
-50
-100
y [AU]
-100
-50
0
50
100
x [AU]
-10.0
-10.5
-11.0
-11.5
-12.0
-12.5
-13.0
log I_ν [erg/s/cm²/Hz/sr]

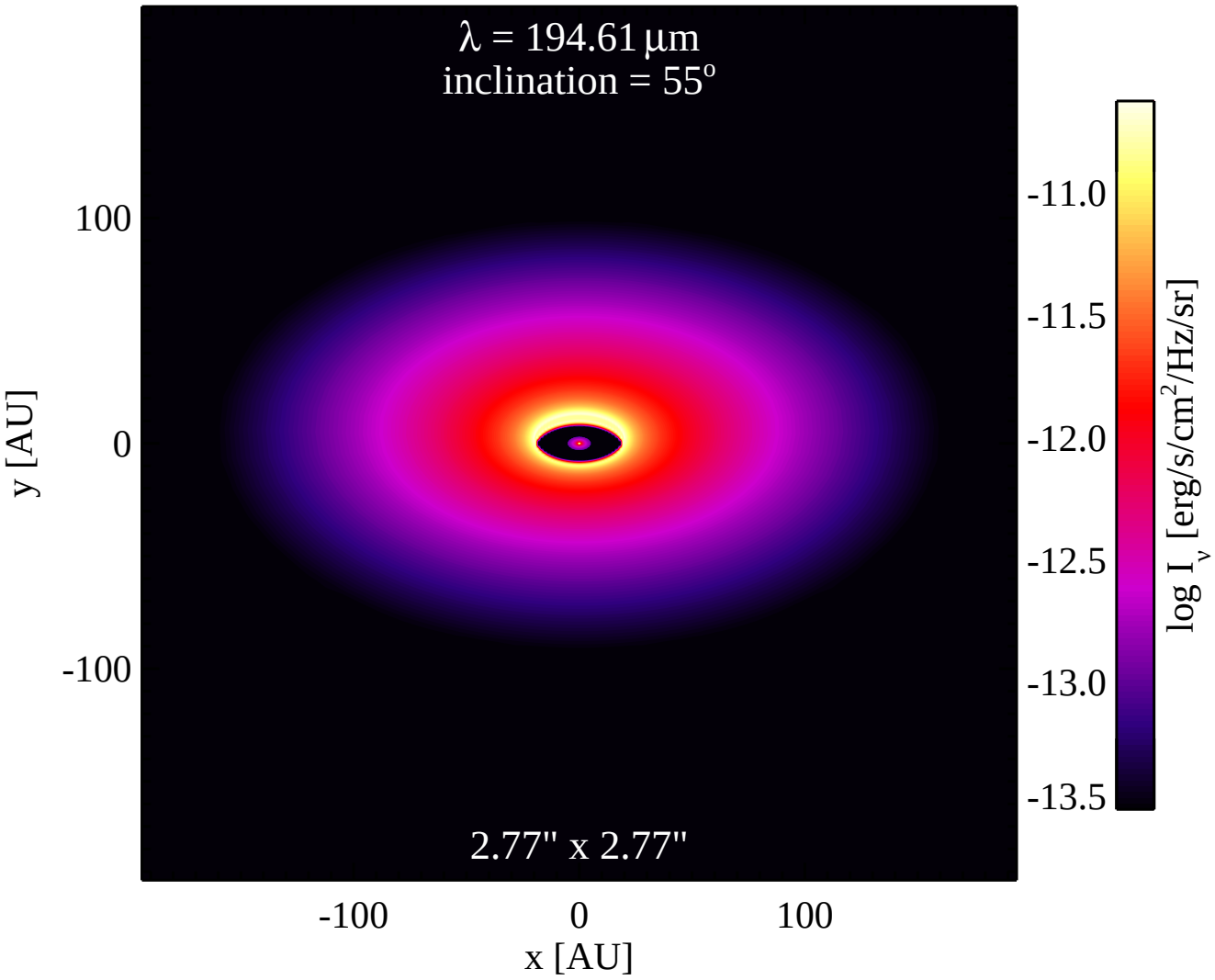

λ = 71.84 μm
inclination = 55°
1.90" x 1.90"
100
50
0
-50
-100
y [AU]
-100
-50
0
50
100
x [AU]
-10.5
-11.0
-11.5
-12.0
-12.5
-13.0
log I_ν [erg/s/cm²/Hz/sr]

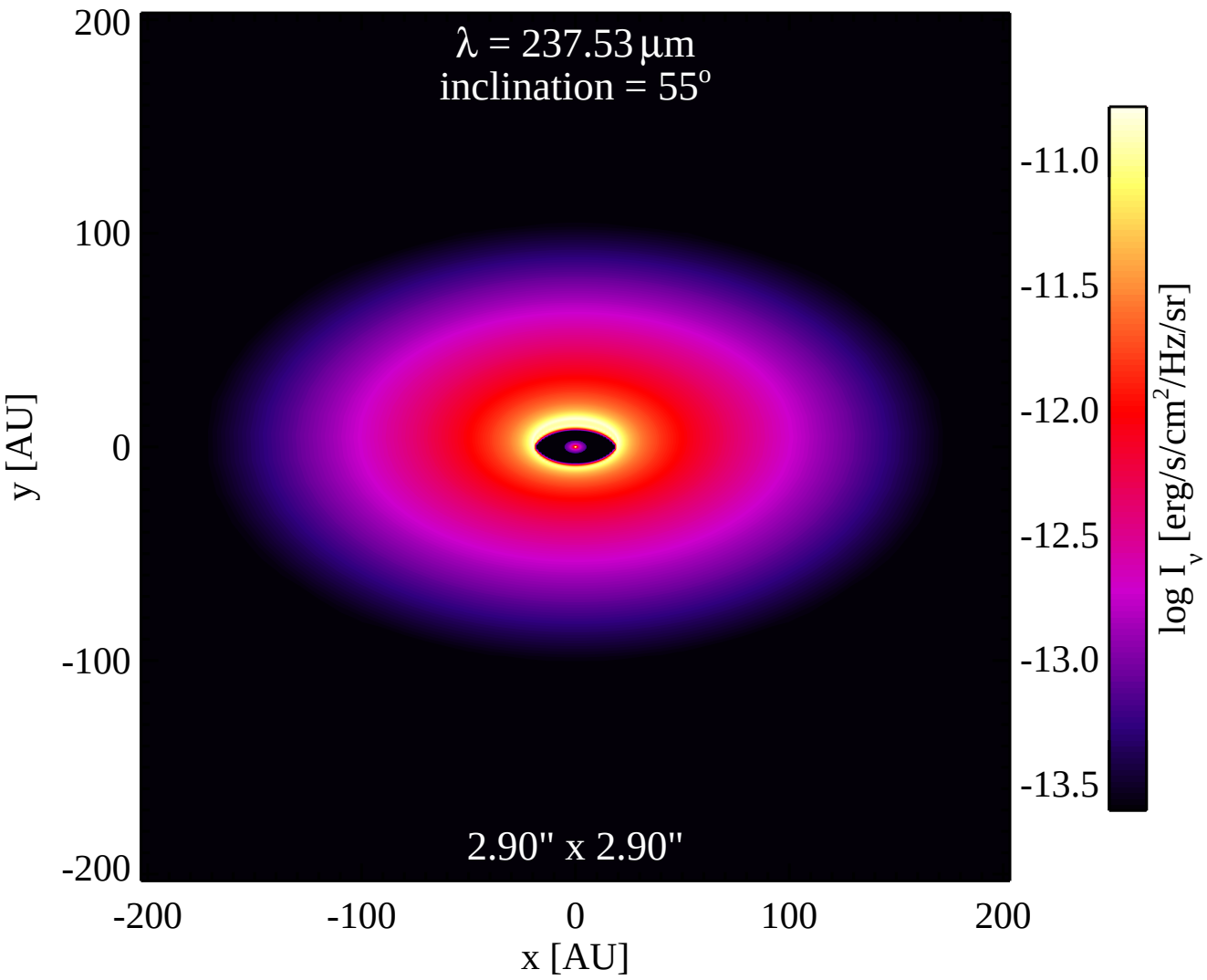

λ = 87.69 μm
inclination = 55°
2.11" x 2.11"
100
50
0
-50
-100
y [AU]
-100
-50
0
50
100
x [AU]
-10.5
-11.0
-11.5
-12.0
-12.5
-13.0
-13.5
log I_ν [erg/s/cm²/Hz/sr]

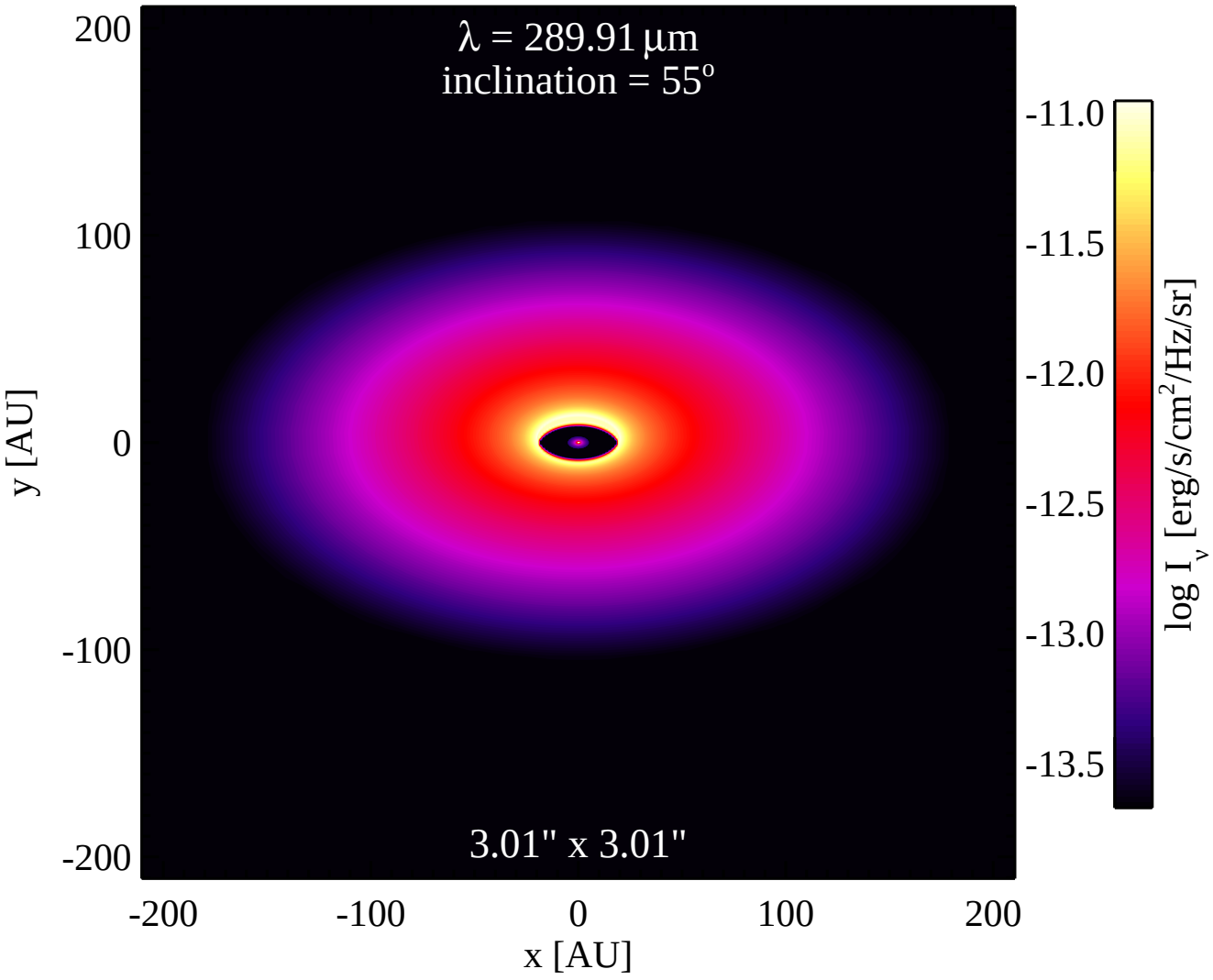

λ = 107.02 μm
inclination = 55°
2.28" x 2.28"
150
100
50
0
-50
-100
-150
y [AU]
-150
-100
-50
0
50
100
150
x [AU]
-10.5
-11.0
-11.5
-12.0
-12.5
-13.0
-13.5
log I_ν [erg/s/cm²/Hz/sr]

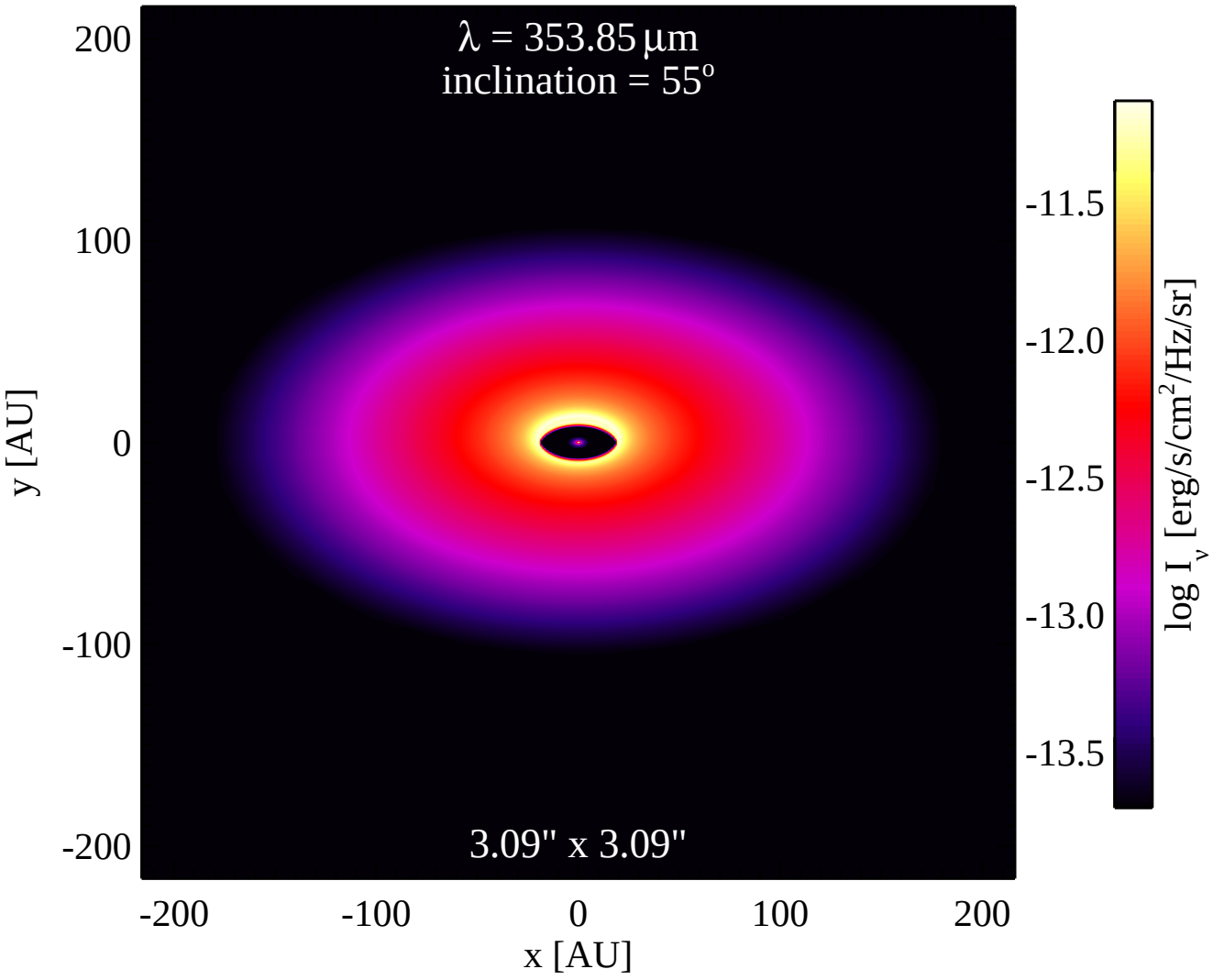

λ = 130.63 μm
inclination = 55°
2.45" x 2.45"
150
100
50
0
-50
-100
-150
y [AU]
-150
-100
-50
0
50
100
150
x [AU]
-10.5
-11.0
-11.5
-12.0
-12.5
-13.0
-13.5
log I_ν [erg/s/cm²/Hz/sr]

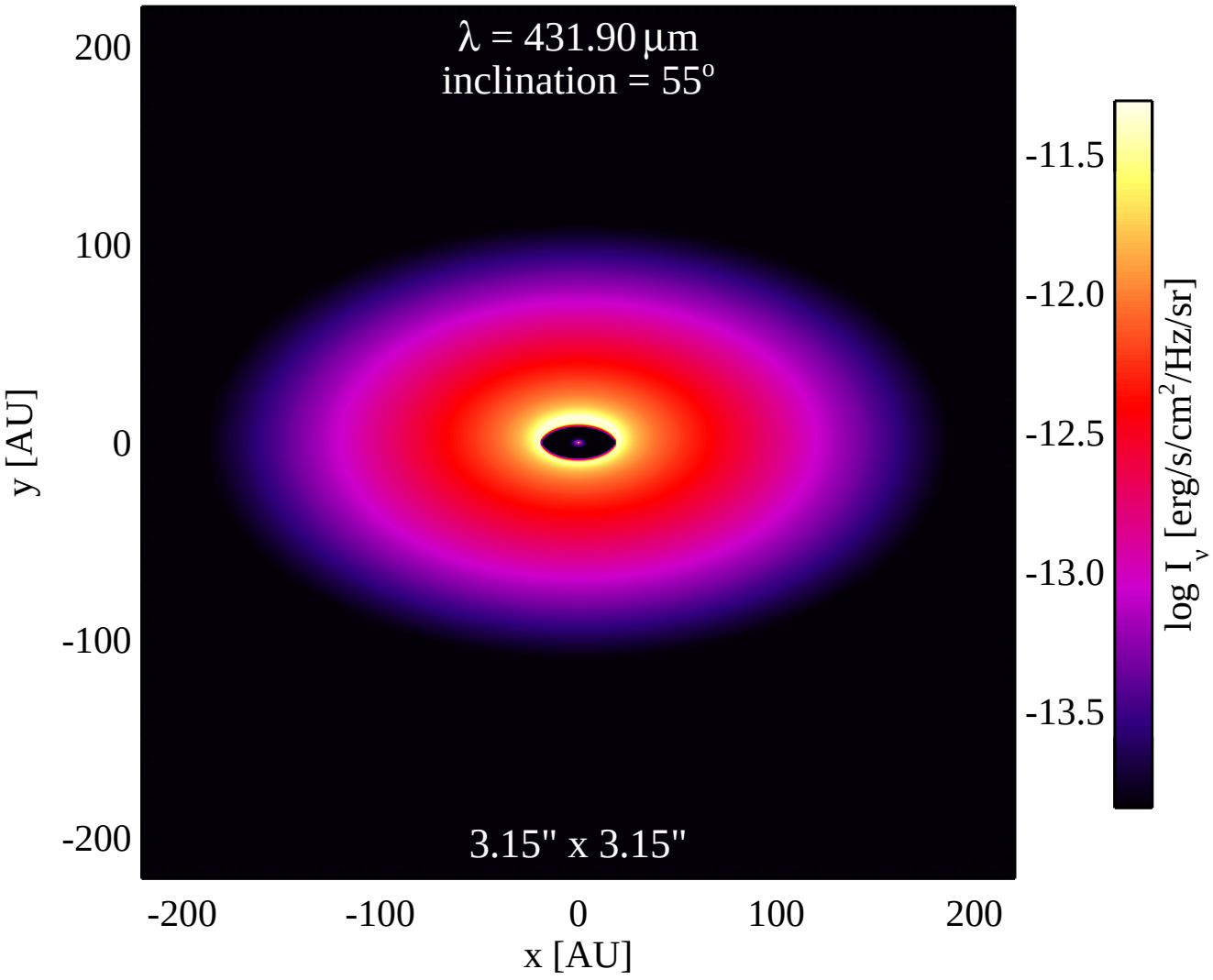

λ = 159.44 μm
inclination = 55°
2.62" x 2.62"
100
0
-100
y [AU]
-100
0
100
x [AU]
-10.5
-11.0
-11.5
-12.0
-12.5
-13.0
-13.5
log I_ν [erg/s/cm²/Hz/sr]

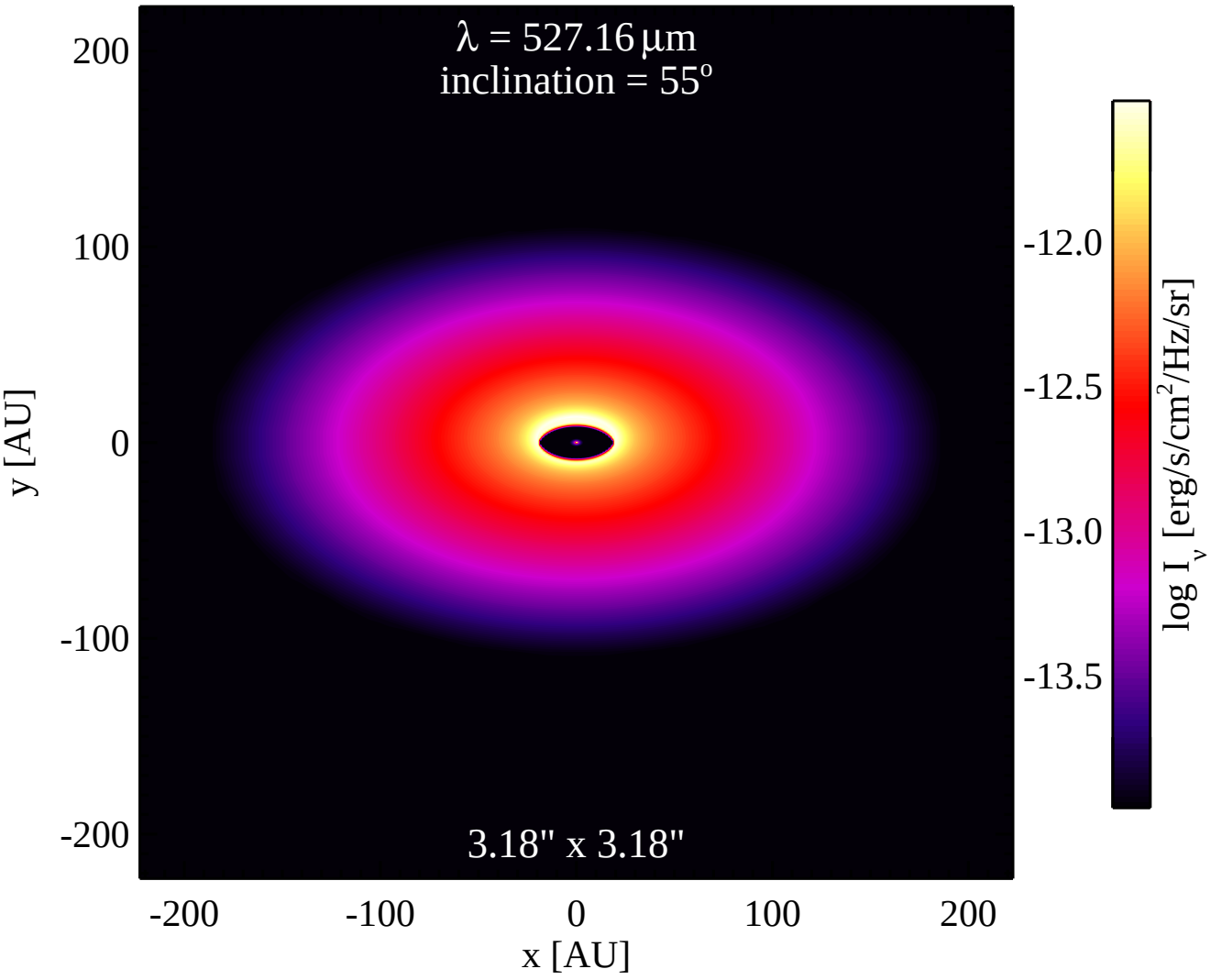

λ = 194.61 μm
inclination = 55°
2.77" x 2.77"
100
0
-100
y [AU]
-100
0
100
x [AU]
-11.0
-11.5
-12.0
-12.5
-13.0
-13.5
log I_ν [erg/s/cm²/Hz/sr]

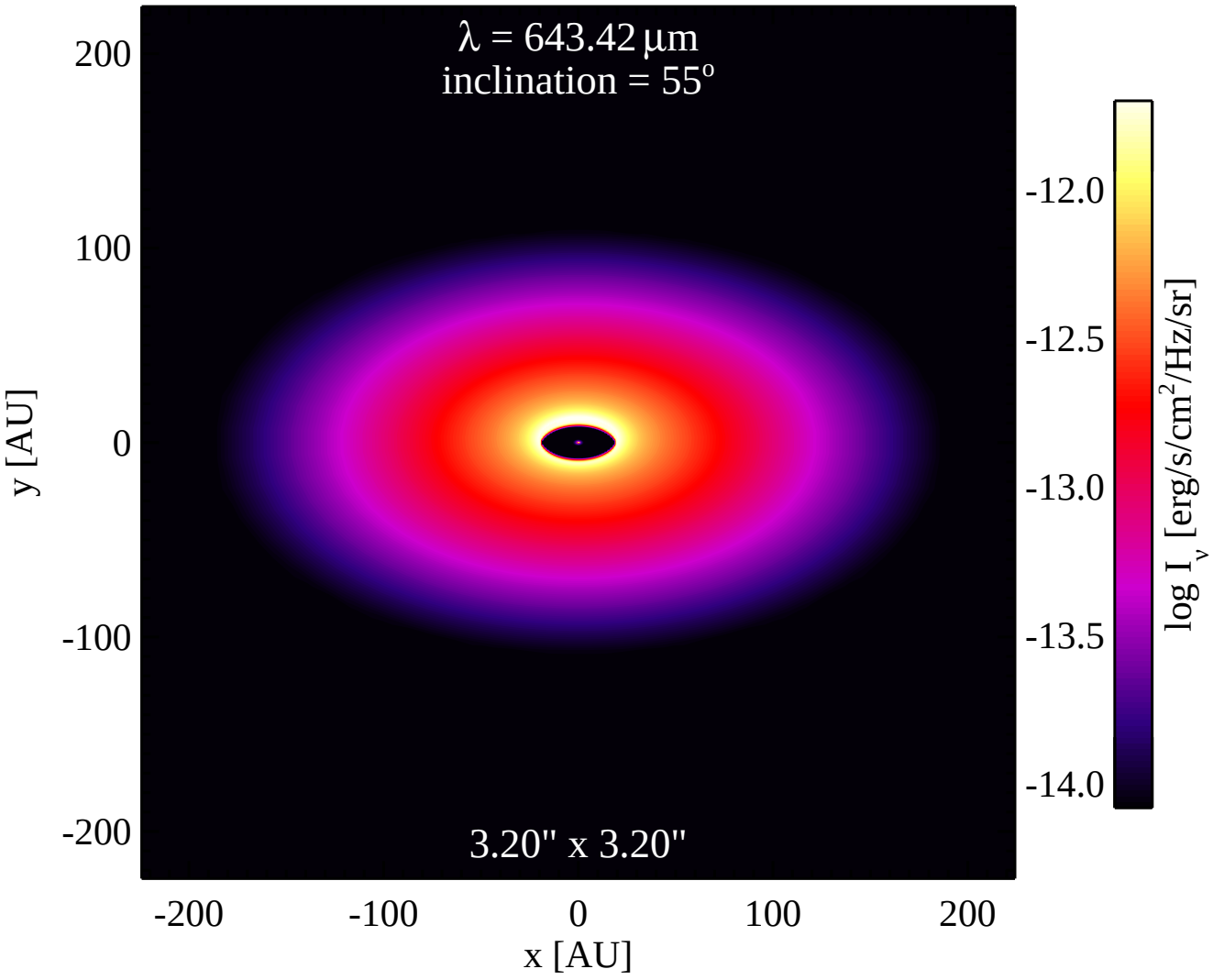

λ = 237.53 μm
inclination = 55°
2.90" x 2.90"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-11.0
-11.5
-12.0
-12.5
-13.0
-13.5
log I_ν [erg/s/cm²/Hz/sr]

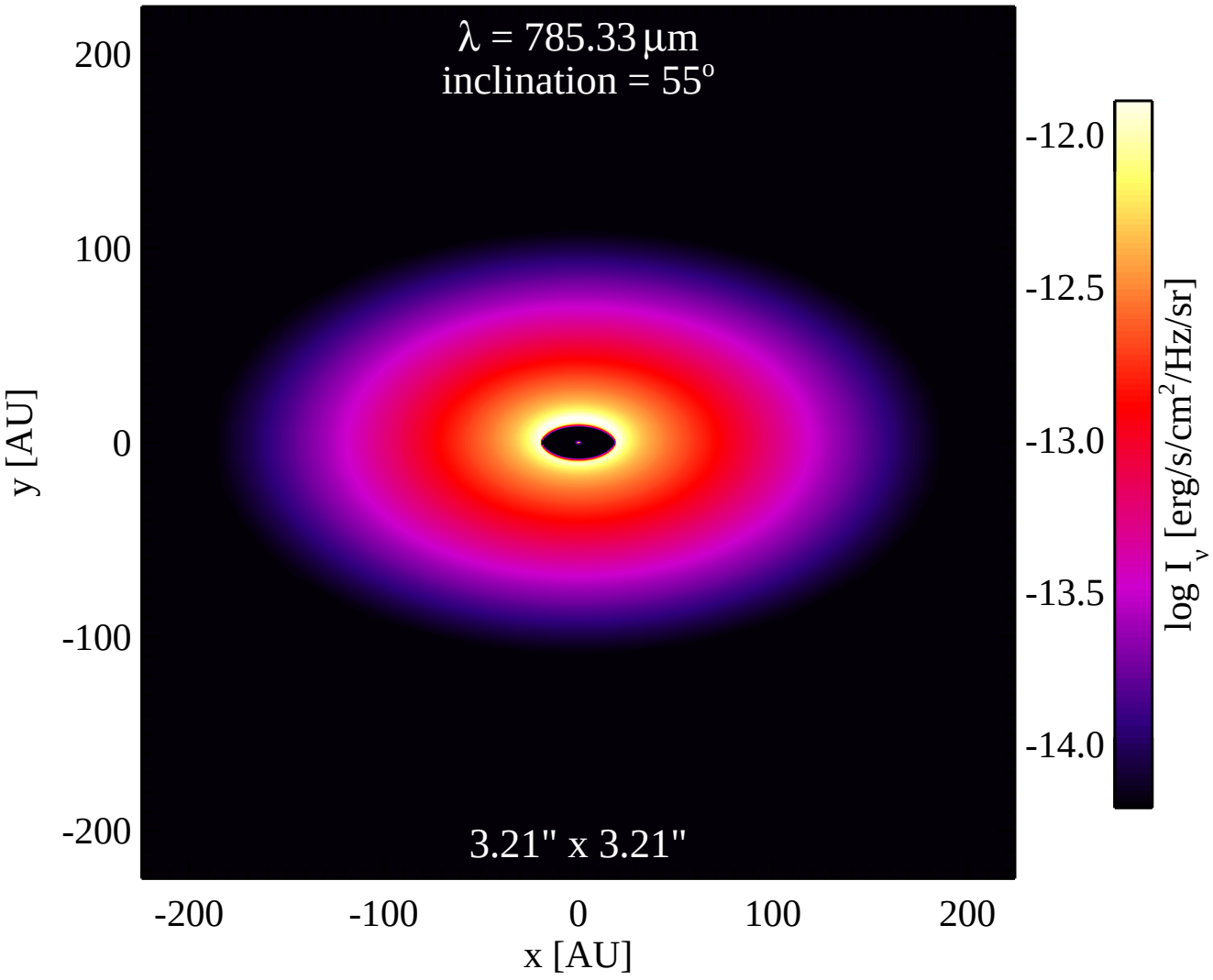

λ = 289.91 μm
inclination = 55°
3.01" x 3.01"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-11.0
-11.5
-12.0
-12.5
-13.0
-13.5
log I_ν [erg/s/cm²/Hz/sr]

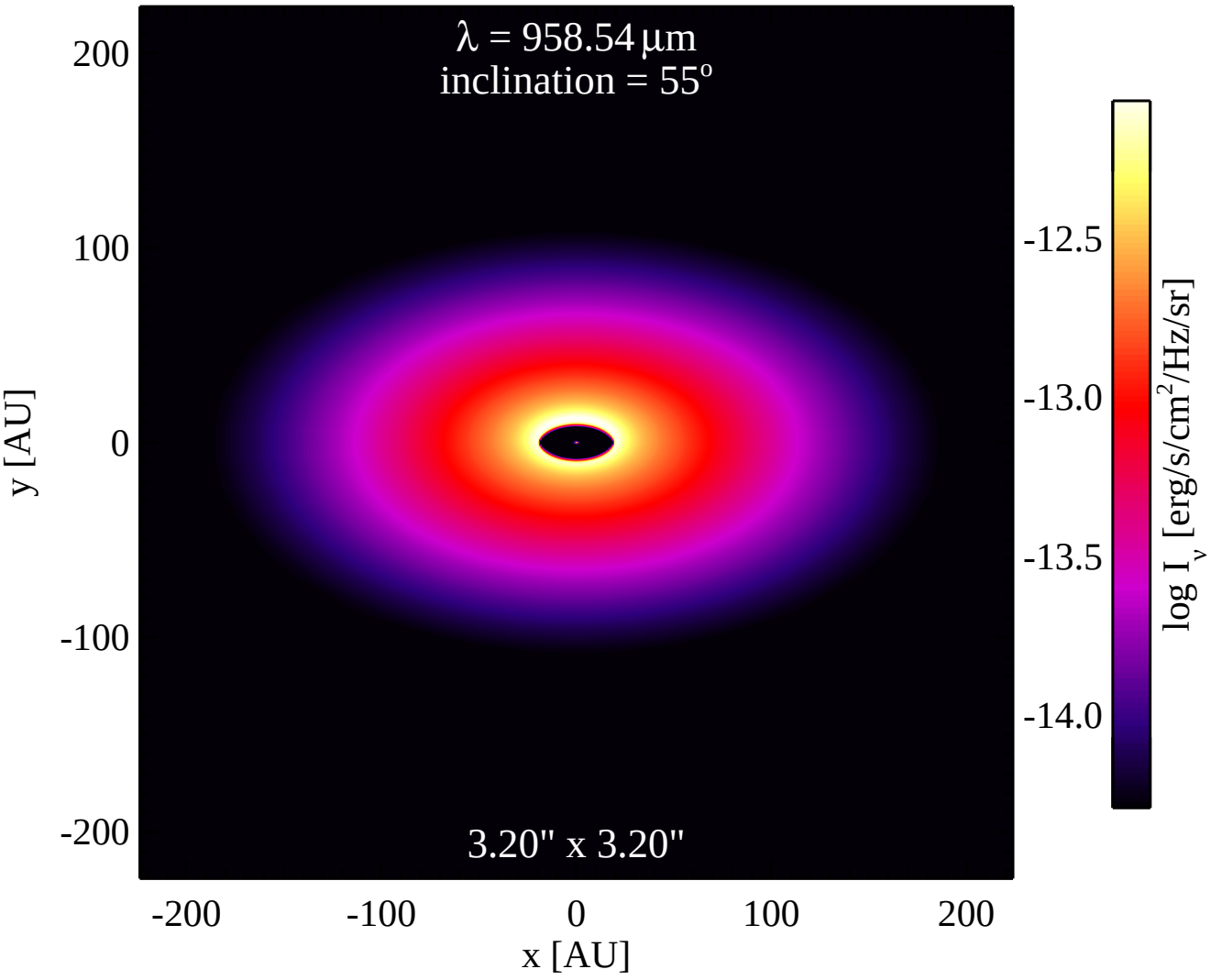

λ = 353.85 μm
inclination = 55°
3.09" x 3.09"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-11.5
-12.0
-12.5
-13.0
-13.5
log I_ν [erg/s/cm²/Hz/sr]

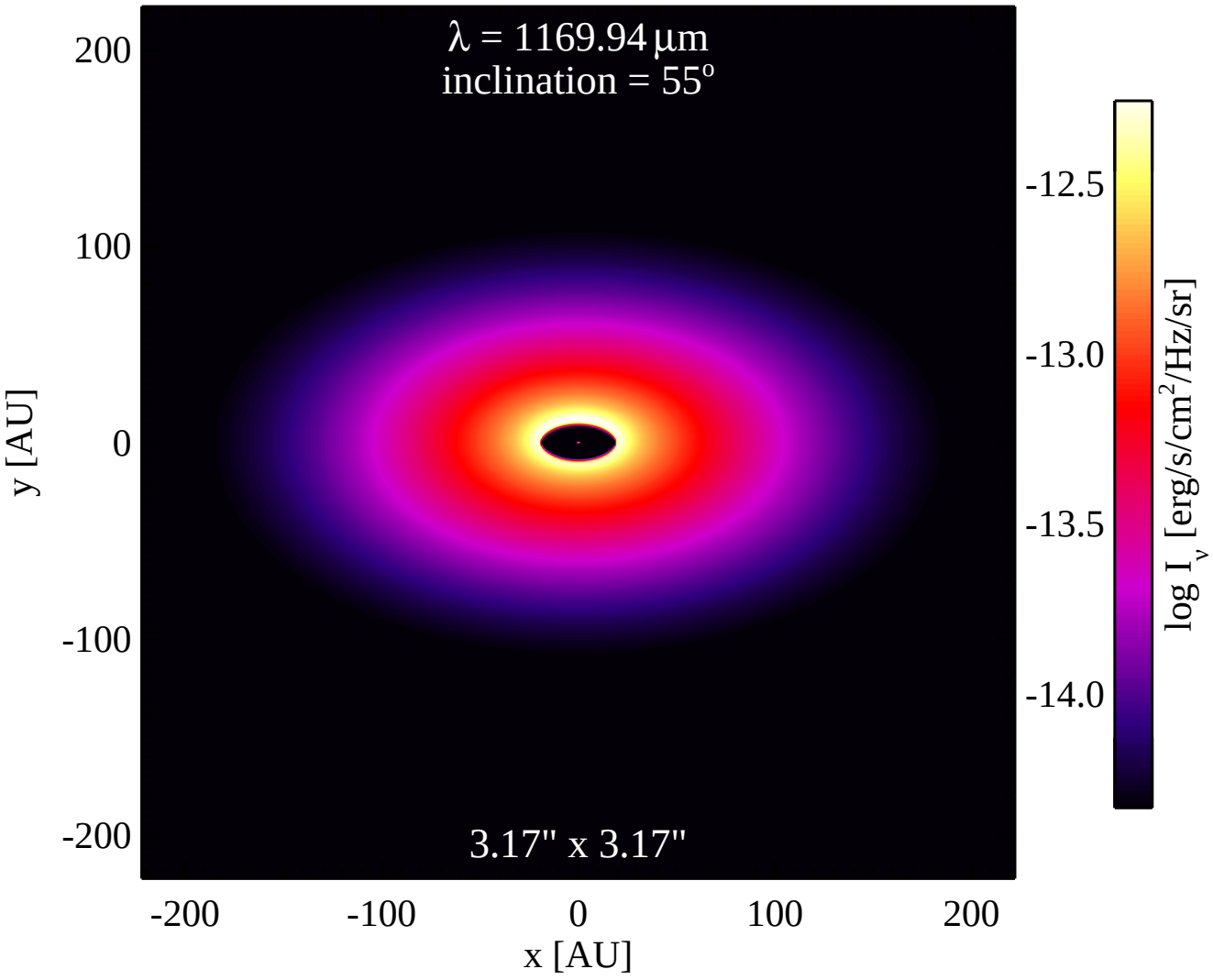

λ = 431.90 μm
inclination = 55°
3.15" x 3.15"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-11.5
-12.0
-12.5
-13.0
-13.5
log I_ν [erg/s/cm²/Hz/sr]

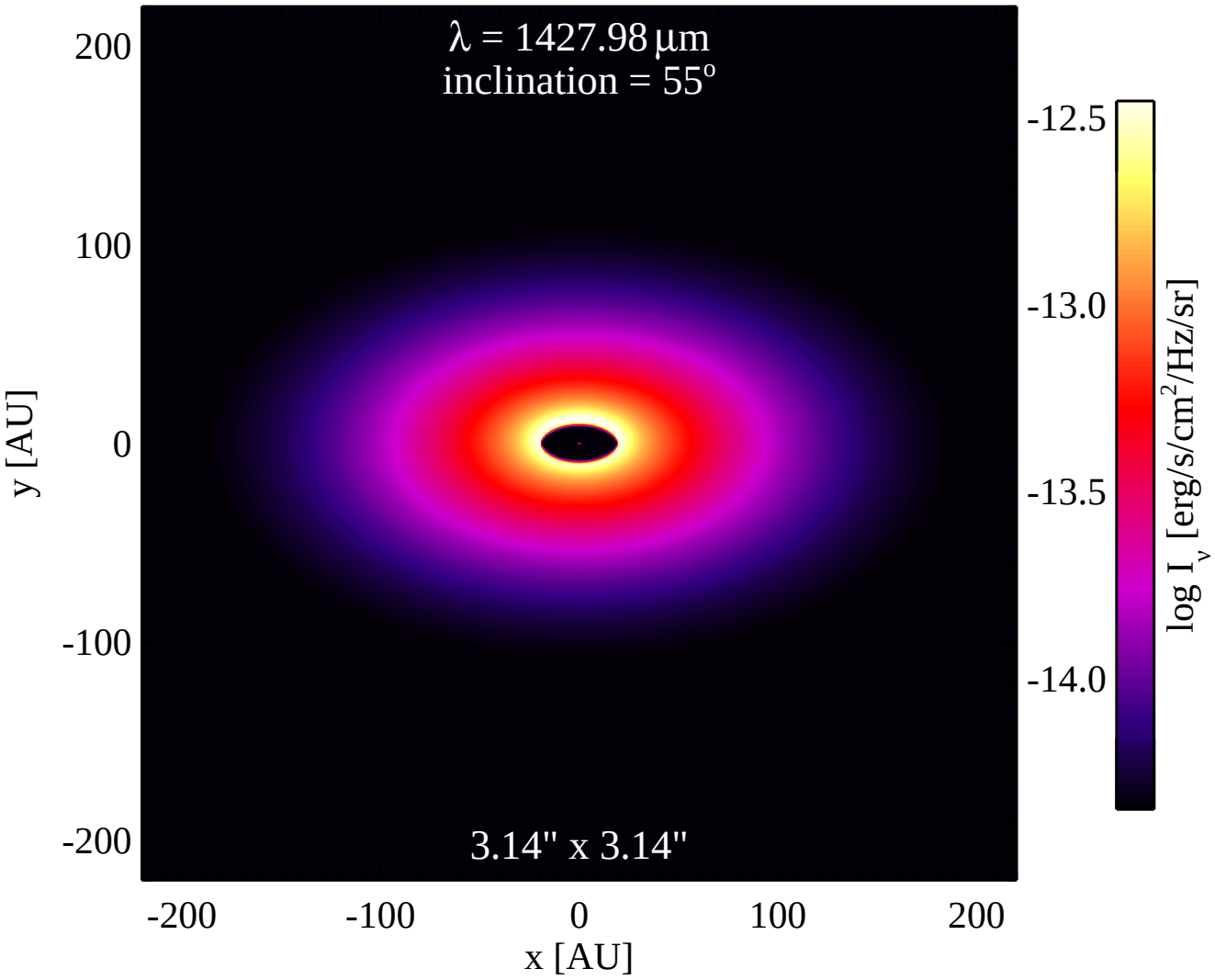

λ = 527.16 μm
inclination = 55°
3.18" x 3.18"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-12.0
-12.5
-13.0
-13.5
log I_ν [erg/s/cm²/Hz/sr]

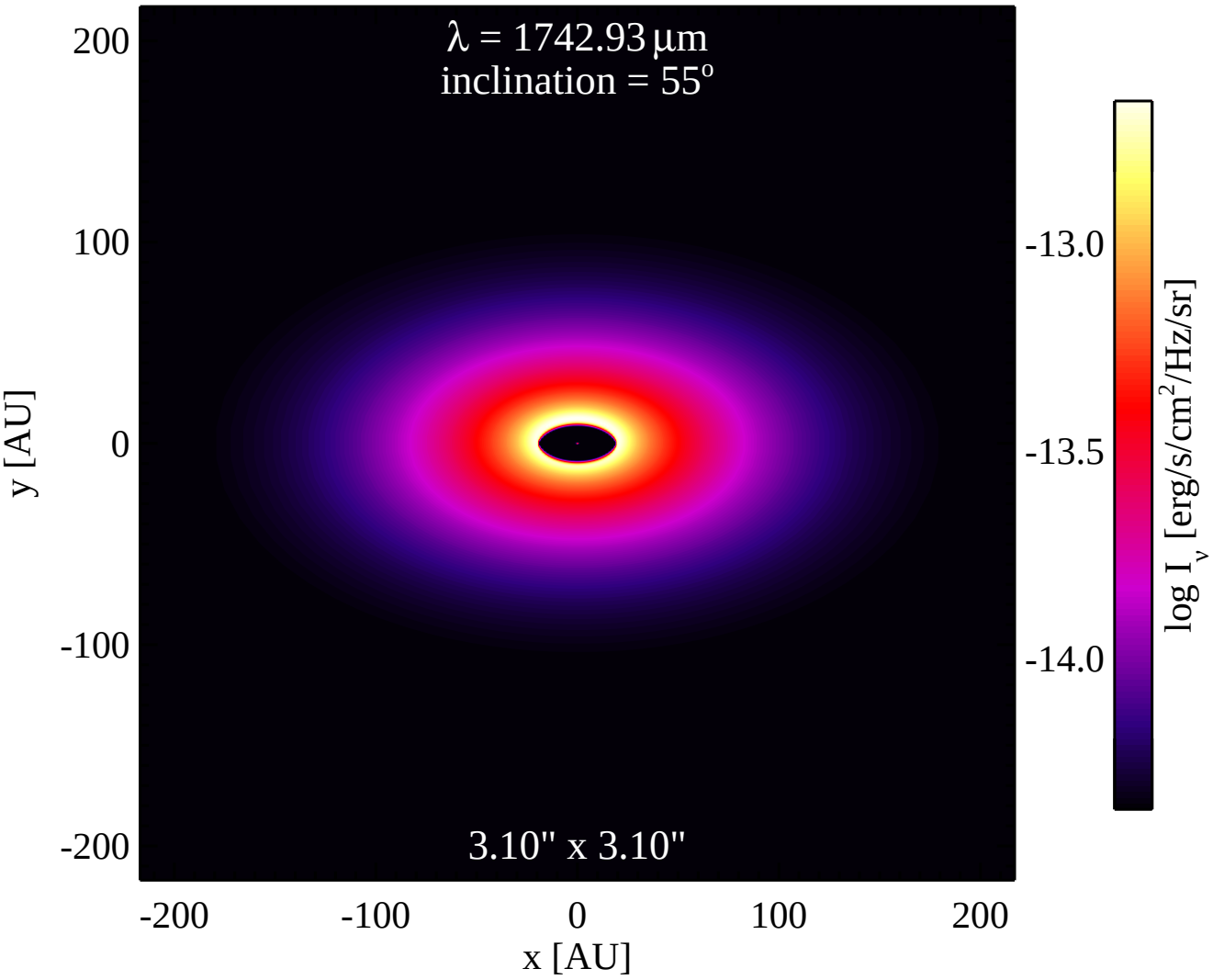

λ = 643.42 μm
inclination = 55°
3.20" x 3.20"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-12.0
-12.5
-13.0
-13.5
-14.0
log I_ν [erg/s/cm²/Hz/sr]

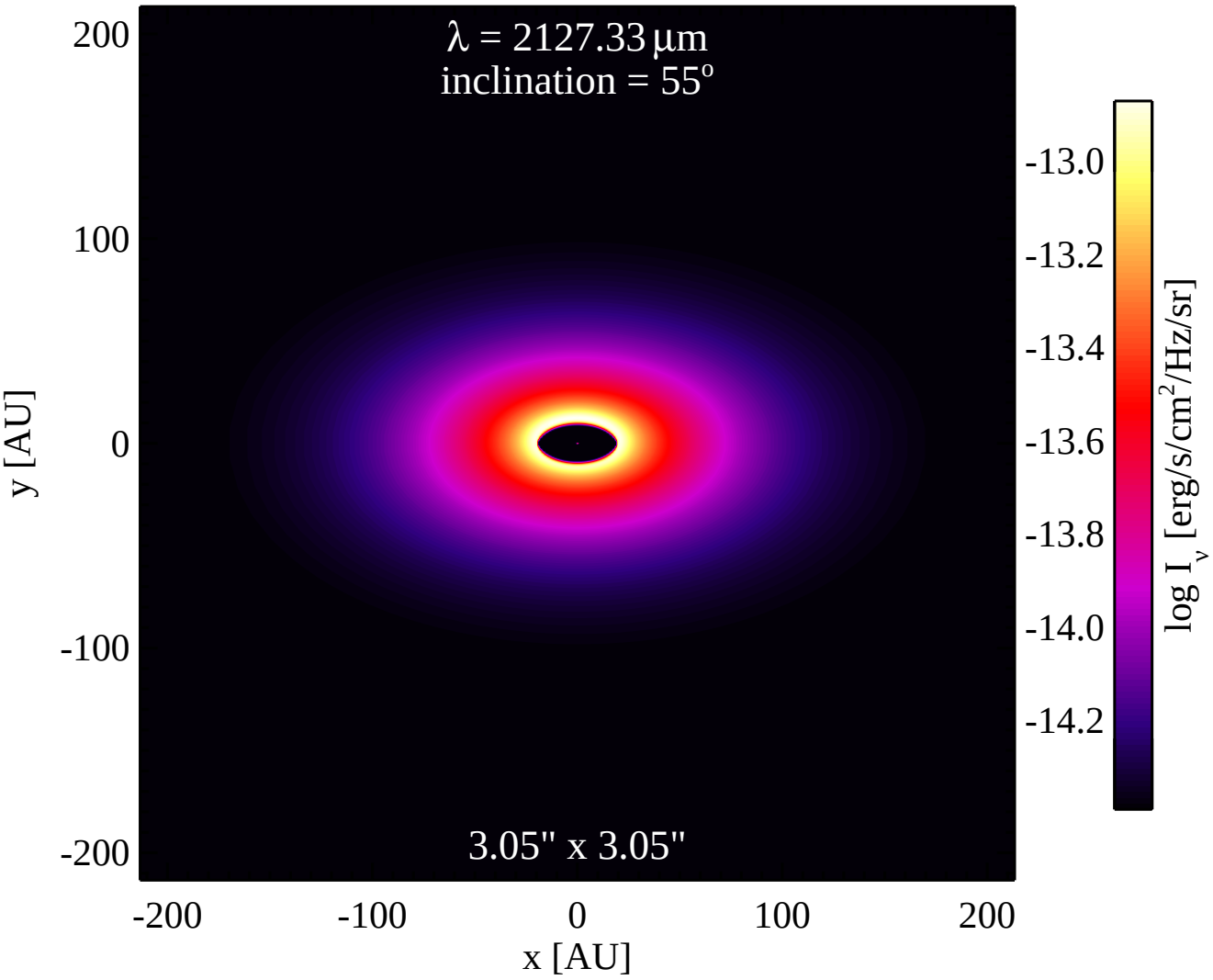

λ = 785.33 μm
inclination = 55°
3.21" x 3.21"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-12.0
-12.5
-13.0
-13.5
-14.0
log I_ν [erg/s/cm²/Hz/sr]

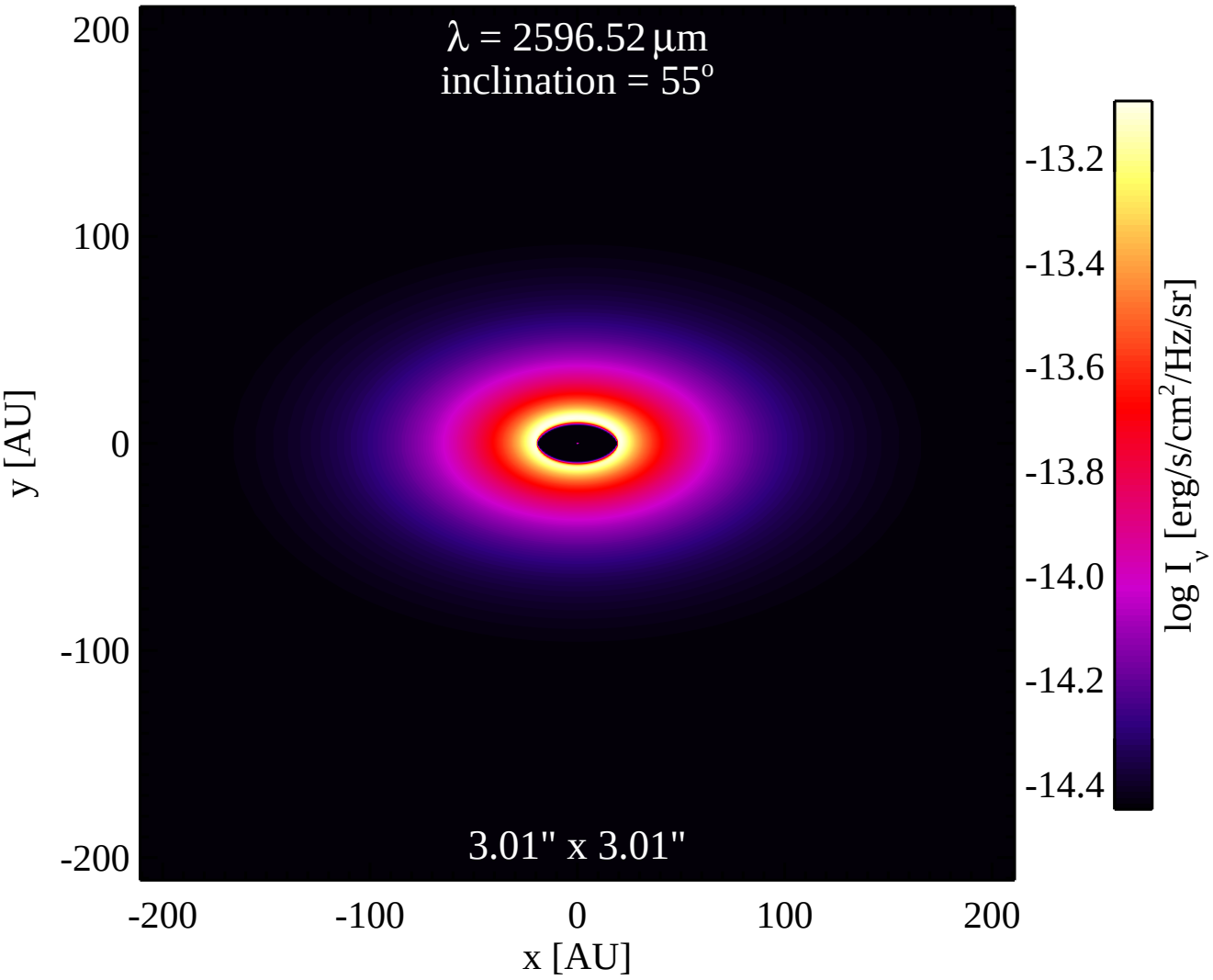

λ = 958.54 μm
inclination = 55°
3.20" x 3.20"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-12.5
-13.0
-13.5
-14.0
log I_ν [erg/s/cm²/Hz/sr]

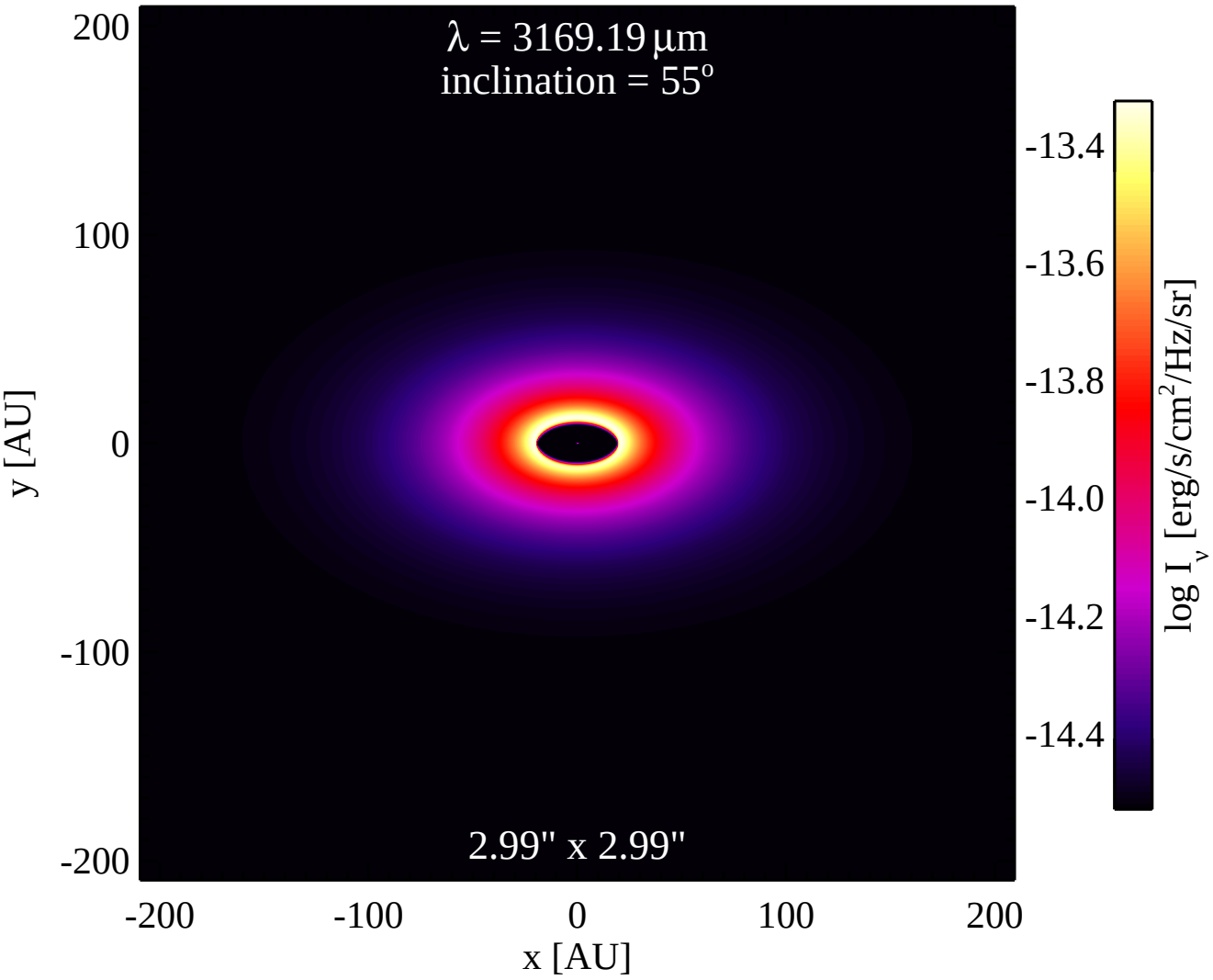

λ = 1169.94 μm
inclination = 55°
3.17" x 3.17"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-12.5
-13.0
-13.5
-14.0
log I_ν [erg/s/cm²/Hz/sr]

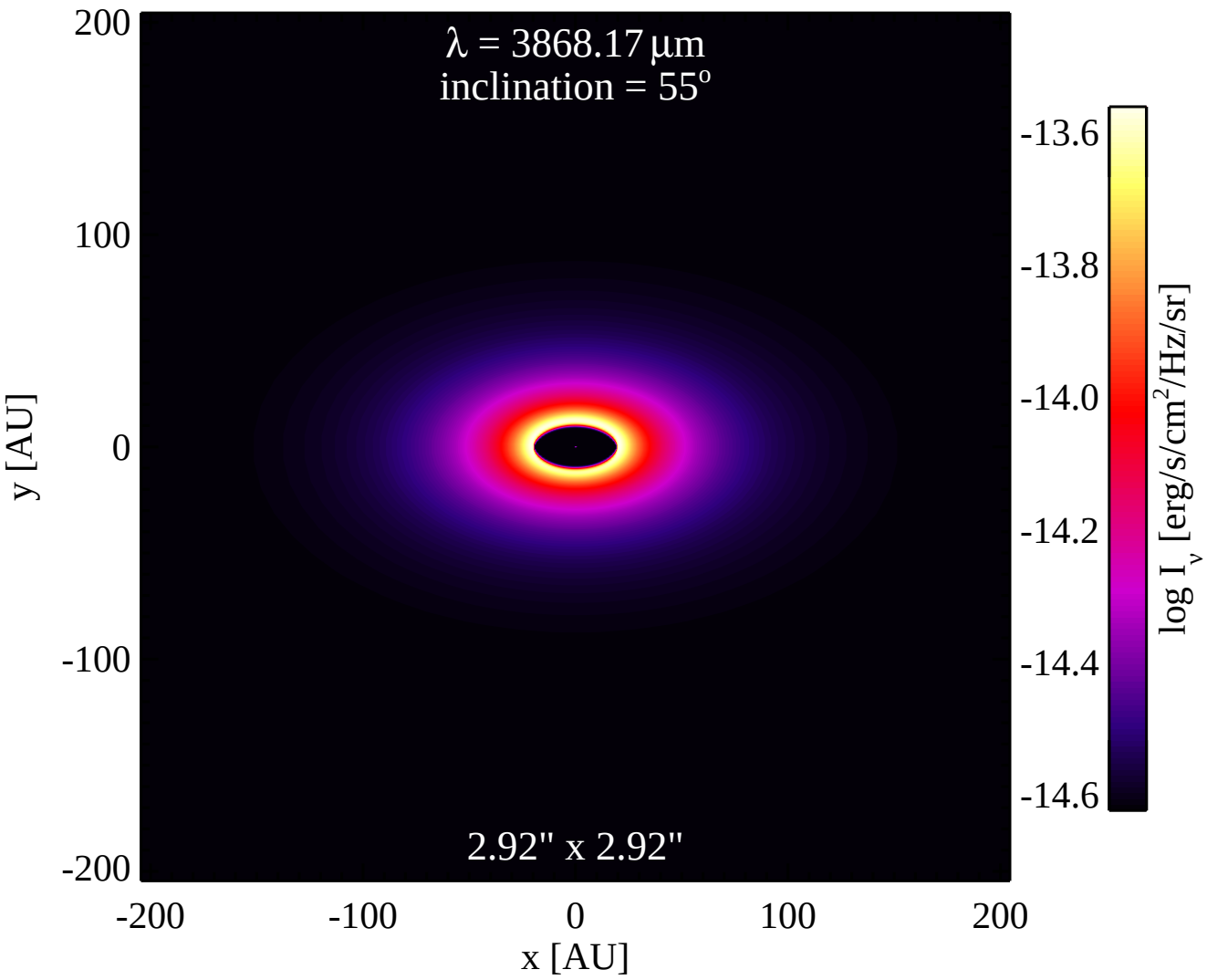

λ = 1427.98 μm
inclination = 55°
3.14" x 3.14"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-12.5
-13.0
-13.5
-14.0
log I_ν [erg/s/cm²/Hz/sr]

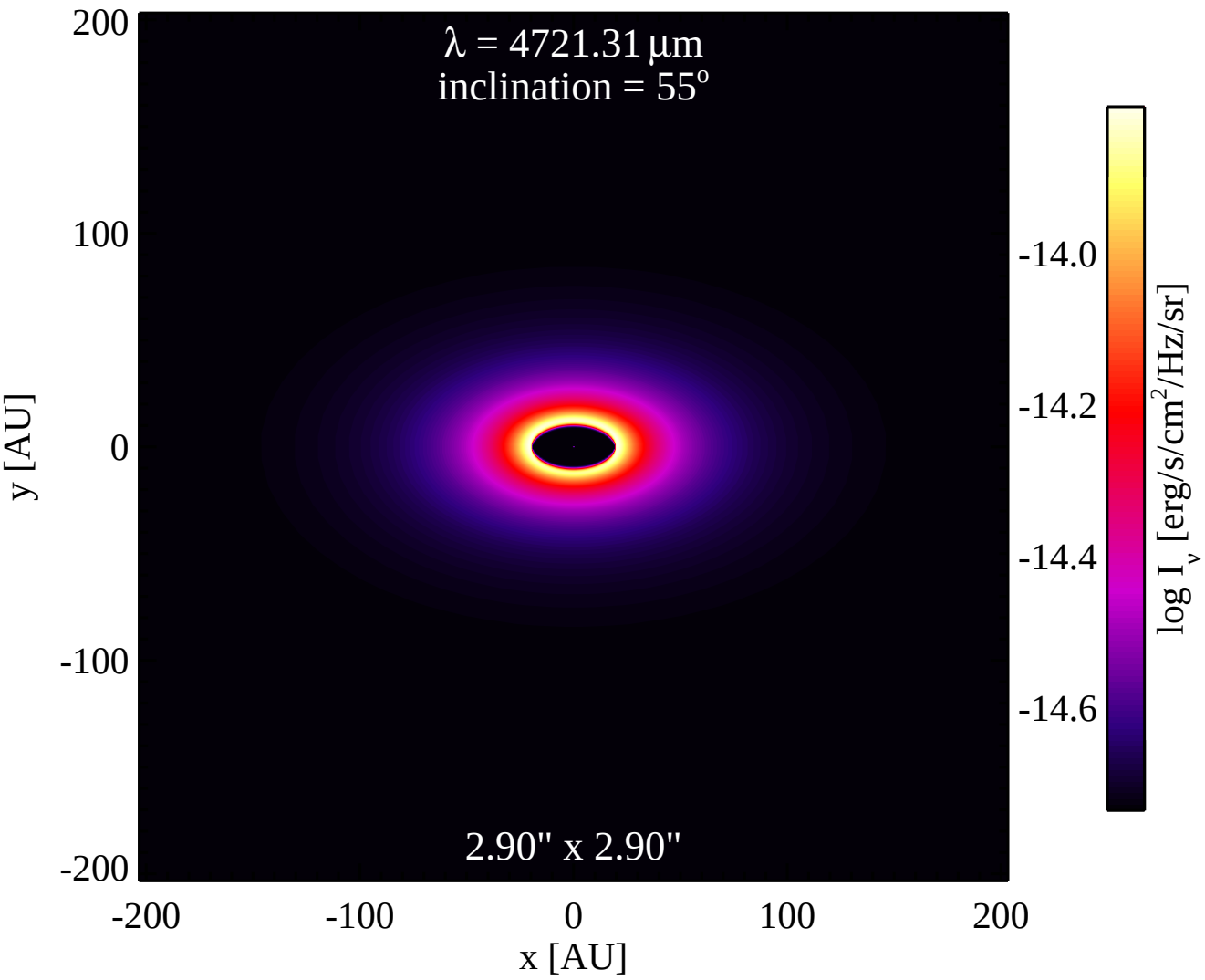

λ = 1742.93 μm
inclination = 55°
3.10" x 3.10"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-13.0
-13.5
-14.0
log I_ν [erg/s/cm²/Hz/sr]

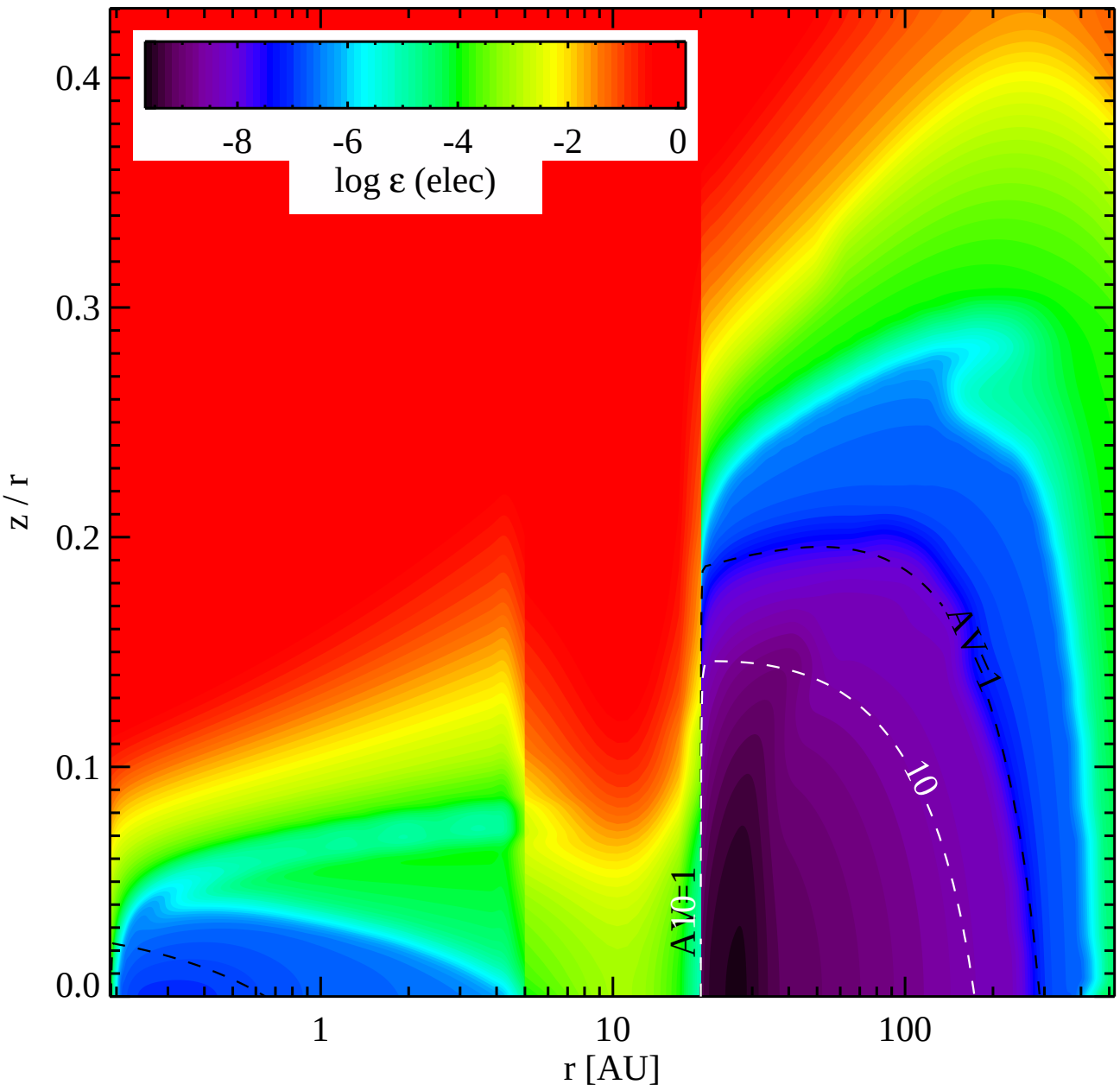

λ = 2127.33 μm
inclination = 55°
3.05" x 3.05"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-13.0
-13.2
-13.4
-13.6
-13.8
-14.0
-14.2
log I_ν [erg/s/cm²/Hz/sr]

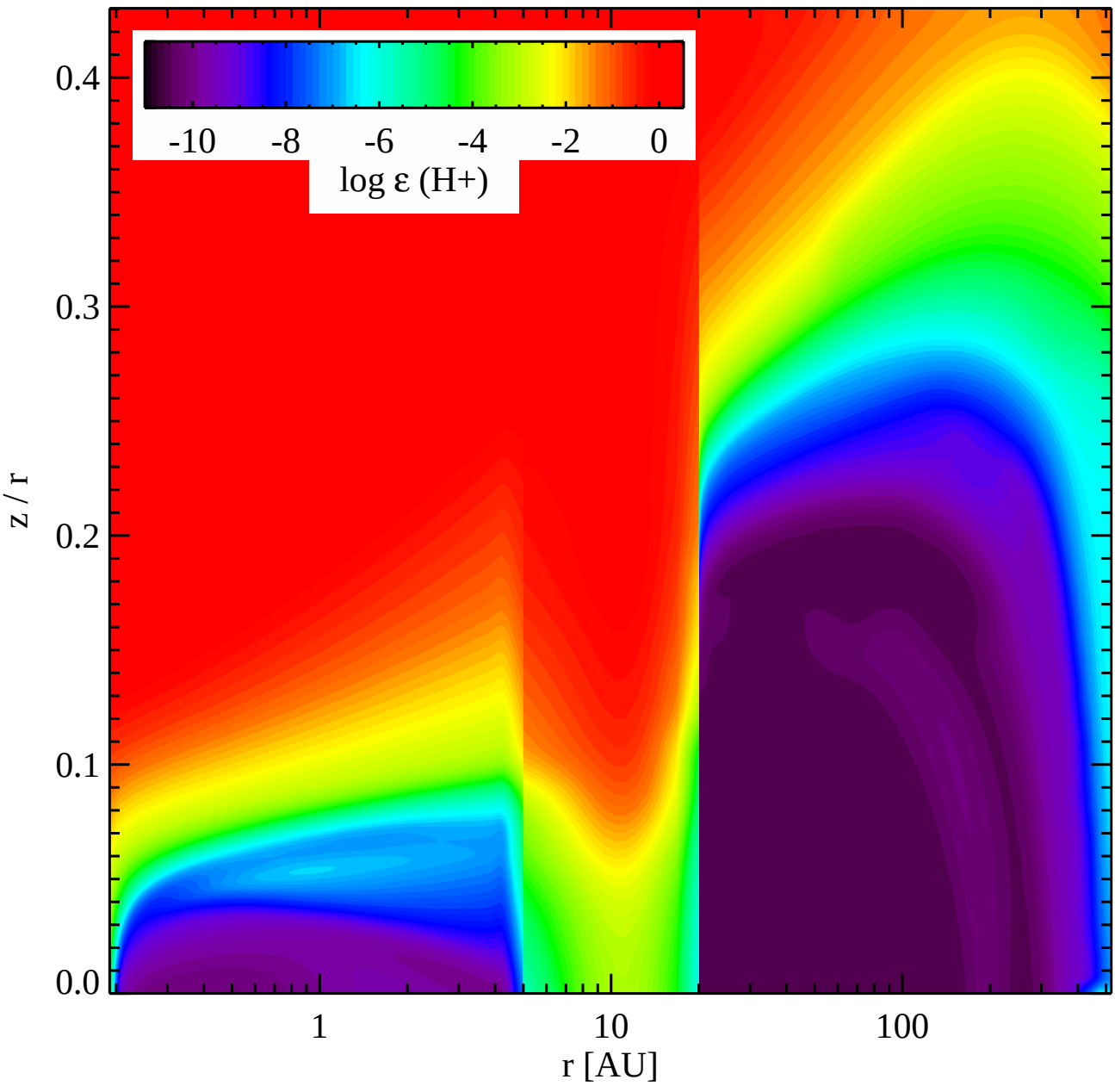

λ = 2596.52 μm
inclination = 55°
3.01" x 3.01"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-13.2
-13.4
-13.6
-13.8
-14.0
-14.2
-14.4
log I_ν [erg/s/cm²/Hz/sr]

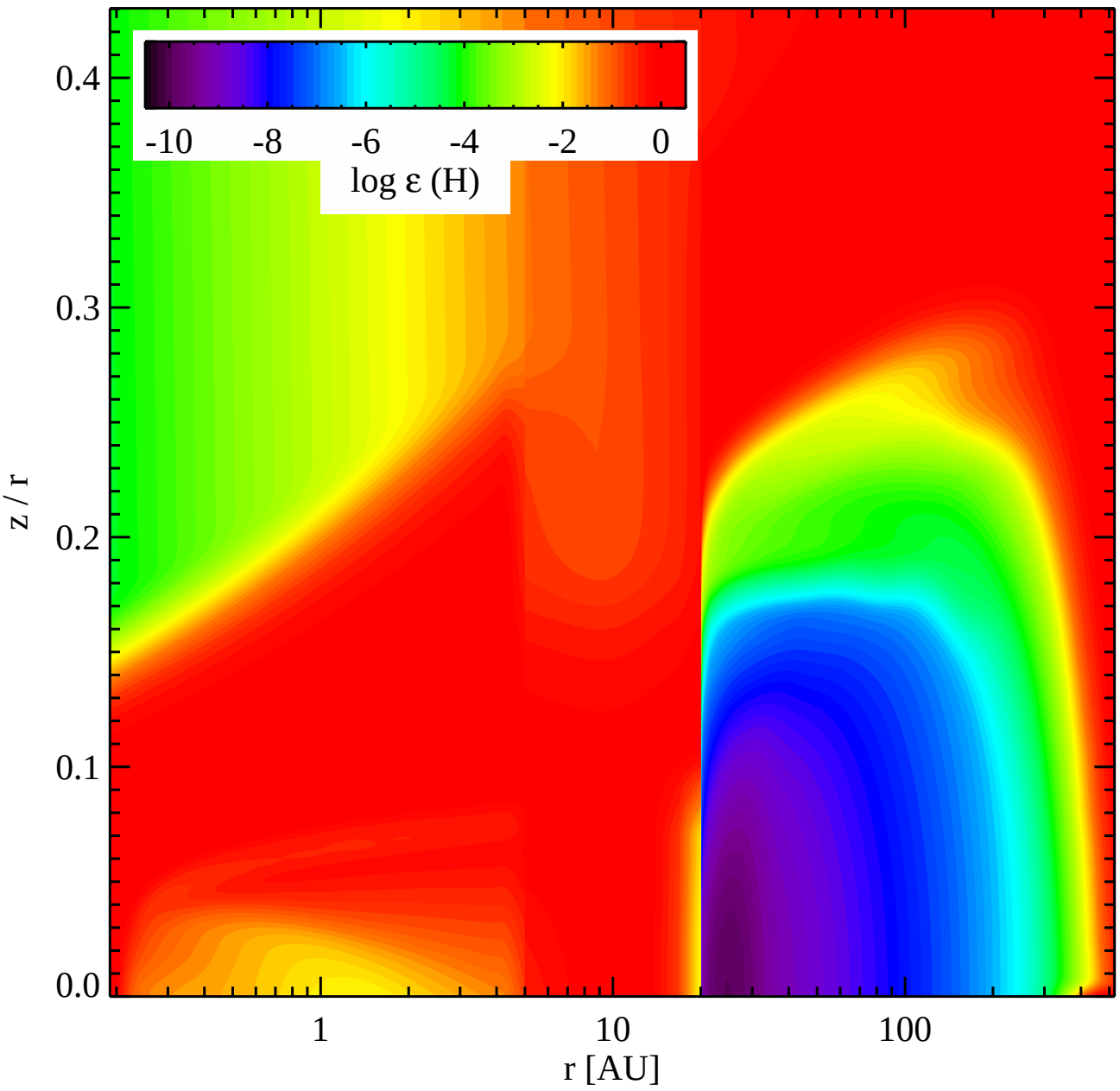

λ = 3169.19 μm
inclination = 55°
2.99" x 2.99"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-13.4
-13.6
-13.8
-14.0
-14.2
-14.4
log I_ν [erg/s/cm²/Hz/sr]

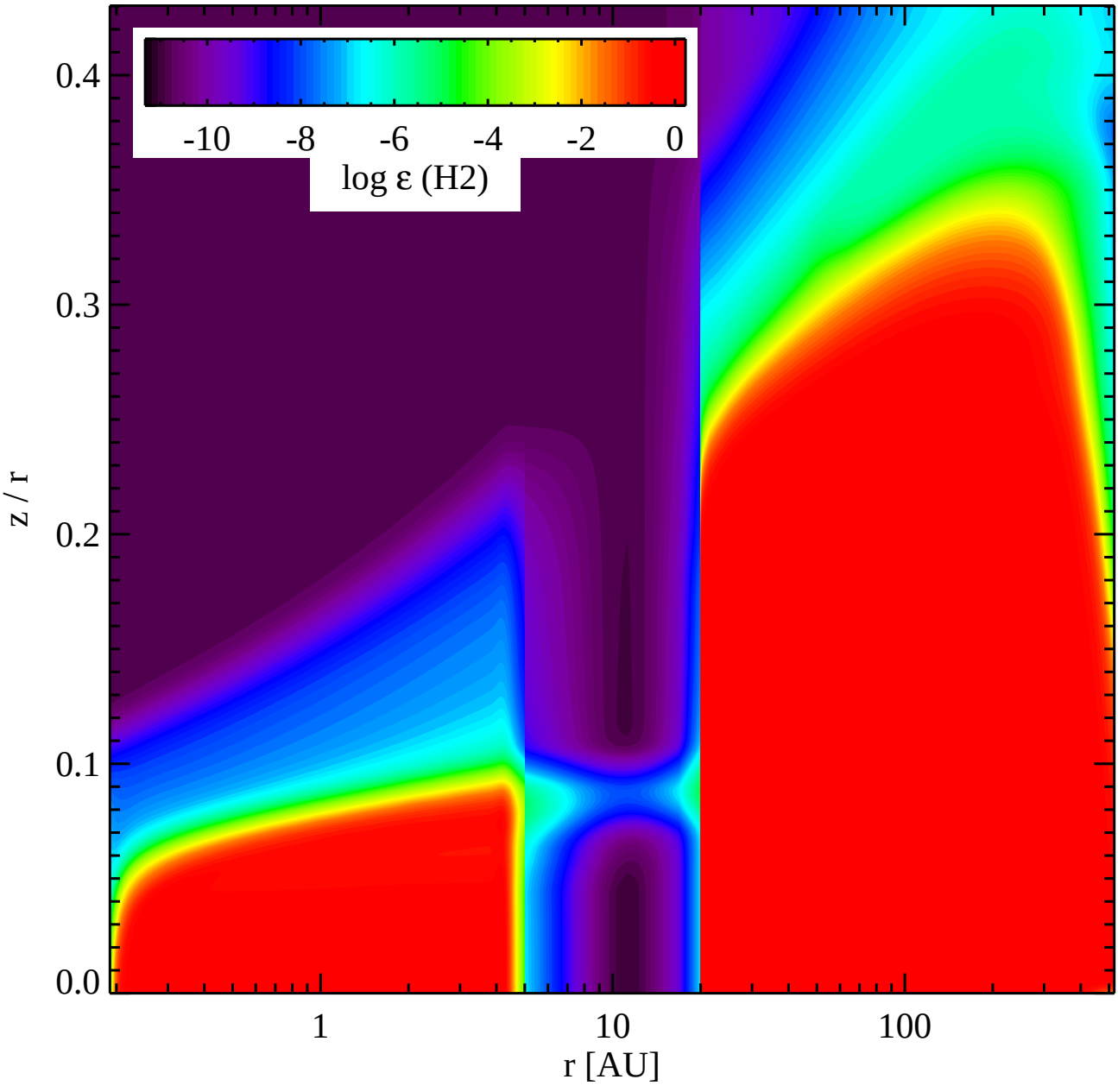

λ = 3868.17 μm
inclination = 55°
2.92" x 2.92"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-13.6
-13.8
-14.0
-14.2
-14.4
-14.6
log I_ν [erg/s/cm²/Hz/sr]

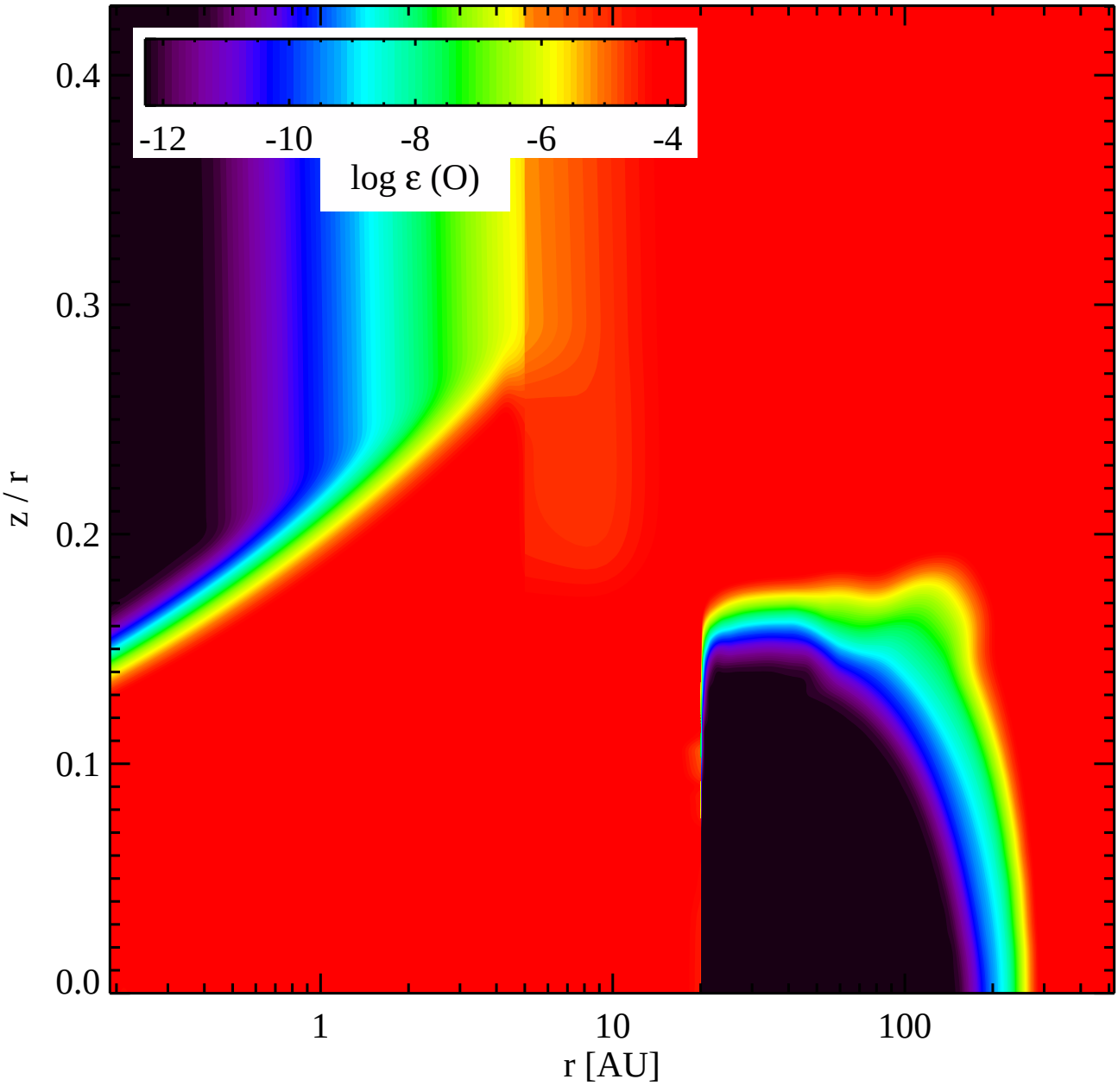

λ = 4721.31 μm
inclination = 55°
2.90" x 2.90"
200
100
0
-100
-200
y [AU]
-200
-100
0
100
200
x [AU]
-14.0
-14.2
-14.4
-14.6
log I_ν [erg/s/cm²/Hz/sr]

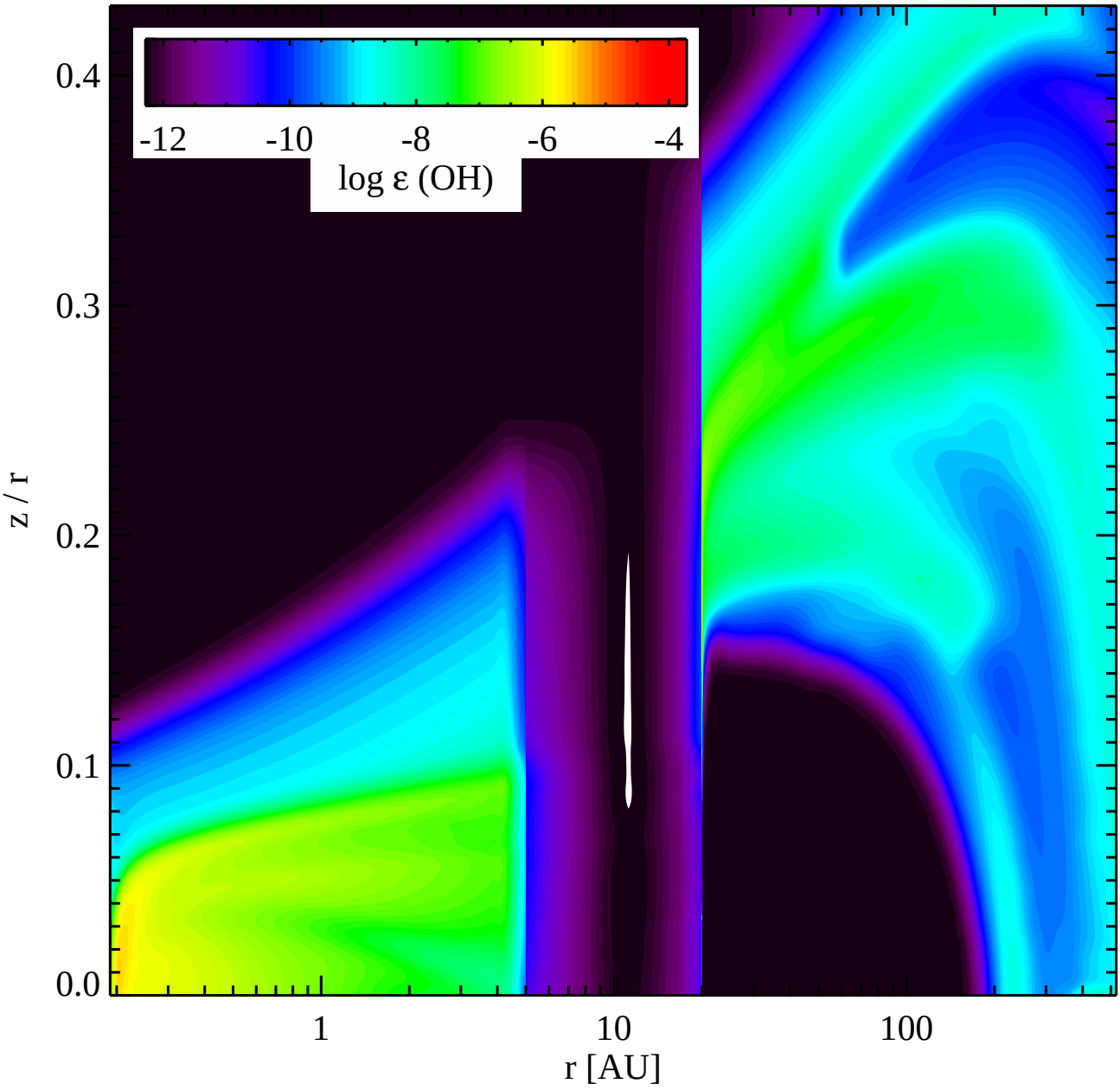

-8
-6
-4
-2
0
log ε (elec)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]
AV=1
10
A10=1

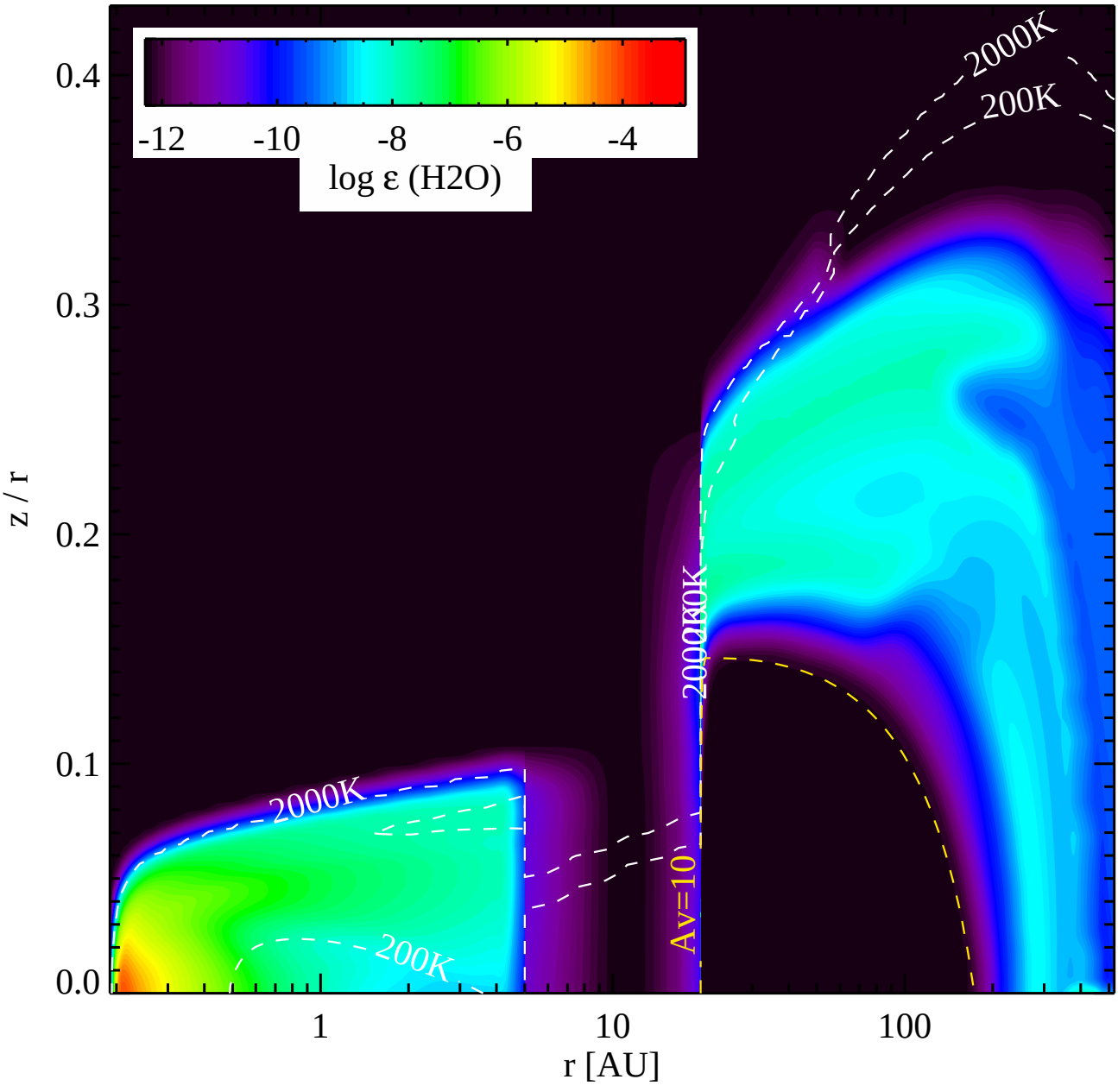

-10
-8
-6
-4
-2
0
log ε (H+)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

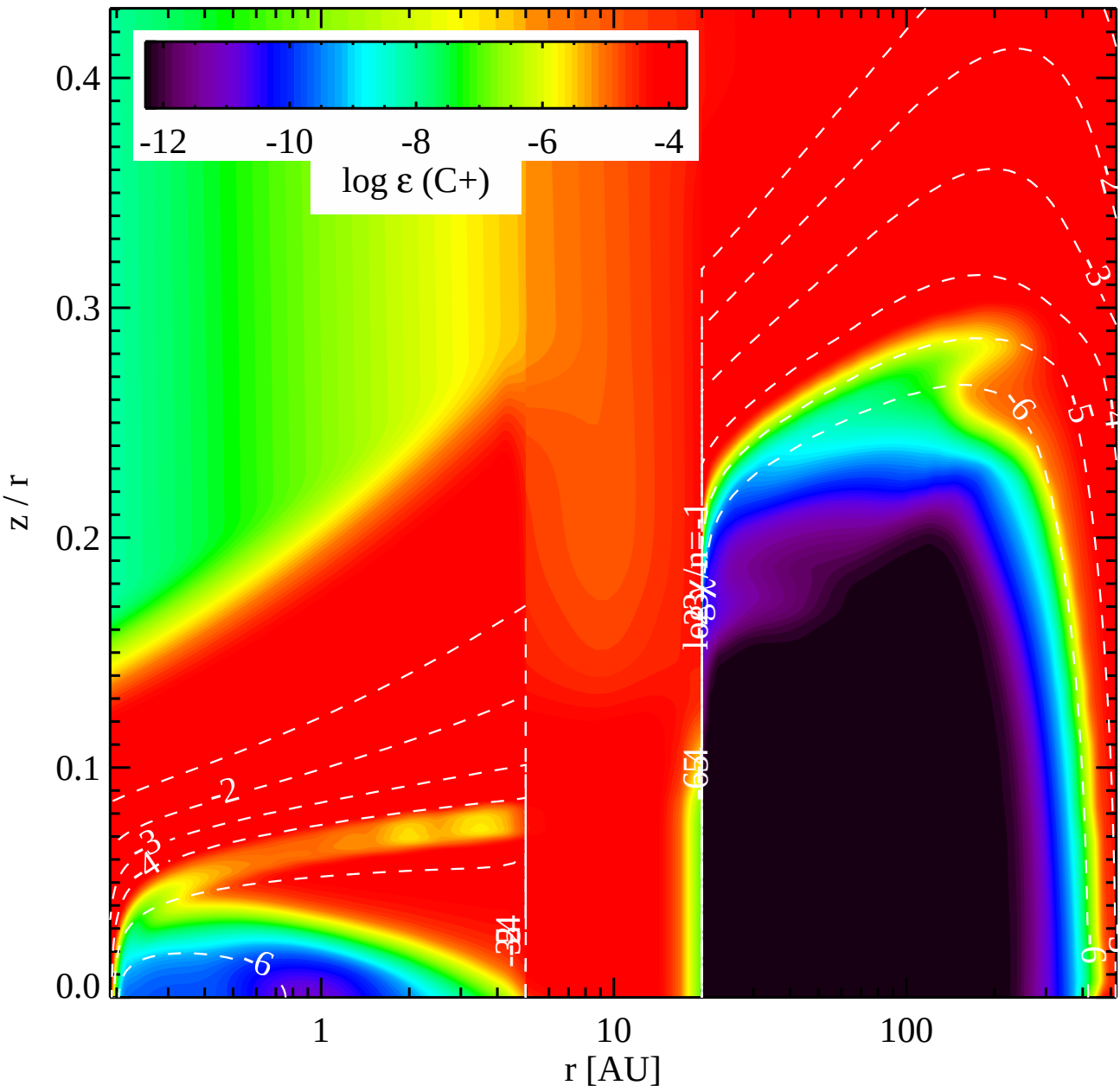

-10
-8
-6
-4
-2
0
log ε (H)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

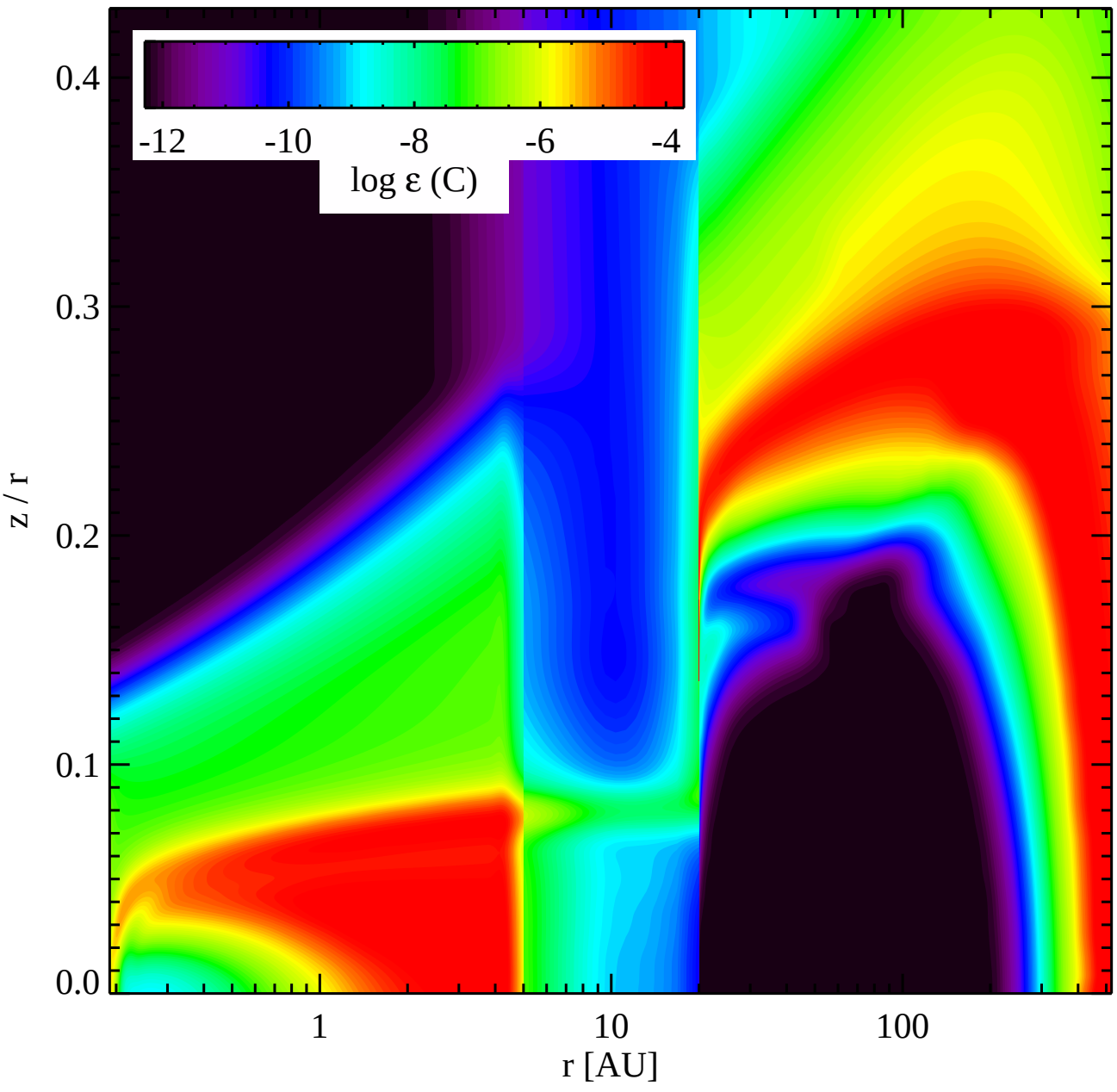

-10
-8
-6
-4
-2
0
log ε (H2)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

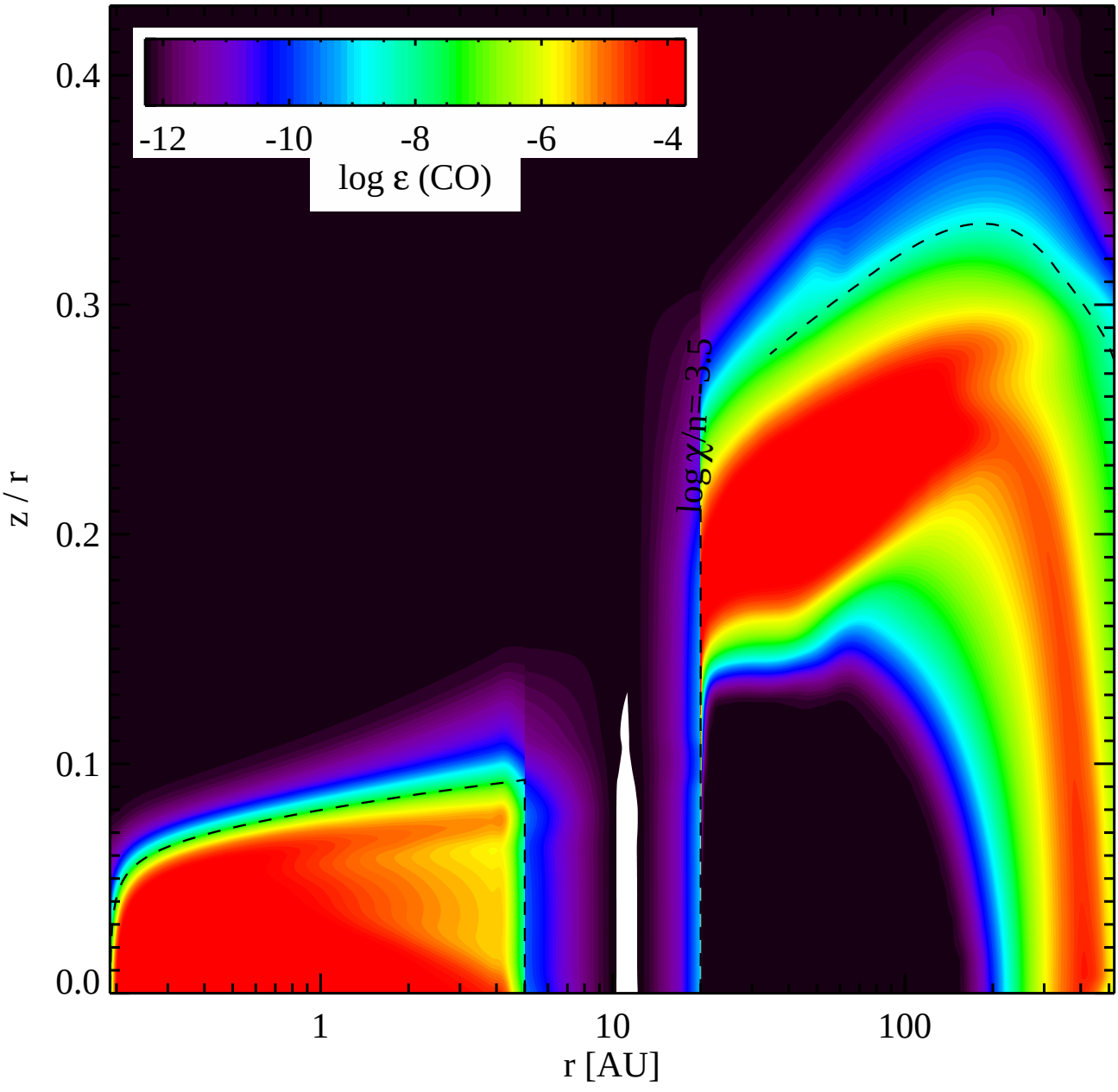

-12
-10
-8
-6
-4
log ε (O)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

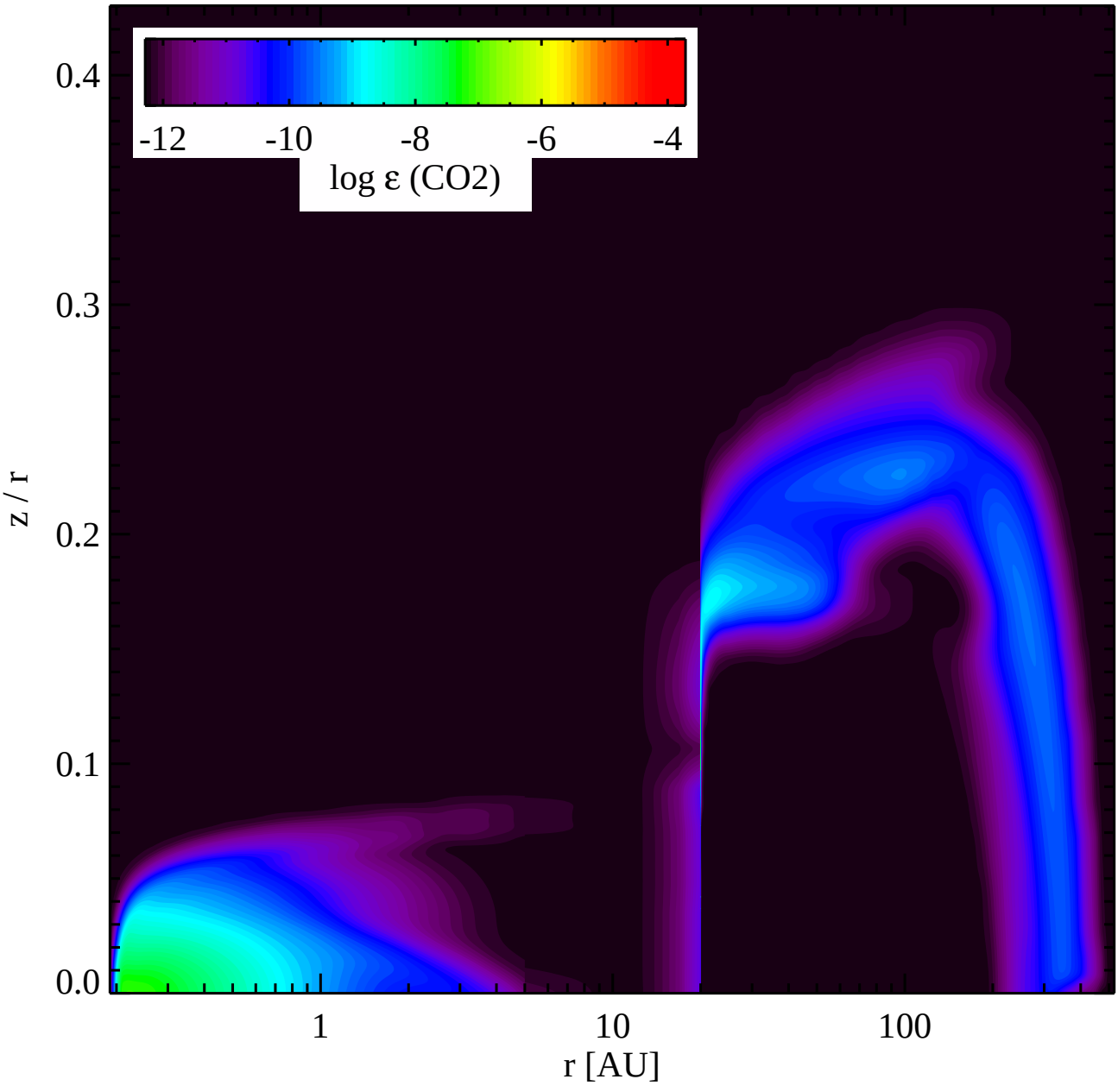

-12
-10
-8
-6
-4
log ε (OH)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

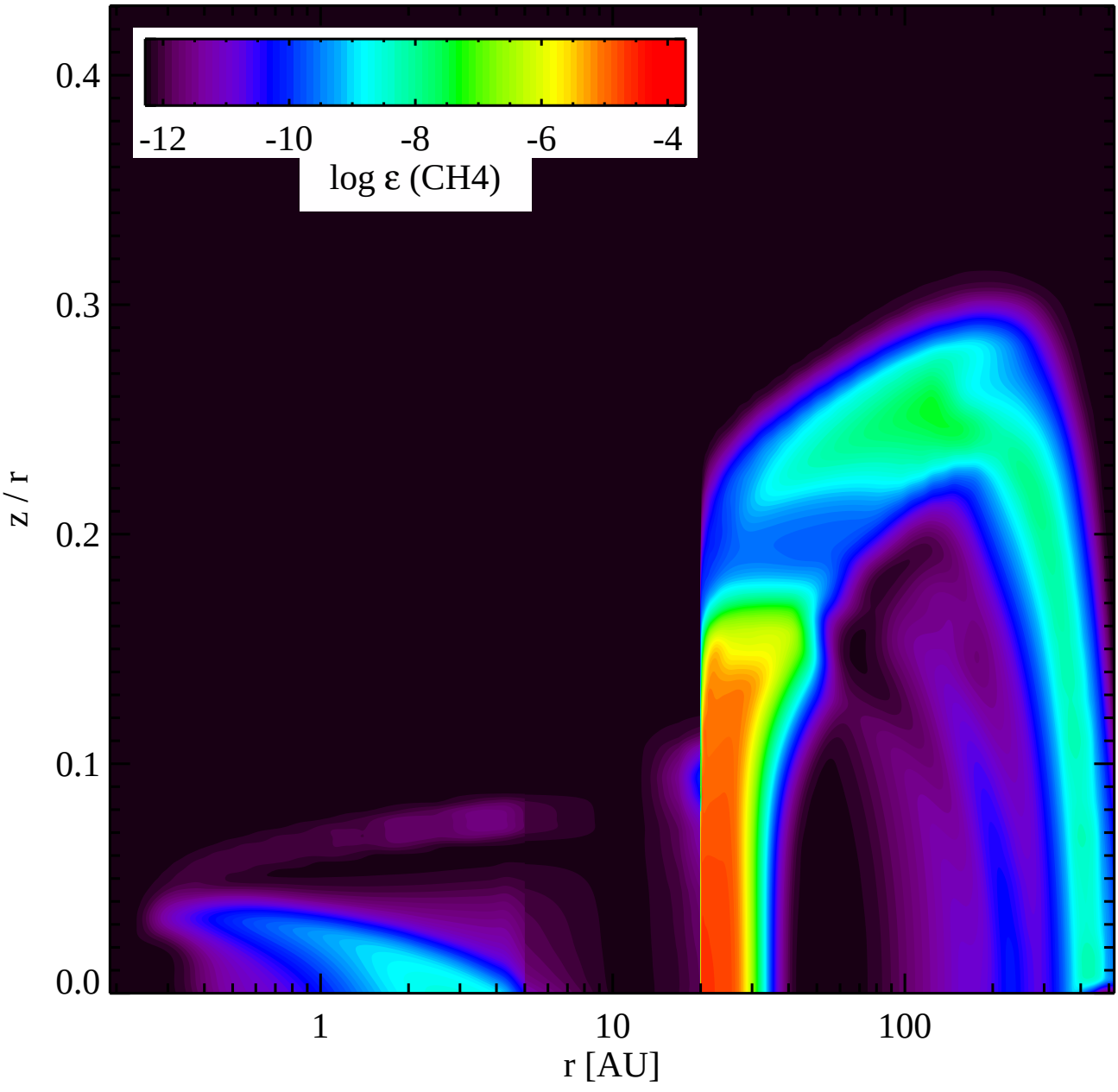

-12
-10
-8
-6
-4
log ε (H2O)
2000K
200K
2000K
200K
Av=10
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

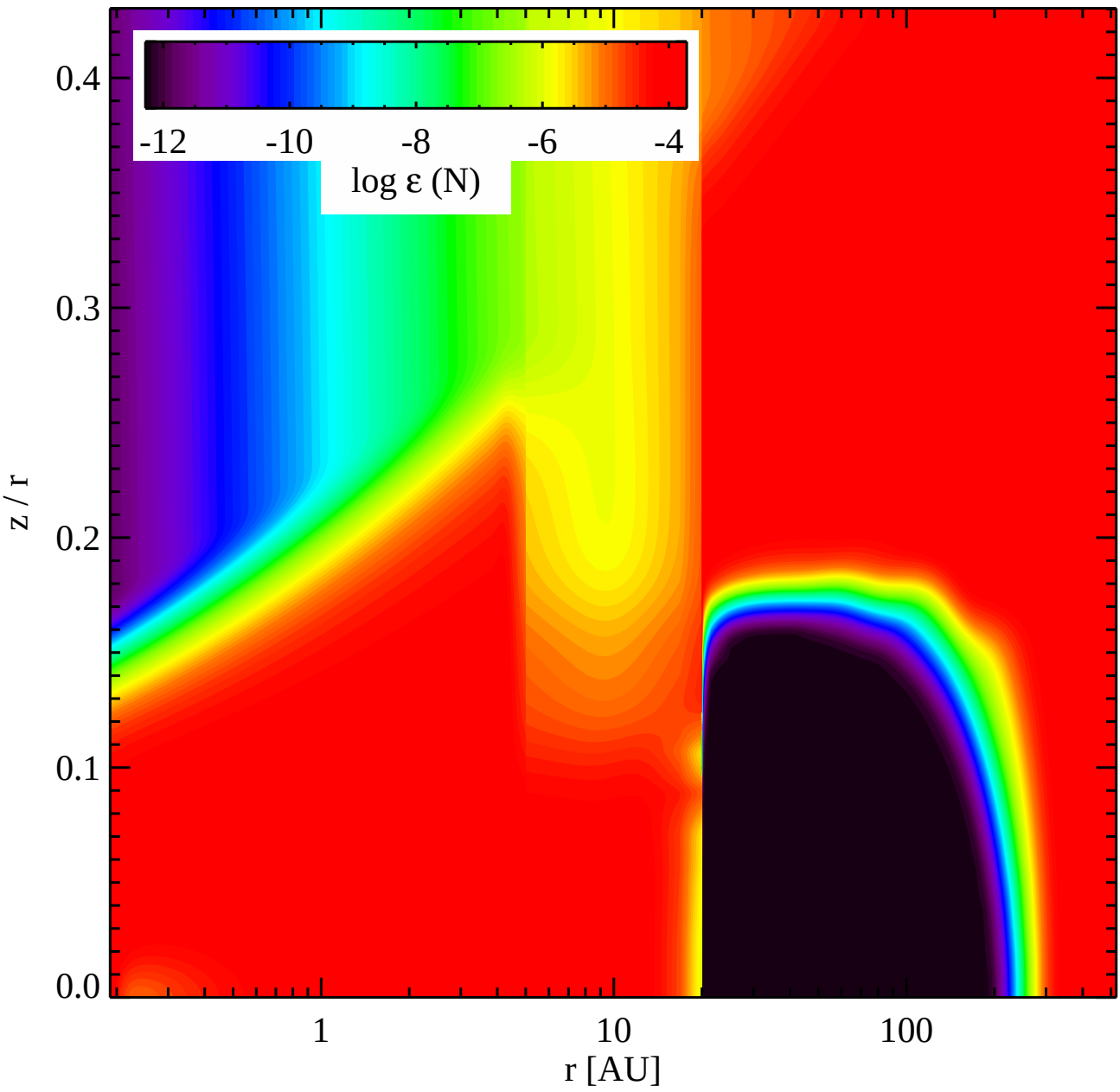

-12
-10
-8
-6
-4
log ε (C+)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

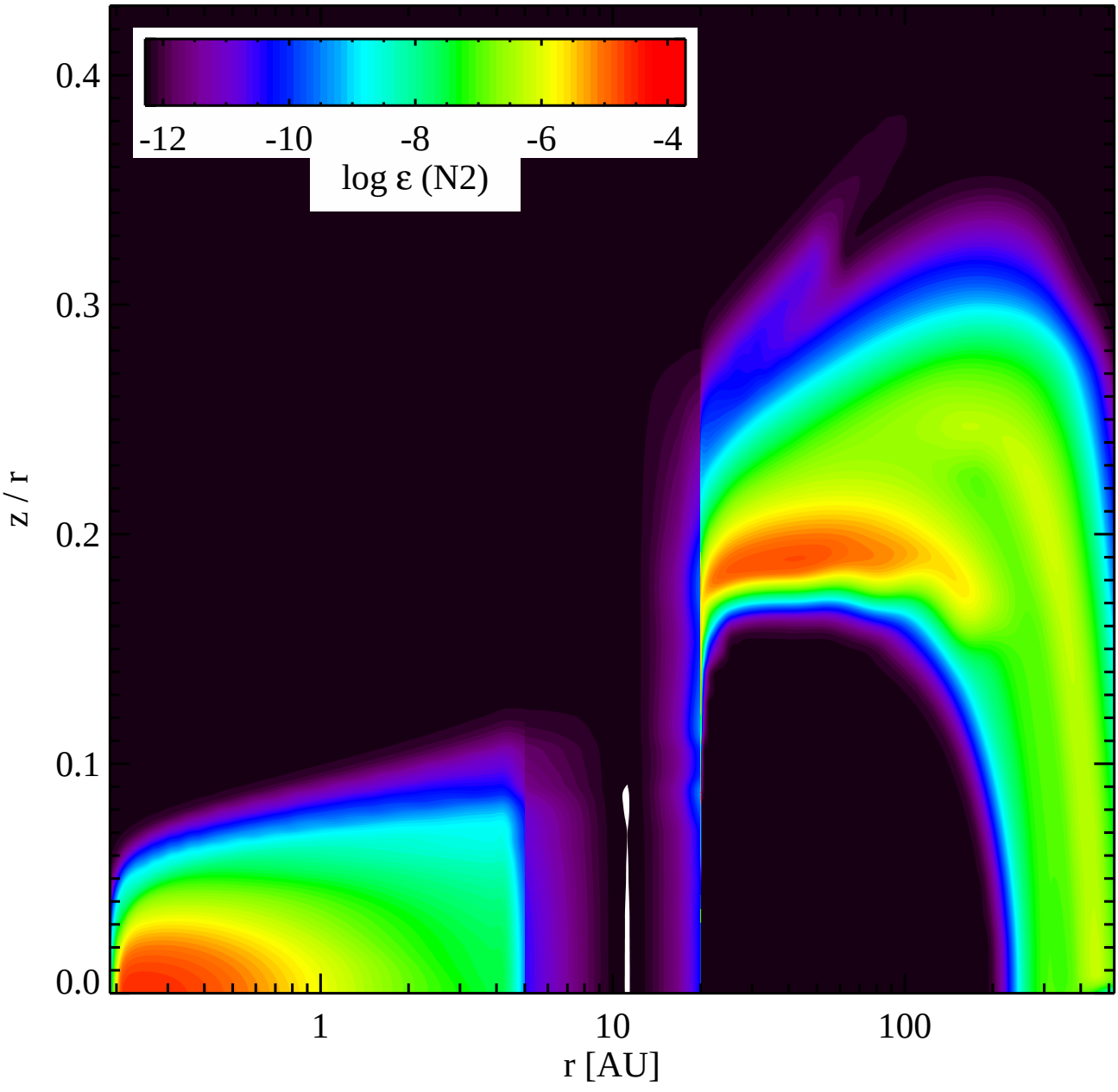

-12
-10
-8
-6
-4
log ε (C)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

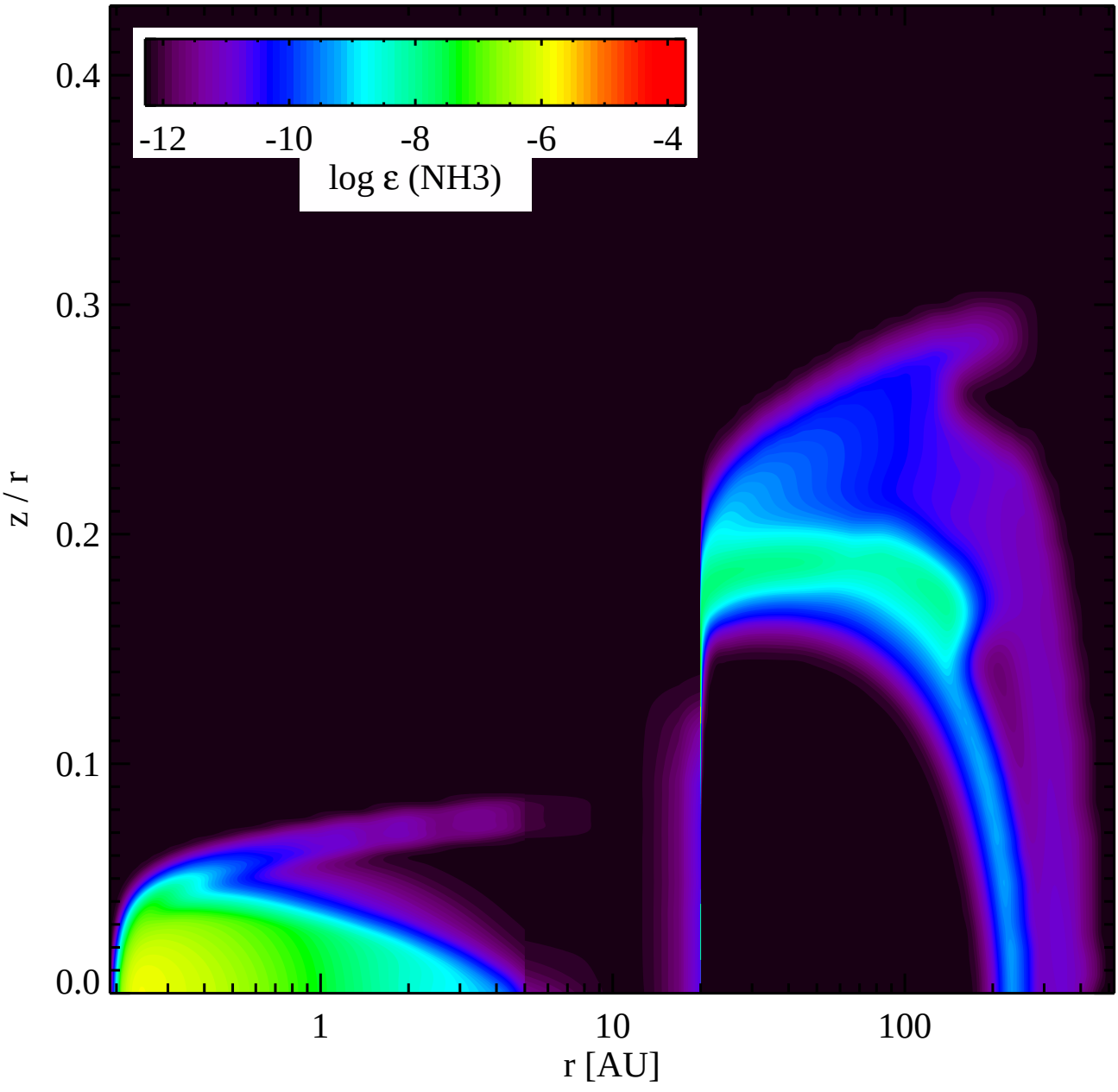

-12
-10
-8
-6
-4
log ε (CO)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]
log χ/n=-3.5

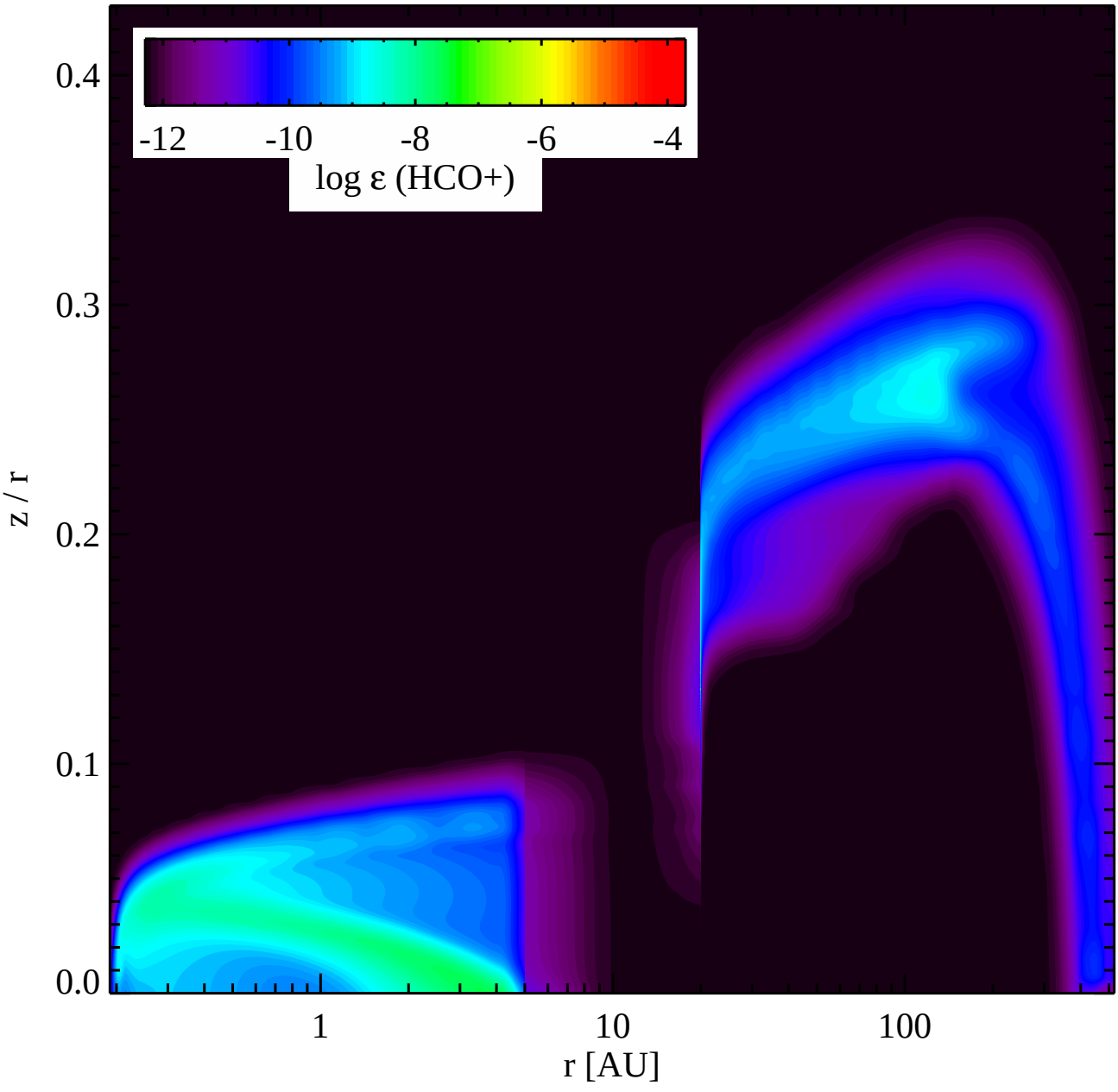

-12
-10
-8
-6
-4
log ε (CO2)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

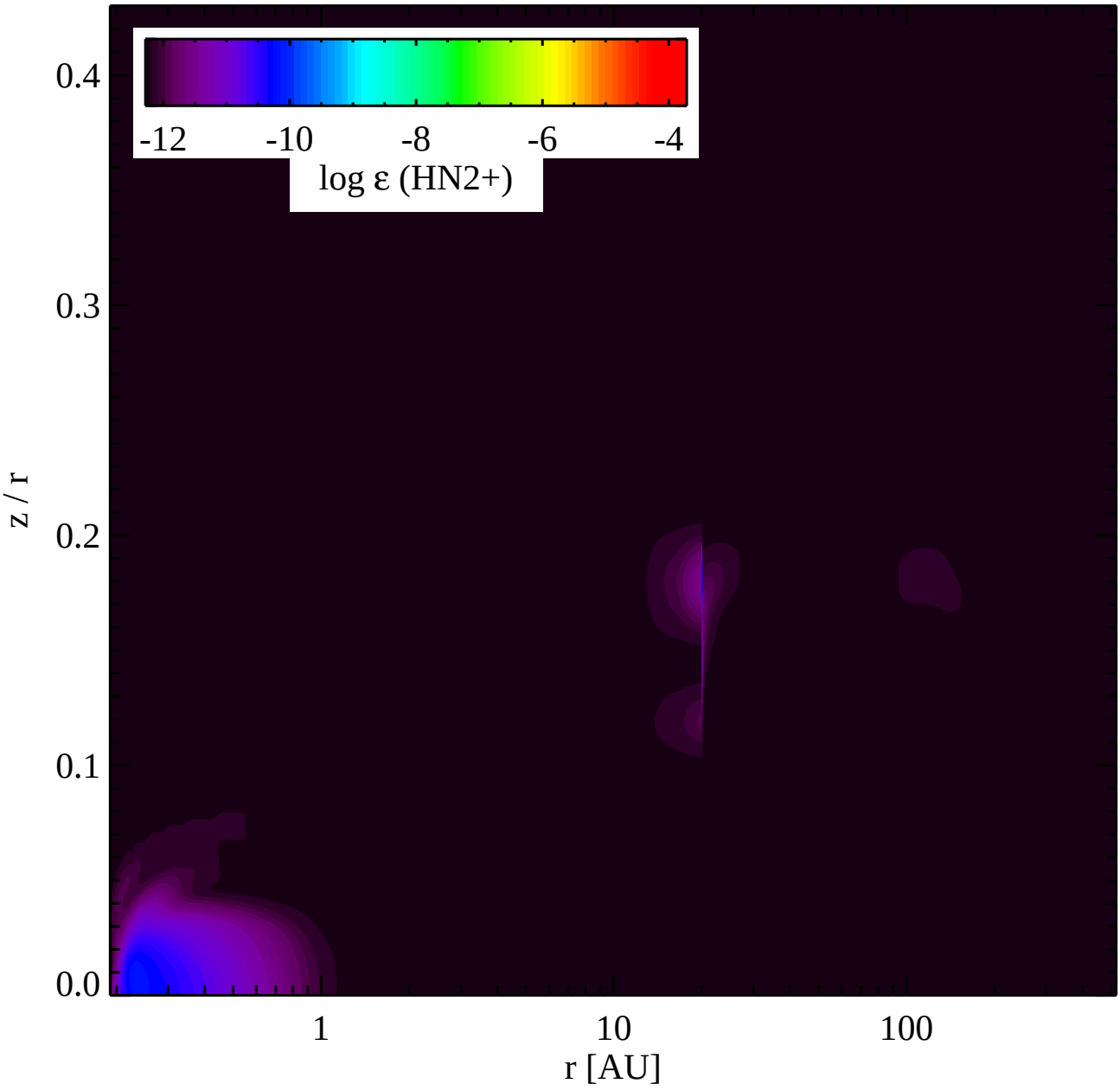

-12
-10
-8
-6
-4
log ε (CH4)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

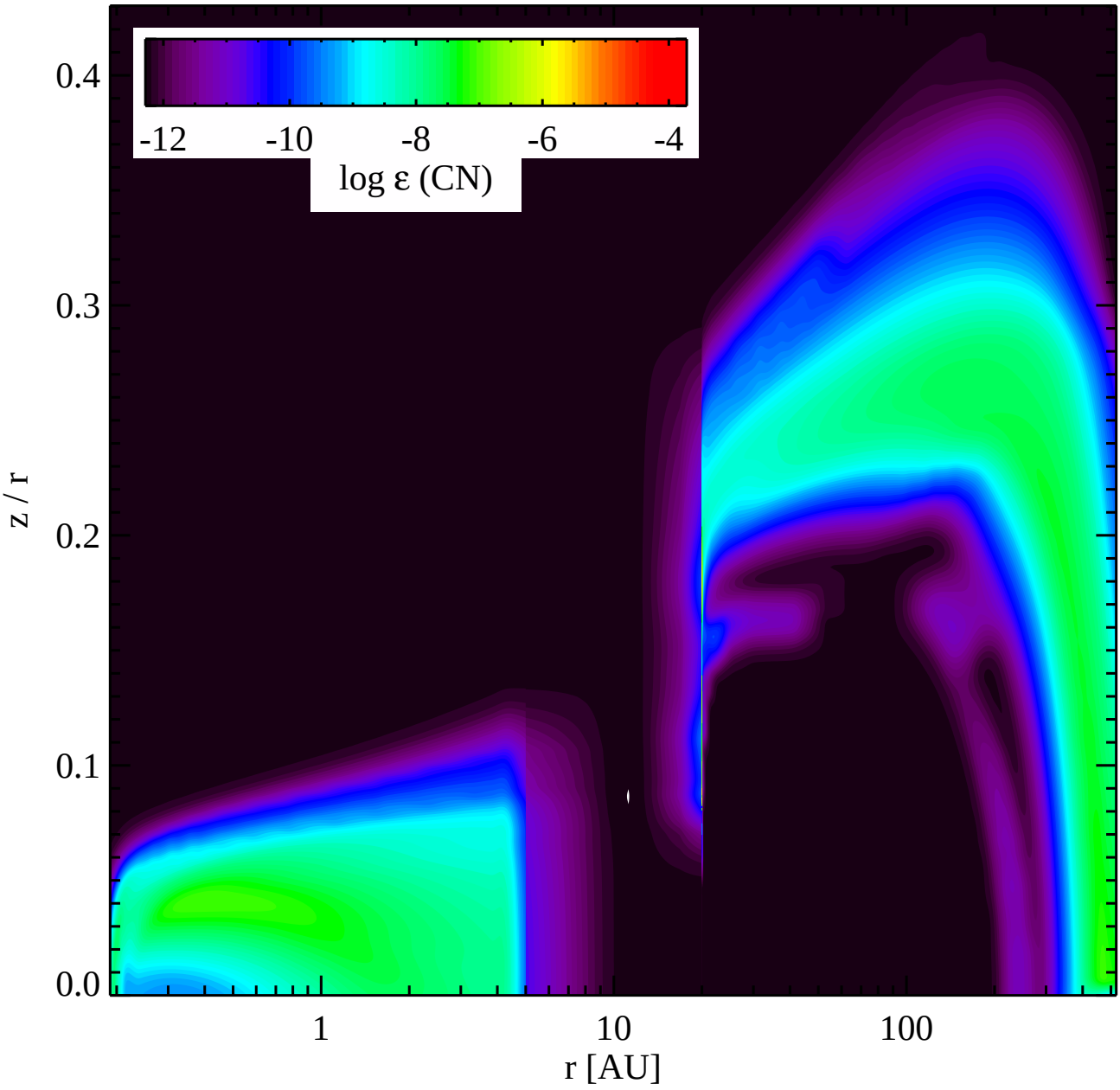

-12
-10
-8
-6
-4
log ε (N)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

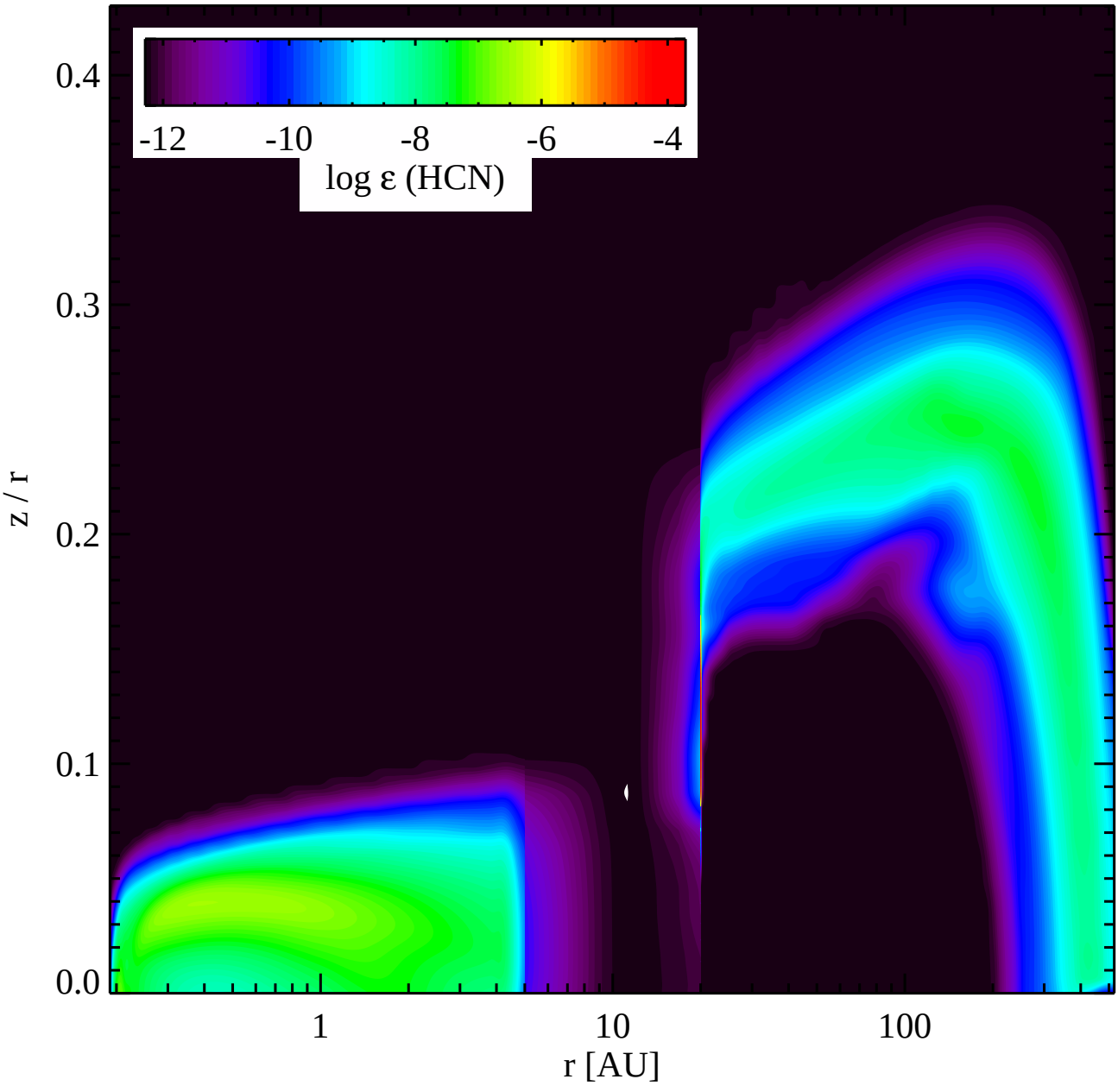

-12
-10
-8
-6
-4
log ε (N2)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

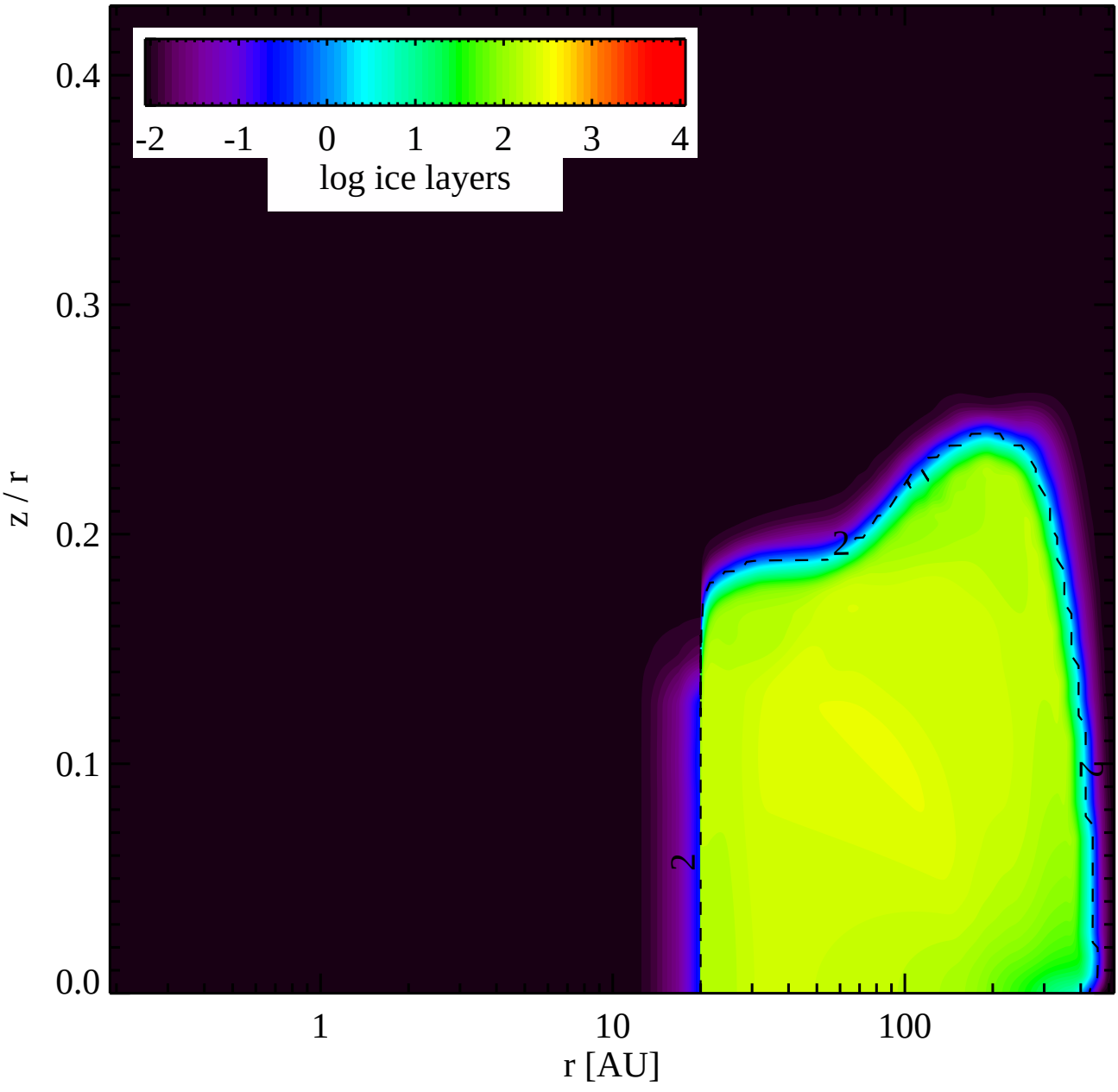

-12
-10
-8
-6
-4
log ε (NH3)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

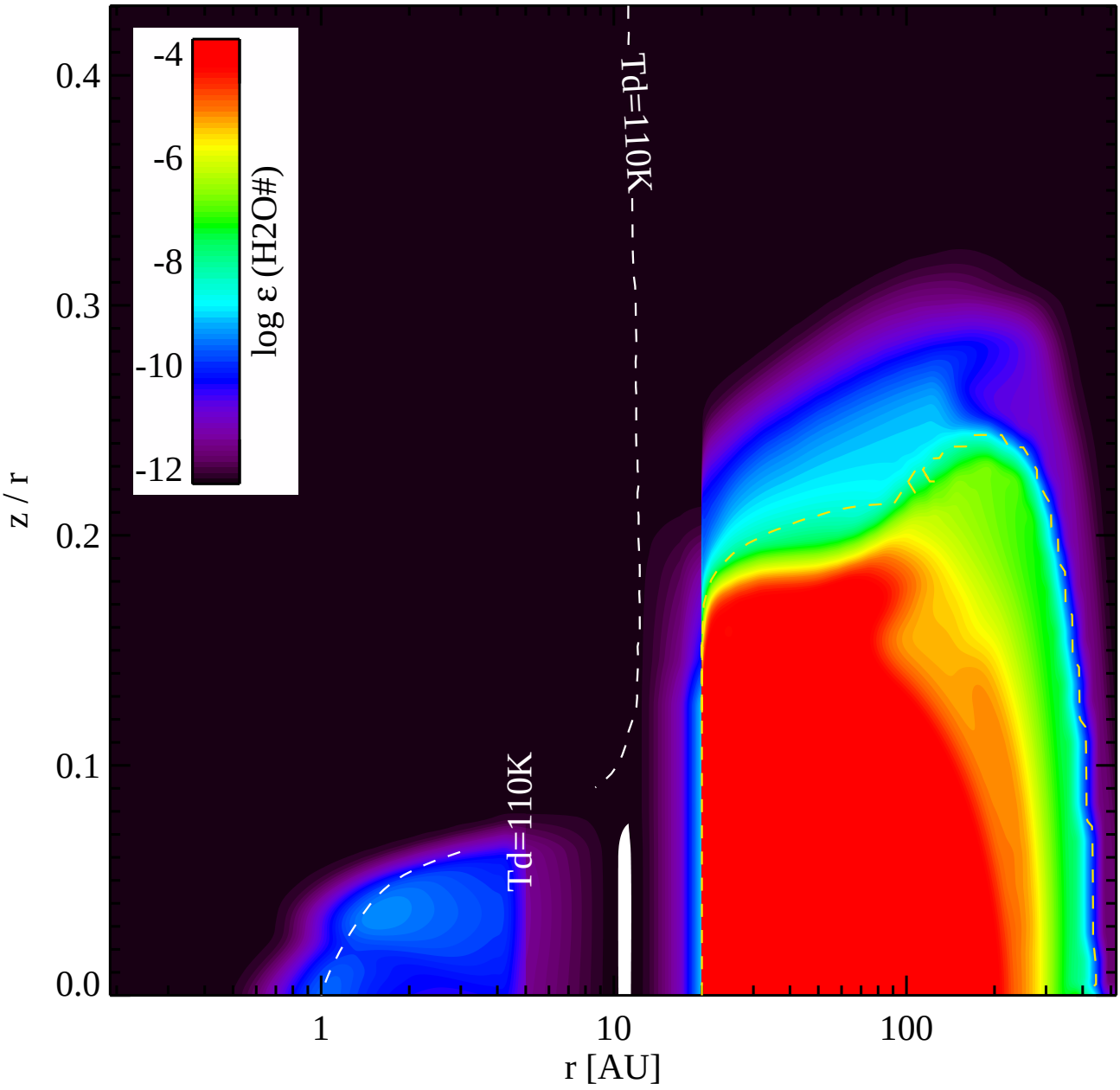

-12
-10
-8
-6
-4
log ε (HCO+)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

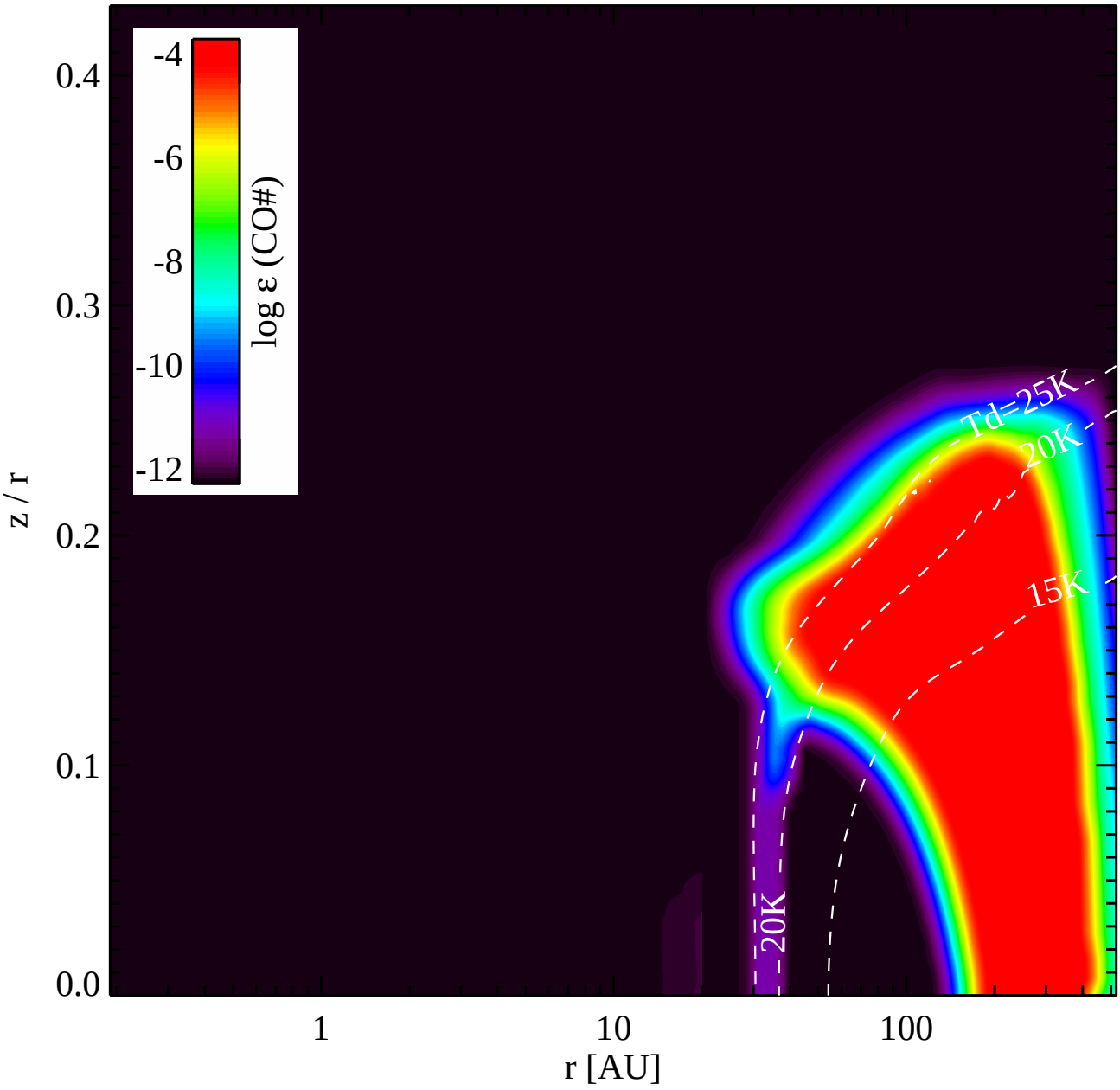

-12
-10
-8
-6
-4
log ε (HN2+)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

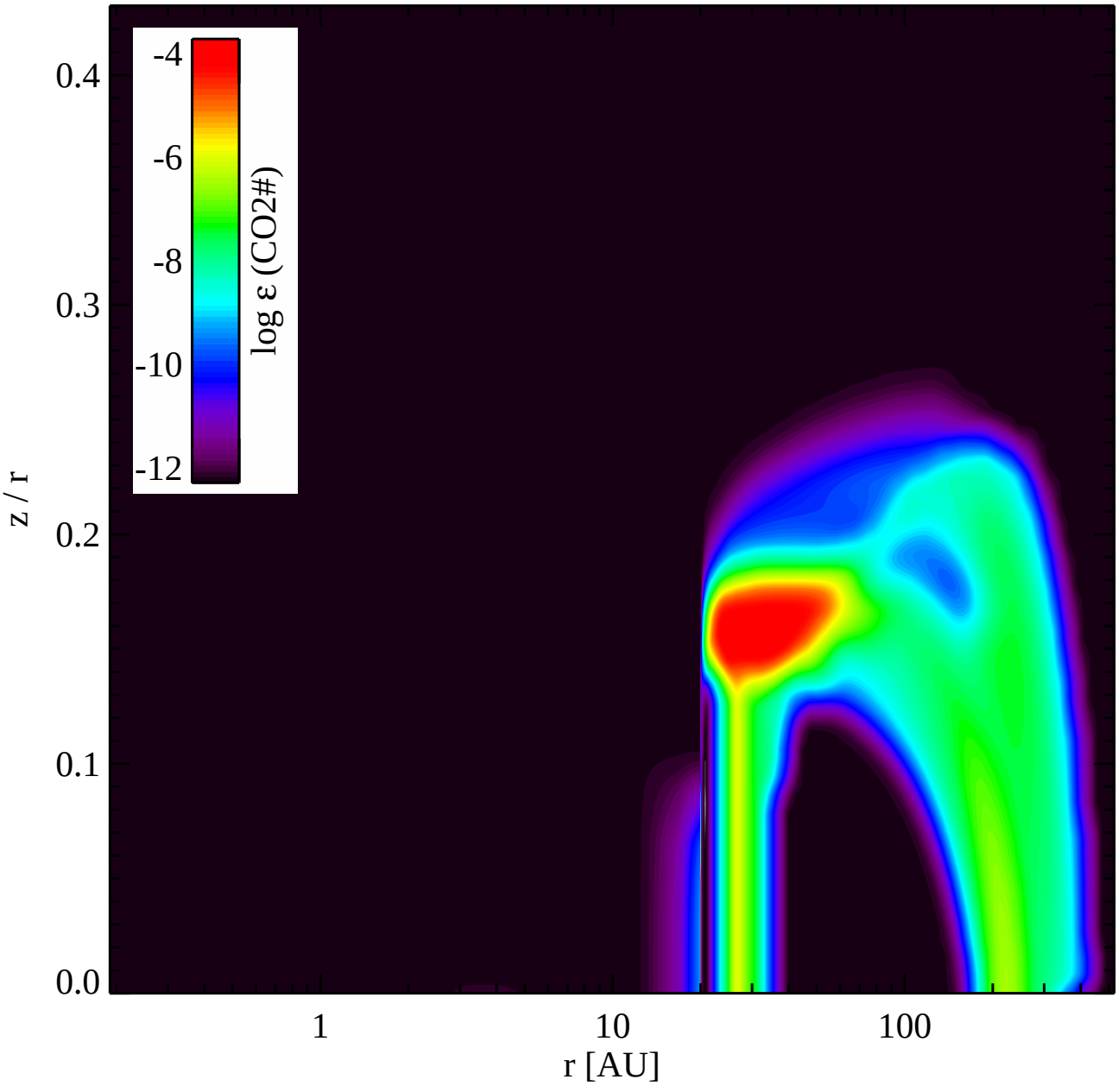

-12
-10
-8
-6
-4
log ε (CN)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

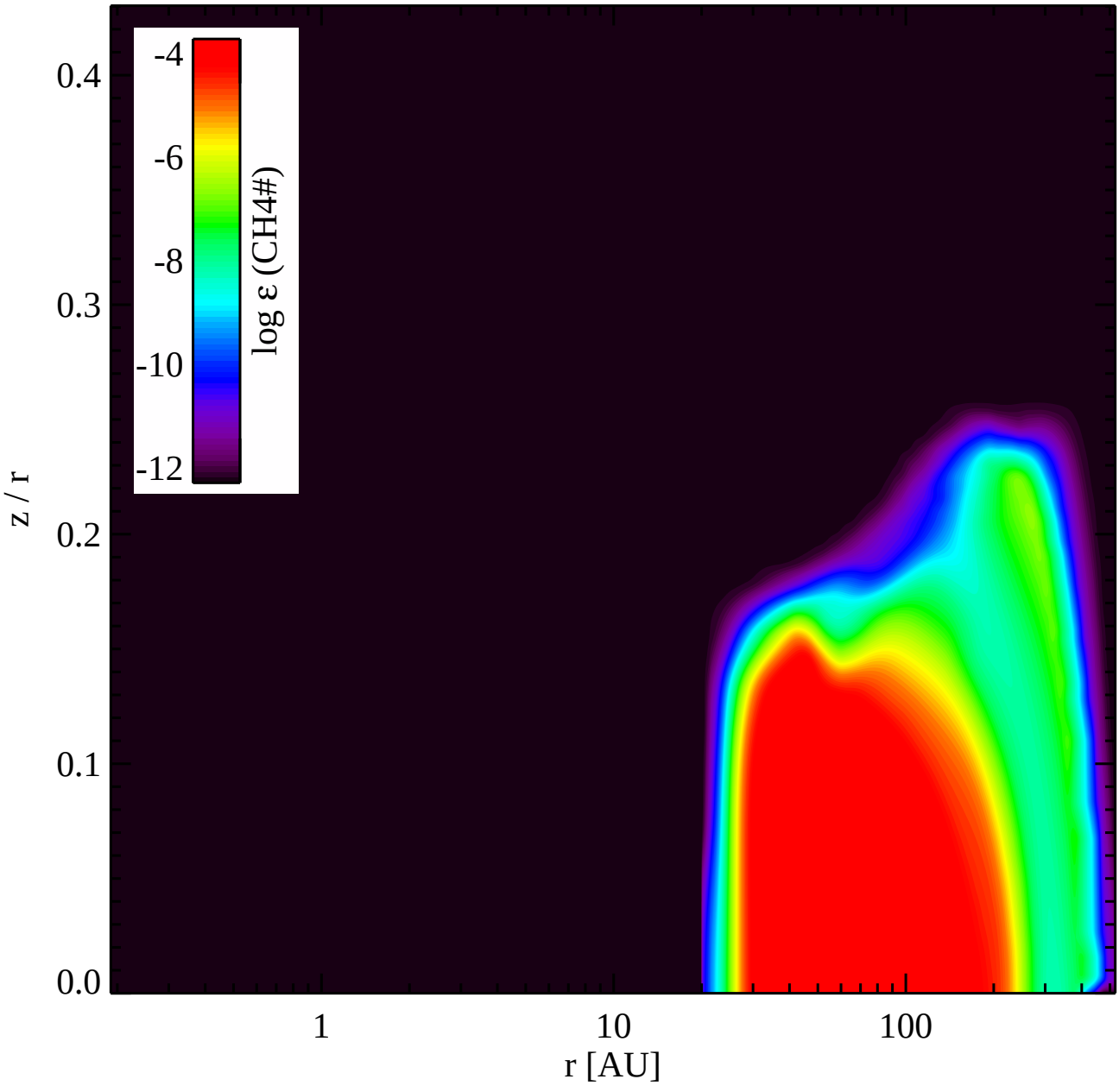

-12
-10
-8
-6
-4
log ε (HCN)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

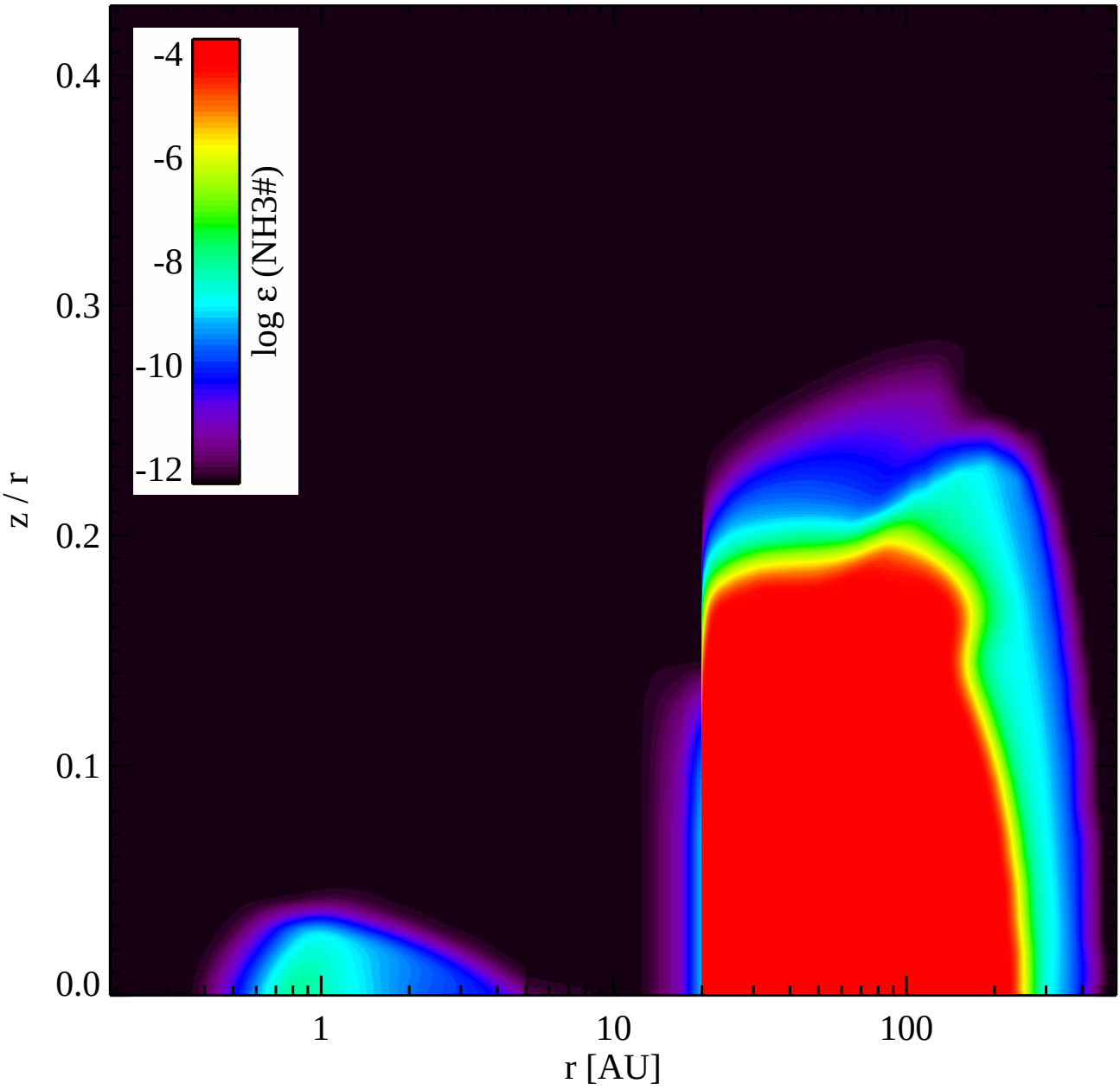

-2
-1
0
1
2
3
4
log ice layers
0.4
0.3
0.2
0.1
0.0
z / r
2
2
2
1
10
100
r [AU]

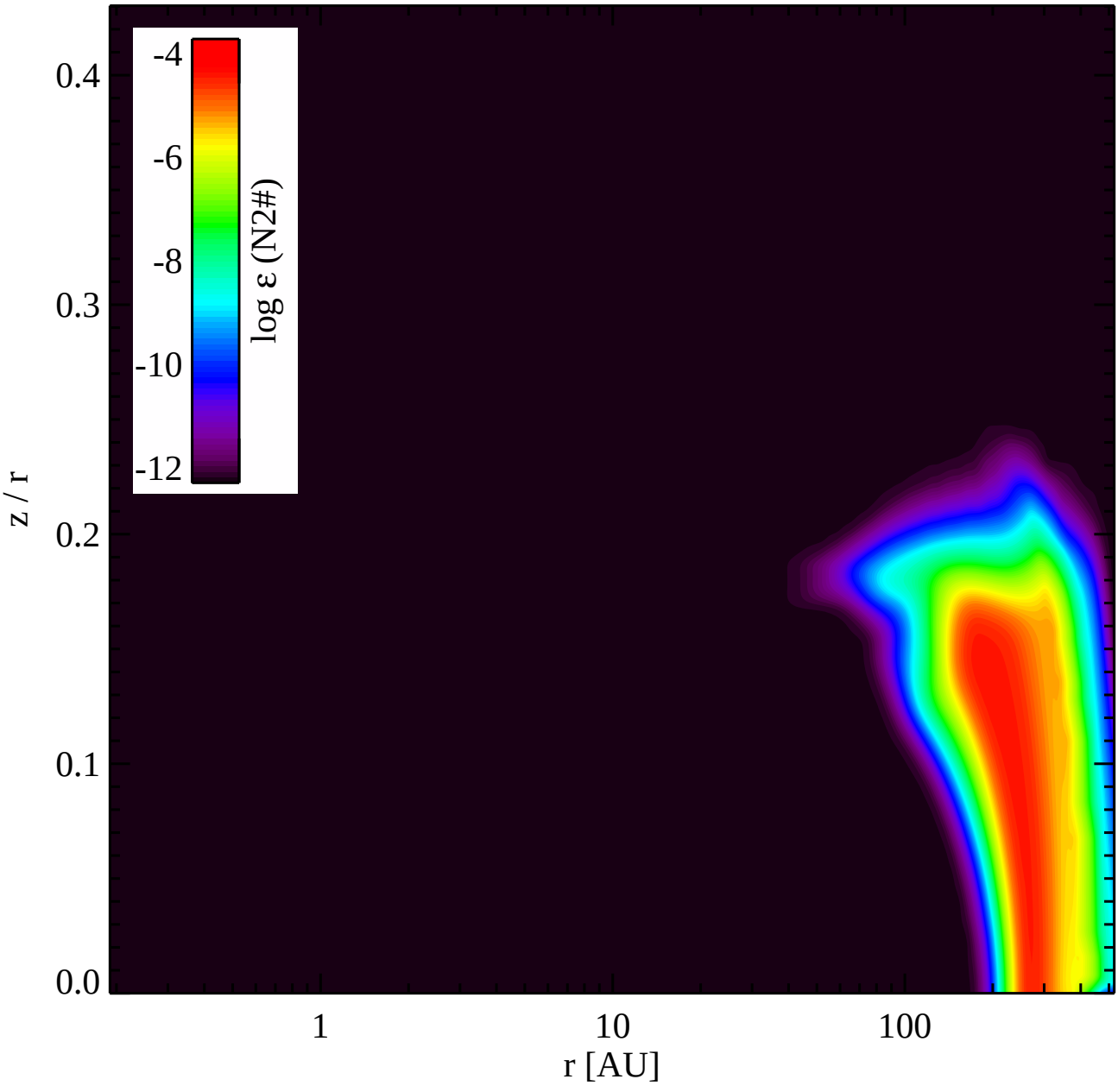

-4
-6
-8
-10
-12
log ε (H2O#)
Td=110K
Td=110K
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

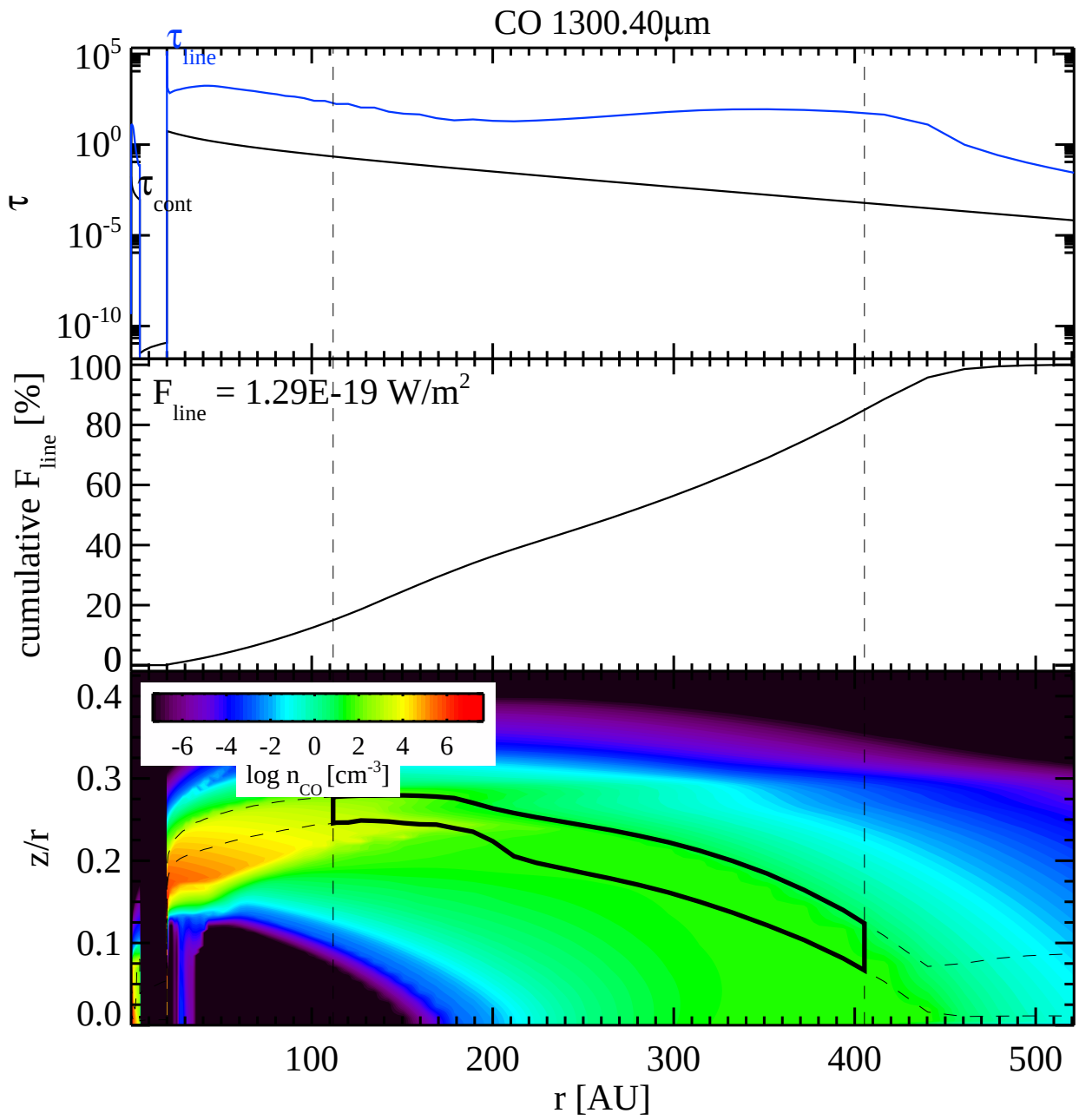

-4
-6
-8
-10
-12
log ε (CO#)
Td=25K
20K
15K
20K
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

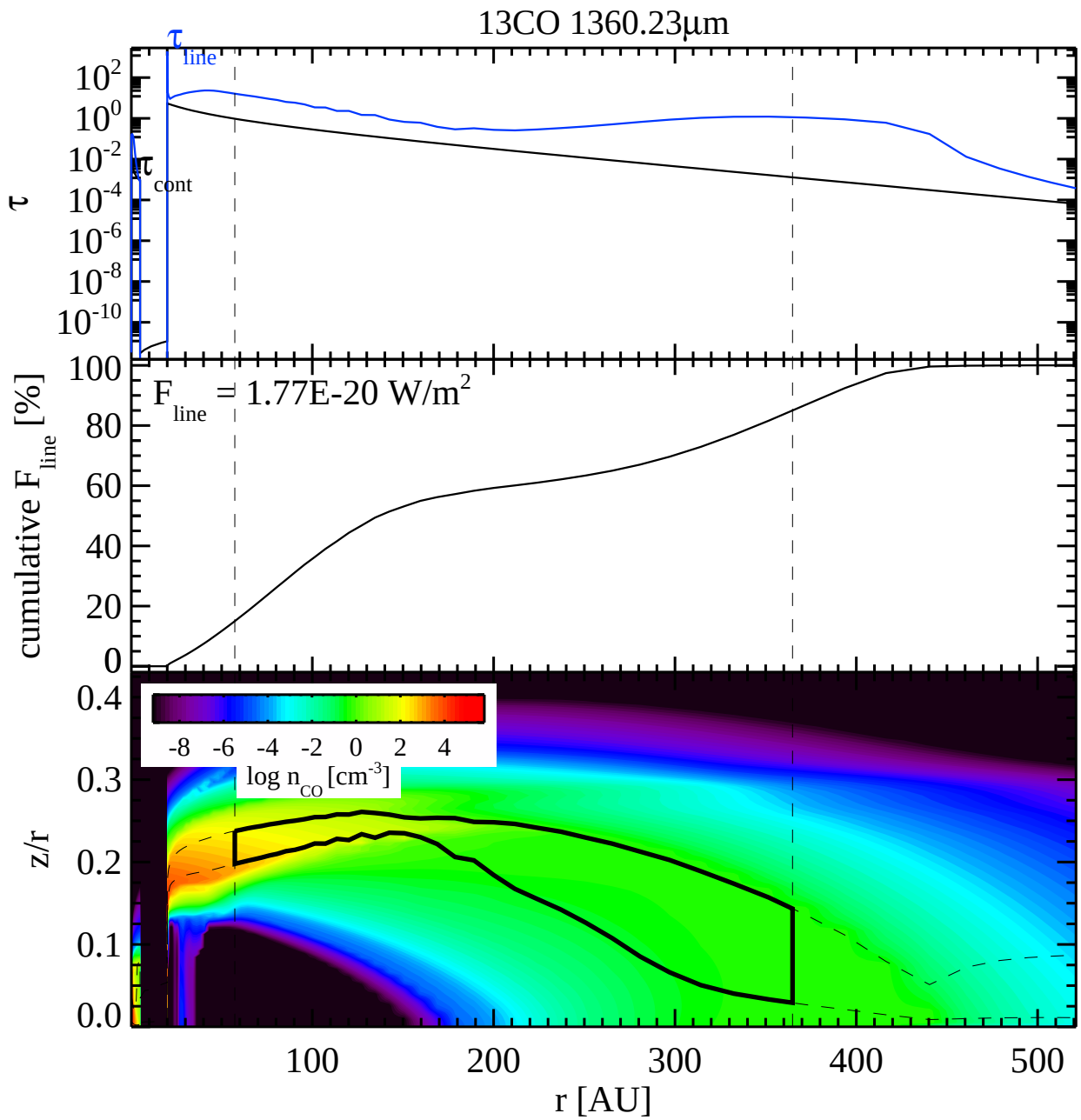

-4
-6
-8
-10
-12
log ε (CO2#)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

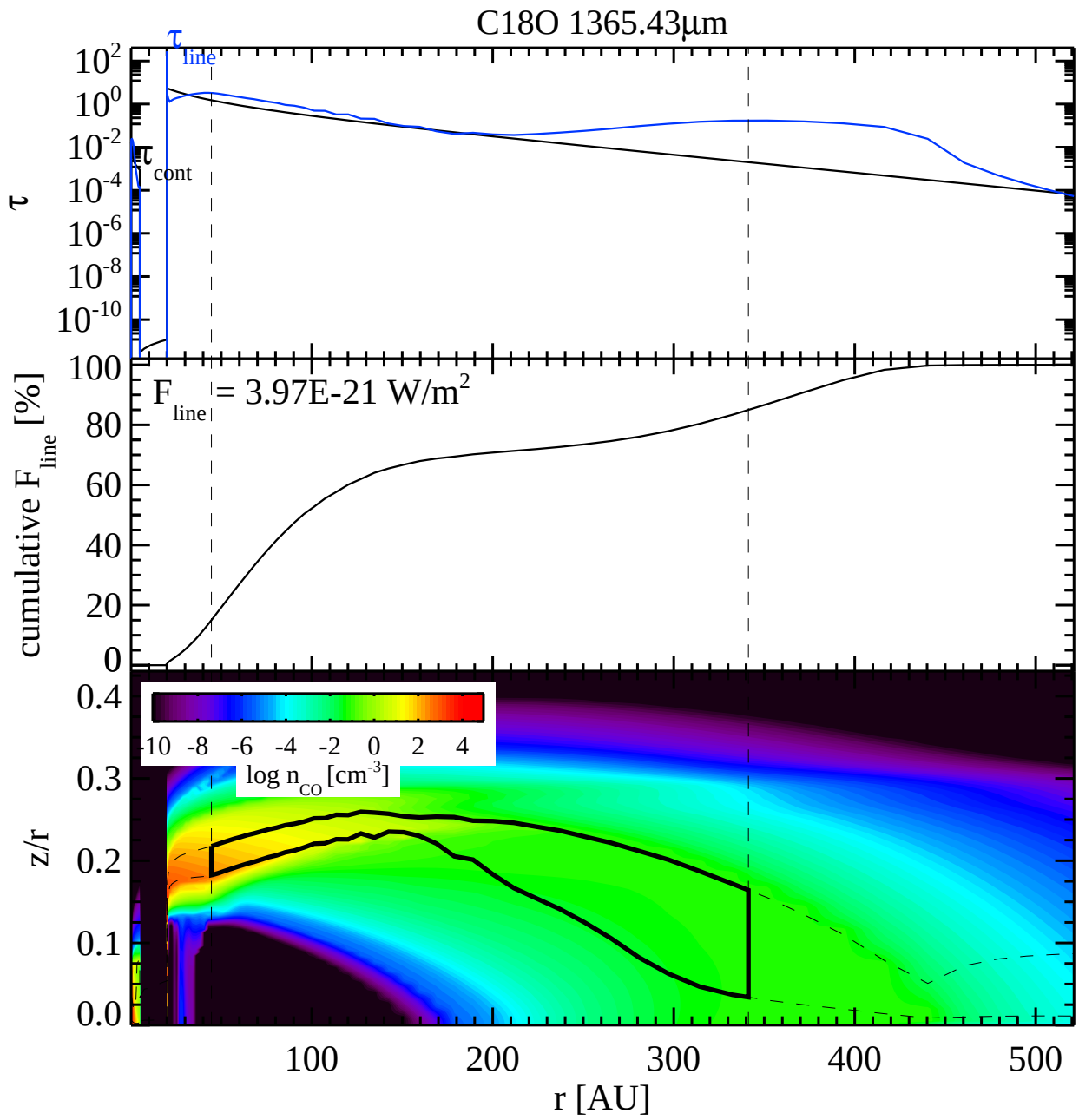

-4
-6
-8
-10
-12
log ε (CH4#)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

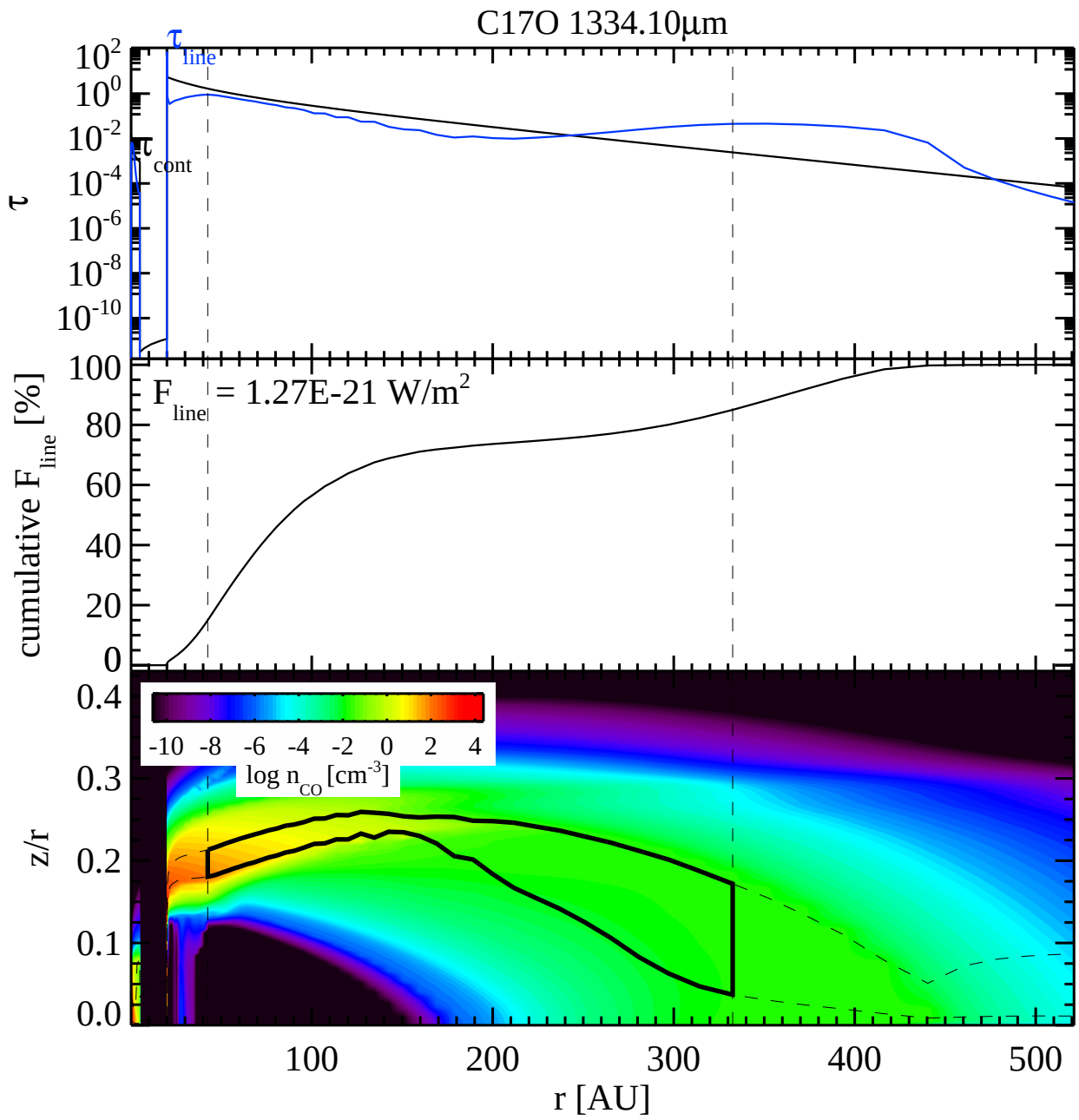

-4
-6
-8
-10
-12
log ε (NH3#)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

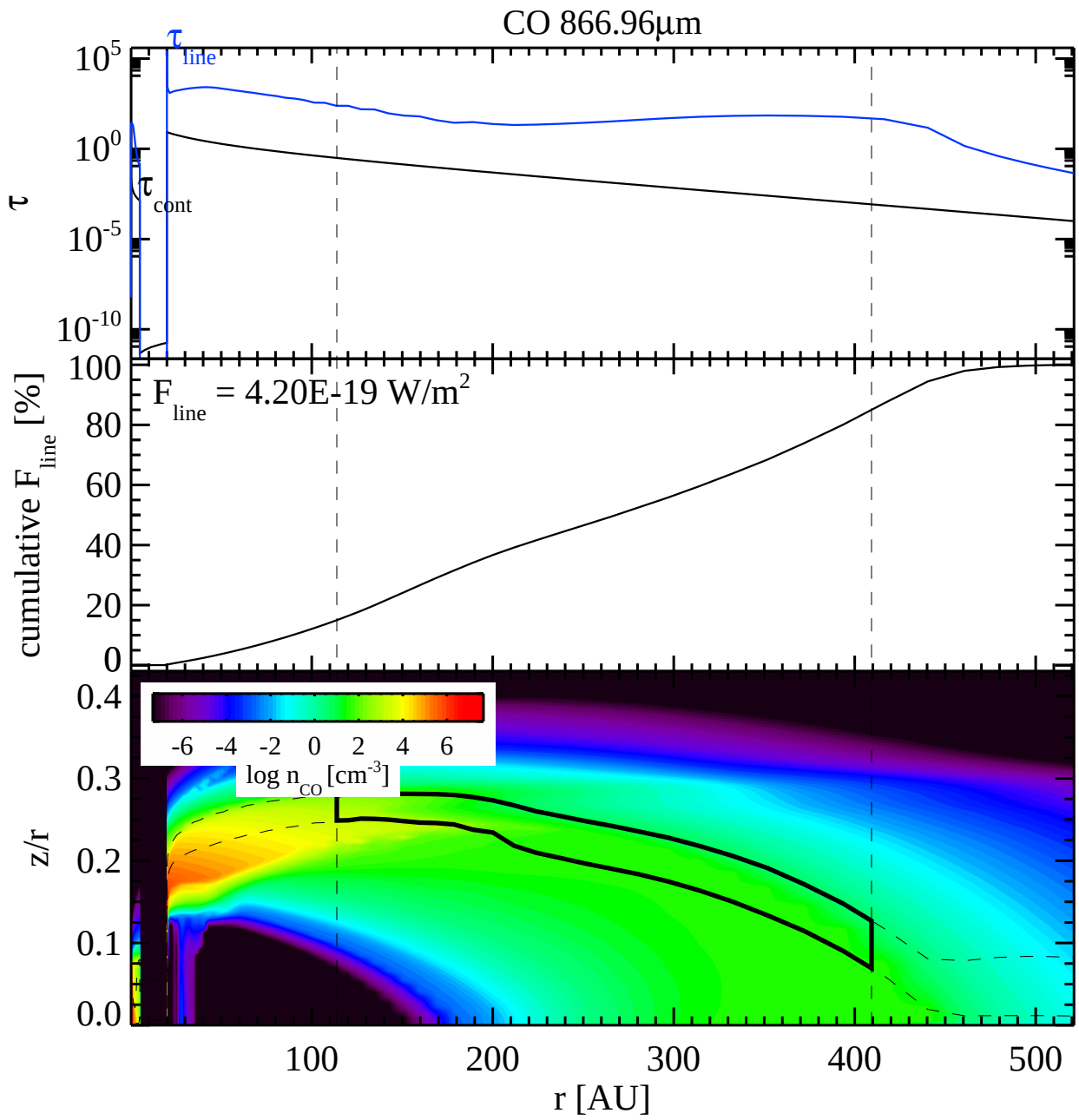

-4
-6
-8
-10
-12
log ε (N2#)
0.4
0.3
0.2
0.1
0.0
z / r
1
10
100
r [AU]

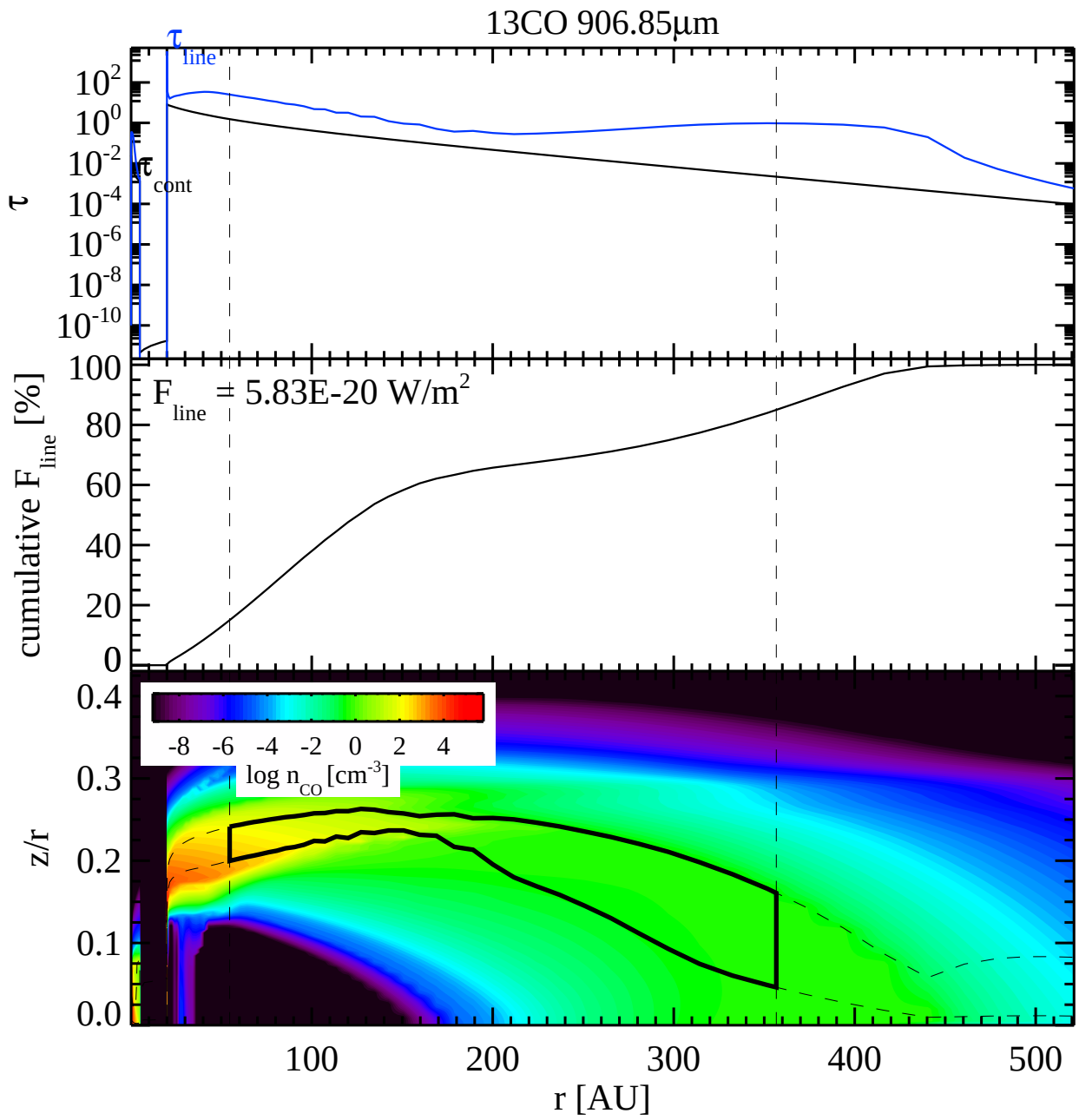

CO 1300.40µm
τ line
τ cont
τ
10^5
10^0
10^-5
10^-10
F line = 1.29E-19 W/m^2
cumulative F line [%]
100
80
60
40
20
0
log n CO [cm^-3]
-6 -4 -2 0 2 4 6
z/r
0.4
0.3
0.2
0.1
0.0
100
200
300
400
500
r [AU]

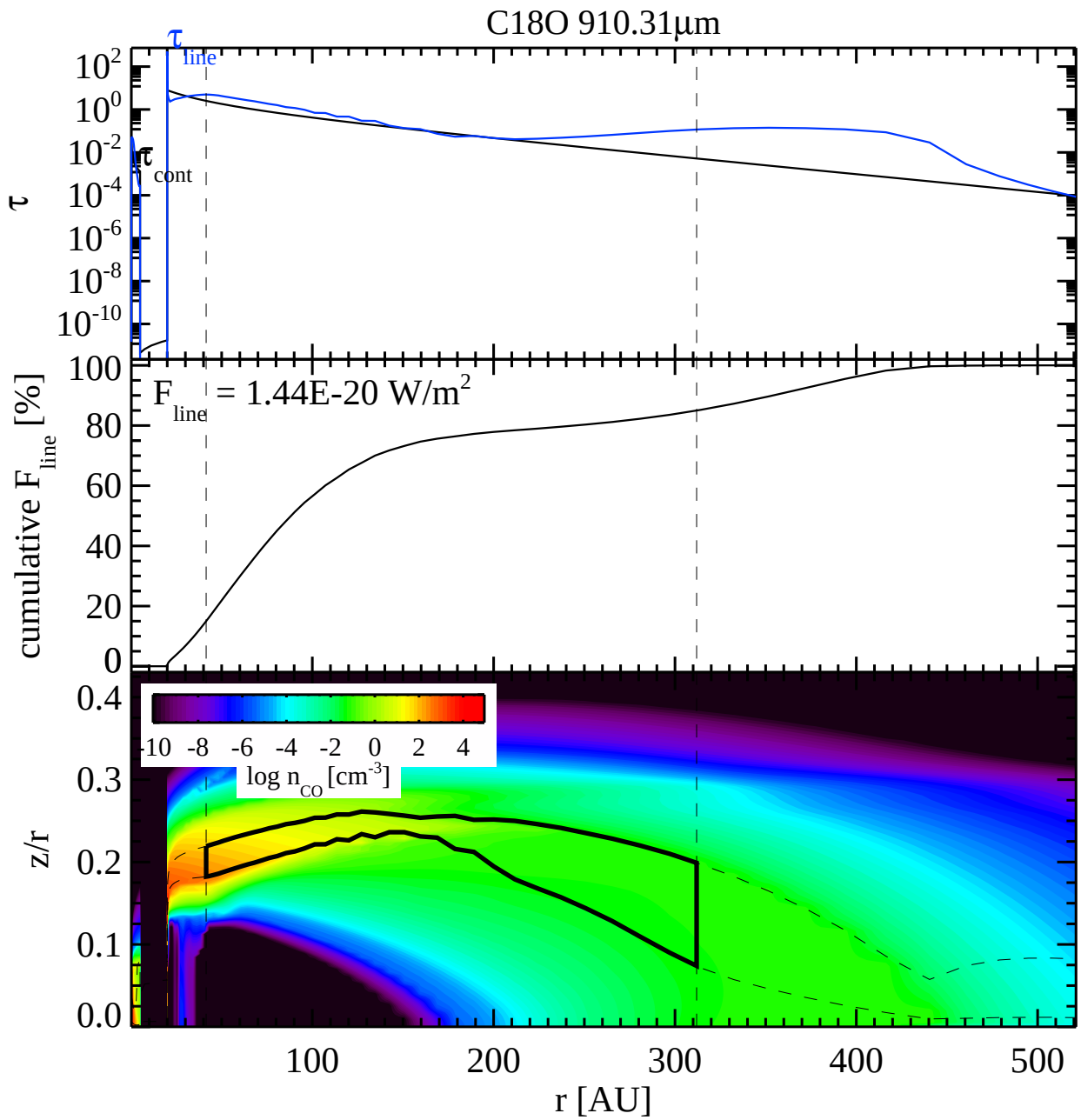

13CO 1360.23µm
τ line
τ cont
τ
cumulative F line [%]
F line = 1.77E-20 W/m2
log n CO [cm-3]
z/r
r [AU]

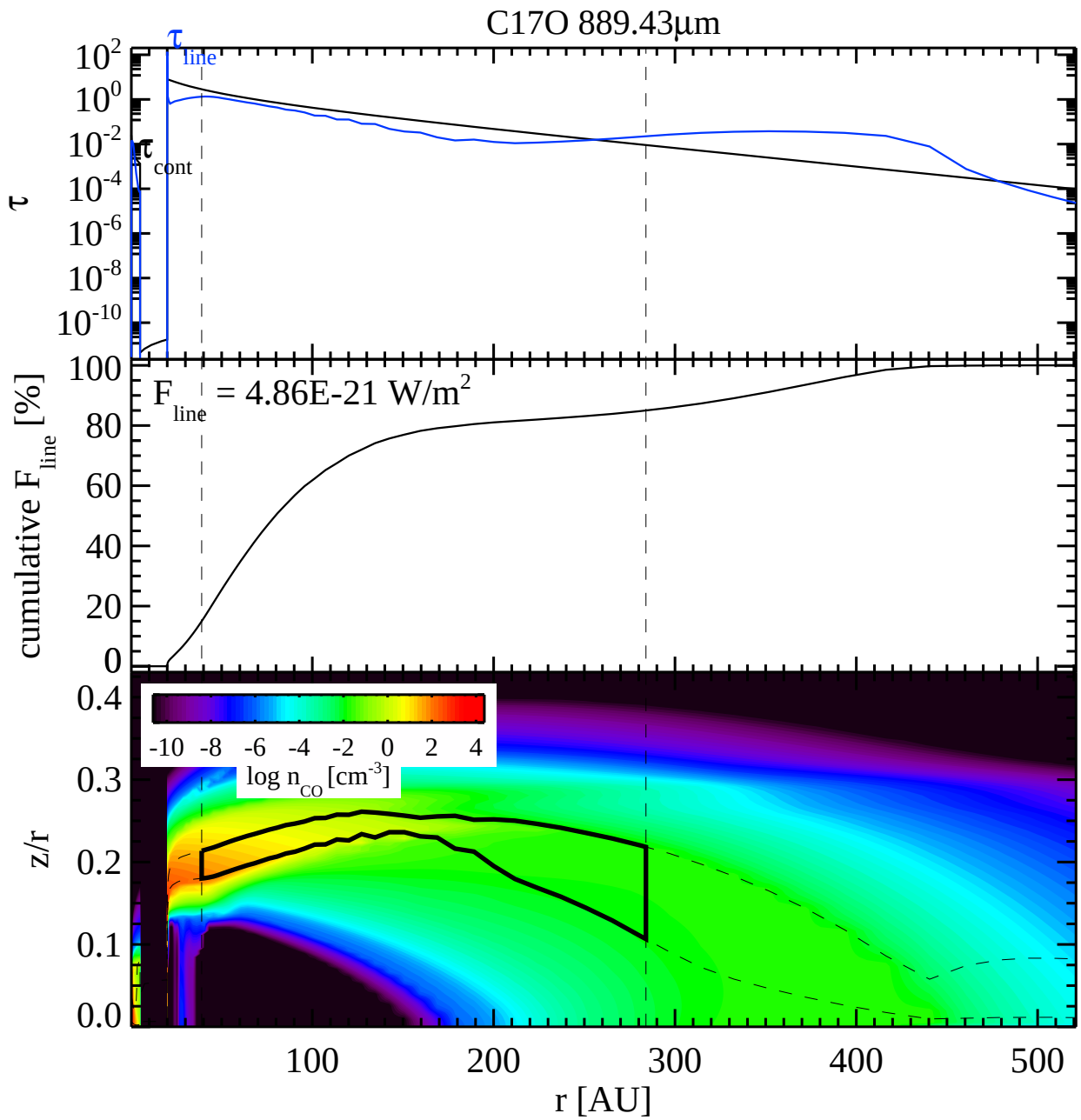

C18O 1365.43µm
τ line
τ cont
τ
cumulative F line [%]
F line = 3.97E-21 W/m2
log n CO [cm-3]
z/r
r [AU]

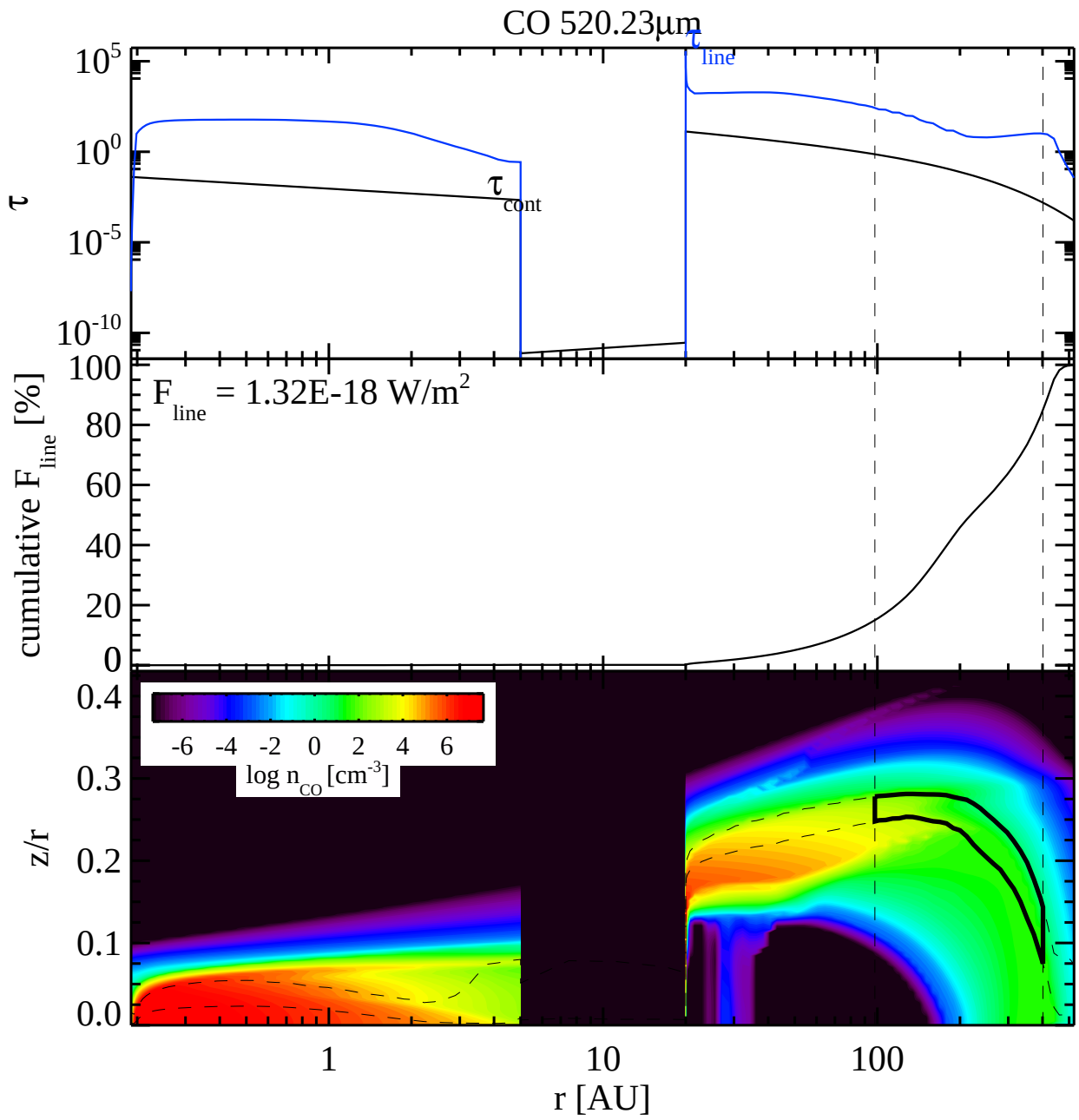

C17O 1334.10µm
τ line
τ cont
τ
F line = 1.27E-21 W/m2
cumulative F line [%]
log n CO [cm-3]
z/r
r [AU]

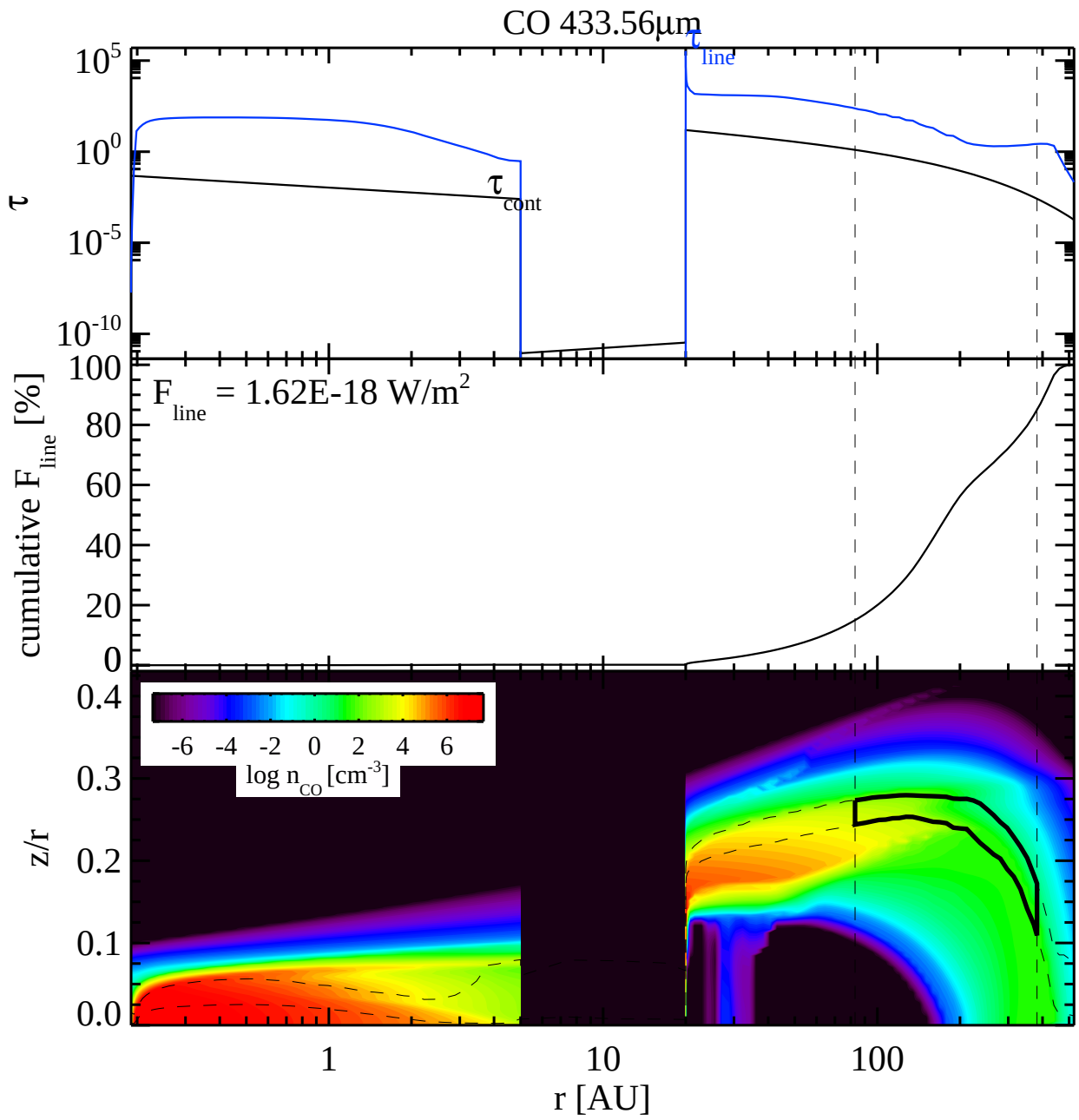

CO 866.96µm
τ line
τ cont
τ
10^5
10^0
10^-5
10^-10
F line = 4.20E-19 W/m^2
cumulative F line [%]
100
80
60
40
20
0
-6 -4 -2 0 2 4 6
log n CO [cm^-3]
z/r
0.4
0.3
0.2
0.1
0.0
100
200
300
400
500
r [AU]

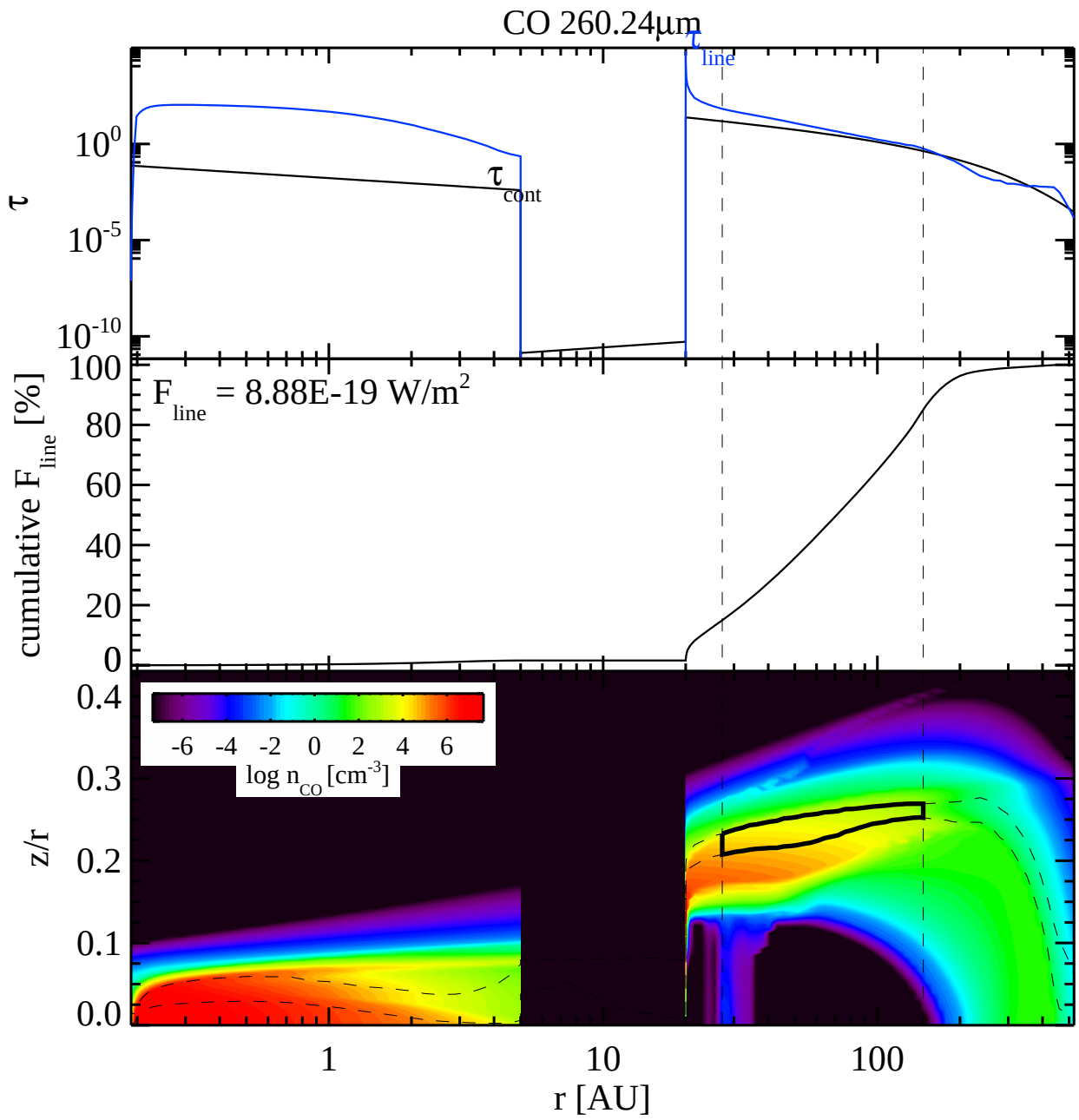

13CO 906.85µm
τ line
τ cont
τ
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
F line = 5.83E-20 W/m^2
cumulative F line [%]
100
80
60
40
20
0
-8 -6 -4 -2 0 2 4
log n CO [cm^-3]
z/r
0.4
0.3
0.2
0.1
0.0
100
200
300
400
500
r [AU]

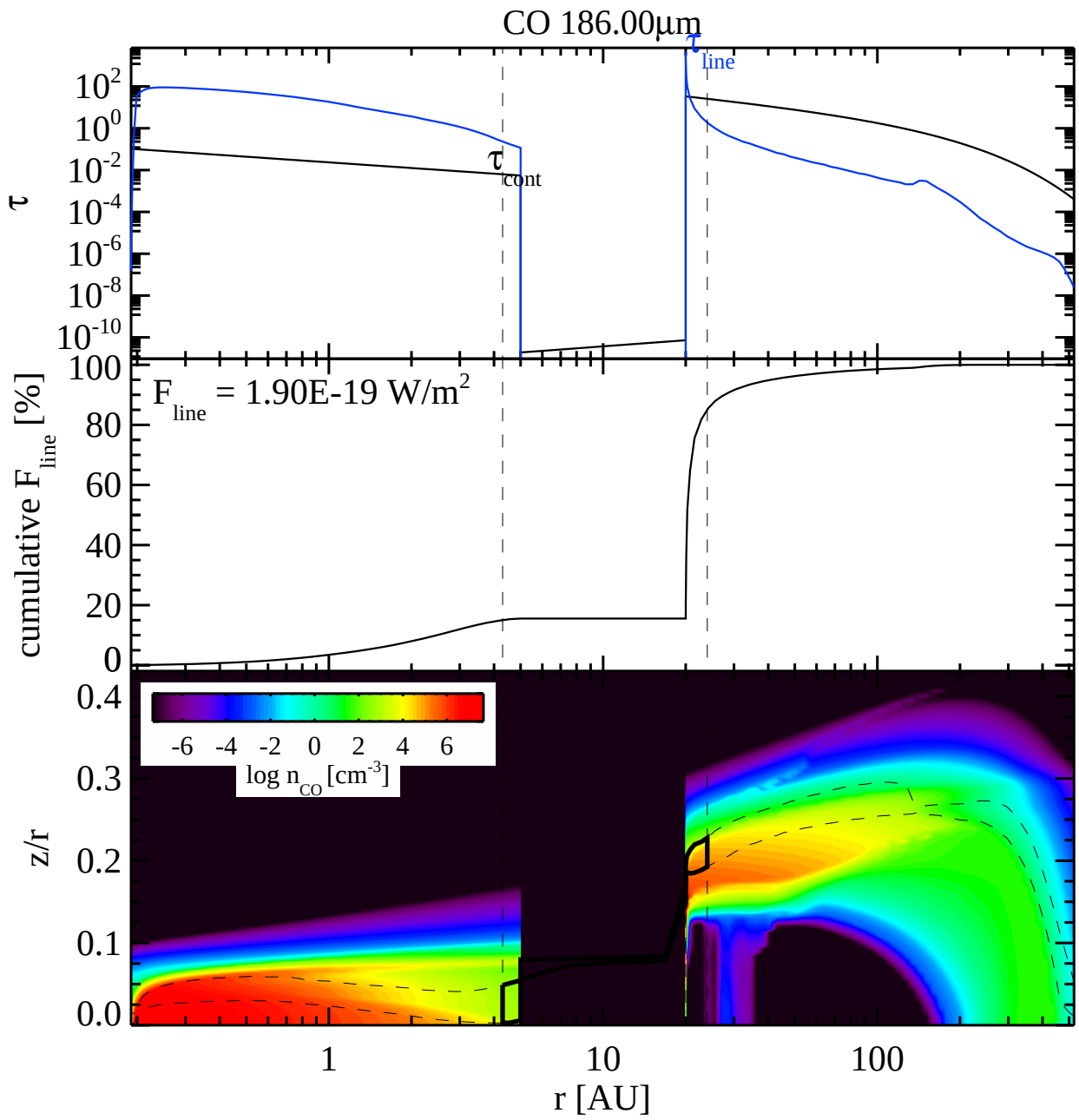

C18O 910.31µm
τ line
τ cont
τ
F line = 1.44E-20 W/m2
cumulative F line [%]
log n CO [cm-3]
z/r
r [AU]

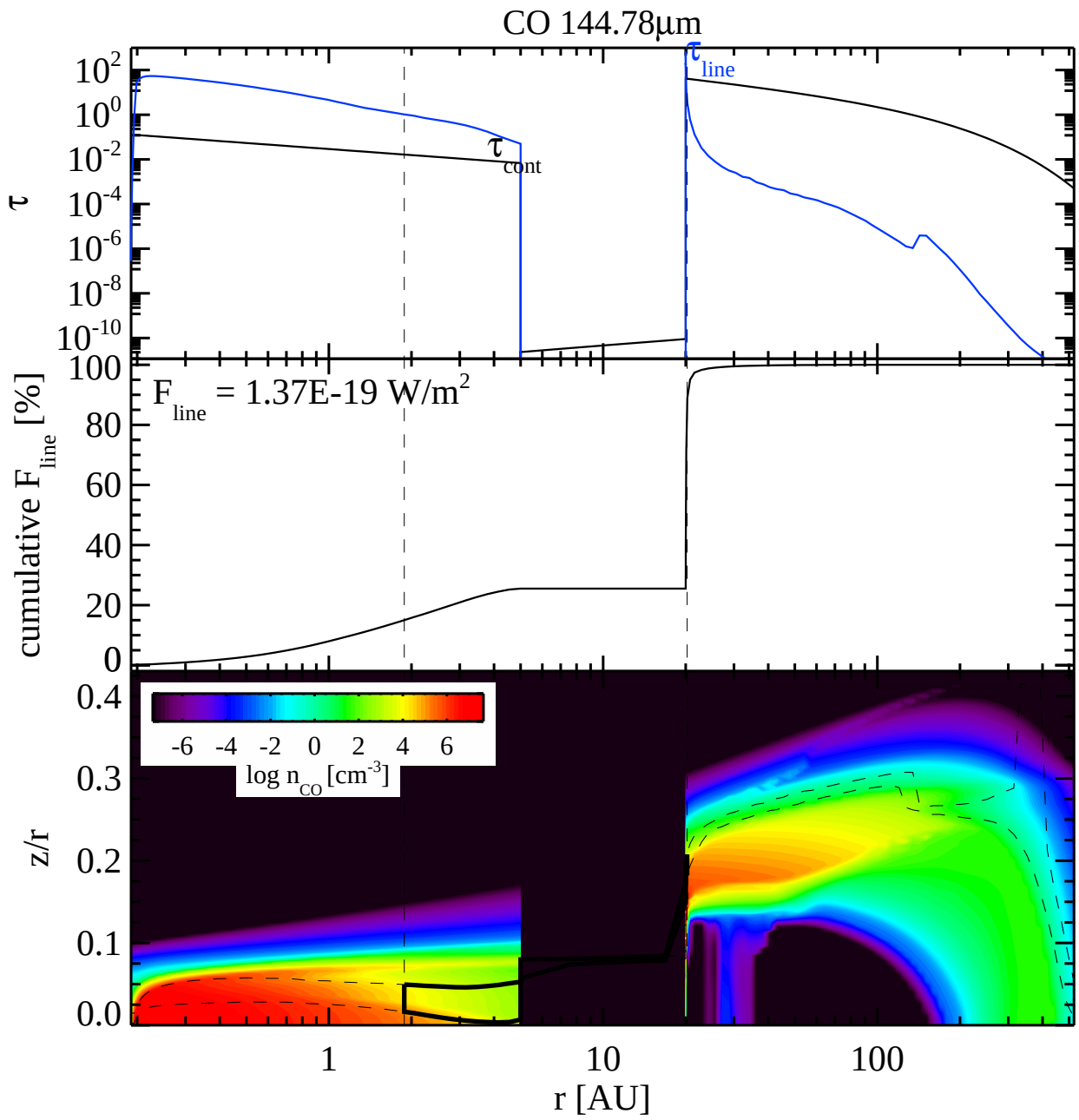

C17O 889.43µm
τ line
τ cont
τ
F line = 4.86E-21 W/m2
cumulative F line [%]
log n CO [cm-3]
z/r
r [AU]

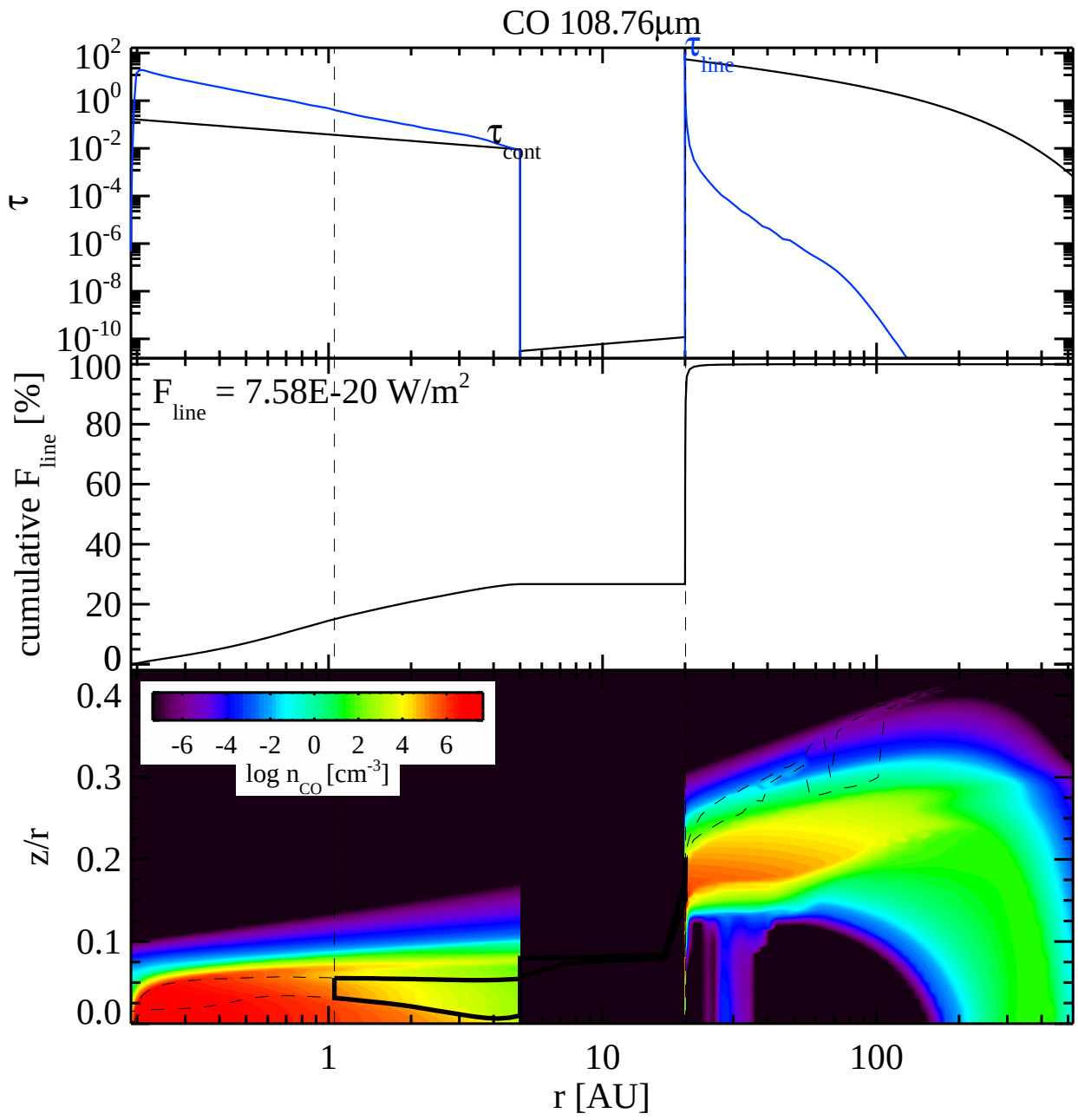

CO 520.23µm
τ
τ line
τ cont
10^5
10^0
10^-5
10^-10
F line = 1.32E-18 W/m^2
cumulative F line [%]
100
80
60
40
20
0
log n CO [cm^-3]
-6 -4 -2 0 2 4 6
z/r
0.4
0.3
0.2
0.1
0.0
1
10
100
r [AU]

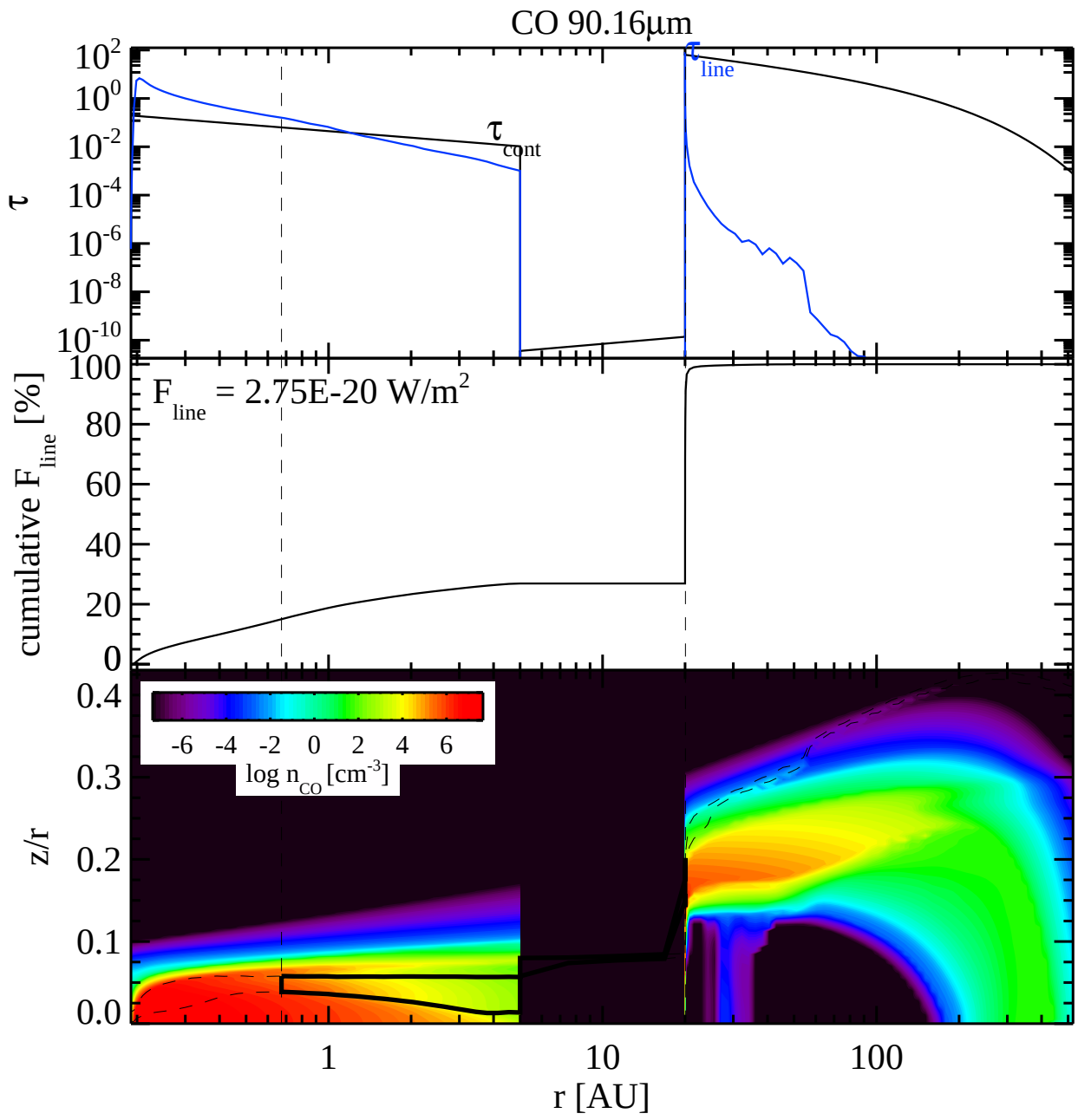

CO 433.56µm
τ
τ line
τ cont
10^5
10^0
10^-5
10^-10
F line = 1.62E-18 W/m^2
cumulative F line [%]
100
80
60
40
20
0
log n CO [cm^-3]
-6 -4 -2 0 2 4 6
z/r
0.4
0.3
0.2
0.1
0.0
1
10
100
r [AU]

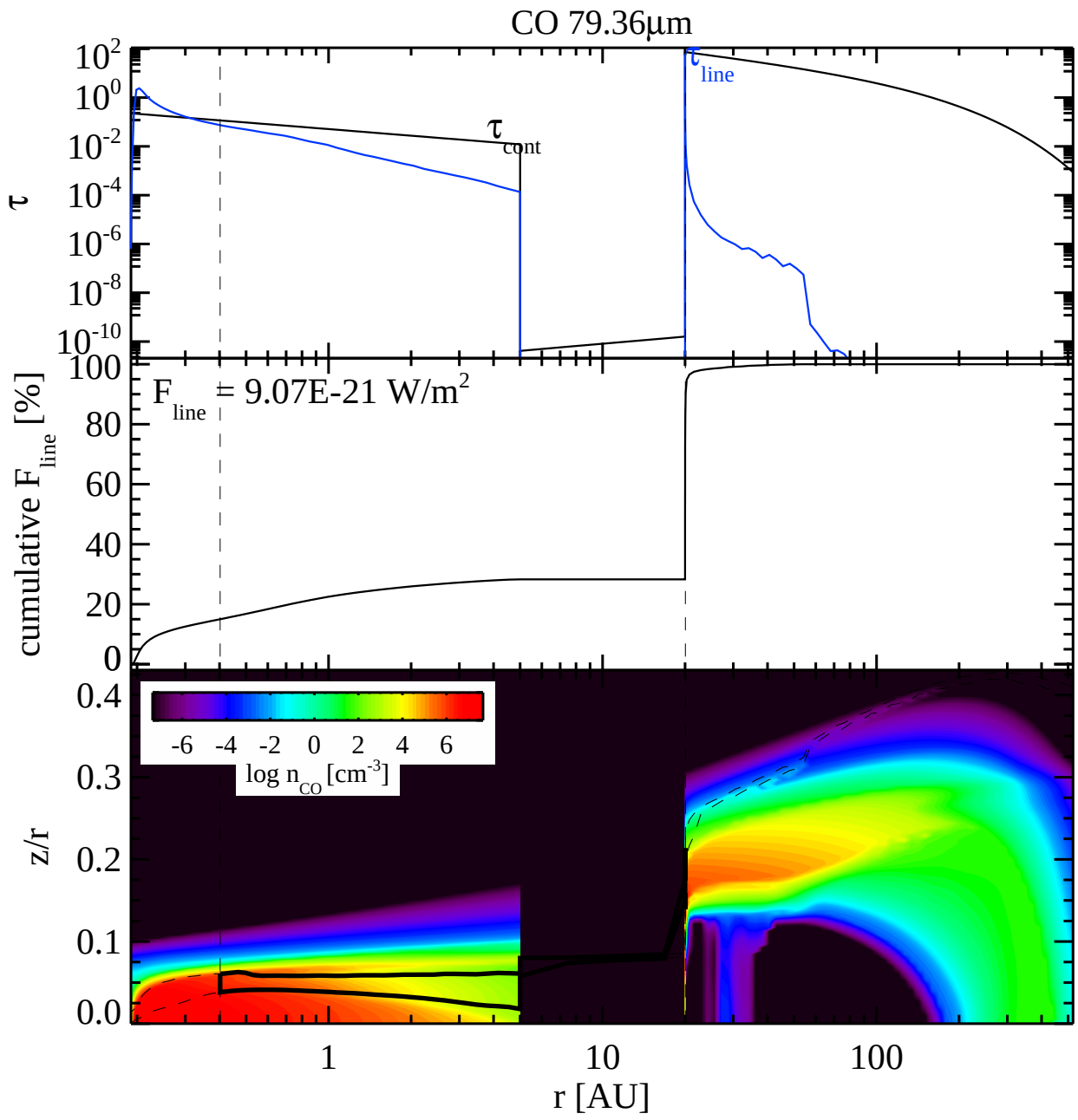

CO 260.24μm
τ
line
τ
cont
10^0
10^-5
10^-10
cumulative F_line [%]
F_line = 8.88E-19 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n_CO [cm^-3]
1
10
100
r [AU]

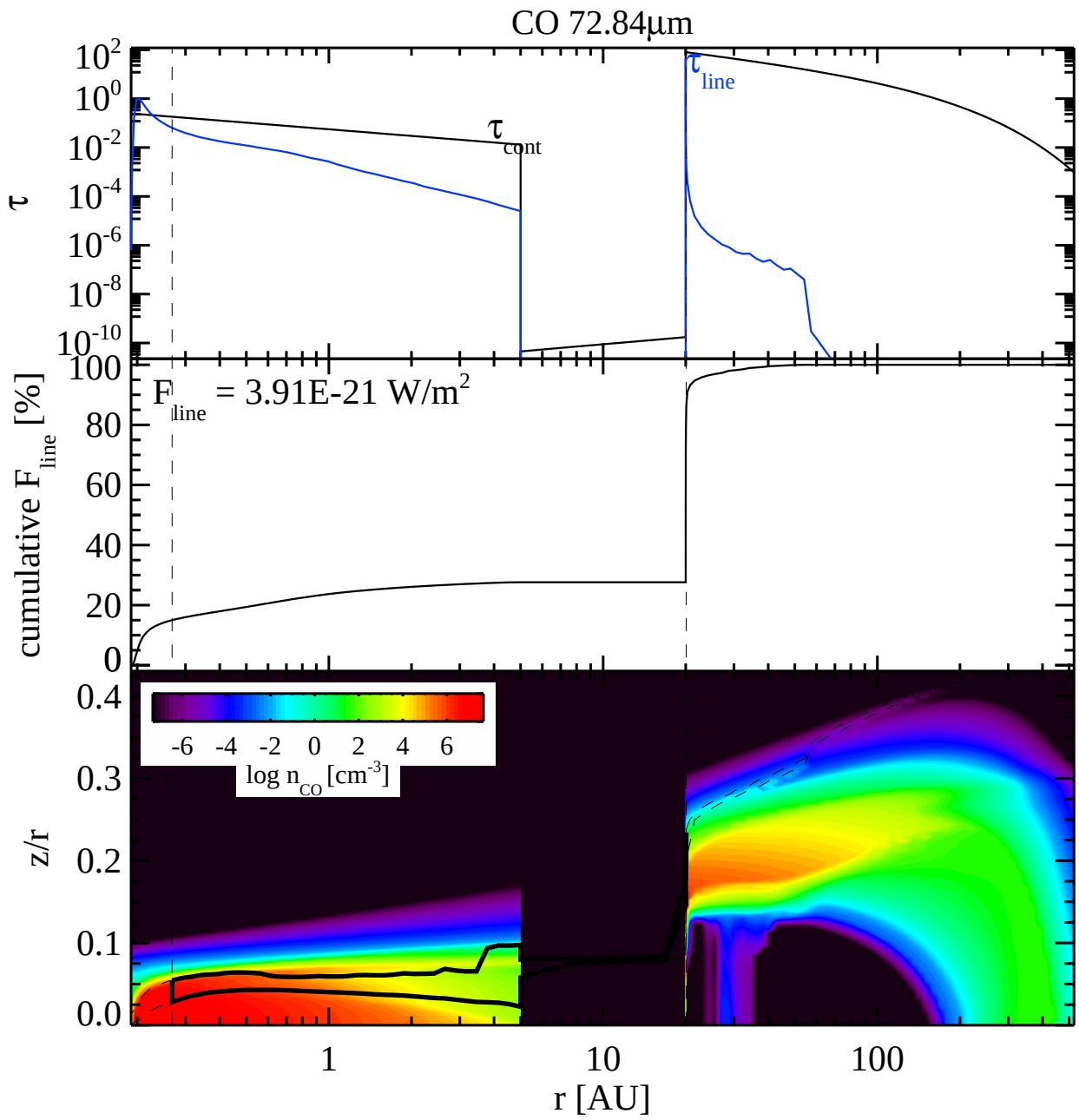

CO 186.00µm
τ
line
τ
cont
τ
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
F
line
= 1.90E-19 W/m^2
cumulative F
line
[%]
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n
CO
[cm^-3]
1
10
100
r [AU]

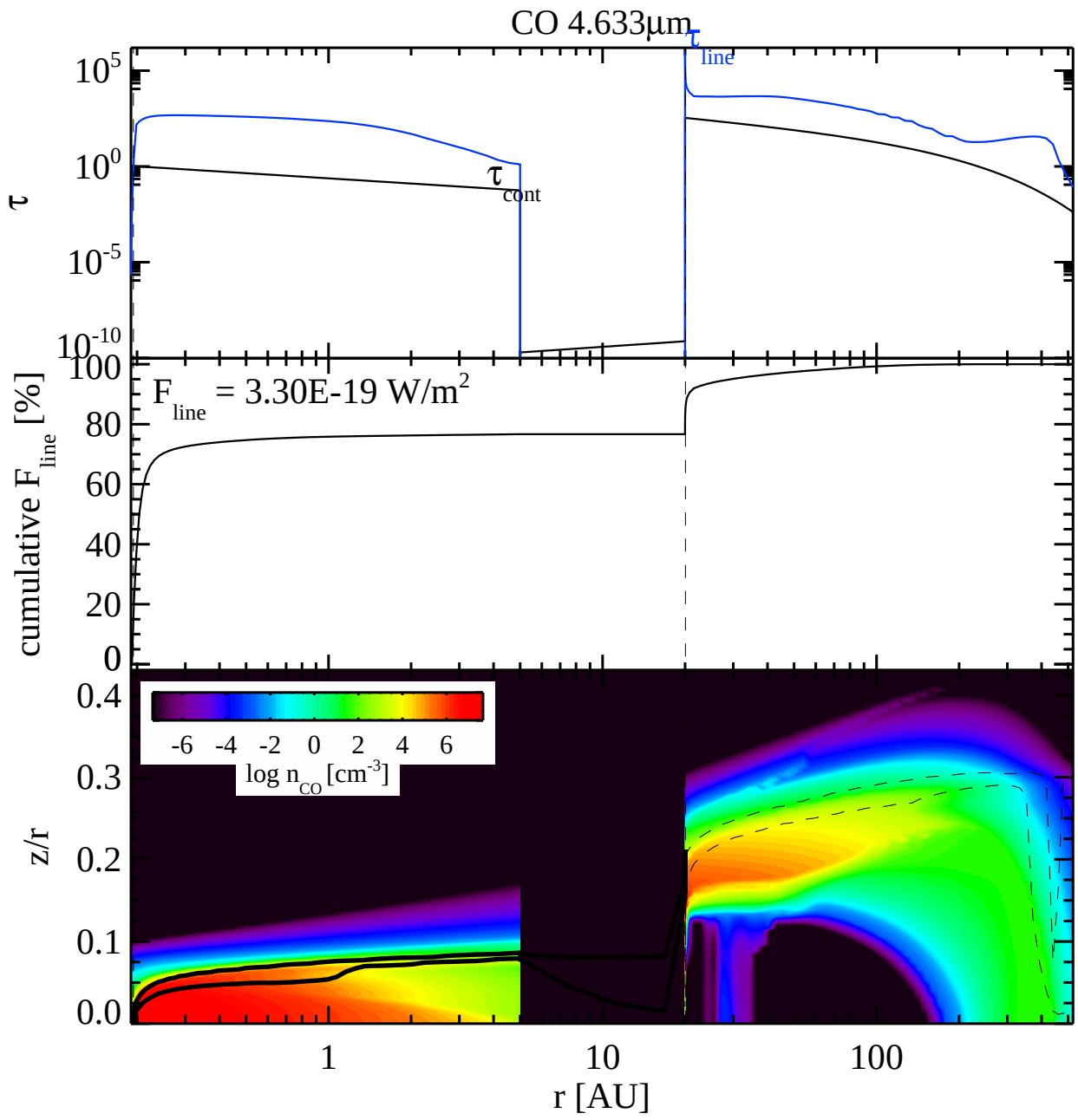

CO 144.78μm
τ
τ line
τ cont
cumulative F line [%]
F line = 1.37E-19 W/m2
log n CO [cm-3]
z/r
r [AU]

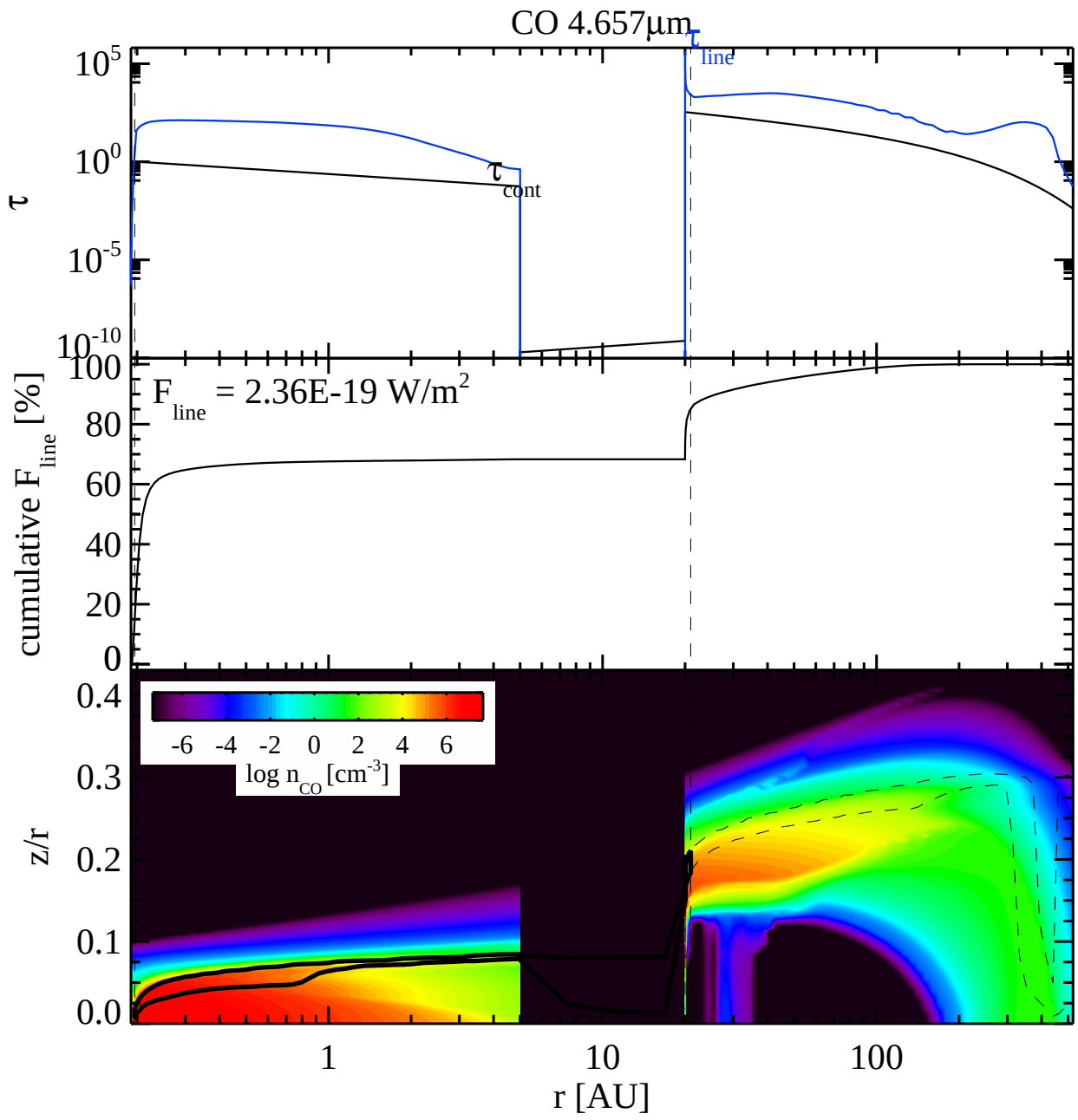

CO 108.76µm
τ
τ line
τ cont
cumulative F line [%]
F line = 7.58E-20 W/m2
log n CO [cm-3]
-6 -4 -2 0 2 4 6
z/r
r [AU]
1
10
100

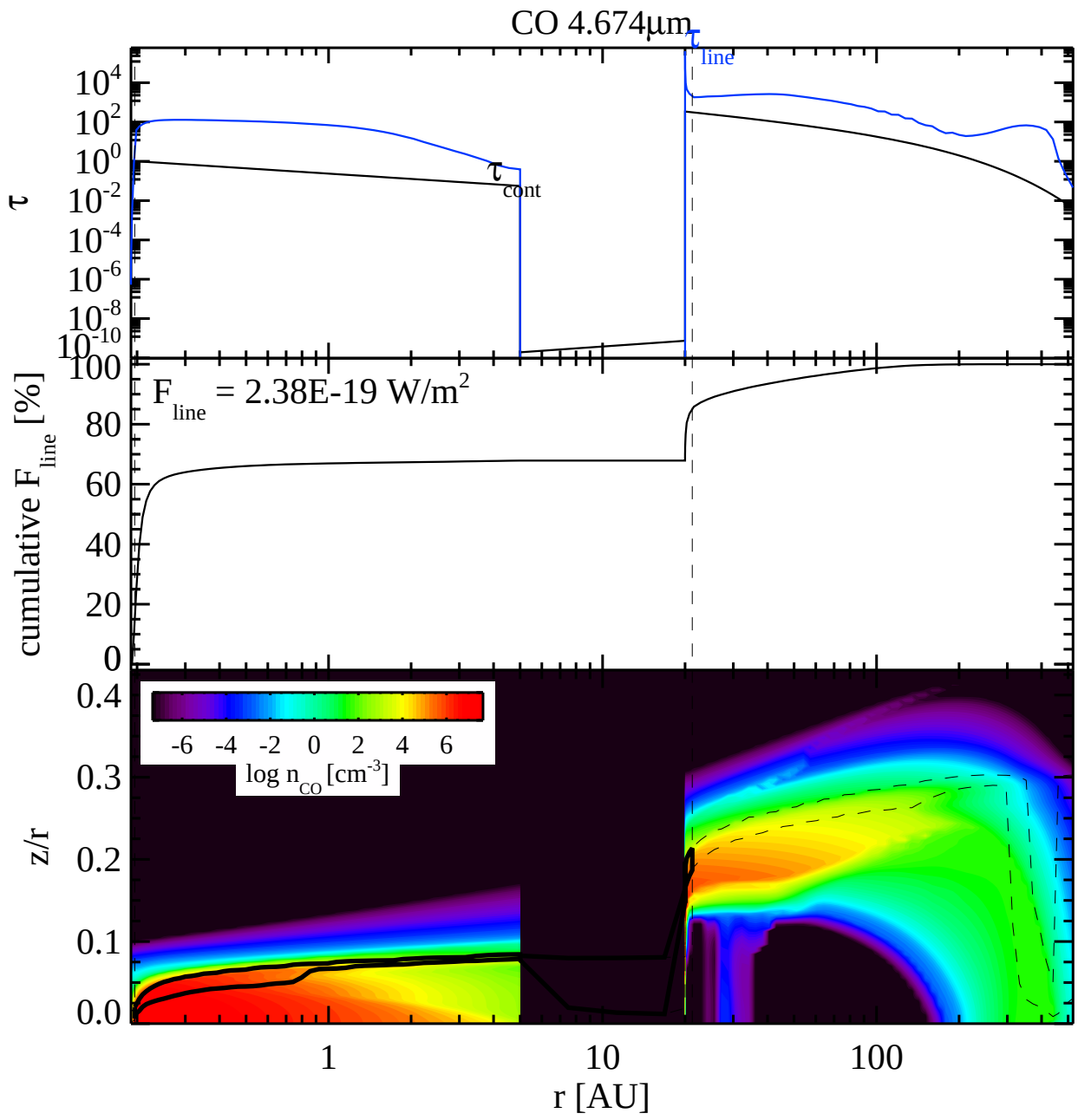

CO 90.16µm
τ
τ cont
τ line
cumulative F line [%]
F line = 2.75E-20 W/m2
log n CO [cm-3]
z/r
r [AU]

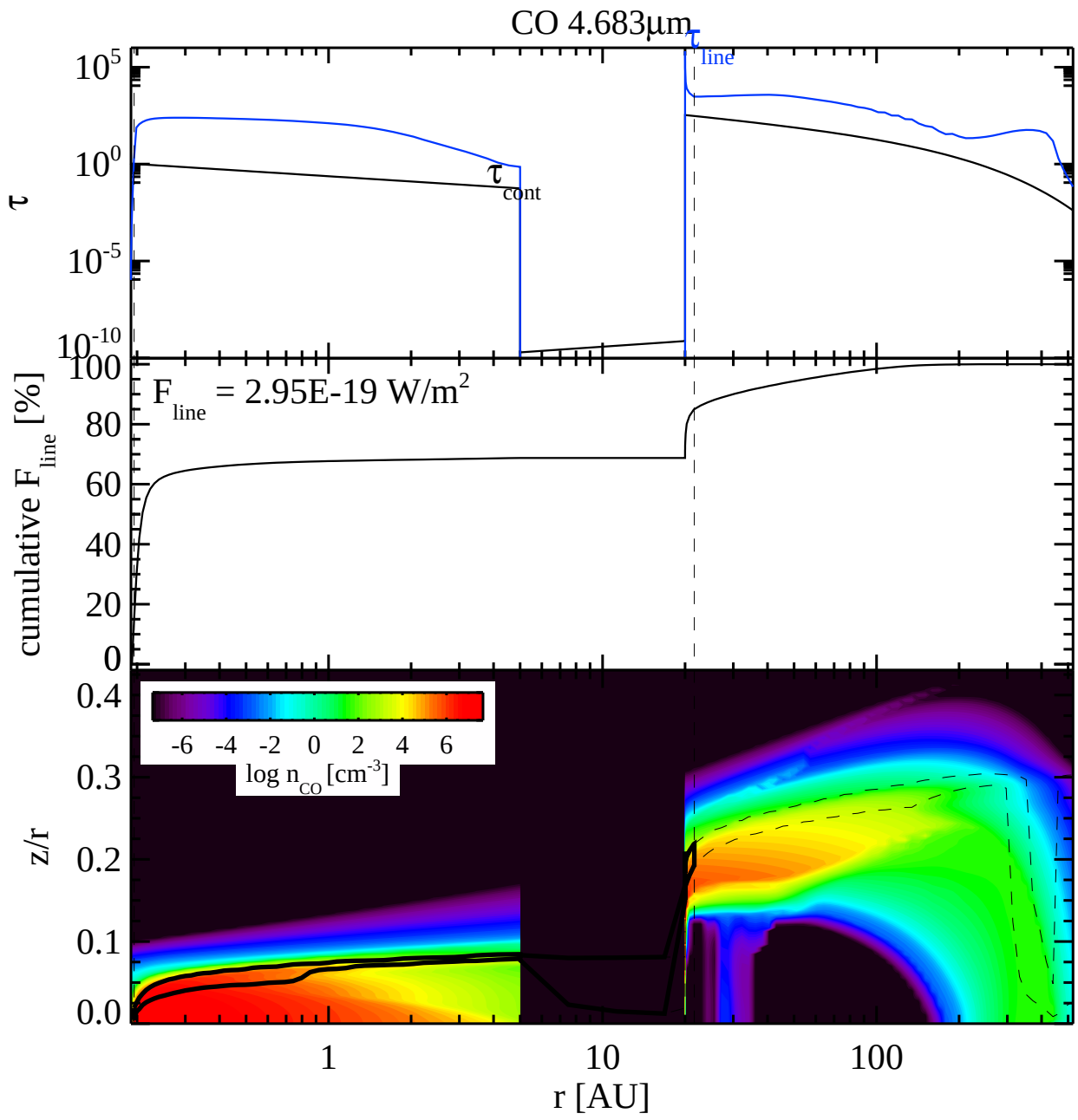

CO 79.36µm
τ
τ cont
τ line
cumulative F line [%]
F line = 9.07E-21 W/m2
log n CO [cm-3]
z/r
r [AU]

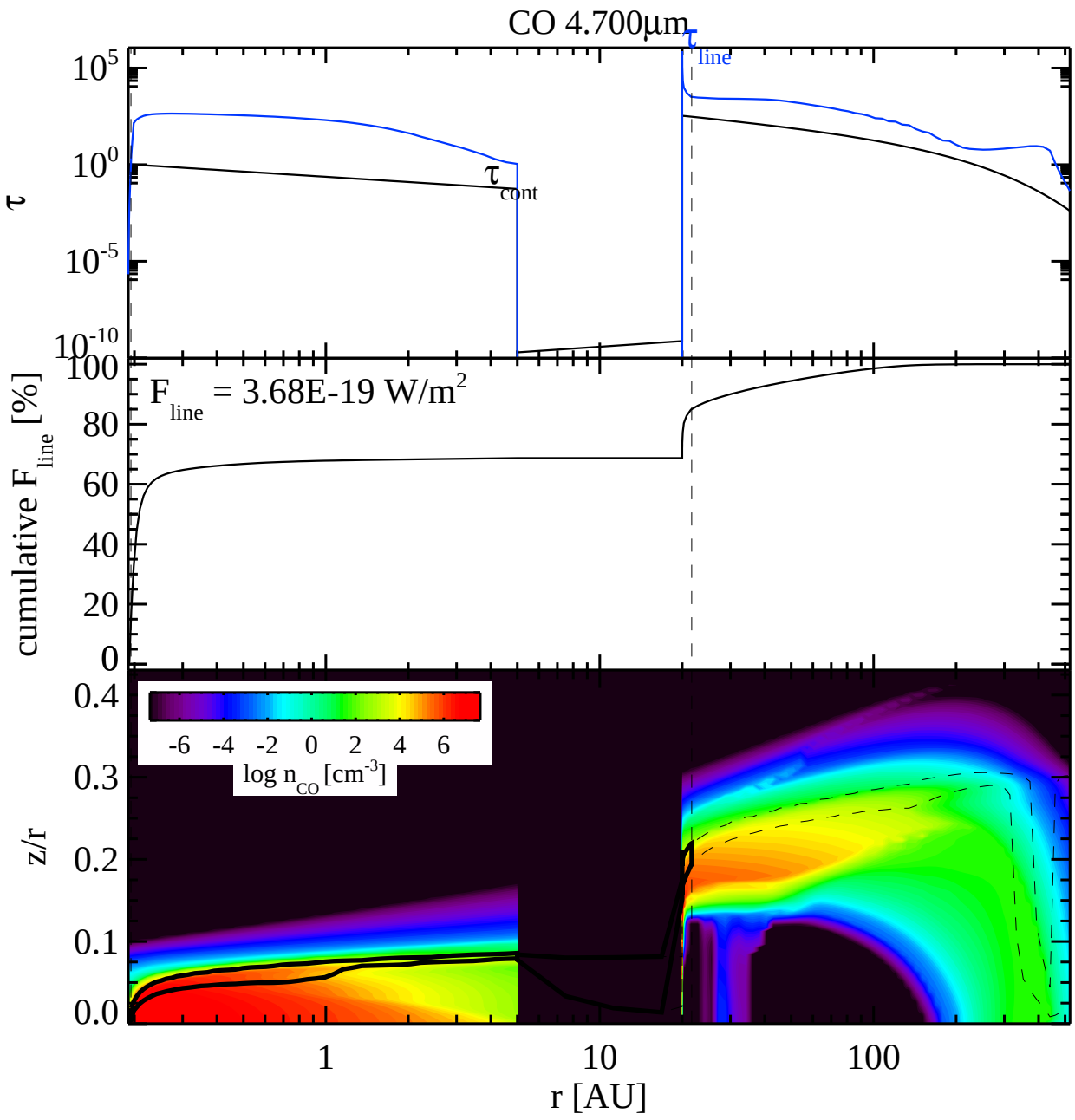

CO 72.84μm
τ
τ cont
τ line
cumulative F line [%]
F line = 3.91E-21 W/m2
z/r
-6 -4 -2 0 2 4 6
log n CO [cm-3]
r [AU]

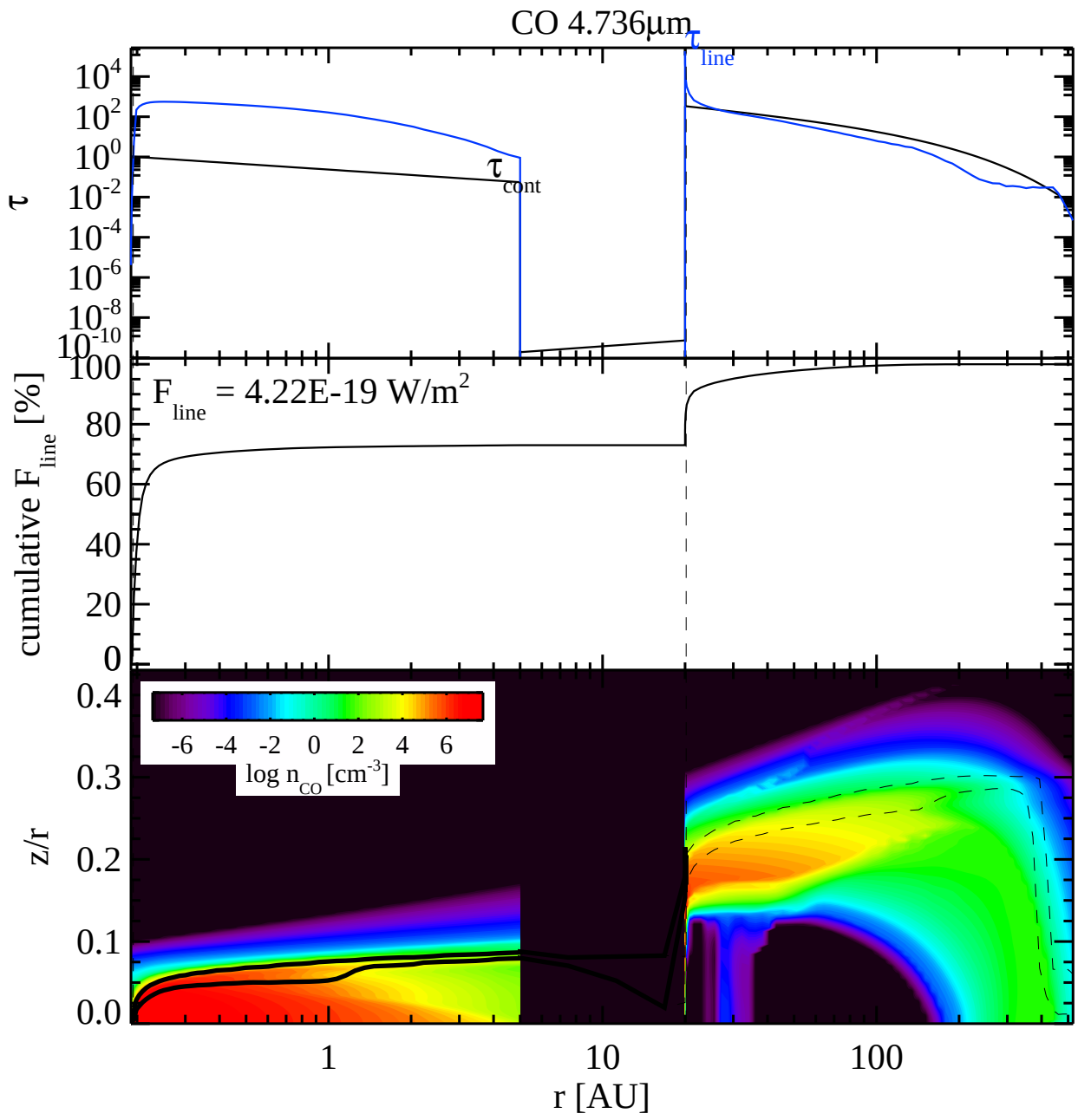

CO 4.633µm
τ
line
τ
cont
τ
10^5
10^0
10^-5
10^-10
F
line
= 3.30E-19 W/m^2
cumulative F
line
[%]
100
80
60
40
20
0
-6 -4 -2 0 2 4 6
log n
CO
[cm^-3]
z/r
0.4
0.3
0.2
0.1
0.0
1
10
100
r [AU]

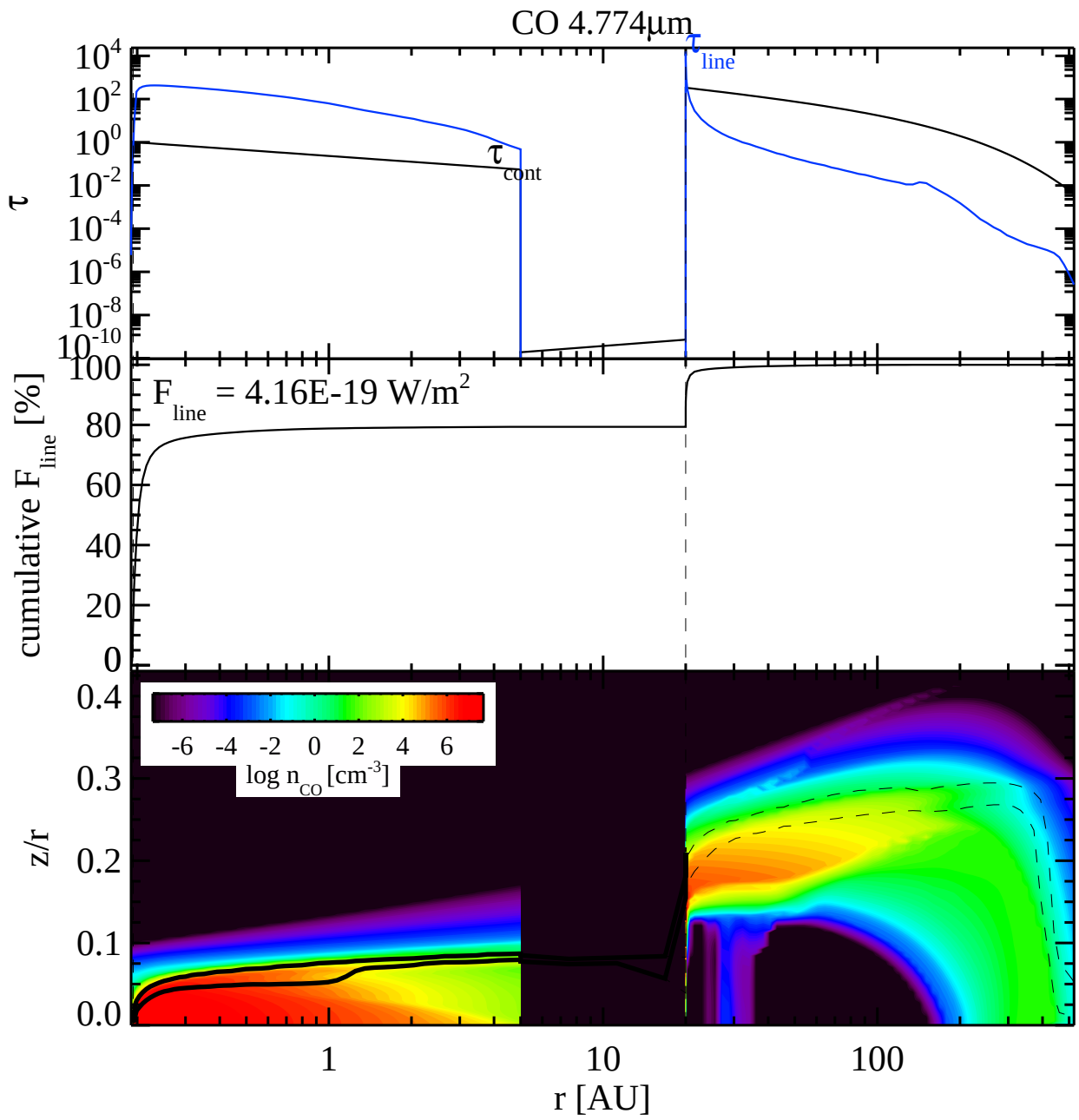

CO 4.657µm
τ line
τ cont
τ
10^5
10^0
10^-5
10^-10
F line = 2.36E-19 W/m^2
cumulative F line [%]
100
80
60
40
20
0
-6 -4 -2 0 2 4 6
log n CO [cm^-3]
z/r
0.4
0.3
0.2
0.1
0.0
1
10
100
r [AU]

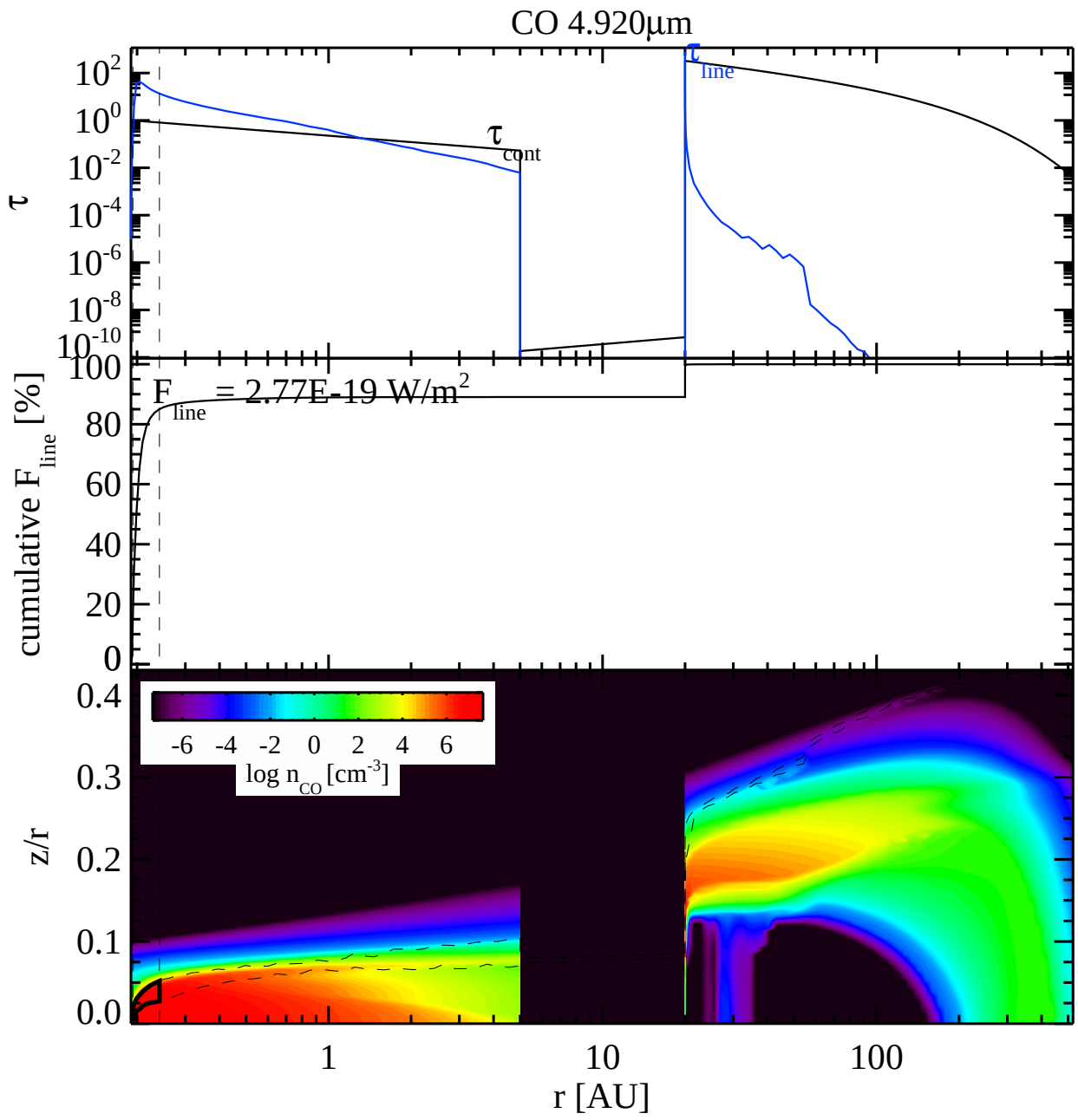

CO 4.674µm
τ line
τ cont
τ
10^4
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
F line = 2.38E-19 W/m^2
cumulative F line [%]
100
80
60
40
20
0
log n CO [cm^-3]
-6 -4 -2 0 2 4 6
z/r
0.4
0.3
0.2
0.1
0.0
1
10
100
r [AU]

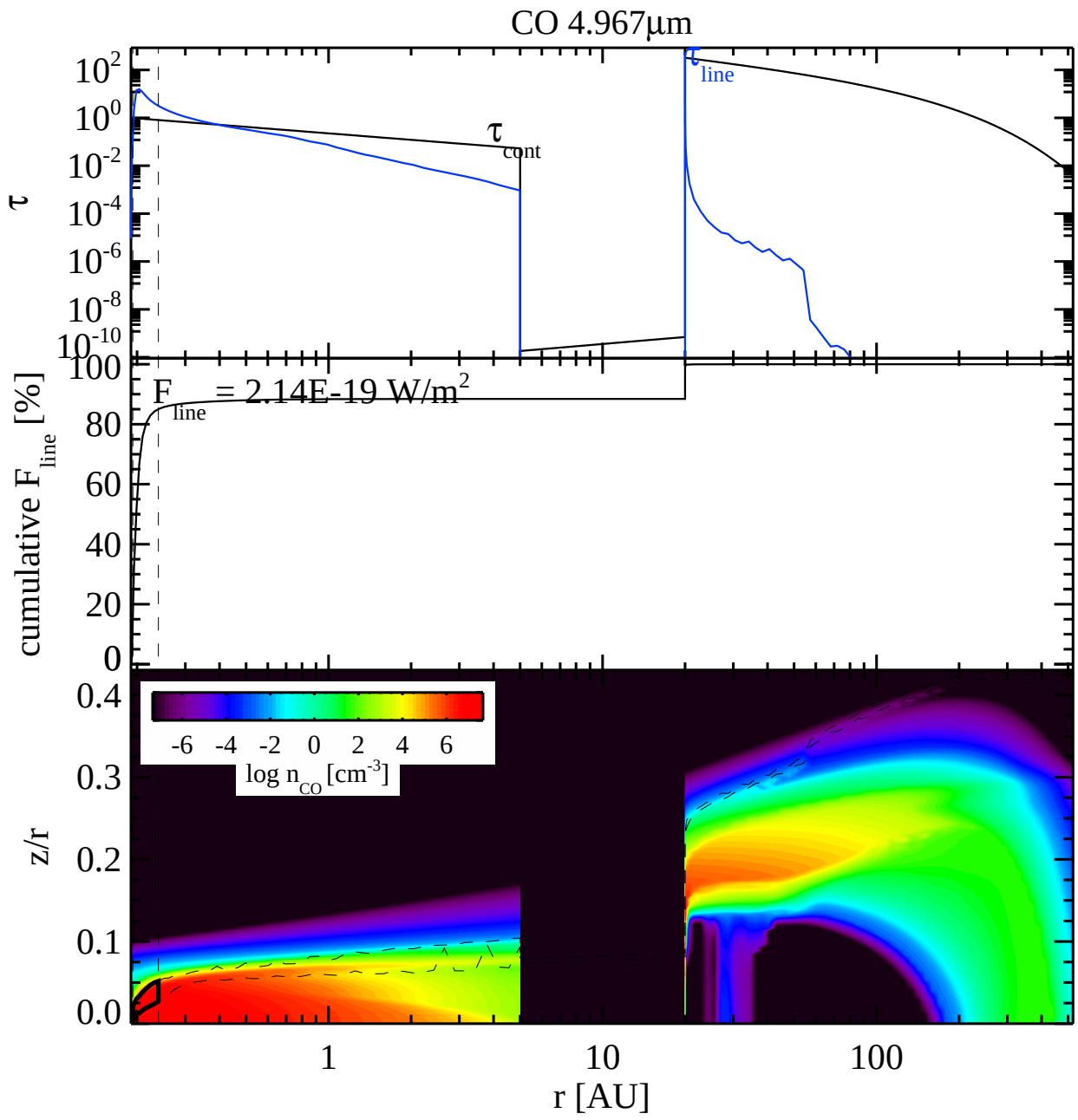

CO 4.683µm
τ line
τ cont
τ
10^5
10^0
10^-5
10^-10
F line = 2.95E-19 W/m^2
cumulative F line [%]
100
80
60
40
20
0
log n CO [cm^-3]
-6 -4 -2 0 2 4 6
z/r
0.4
0.3
0.2
0.1
0.0
1
10
100
r [AU]

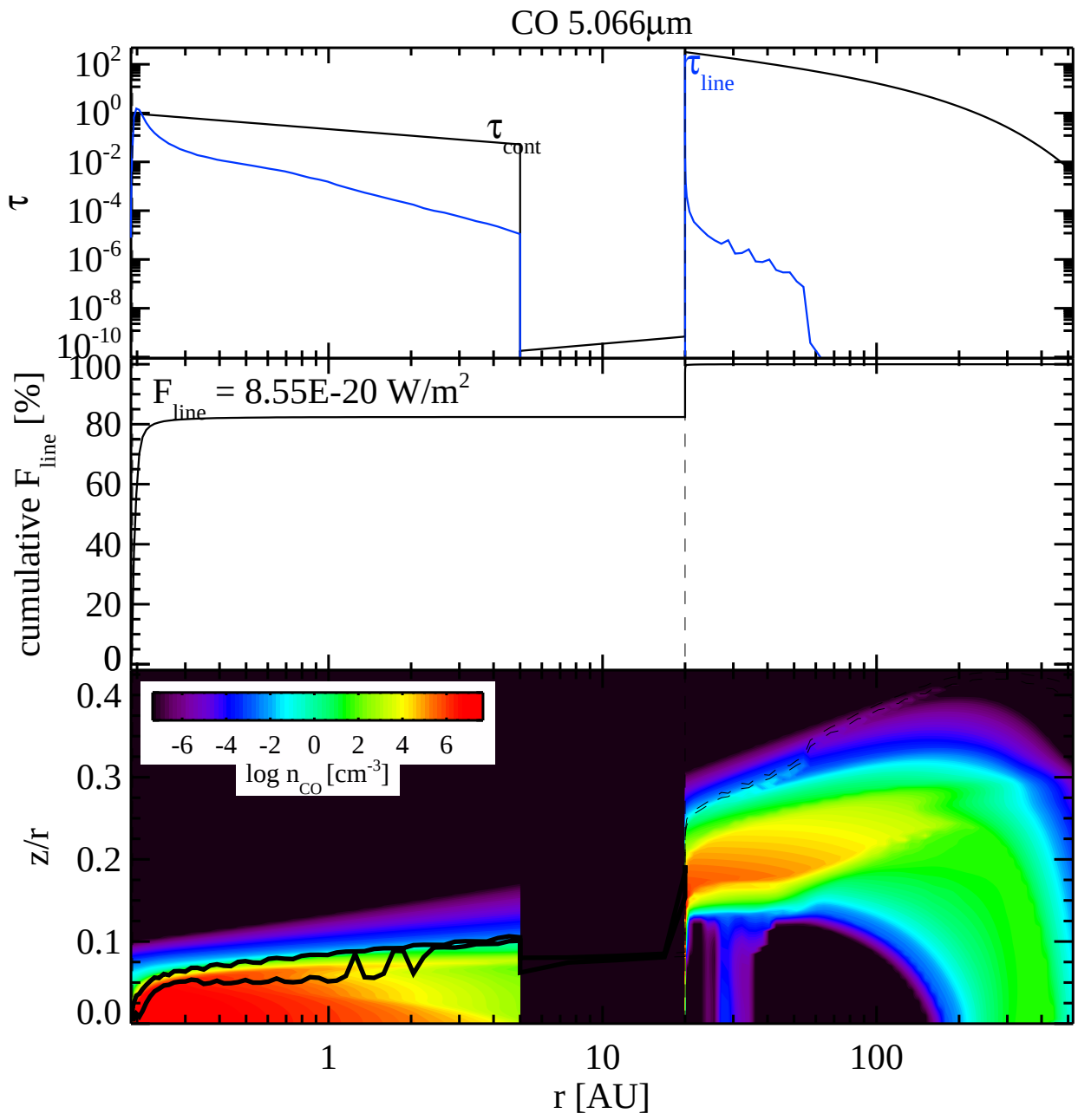

CO 4.700µm
τ
line
τ
cont
10^5
10^0
10^-5
10^-10
F
line
= 3.68E-19 W/m^2
cumulative F
line
[%]
100
80
60
40
20
0
-6 -4 -2 0 2 4 6
log n
CO
[cm^-3]
z/r
0.4
0.3
0.2
0.1
0.0
1
10
100
r [AU]

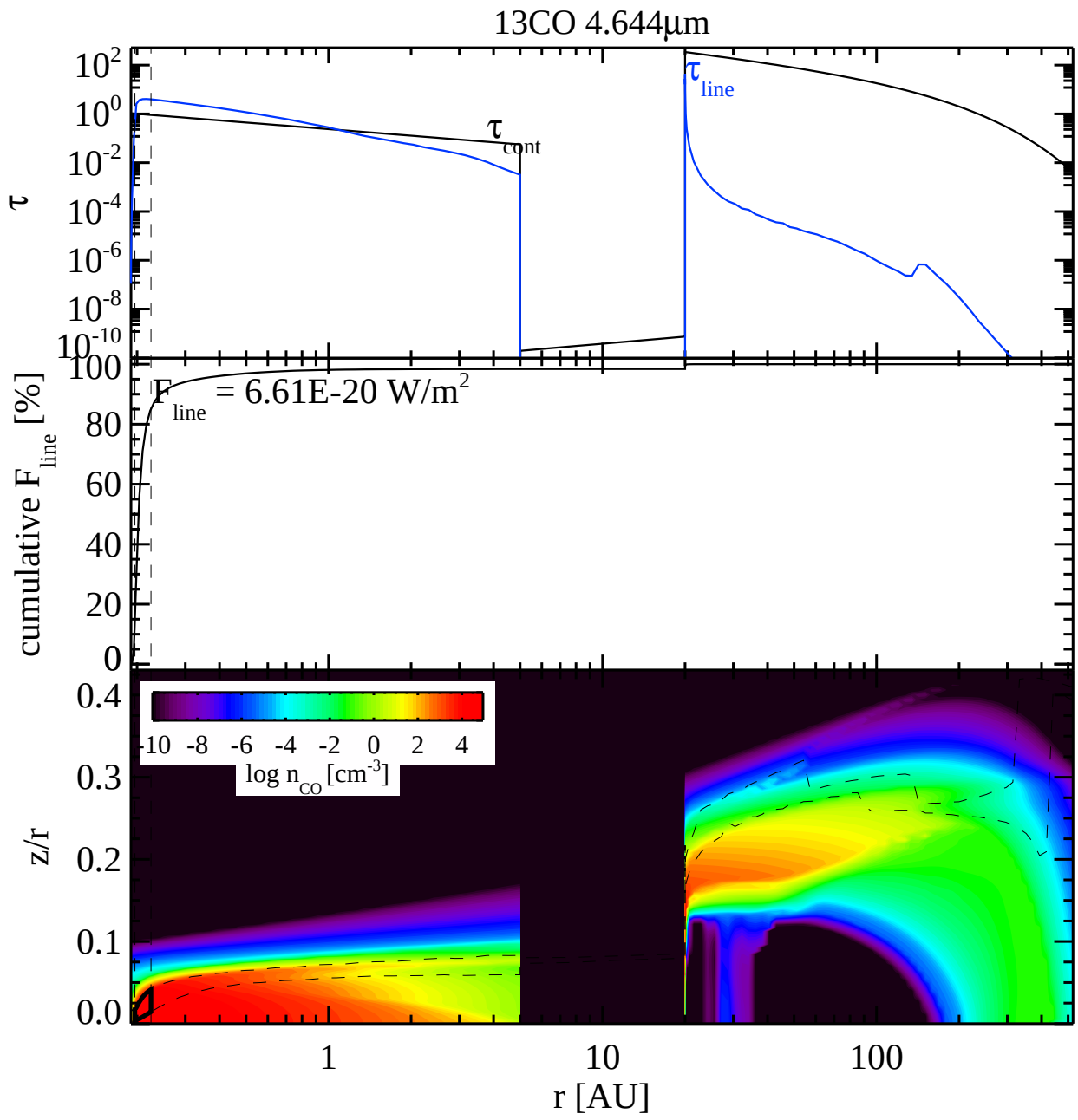

CO 4.736µm
τ
τ line
τ cont
cumulative F line [%]
F line = 4.22E-19 W/m2
log n CO [cm-3]
z/r
r [AU]

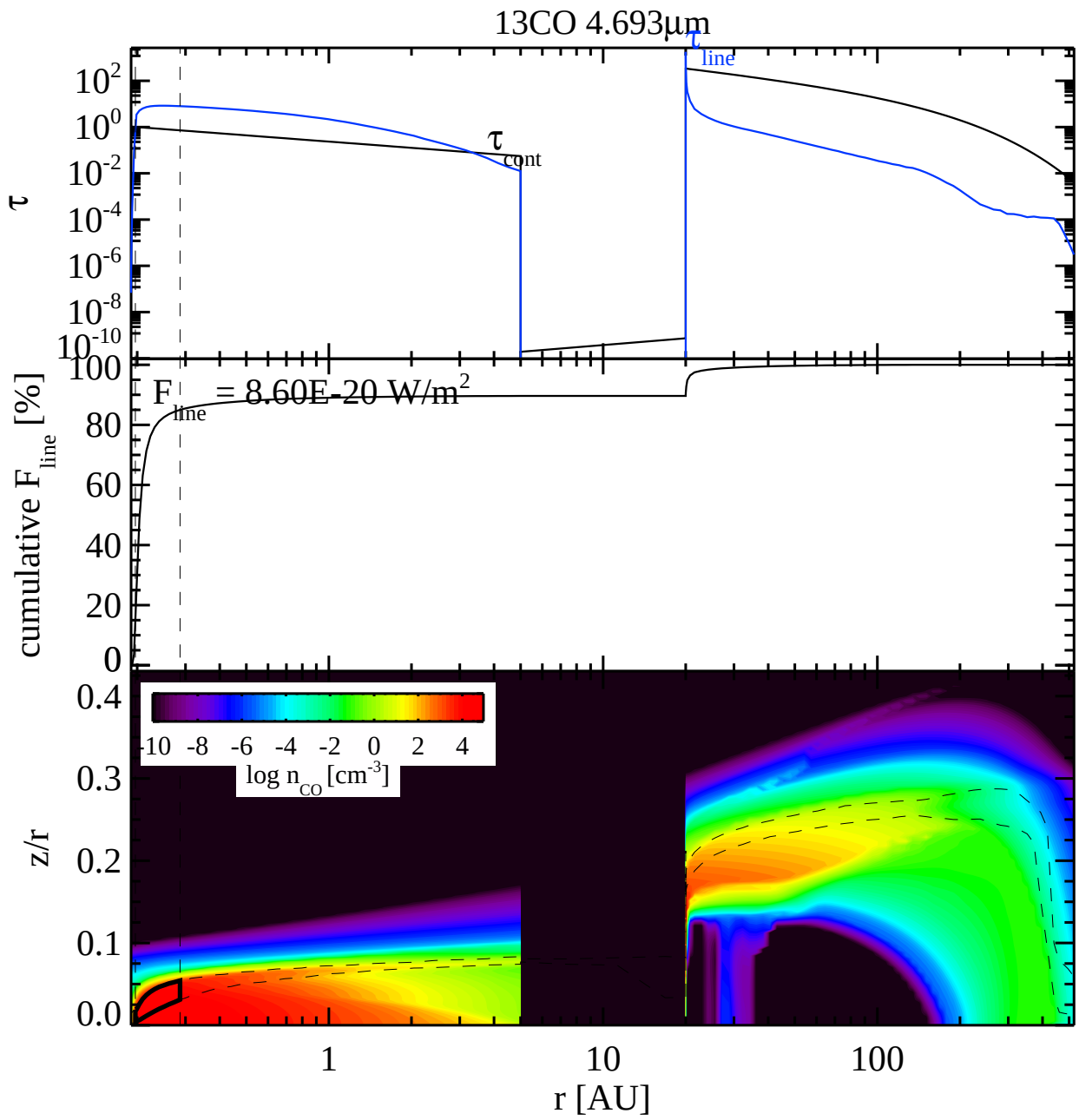

CO 4.774µm
τ
τ line
τ cont
cumulative F line [%]
F line = 4.16E-19 W/m2
log n CO [cm-3]
-6 -4 -2 0 2 4 6
z/r
r [AU]
1
10
100

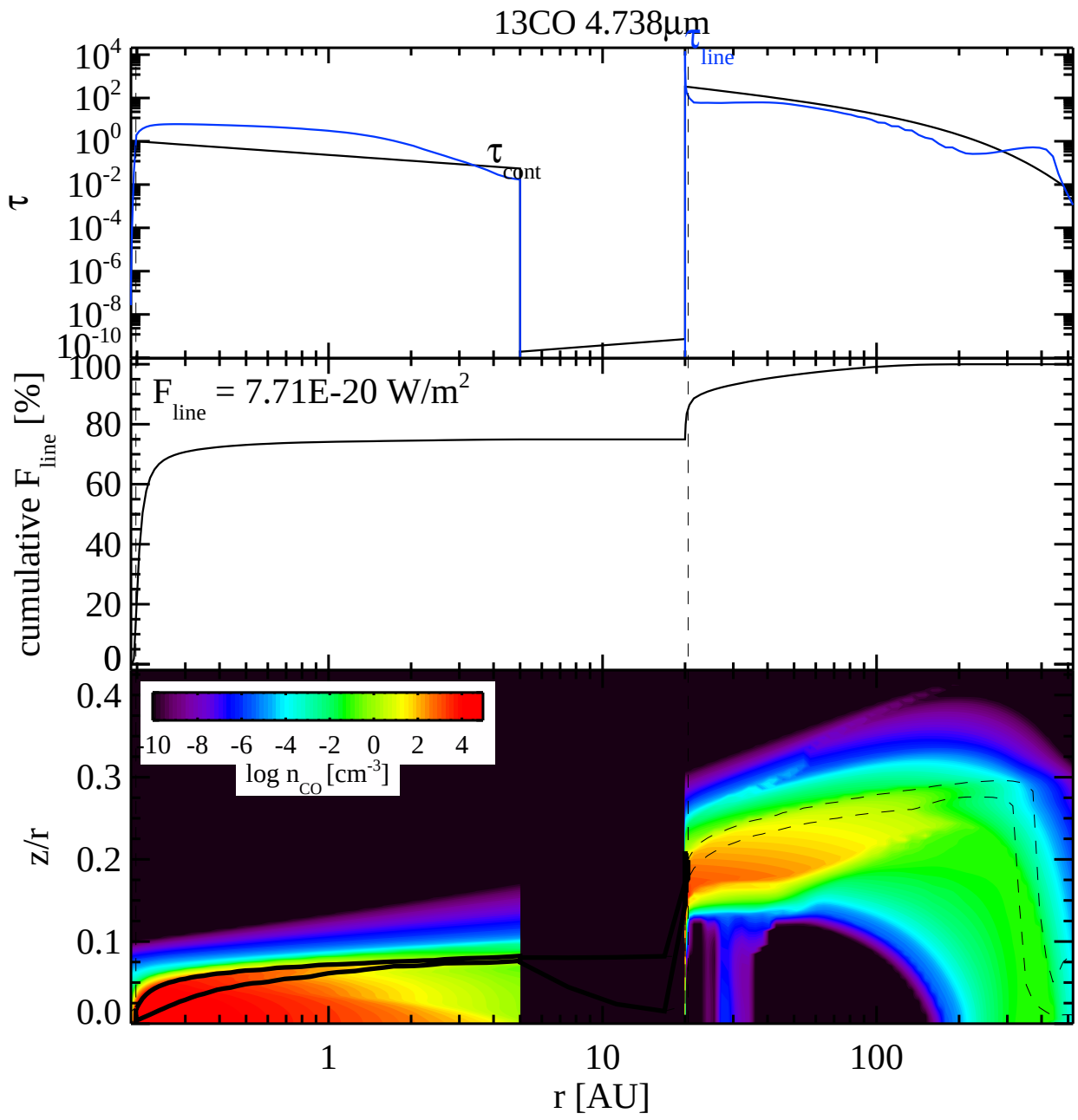

CO 4.920µm
τ
10^{2}
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
100
80
60
40
20
0
F_{line} = 2.77E-19 W/m^2
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n_{CO} [cm^{-3}]
1
10
100
r [AU]

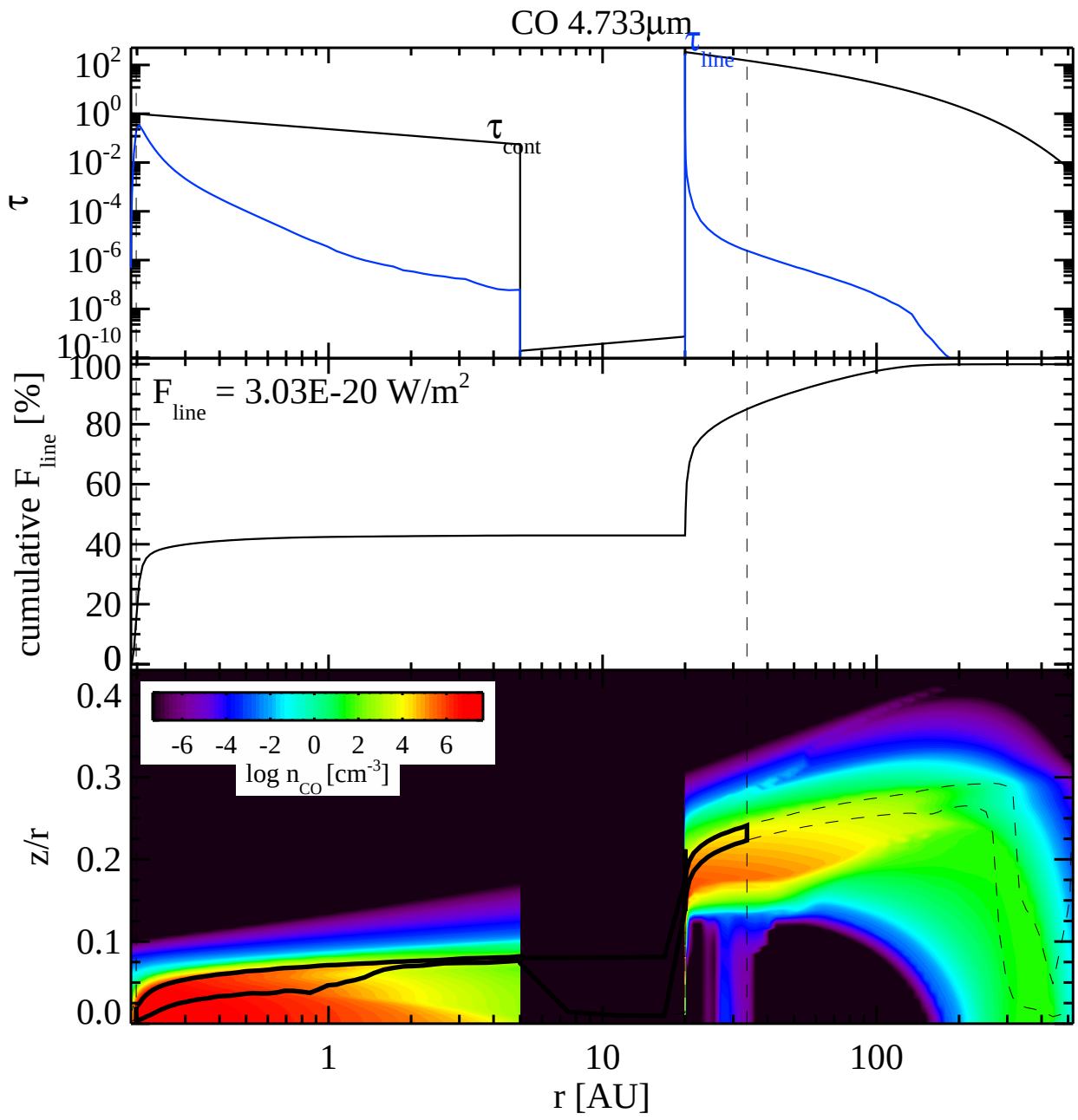

CO 4.967µm
τ
10^{2}
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
line
cumulative F_{line} [%]
100
80
60
40
20
0
F_{line} = 2.14E-19 W/m^2
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n_{CO} [cm^{-3}]
1
10
100
r [AU]

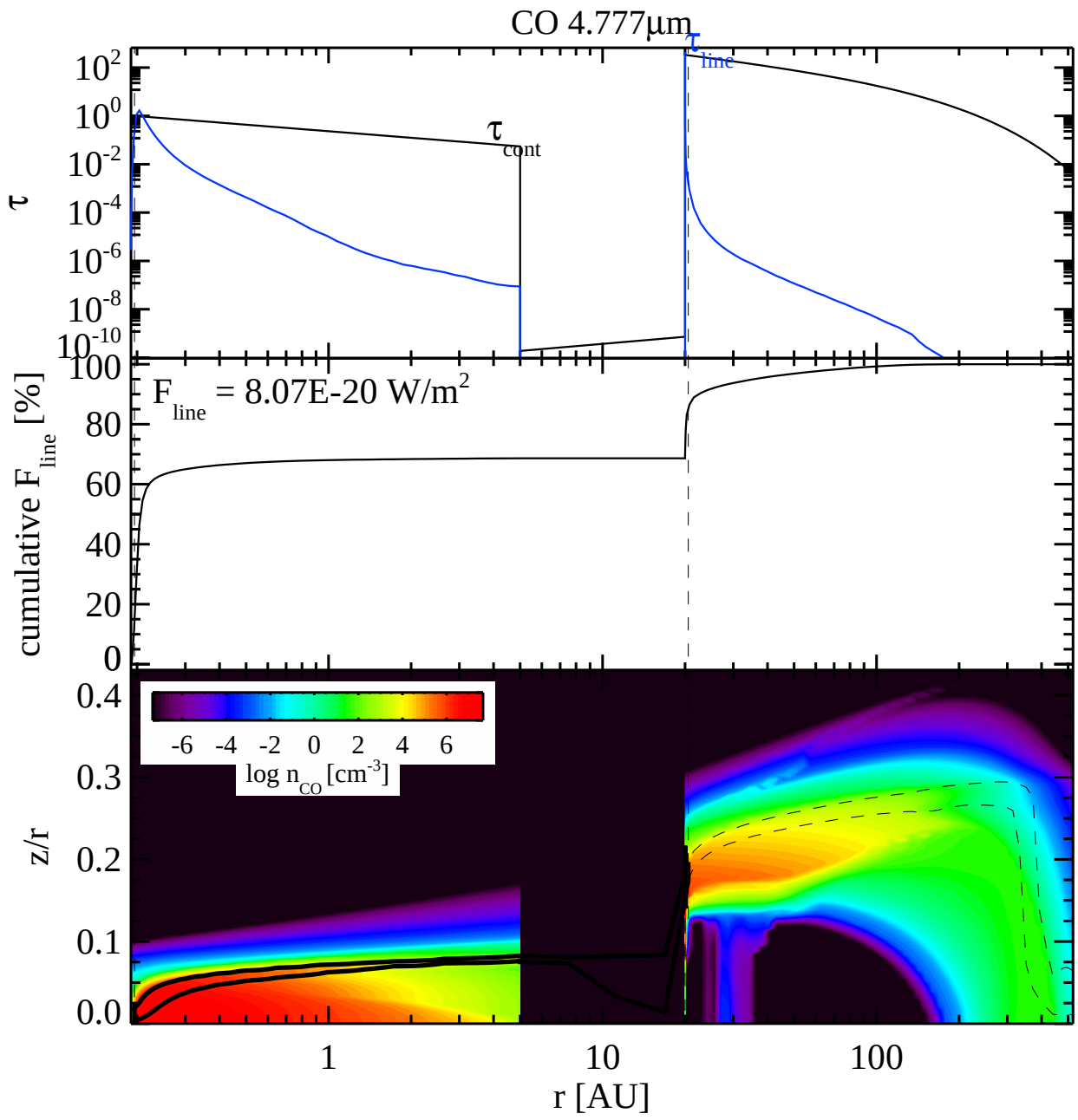

CO 5.066µm
τ
τ cont
τ line
cumulative F line [%]
F line = 8.55E-20 W/m2
-6 -4 -2 0 2 4 6
log n CO [cm-3]
z/r
r [AU]

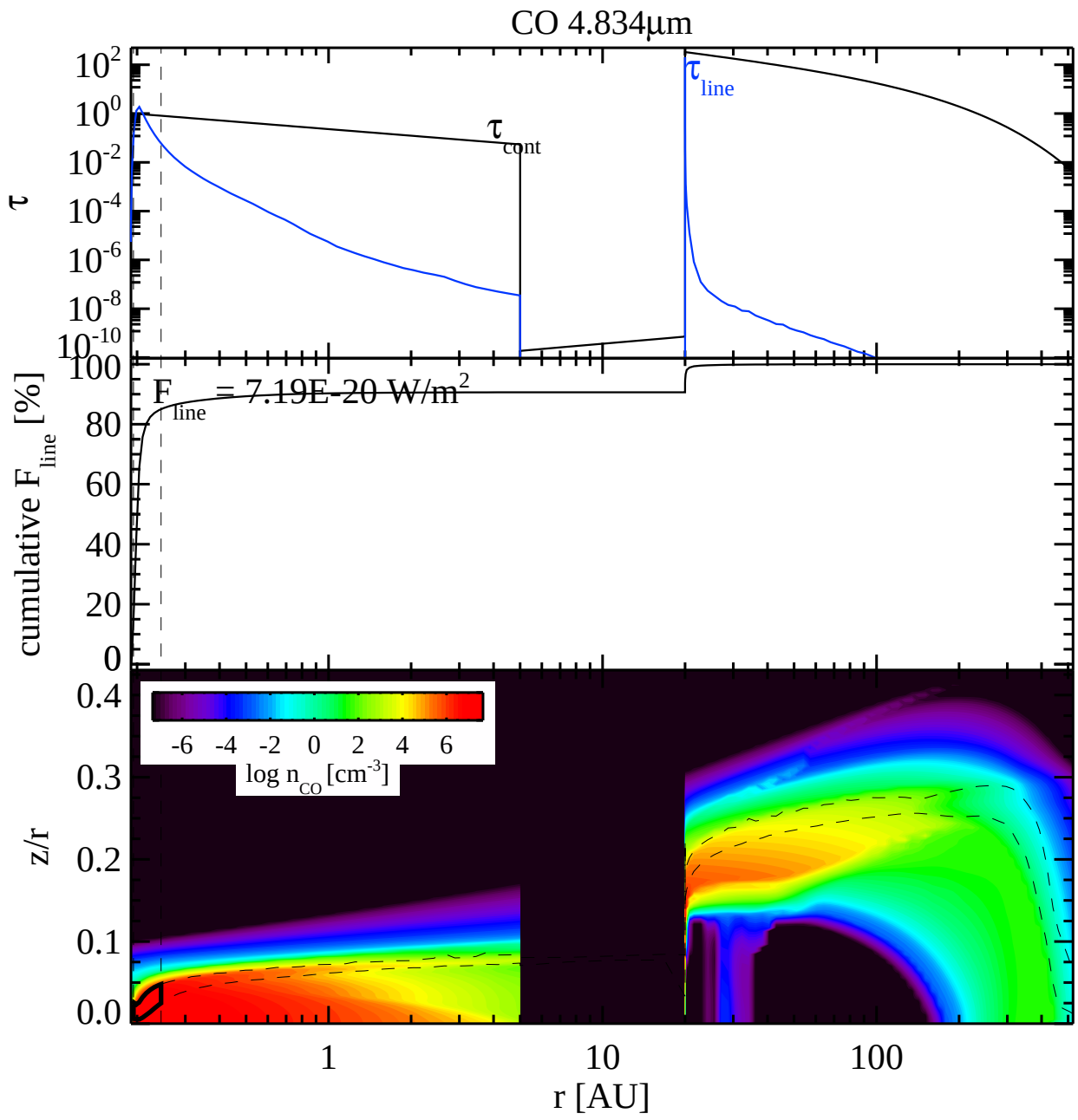

13CO 4.644µm
τ
10^{2}
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
100
80
60
40
20
0
F_{line} = 6.61E-20 W/m^2
z/r
0.4
0.3
0.2
0.1
0.0
-10 -8 -6 -4 -2 0 2 4
log n_{CO} [cm^{-3}]
1
10
100
r [AU]

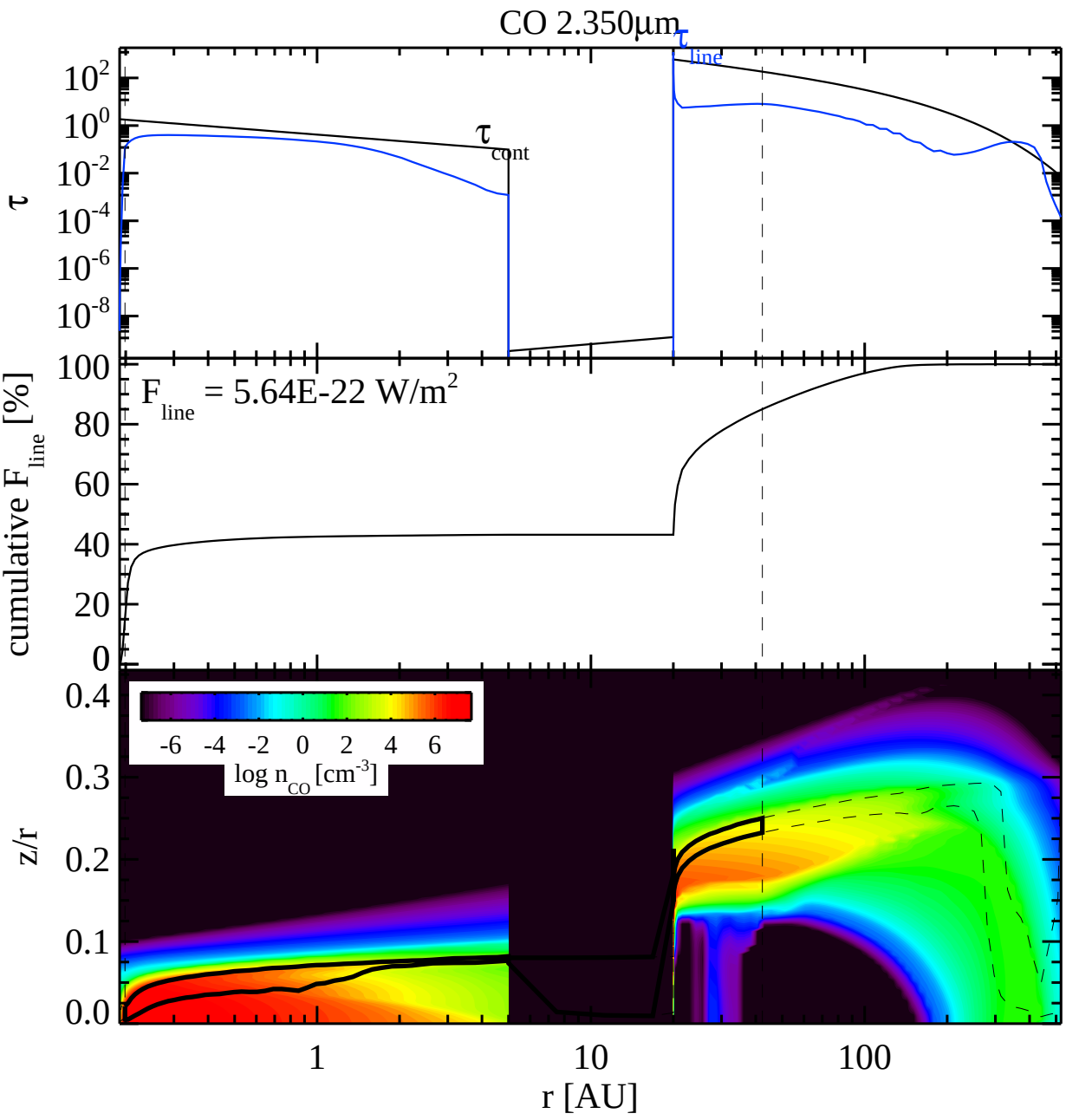

13CO 4.693µm
τ
τ line
τ cont
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 8.60E-20 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-10 -8 -6 -4 -2 0 2 4
log n CO [cm^-3]
1
10
100
r [AU]

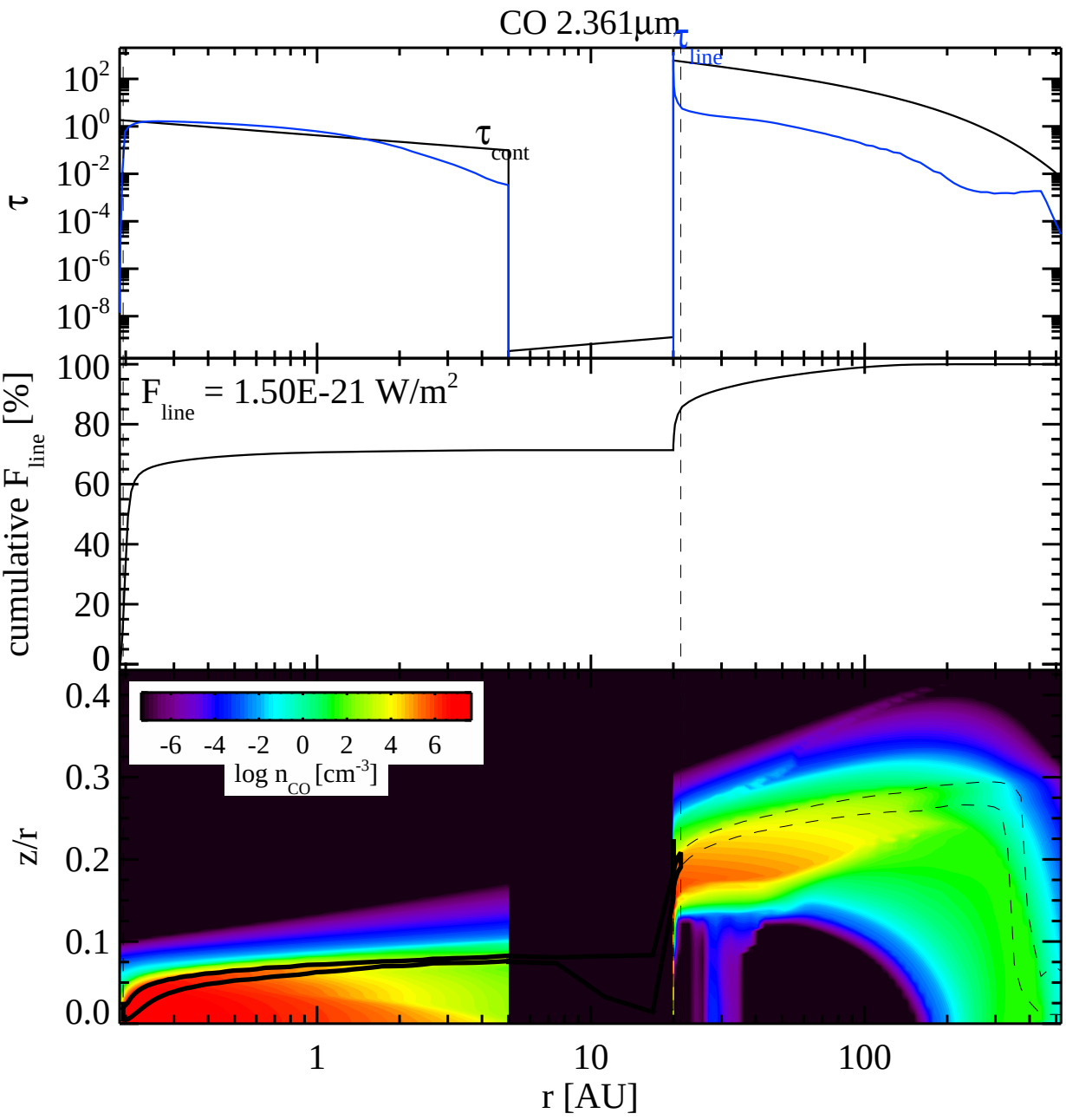

13CO 4.738μm
τ
τ line
τ cont
cumulative F line [%]
F line = 7.71E-20 W/m2
log n CO [cm-3]
z/r
r [AU]

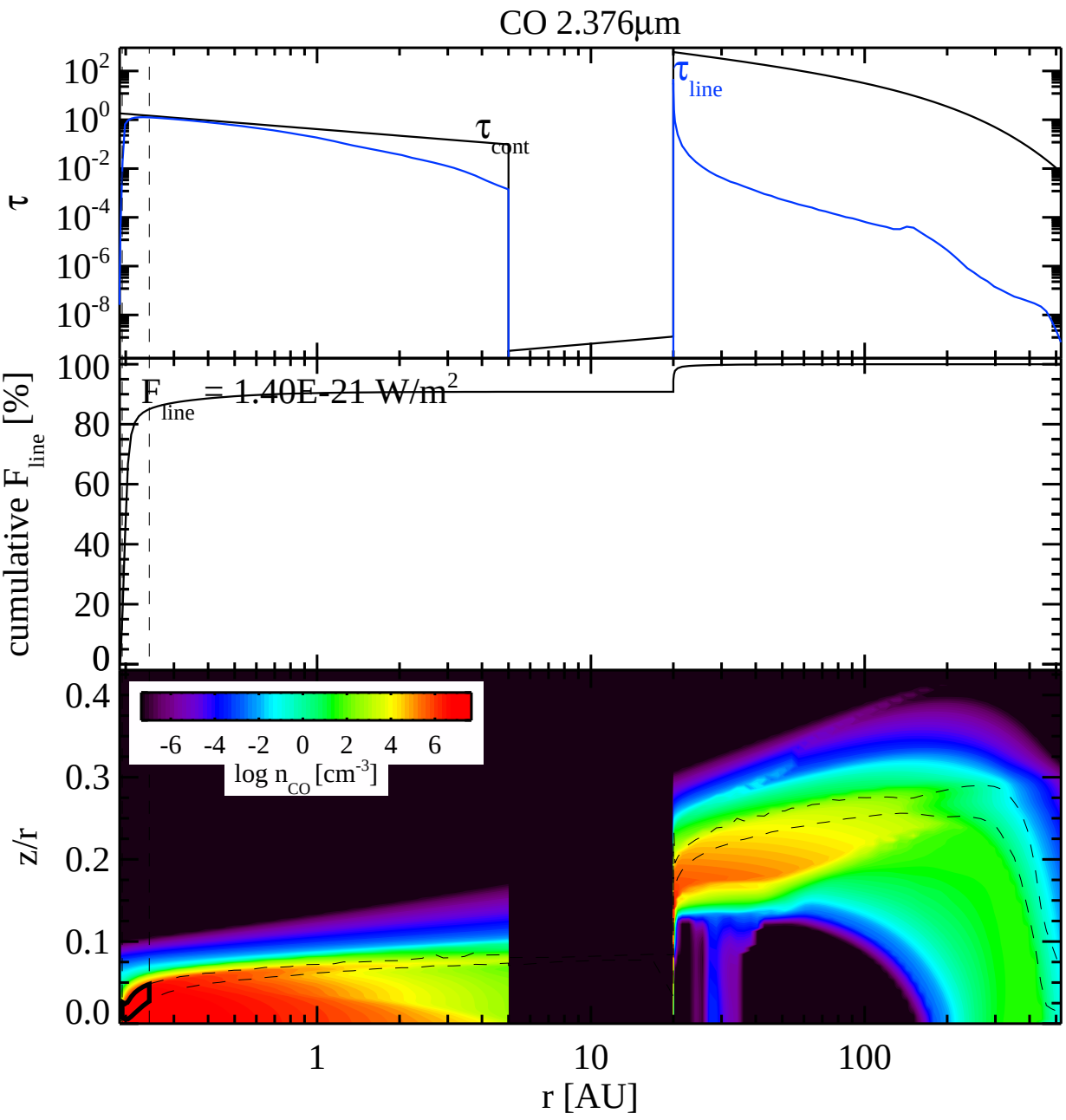

CO 4.733µm
τ
τ line
τ cont
F line = 3.03E-20 W/m2
cumulative F line [%]
log n CO [cm-3]
z/r
r [AU]

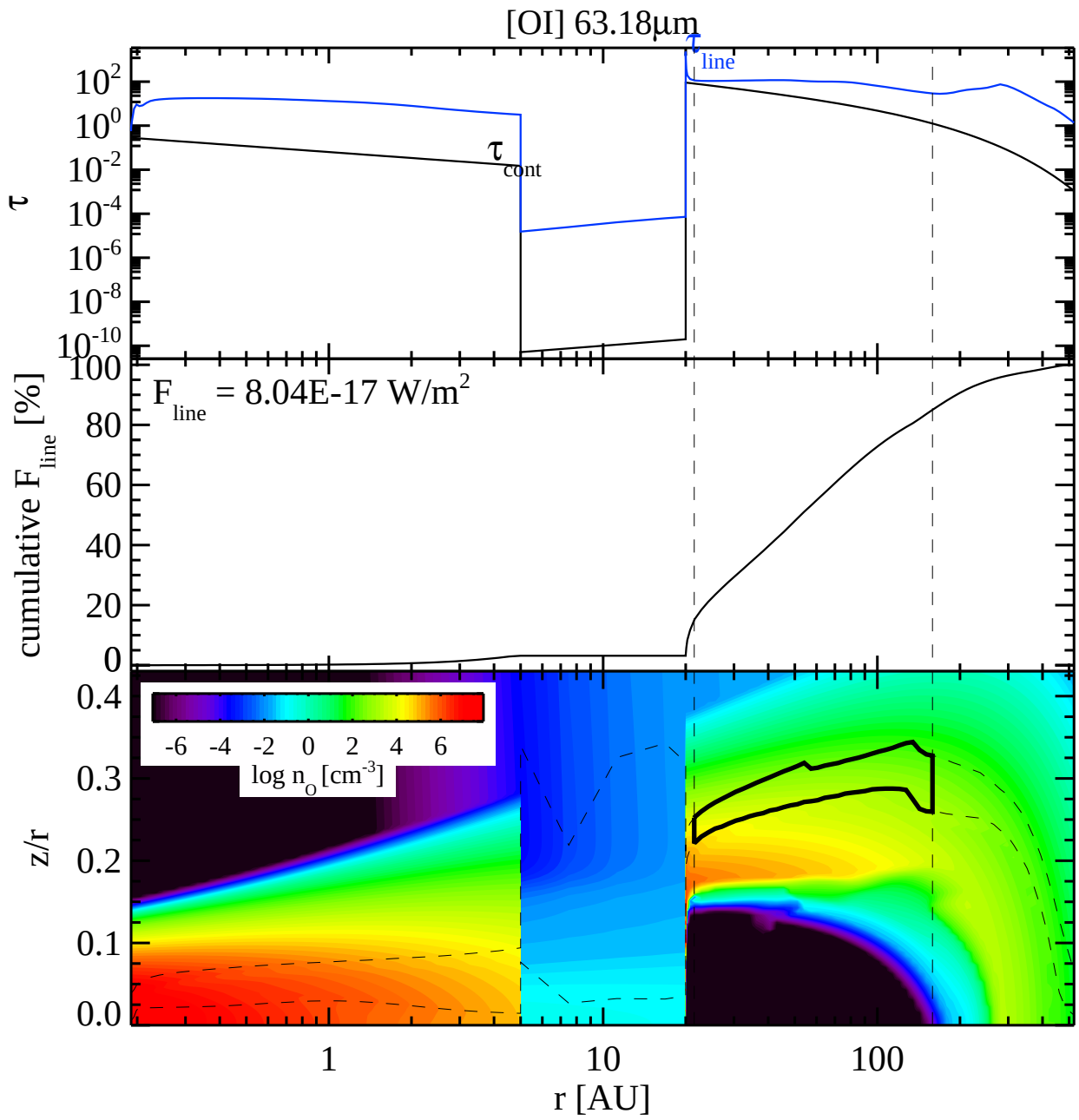

CO 4.777µm
τ
τ cont
τ line
cumulative F line [%]
F line = 8.07E-20 W/m2
log n CO [cm-3]
z/r
r [AU]

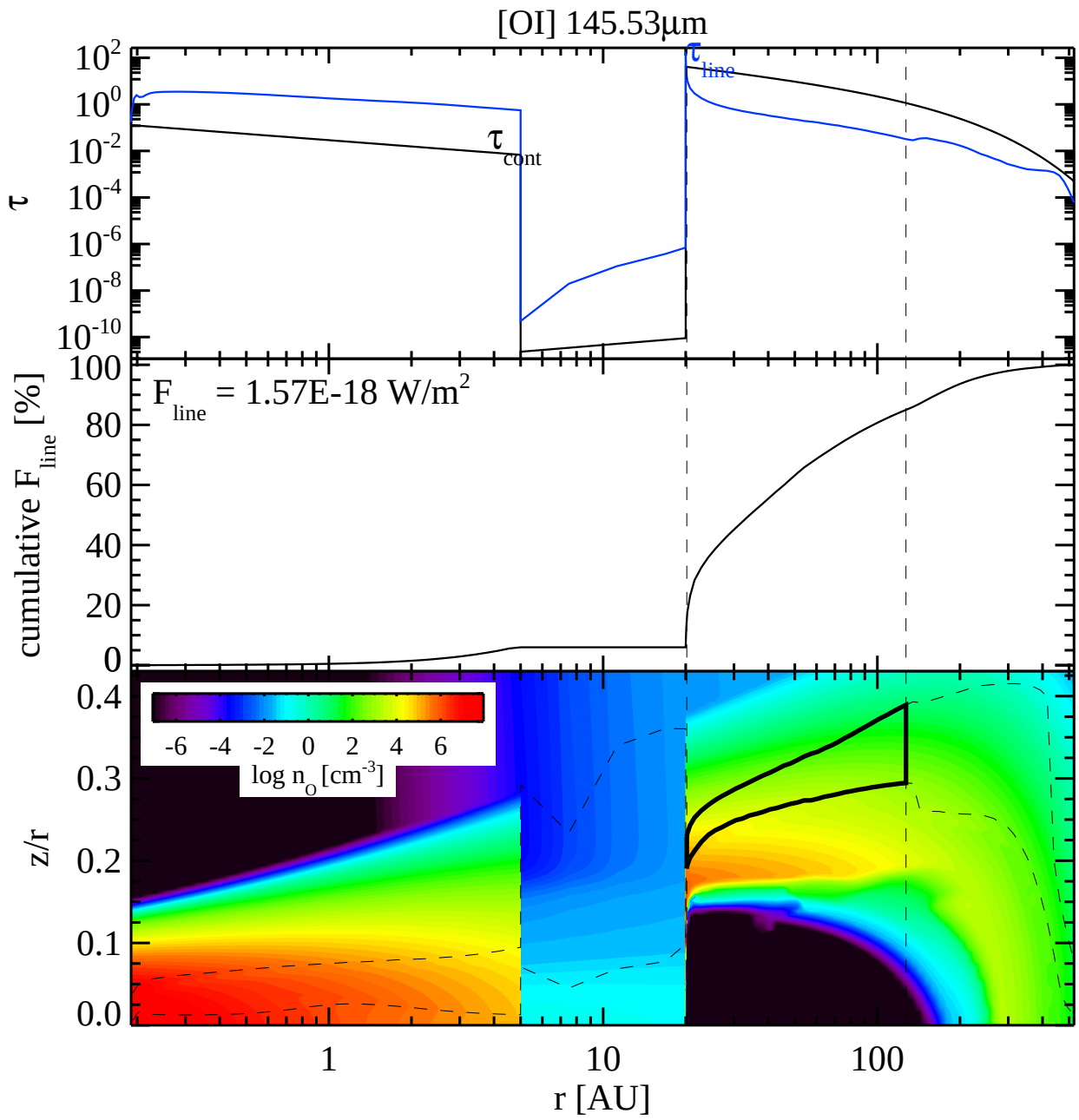

CO 4.834µm
τ
10^{2}
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
100
80
60
40
20
0
F_{line} = 7.19E-20 W/m^2
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n_{CO} [cm^{-3}]
1
10
100
r [AU]

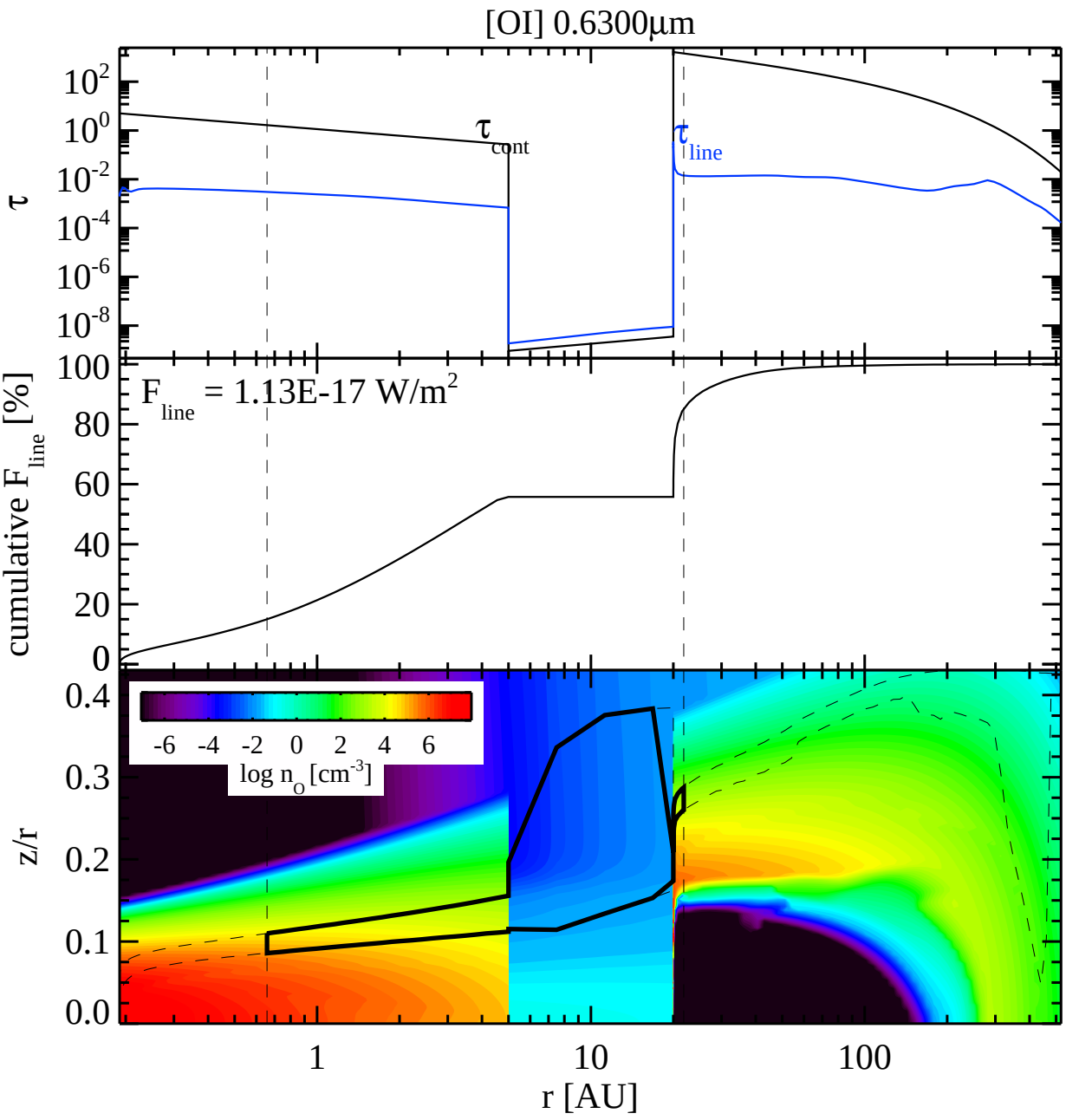

CO 2.350µm
τ
τ line
τ cont
10^2
10^0
10^-2
10^-4
10^-6
10^-8
cumulative F line [%]
F line = 5.64E-22 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n CO [cm^-3]
1
10
100
r [AU]

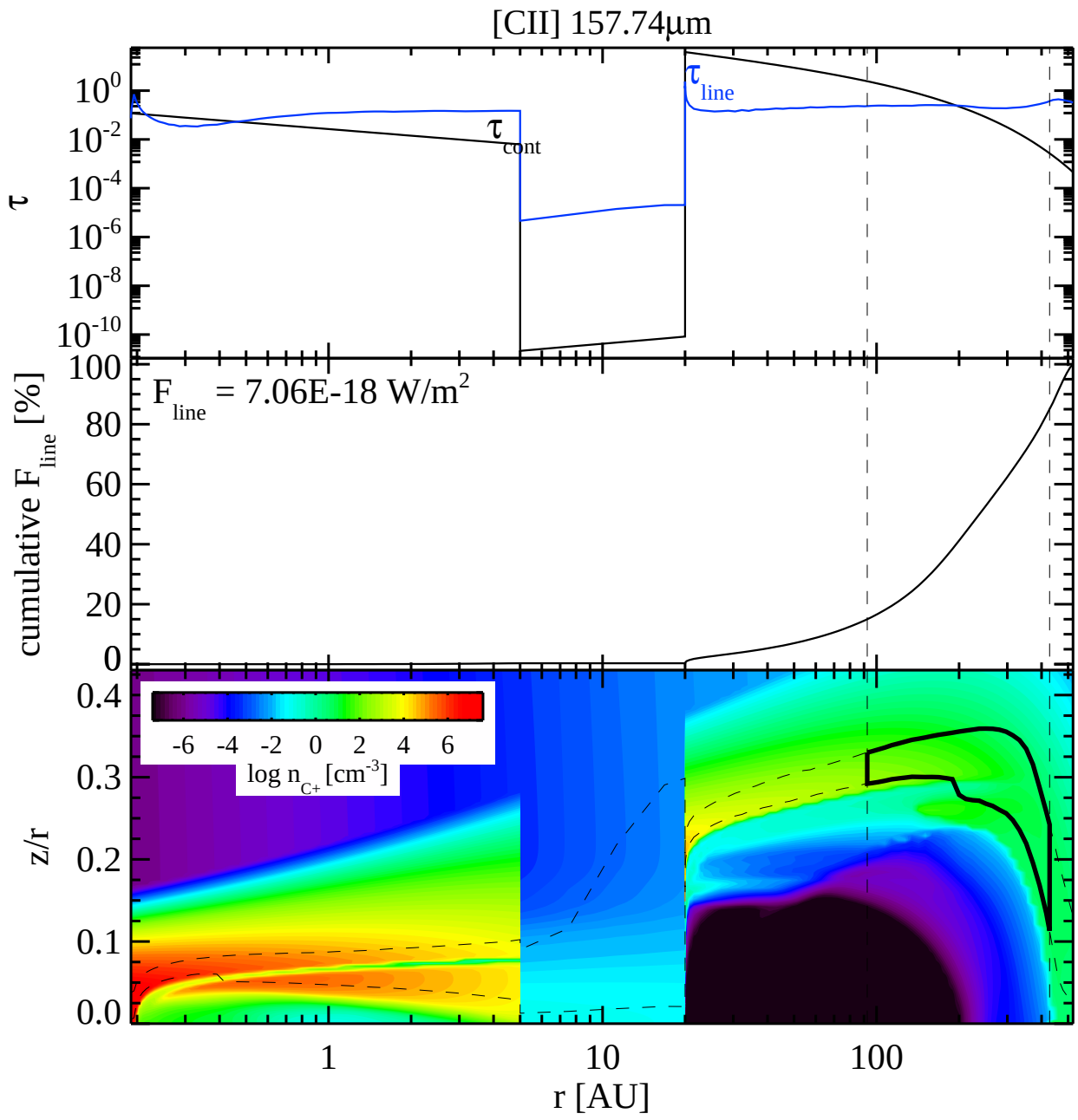

CO 2.361µm
τ line
τ cont
τ
10^2
10^0
10^-2
10^-4
10^-6
10^-8
F line = 1.50E-21 W/m^2
cumulative F line [%]
100
80
60
40
20
0
0.4
0.3
0.2
0.1
0.0
z/r
-6 -4 -2 0 2 4 6
log n CO [cm^-3]
1
10
100
r [AU]

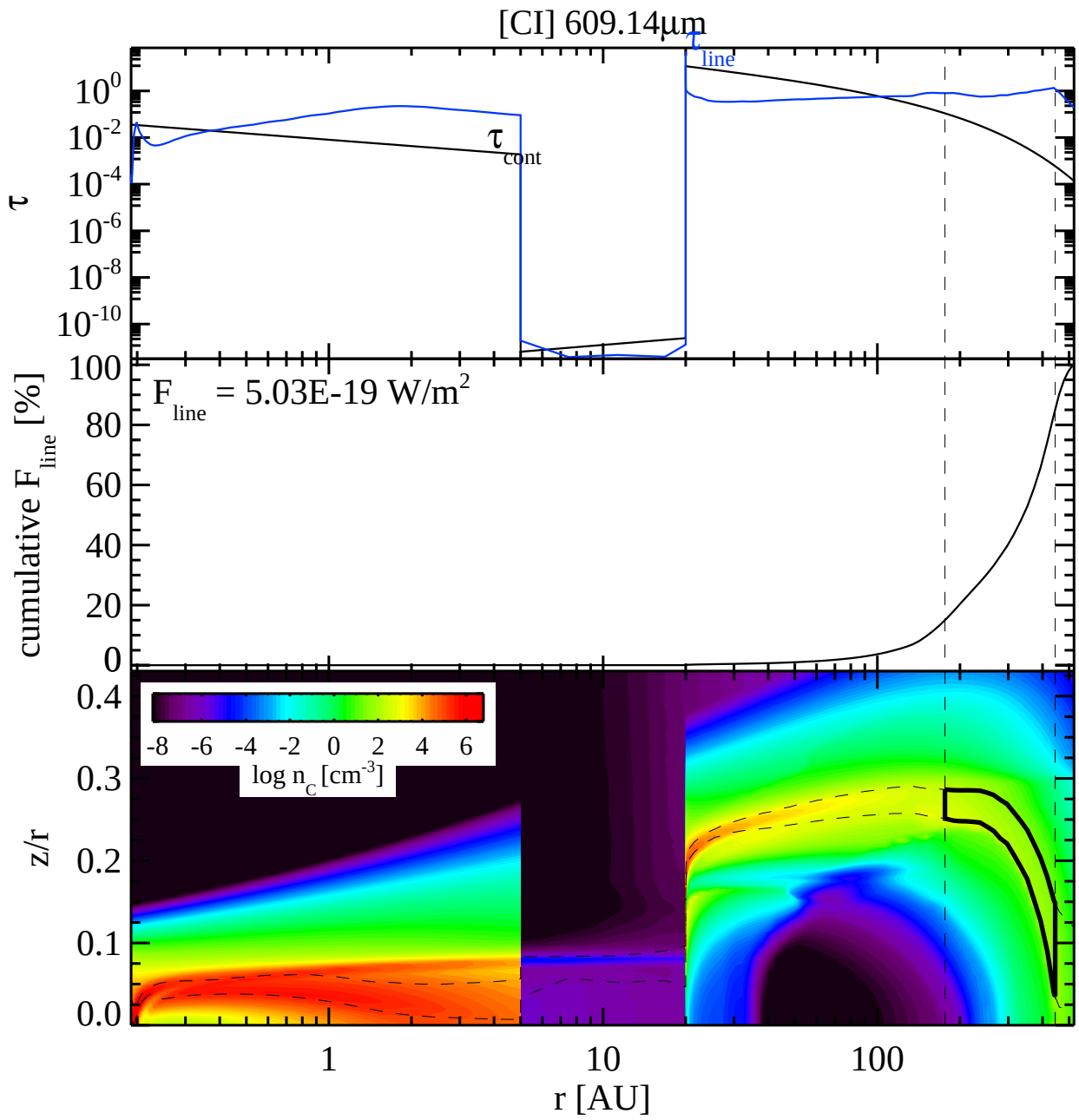

CO 2.376µm
τ
10^{2}
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
100
80
60
40
20
0
F_{line} = 1.40E-21 W/m^2
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n_{CO} [cm^{-3}]
1
10
100
r [AU]

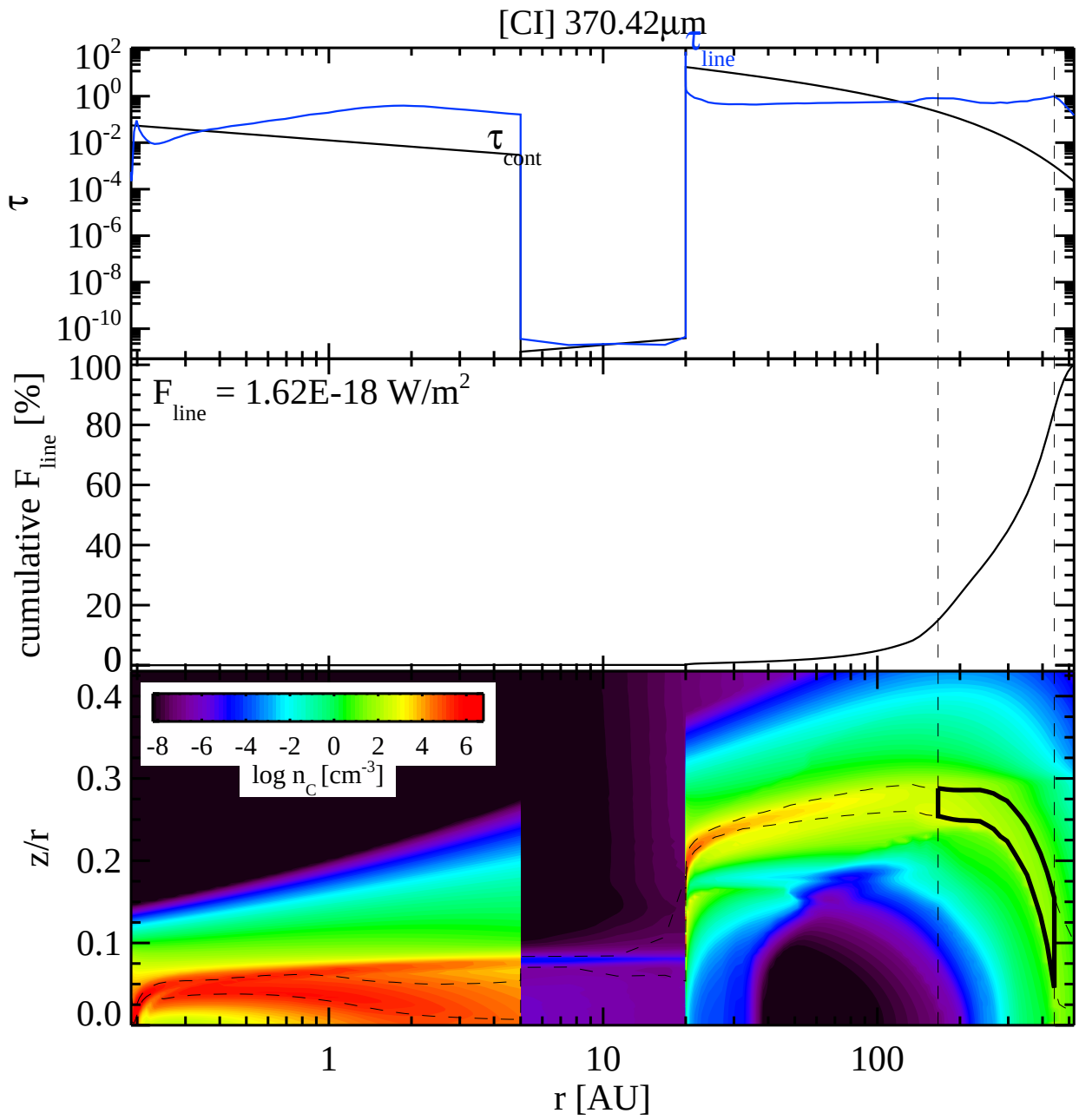

[OI] 63.18µm
τ
line
τ cont
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 8.04E-17 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n O [cm^-3]
1
10
100
r [AU]

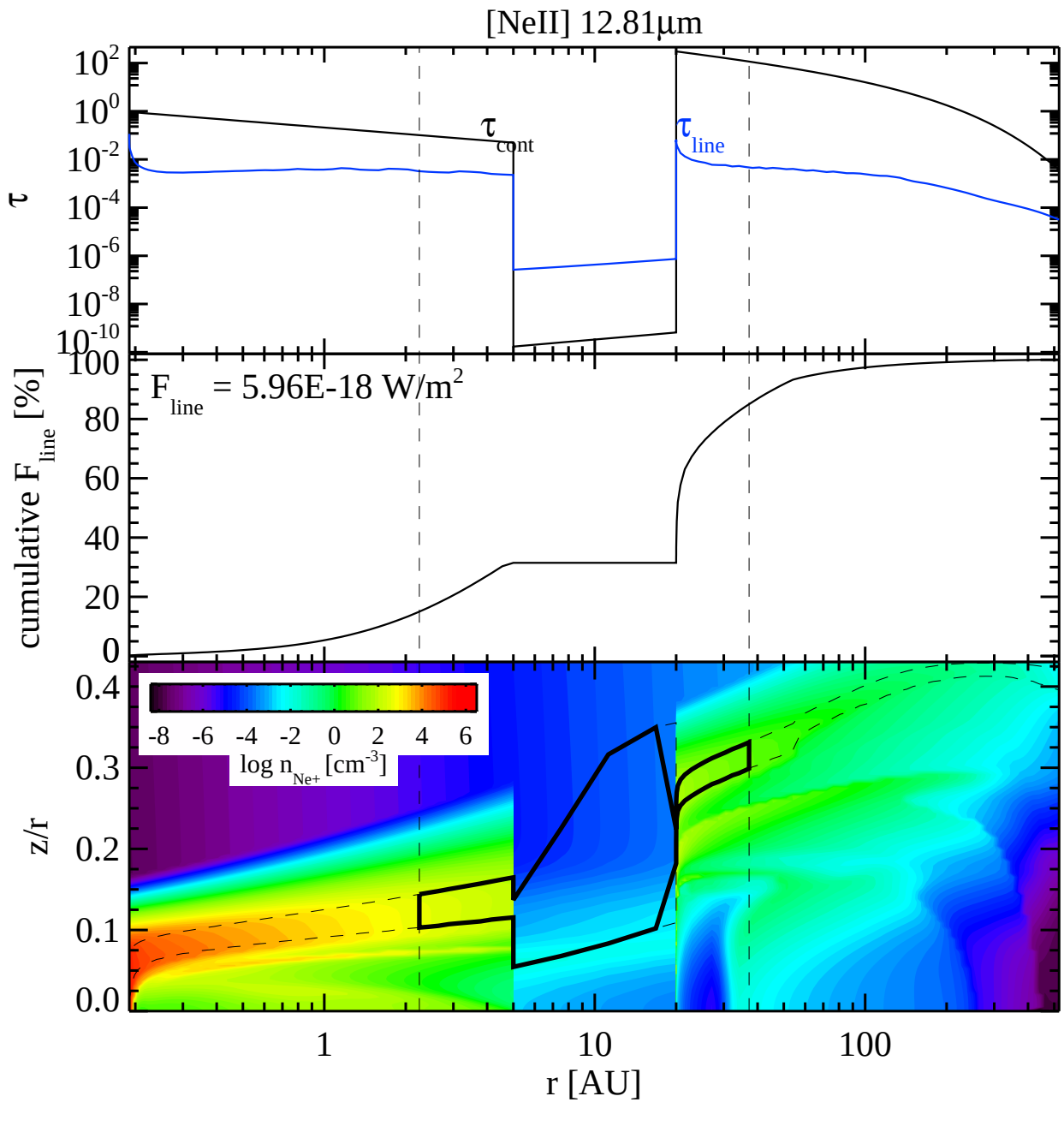

[OI] 145.53µm
τ
τ line
τ cont
F line = 1.57E-18 W/m2
cumulative F line [%]
log n O [cm-3]
z/r
r [AU]

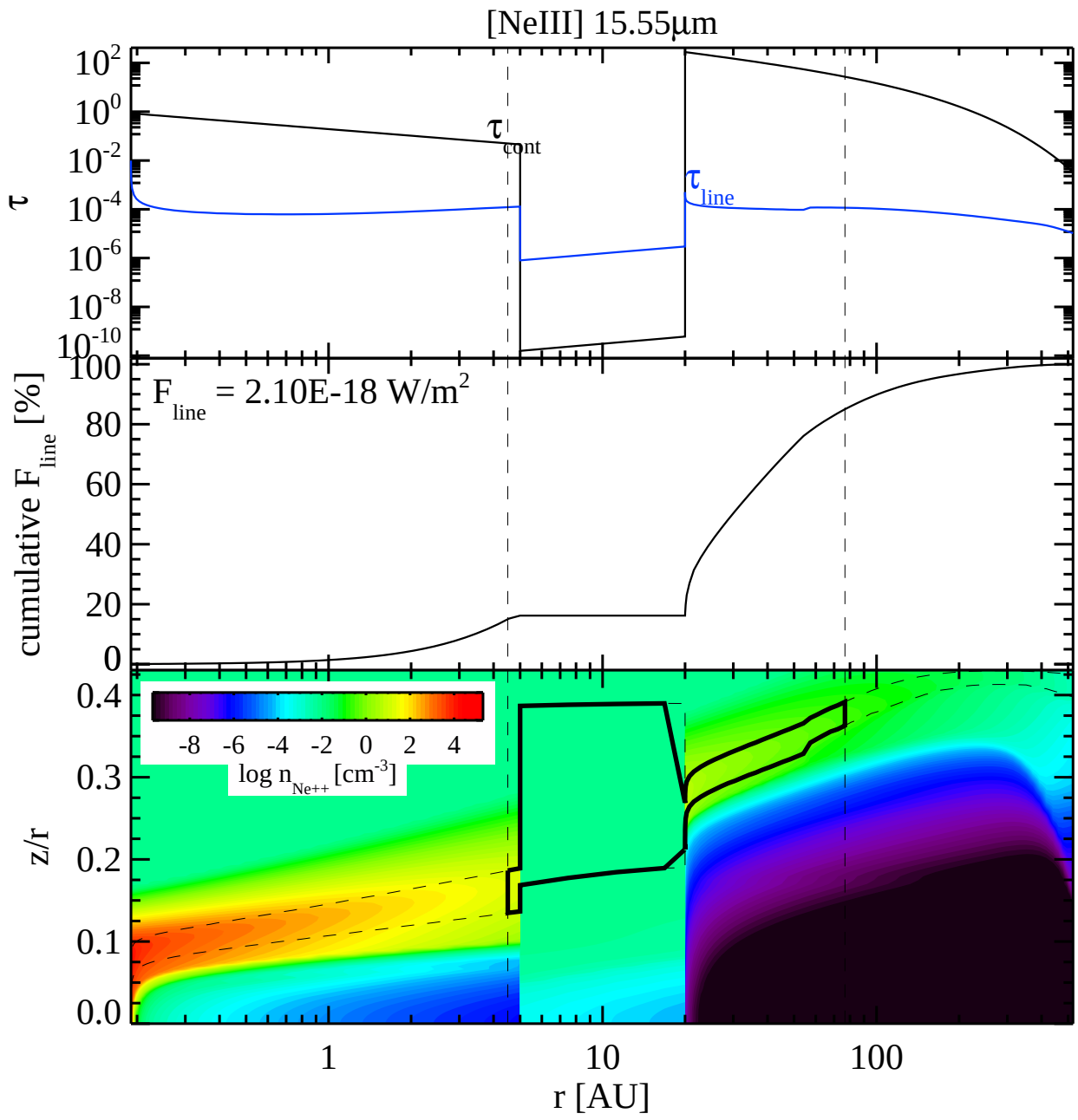

[OI] 0.6300µm
τ
10^{2}
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
100
80
60
40
20
0
F_{line} = 1.13E-17 W/m^2
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n_O [cm^{-3}]
1
10
100
r [AU]

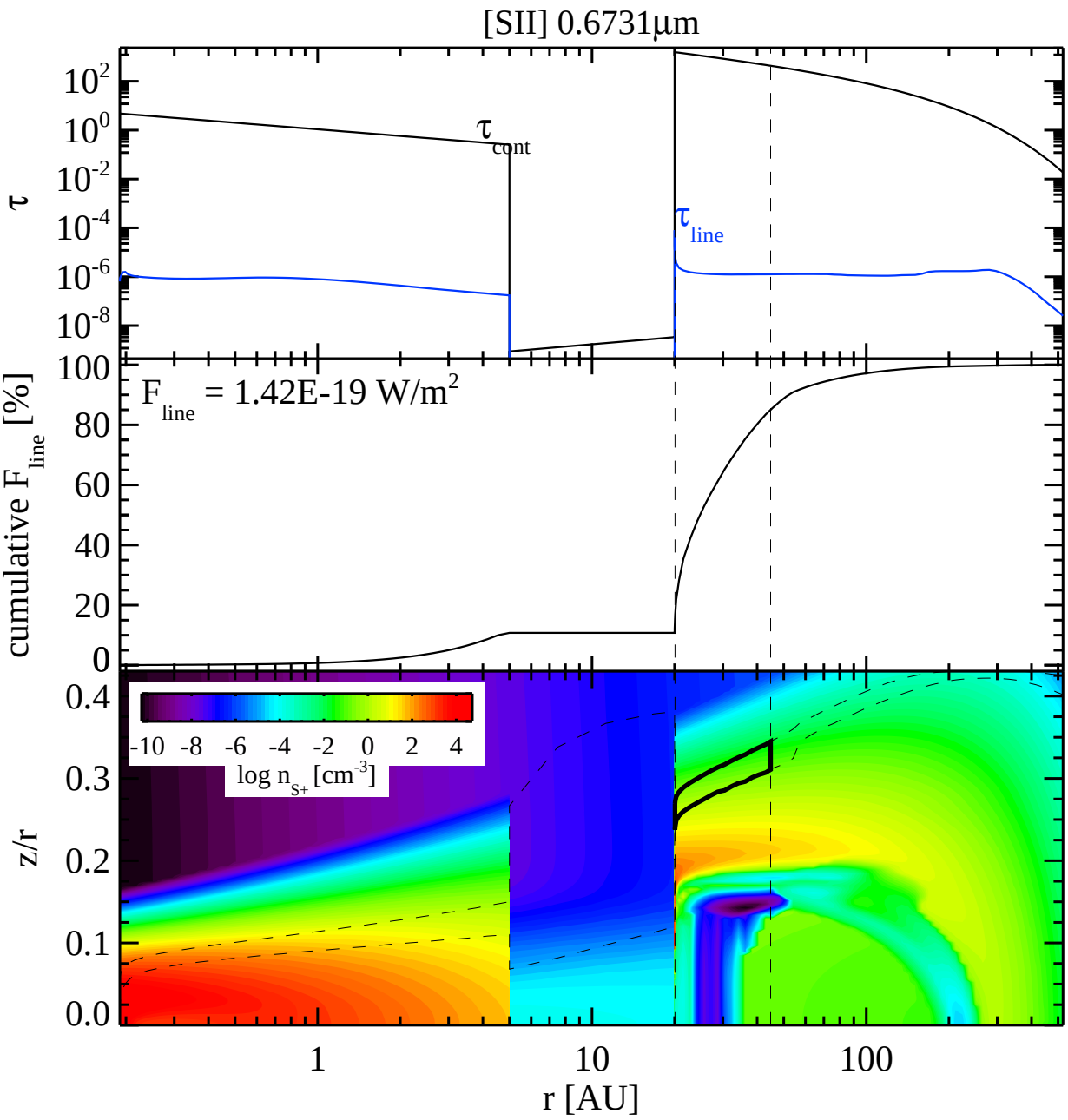

[CII] 157.74µm
τ
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ cont
τ line
cumulative F line [%]
F line = 7.06E-18 W/m2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n C+ [cm-3]
1
10
100
r [AU]

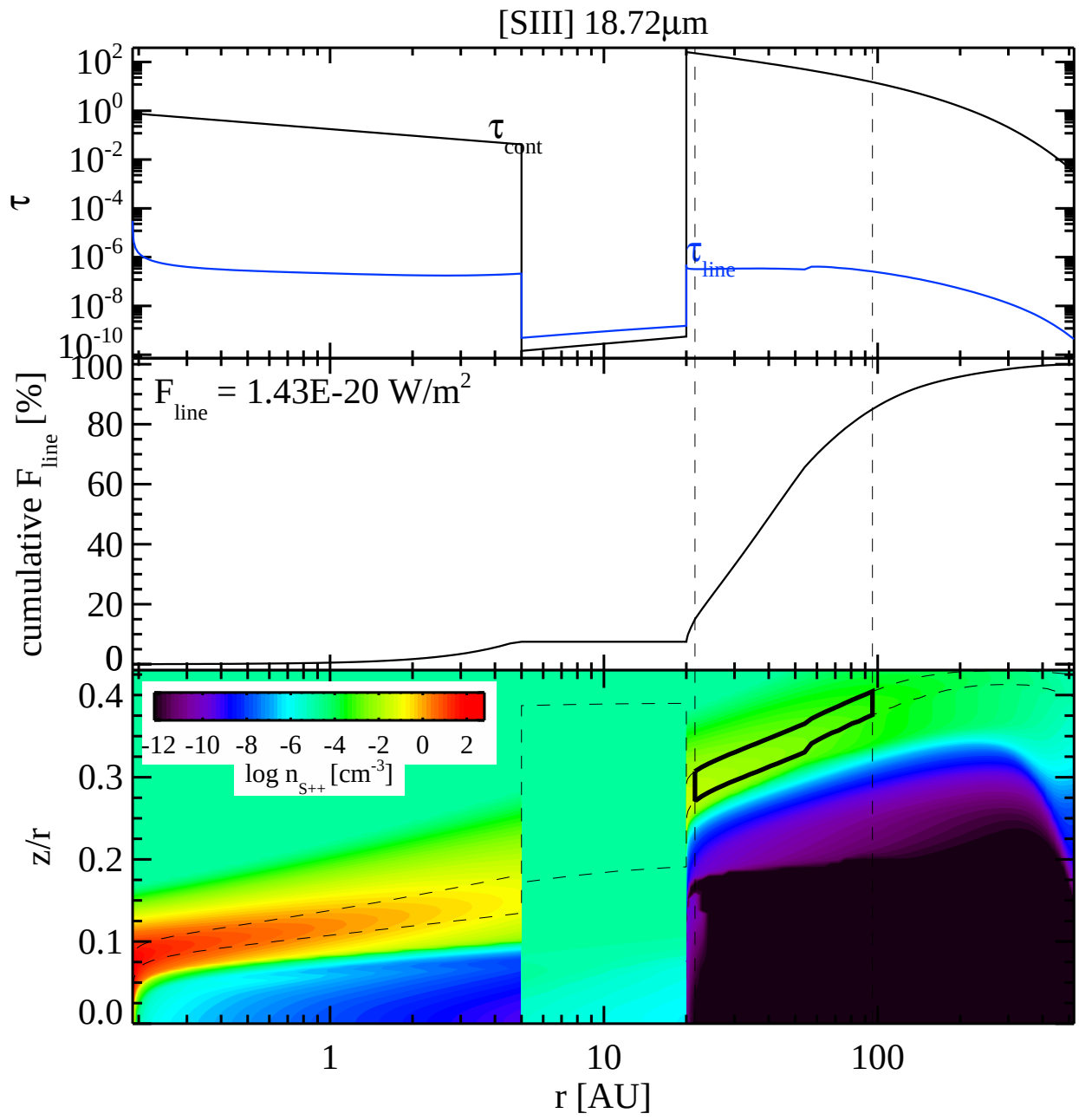

[CI] 609.14µm
τ
τ line
τ cont
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 5.03E-19 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-8 -6 -4 -2 0 2 4 6
log n C [cm^-3]
1
10
100
r [AU]

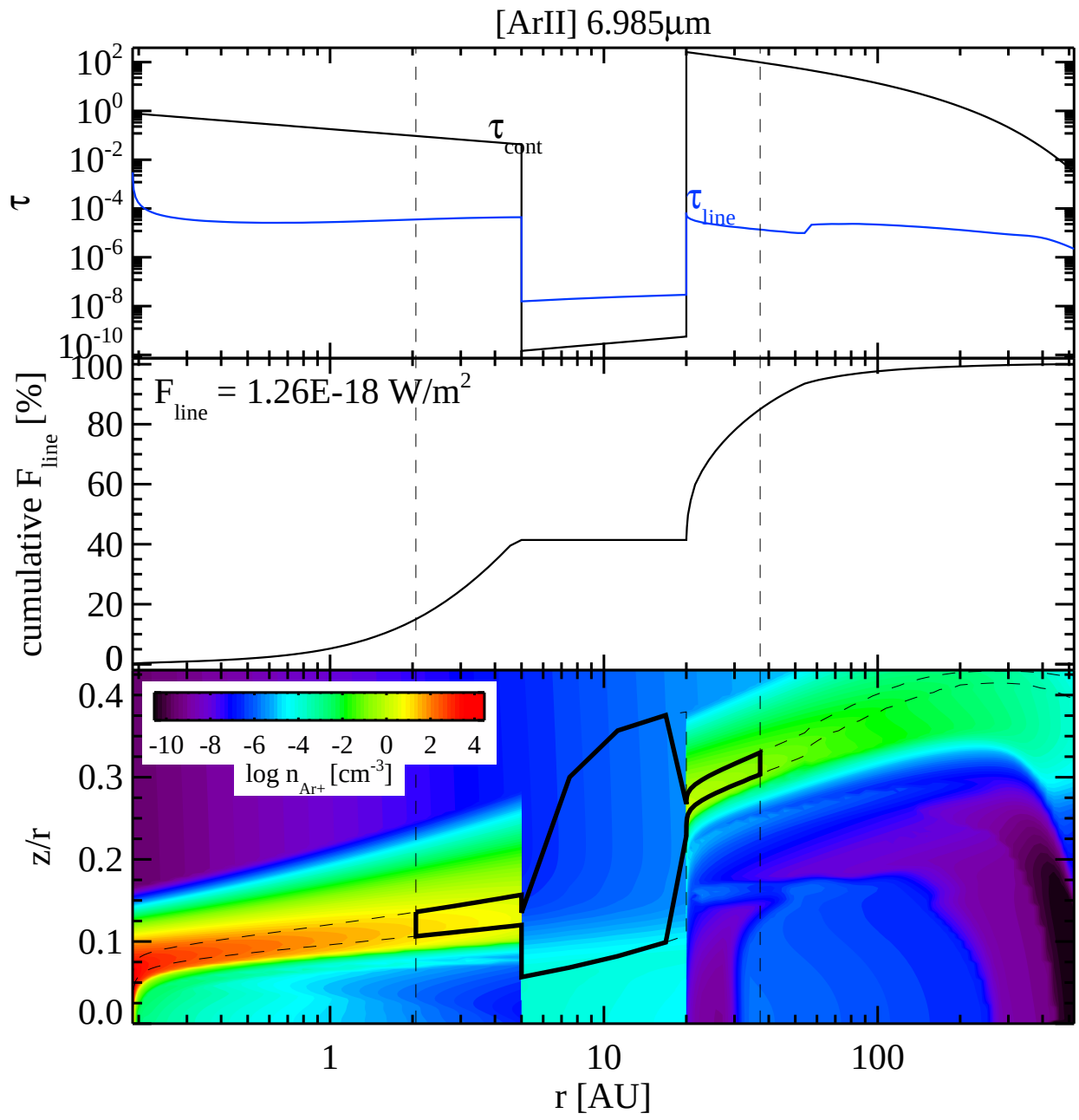

[CI] 370.42µm
τ
τ line
τ cont
cumulative F line [%]
F line = 1.62E-18 W/m2
z/r
log n C [cm-3]
-8 -6 -4 -2 0 2 4 6
r [AU]
1
10
100

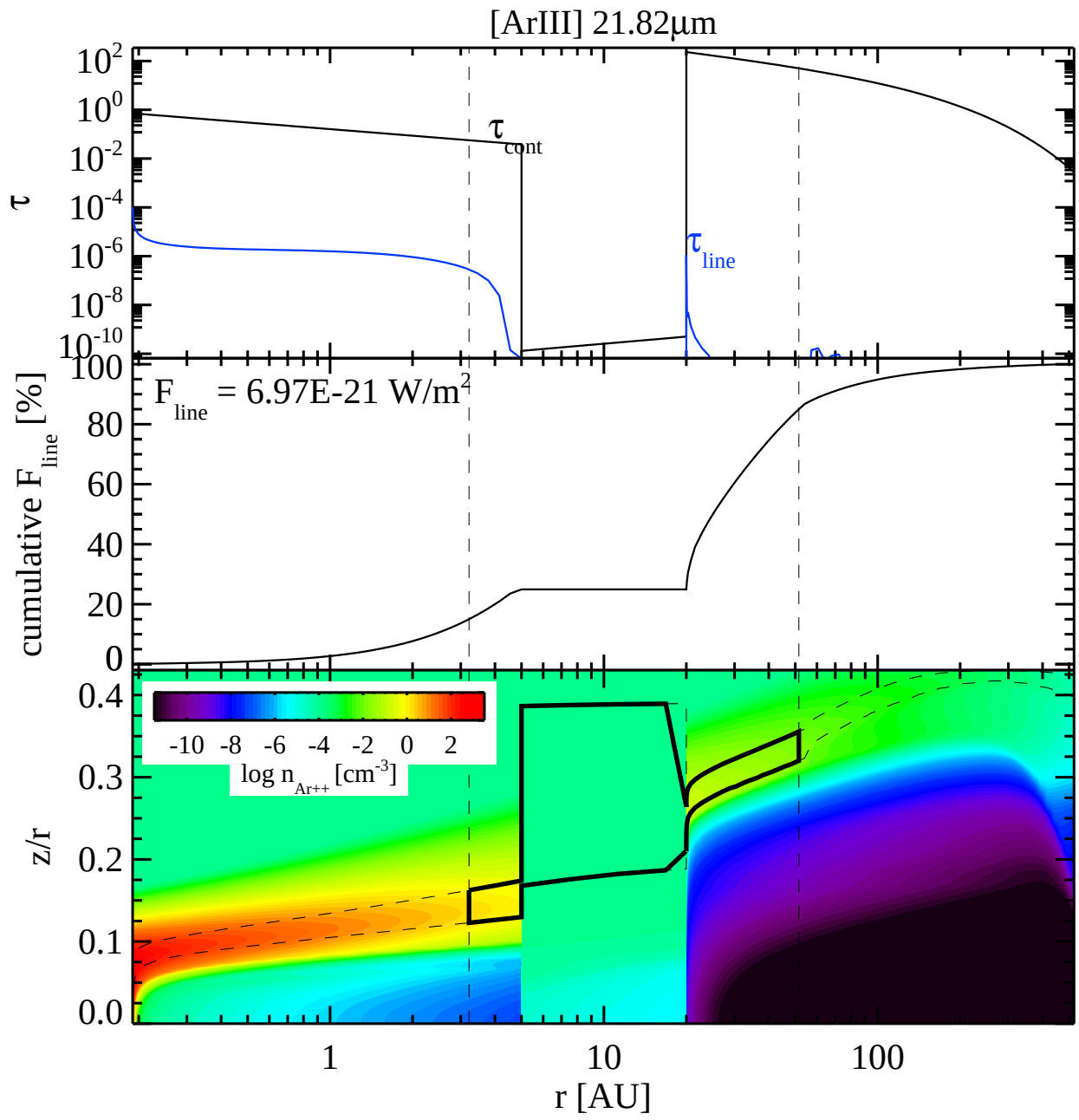

[NeII] 12.81µm
τ
τ cont
τ line
cumulative F line [%]
F line = 5.96E-18 W/m2
log n Ne+ [cm-3]
z/r
r [AU]

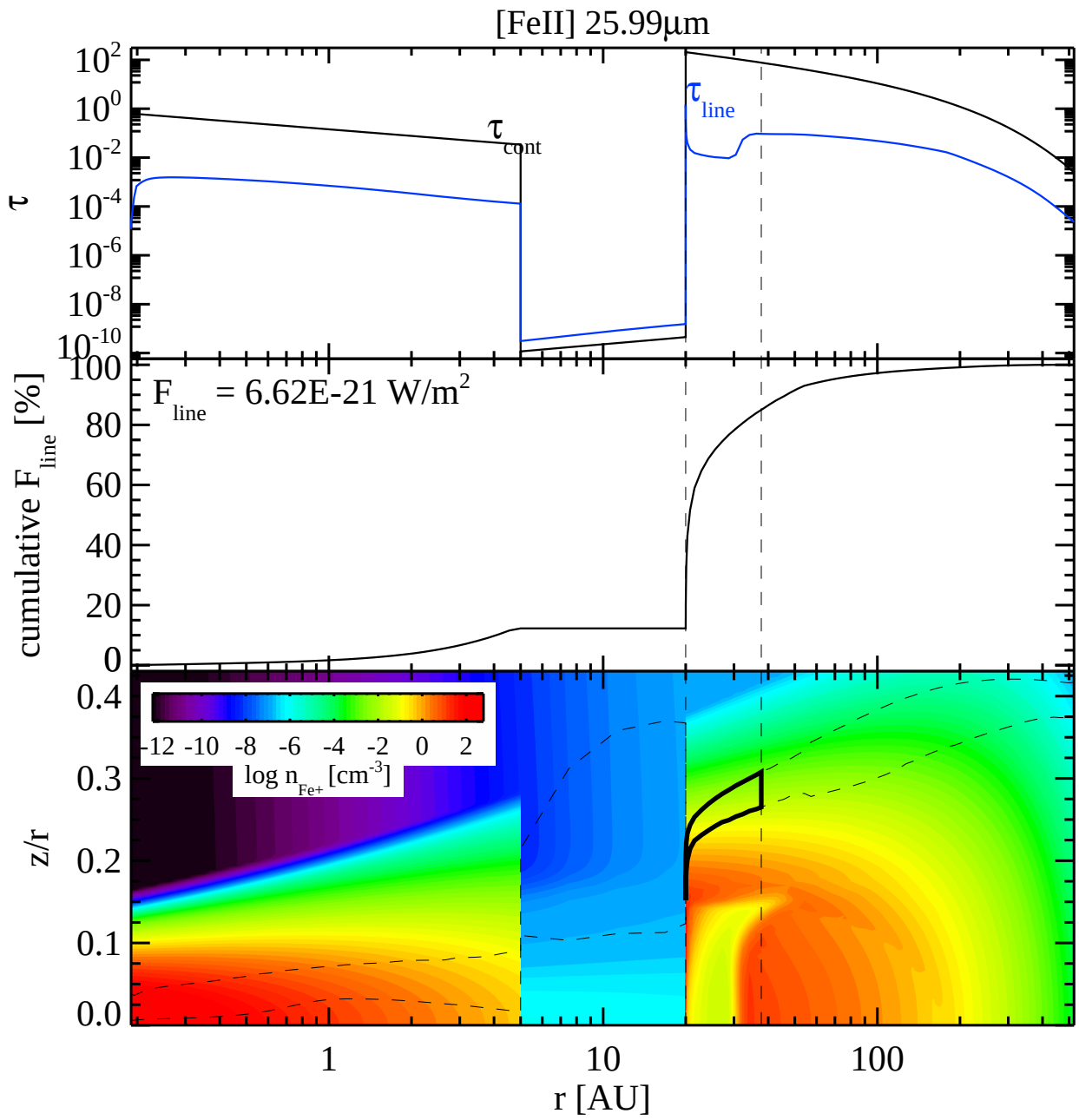

[NeIII] 15.55µm
τ
τ cont
τ line
cumulative F line [%]
F line = 2.10E-18 W/m2
log n Ne++ [cm-3]
z/r
r [AU]

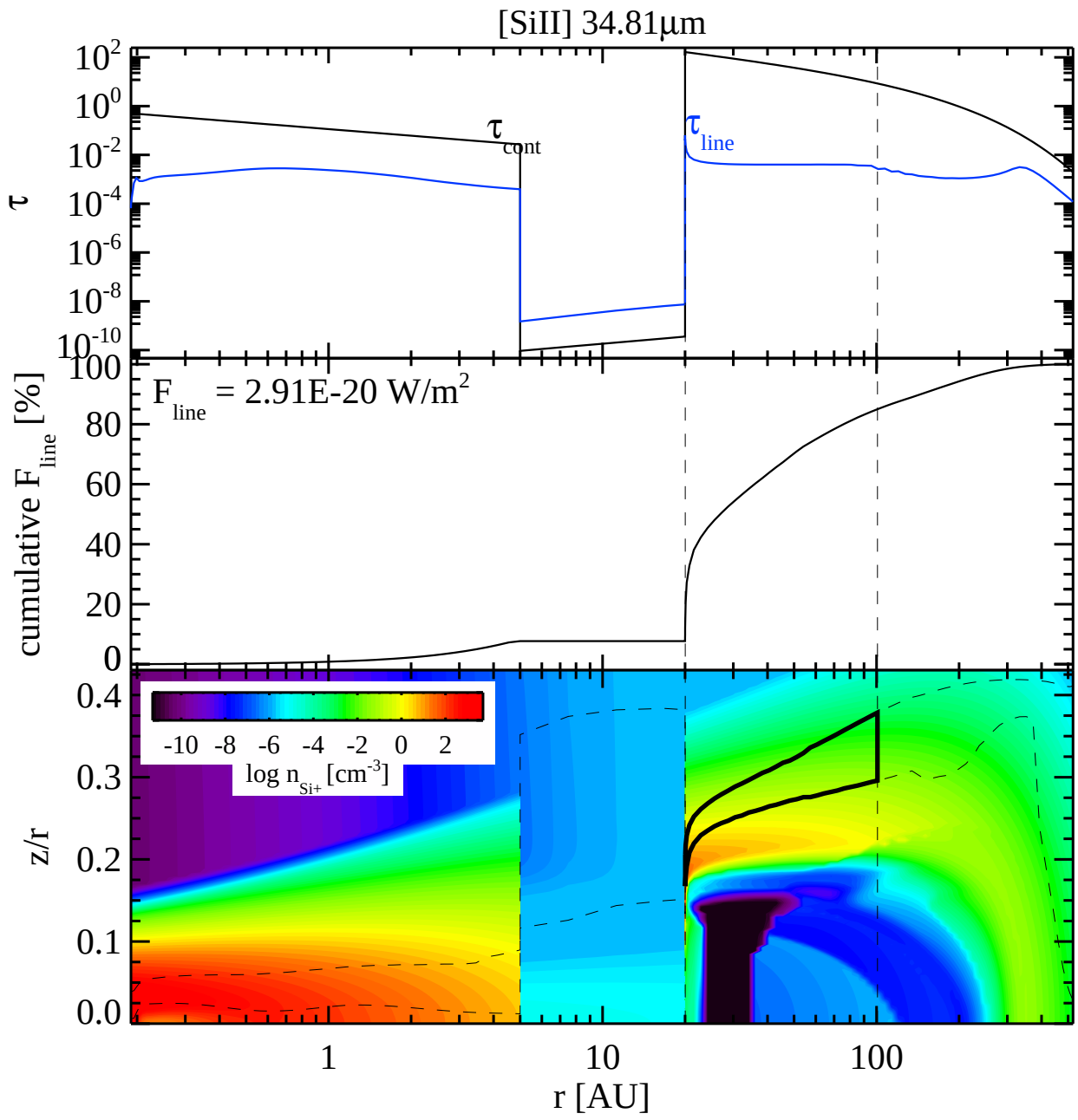

[SII] 0.6731µm
τ
10^{2}
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
100
80
60
40
20
0
F_{line} = 1.42E-19 W/m^2
z/r
0.4
0.3
0.2
0.1
0.0
-10 -8 -6 -4 -2 0 2 4
log n_{S+} [cm^{-3}]
1
10
100
r [AU]

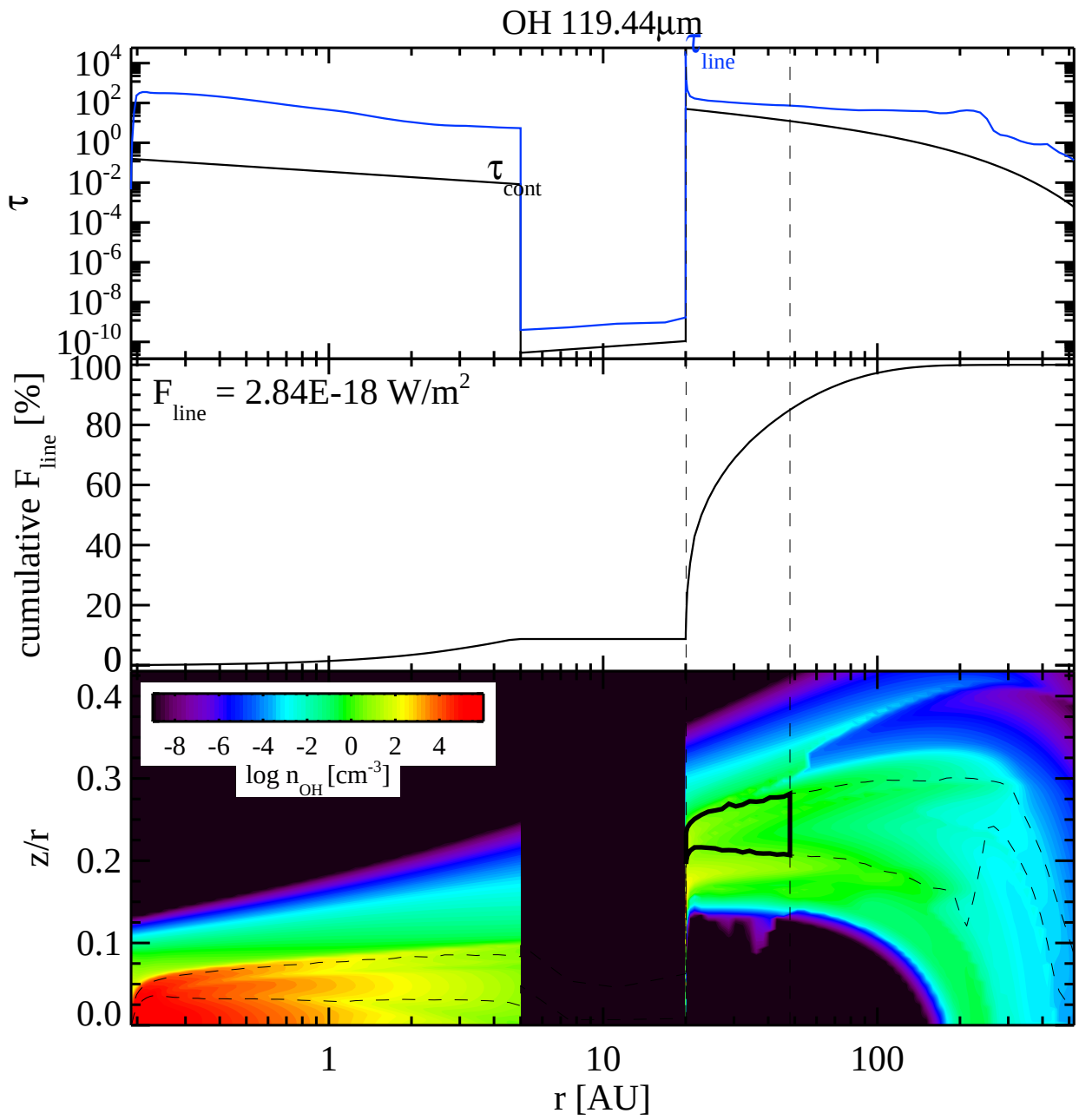

[SIII] 18.72µm
τ
10^{2}
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
F_{line} = 1.43E-20 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-12 -10 -8 -6 -4 -2 0 2
log n_{S++} [cm^{-3}]
1
10
100
r [AU]

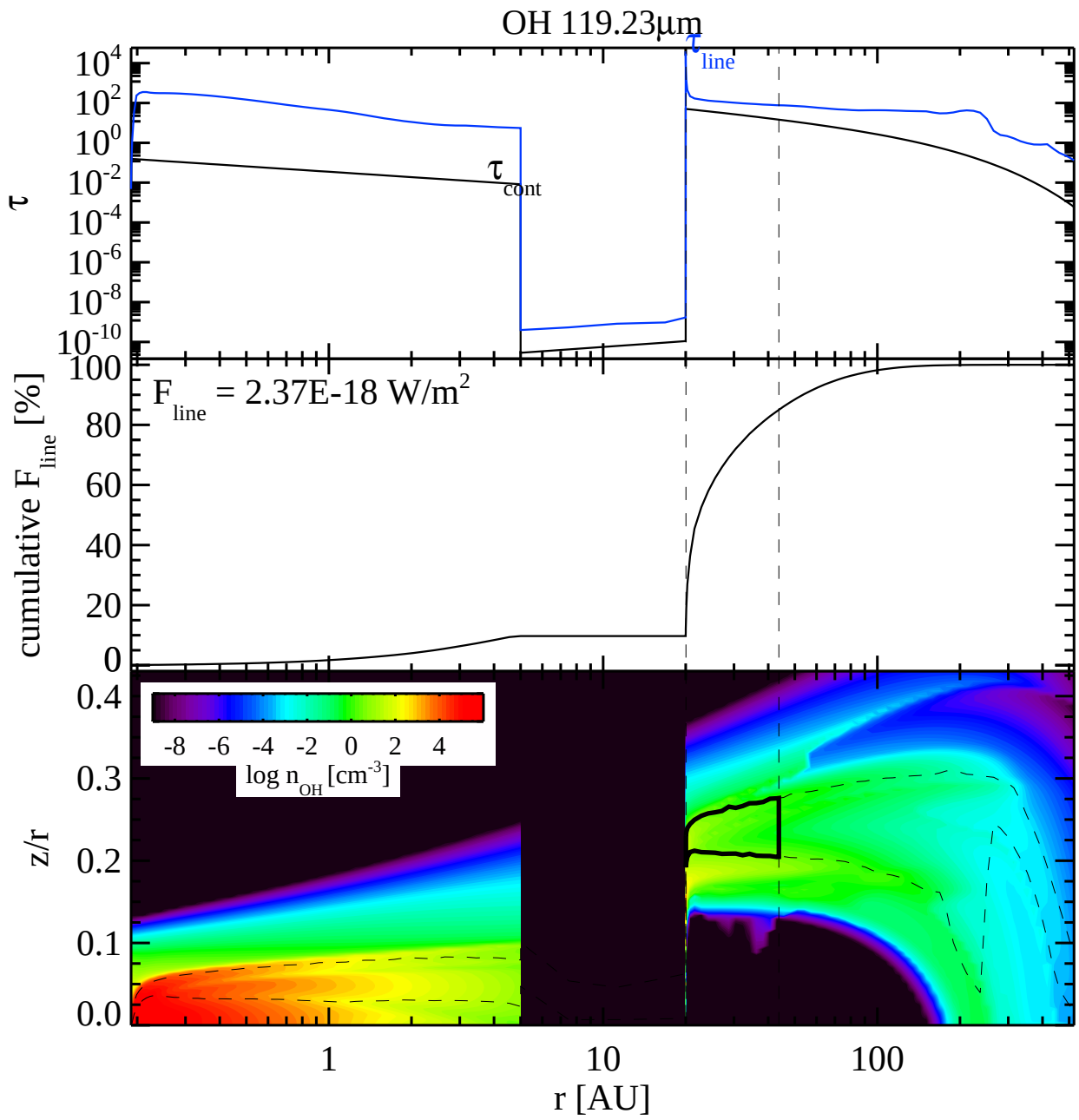

[ArII] 6.985µm
τ
10^{2}
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
F_{line} = 1.26E-18 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-10 -8 -6 -4 -2 0 2 4
log n_{Ar+} [cm^{-3}]
1
10
100
r [AU]

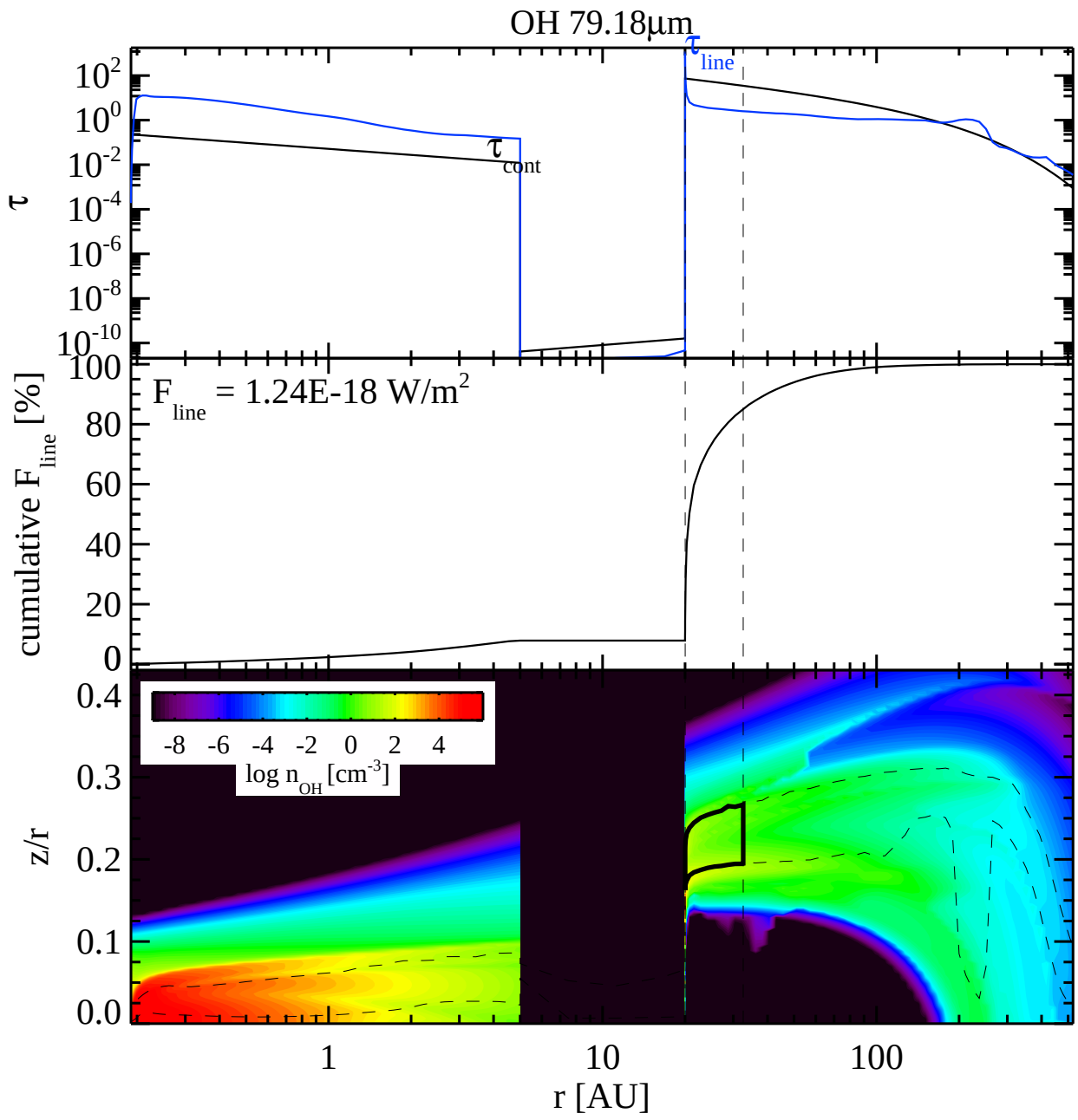

[ArIII] 21.82μm
τ
10^{2}
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
F_{line} = 6.97E-21 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-10 -8 -6 -4 -2 0 2
log n_{Ar++} [cm^{-3}]
1
10
100
r [AU]

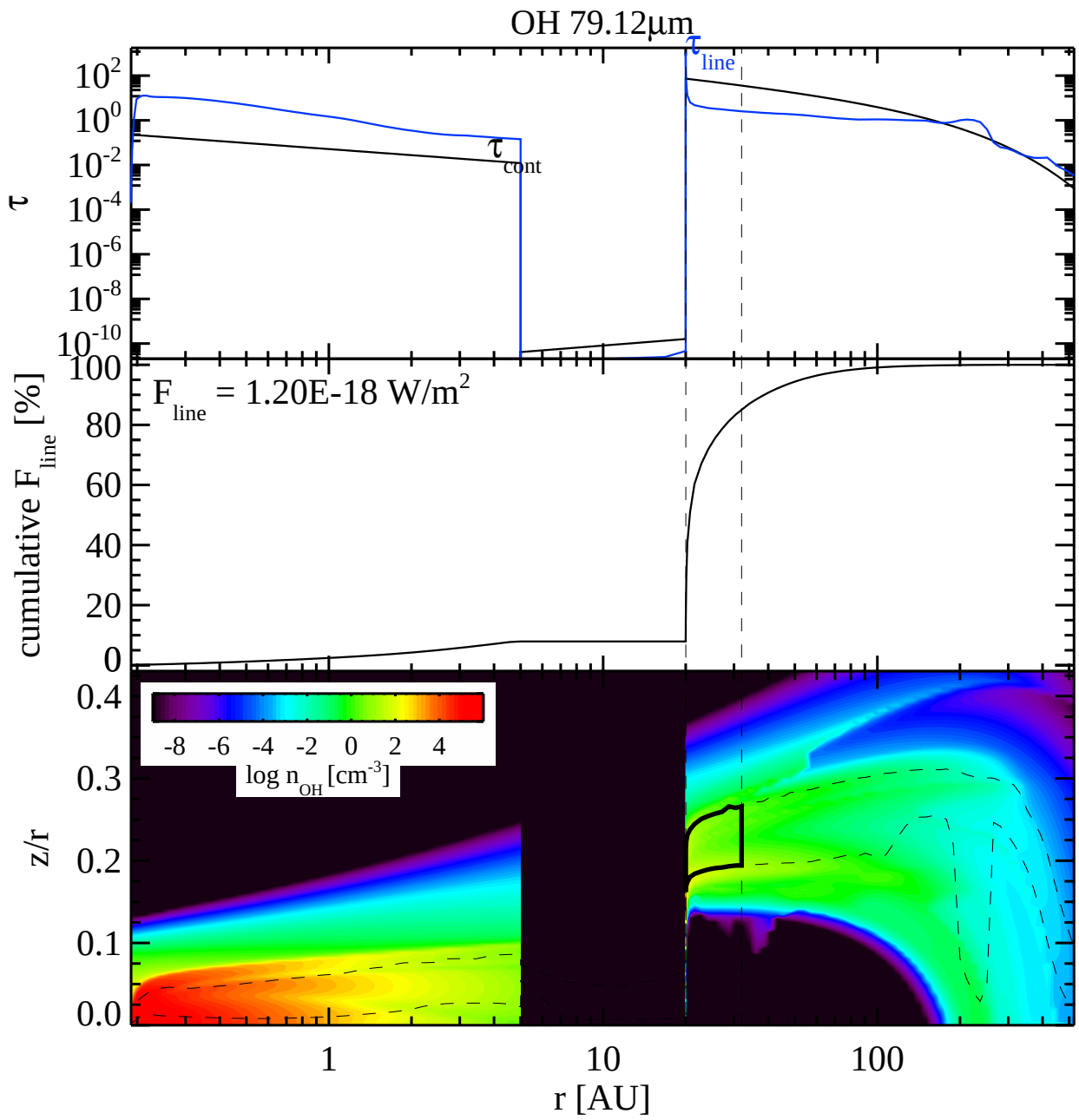

[FeII] 25.99µm
τ
τ cont
τ line
cumulative F line [%]
F line = 6.62E-21 W/m2
log n Fe+ [cm-3]
-12 -10 -8 -6 -4 -2 0 2
z/r
r [AU]
1
10
100

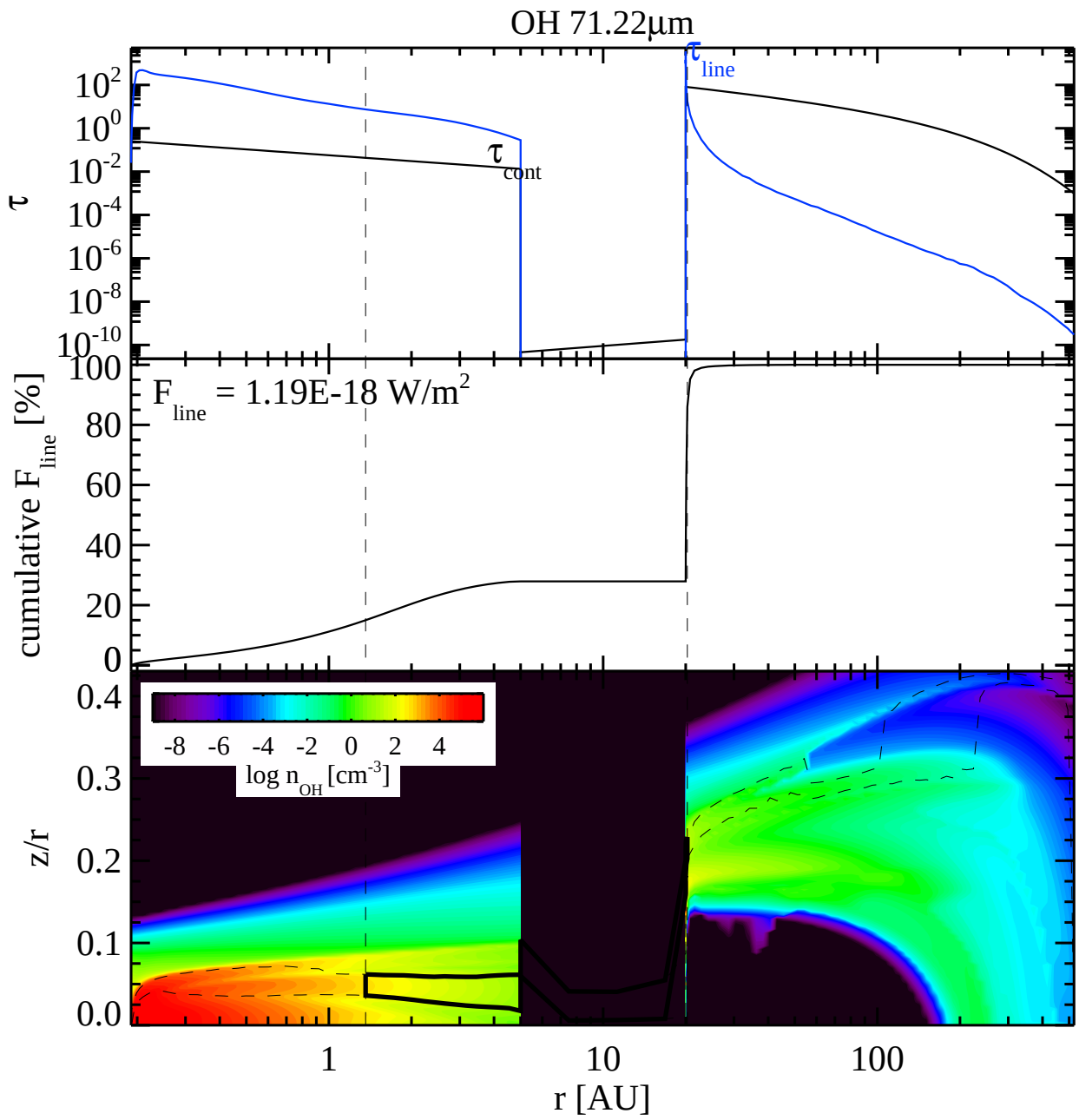

[SiII] 34.81µm
τ
τ cont
τ line
cumulative F line [%]
F line = 2.91E-20 W/m2
z/r
log n Si+ [cm-3]
r [AU]

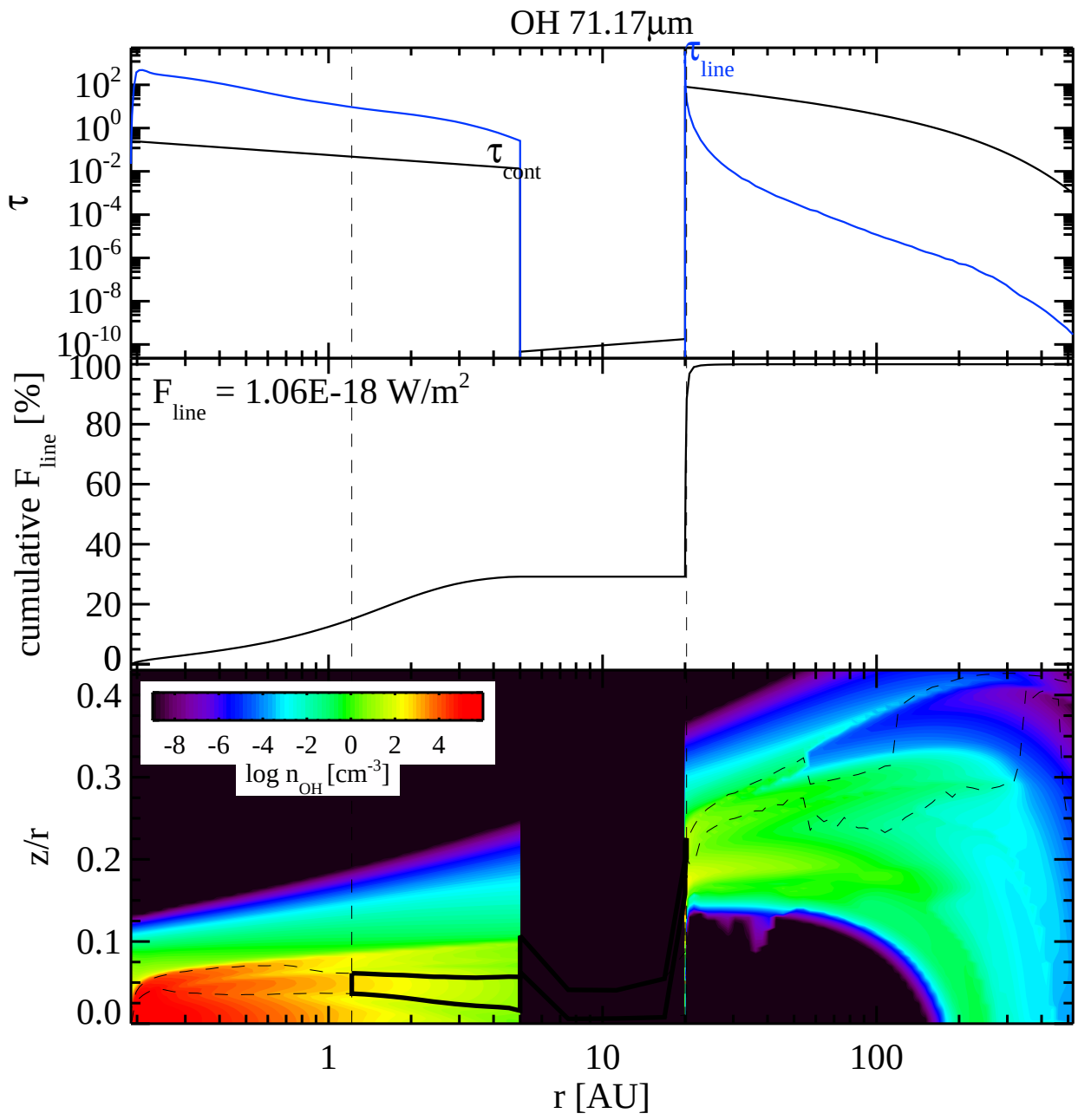

OH 119.44μm
τ
τ line
τ cont
cumulative F line [%]
F line = 2.84E-18 W/m2
log n OH [cm-3]
-8 -6 -4 -2 0 2 4
z/r
r [AU]
1
10
100

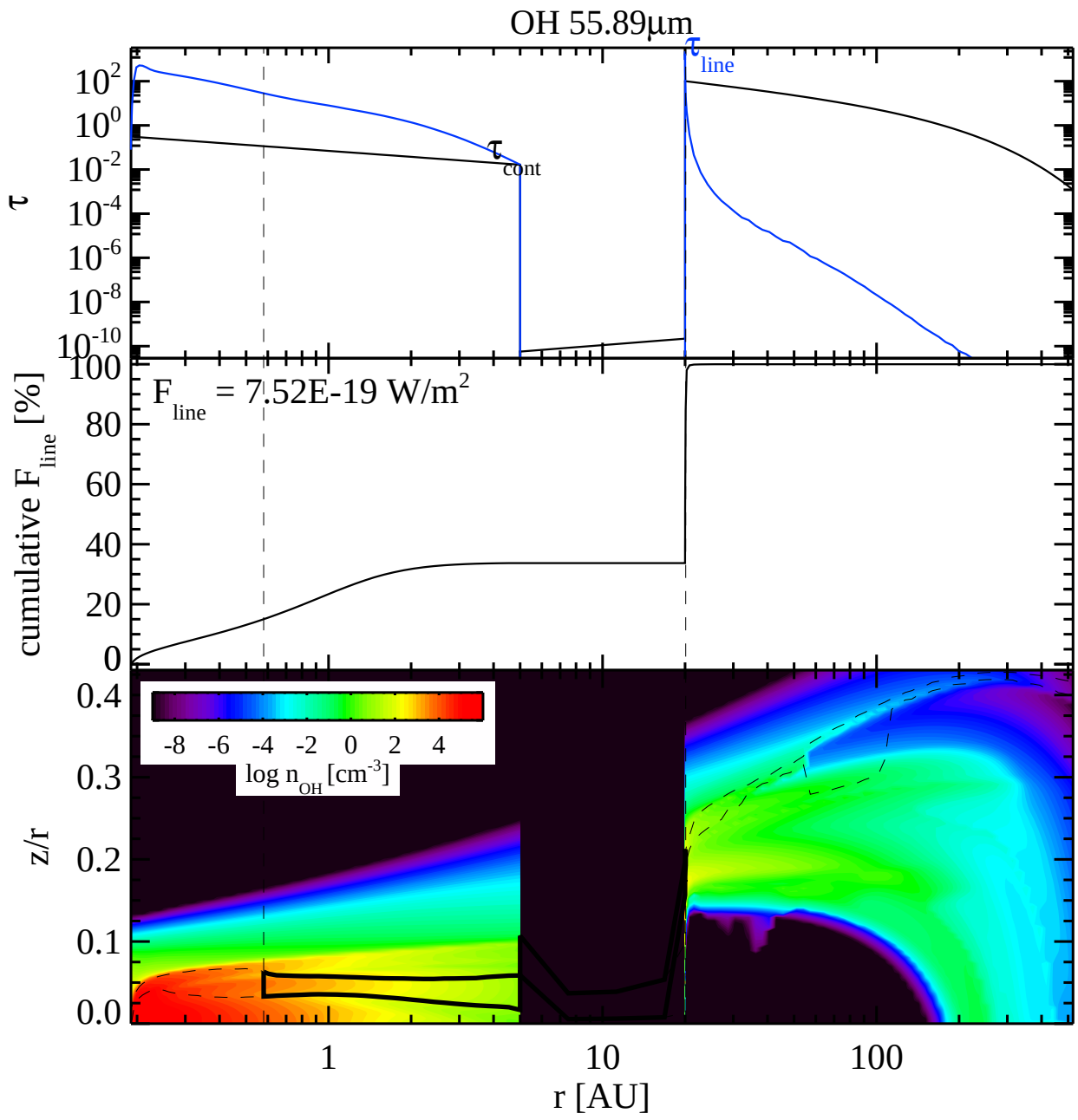

OH 119.23µm
τ
τ line
τ cont
cumulative F line [%]
F line = 2.37E-18 W/m2
log n OH [cm-3]
-8 -6 -4 -2 0 2 4
z/r
r [AU]
1
10
100

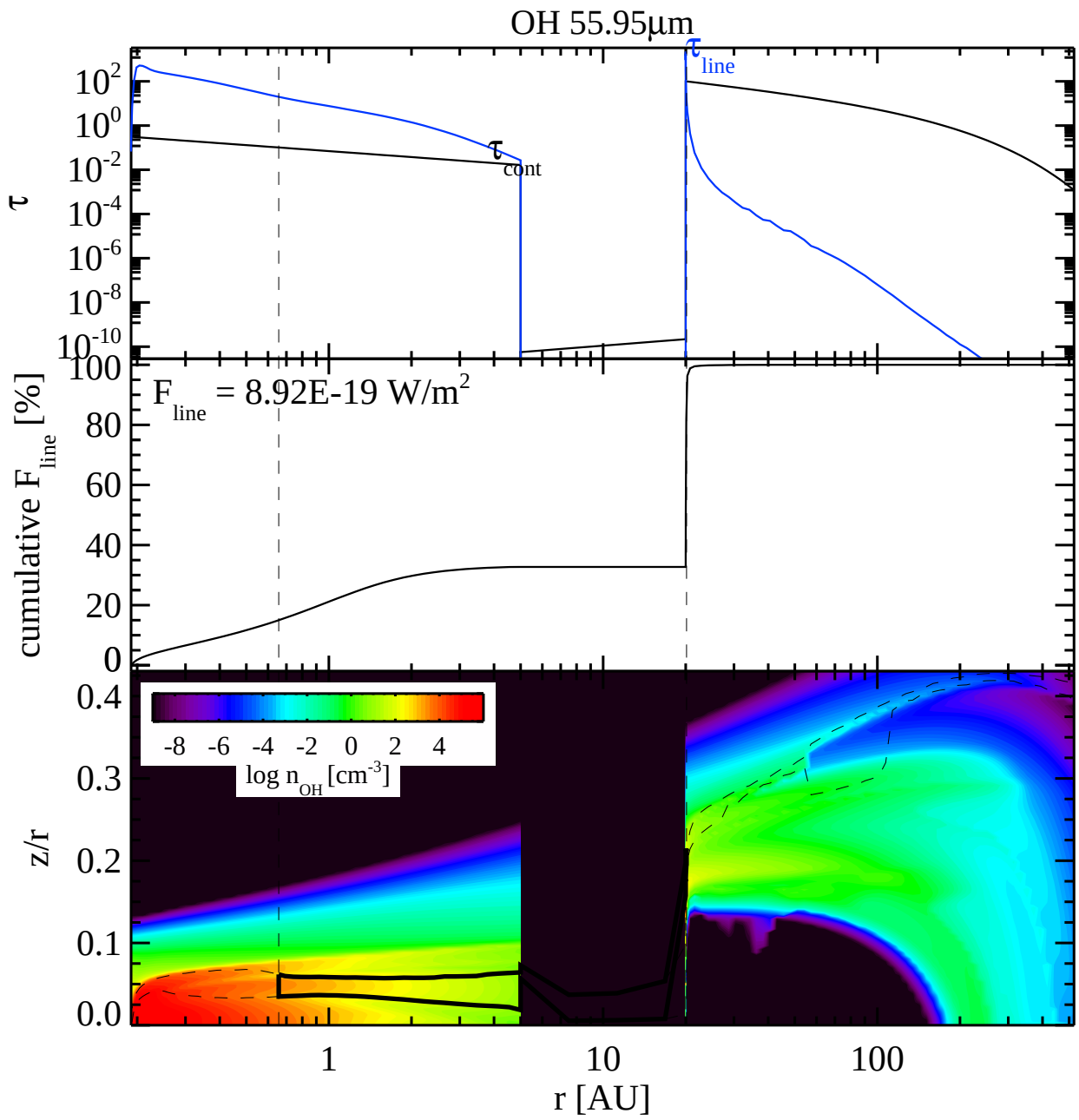

OH 79.18µm
τ
τ line
τ cont
F line = 1.24E-18 W/m2
cumulative F line [%]
log n OH [cm-3]
z/r
r [AU]

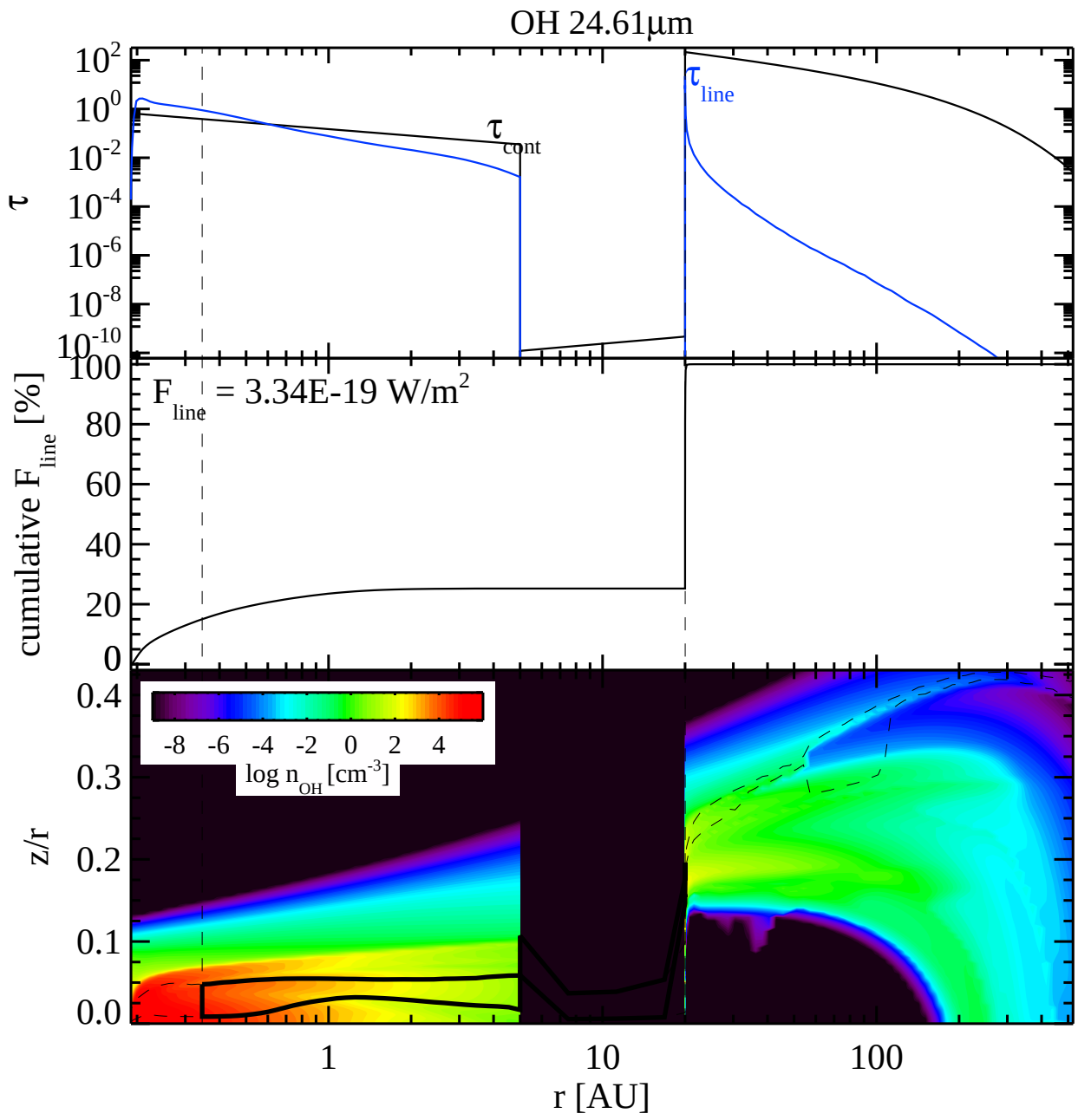

OH 79.12µm
τ
τ line
τ cont
F line = 1.20E-18 W/m2
cumulative F line [%]
log n OH [cm-3]
z/r
r [AU]

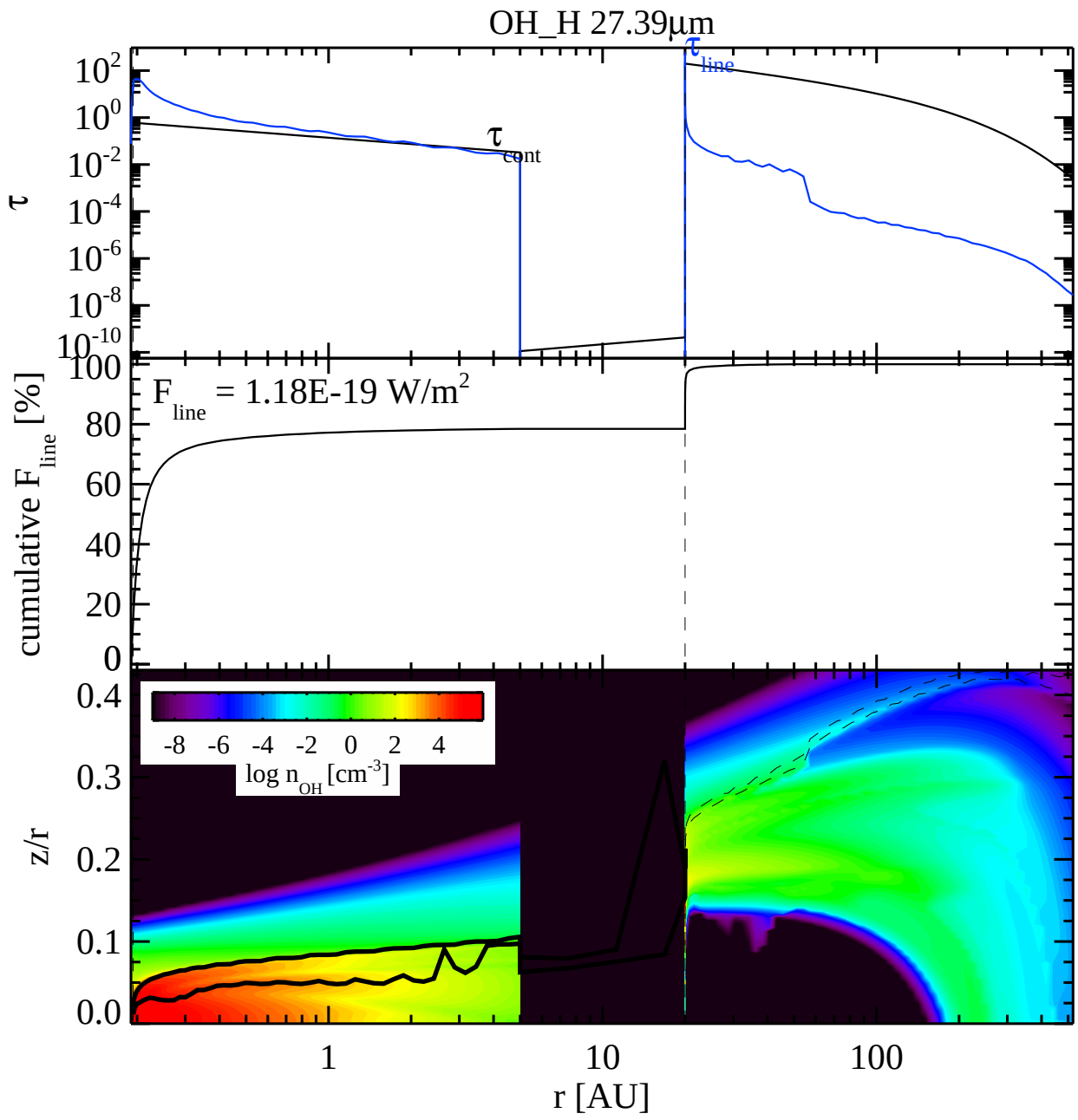

OH 71.22µm
τ
τ line
τ cont
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 1.19E-18 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-8 -6 -4 -2 0 2 4
log n OH [cm^-3]
1
10
100
r [AU]

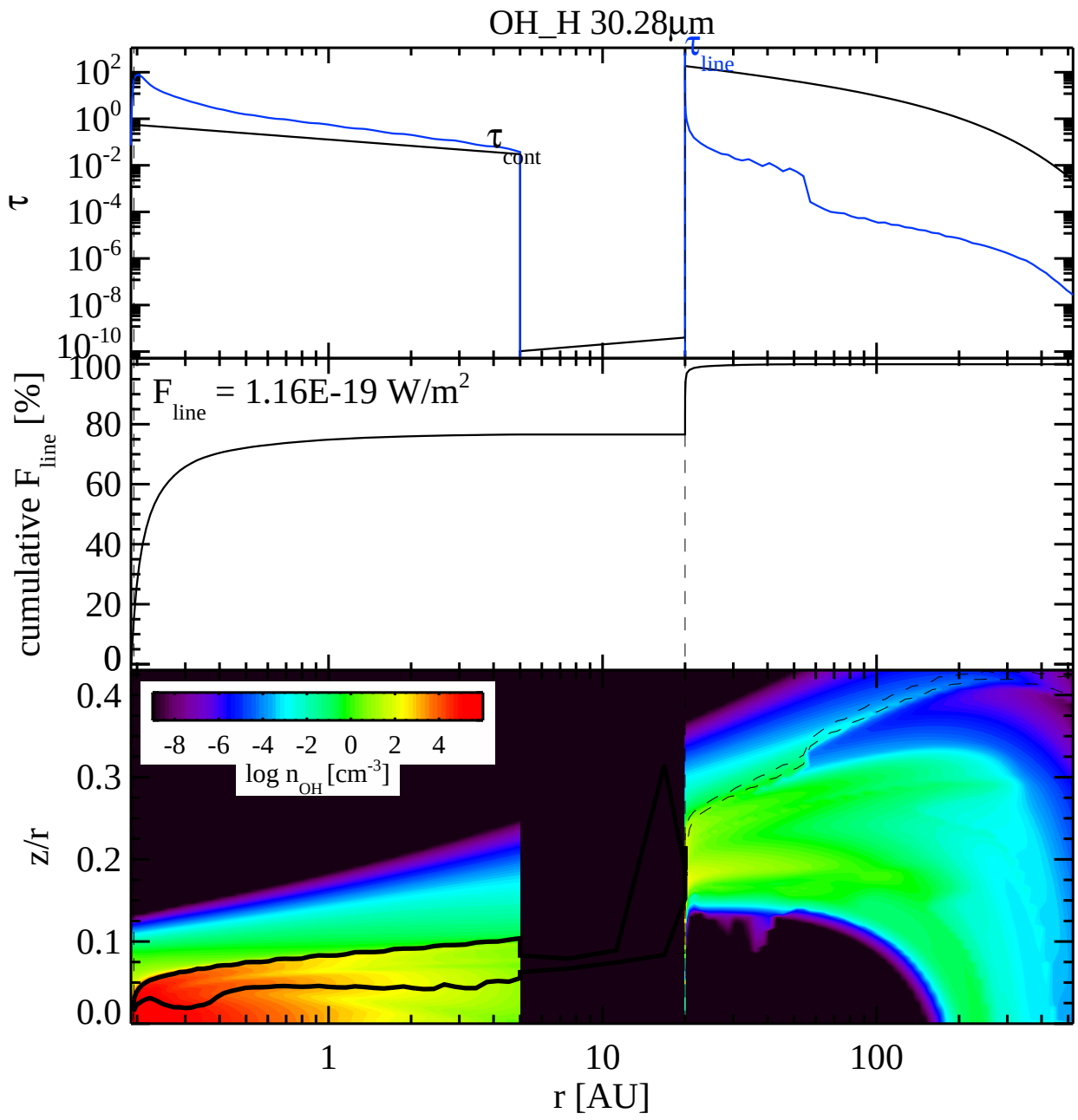

OH 71.17µm
τ
τ line
τ cont
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 1.06E-18 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-8 -6 -4 -2 0 2 4
log n OH [cm^-3]
1
10
100
r [AU]

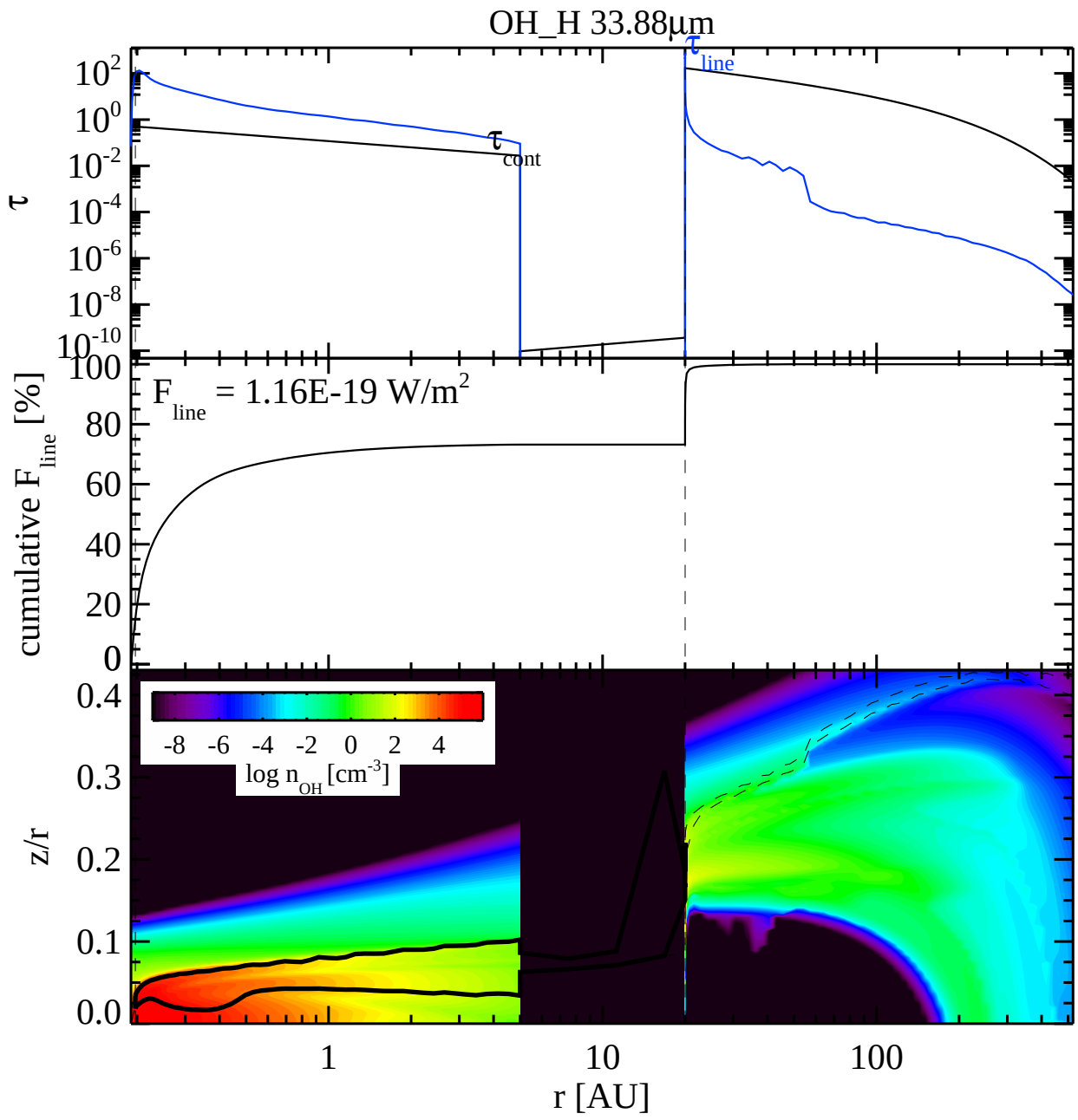

OH 55.89µm
τ
τ line
τ cont
cumulative F line [%]
F line = 7.52E-19 W/m2
log n OH [cm-3]
z/r
r [AU]

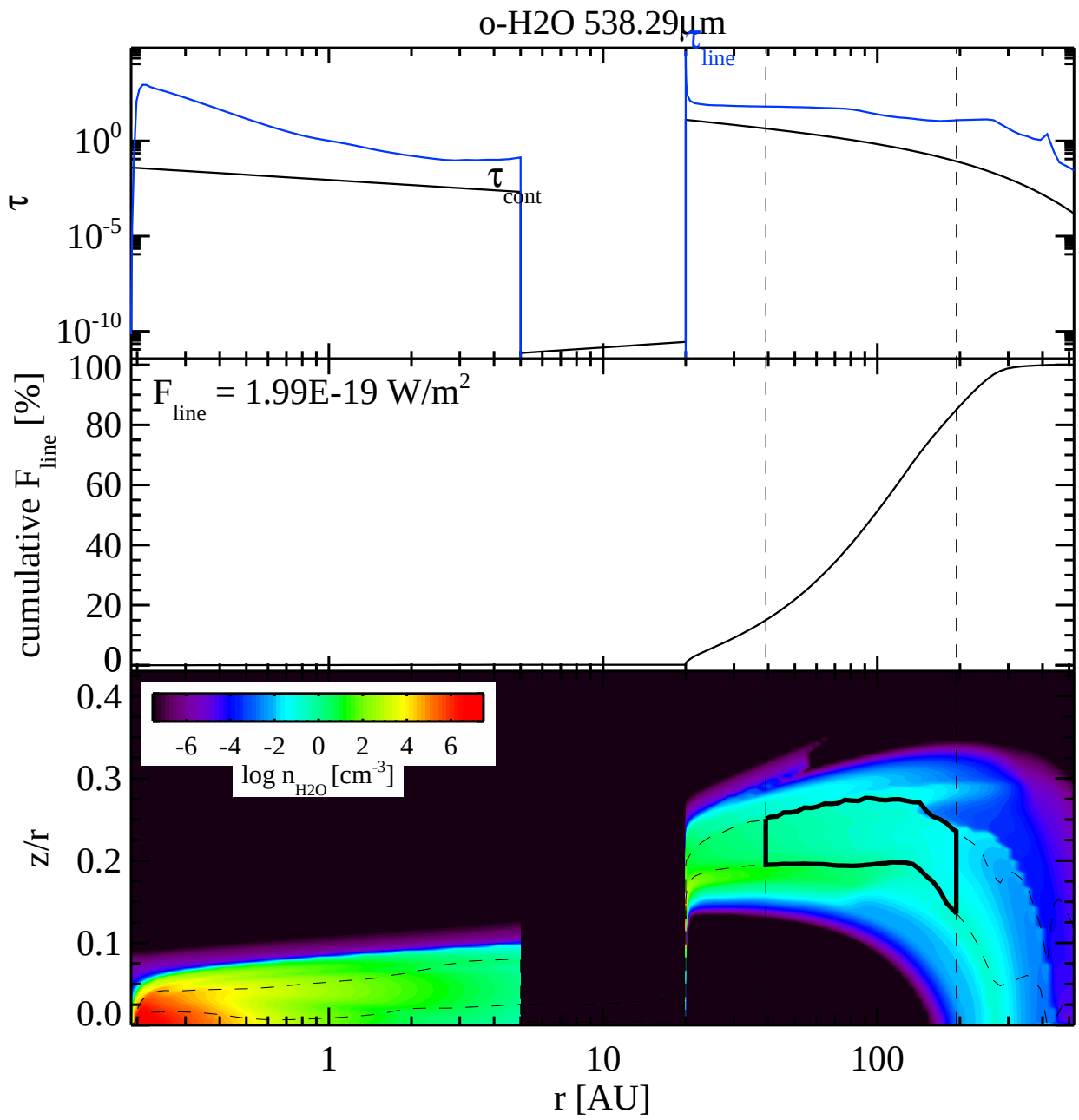

OH 55.95µm
τ
τ line
τ cont
cumulative F line [%]
F line = 8.92E-19 W/m2
log n OH [cm-3]
-8 -6 -4 -2 0 2 4
z/r
r [AU]
1
10
100

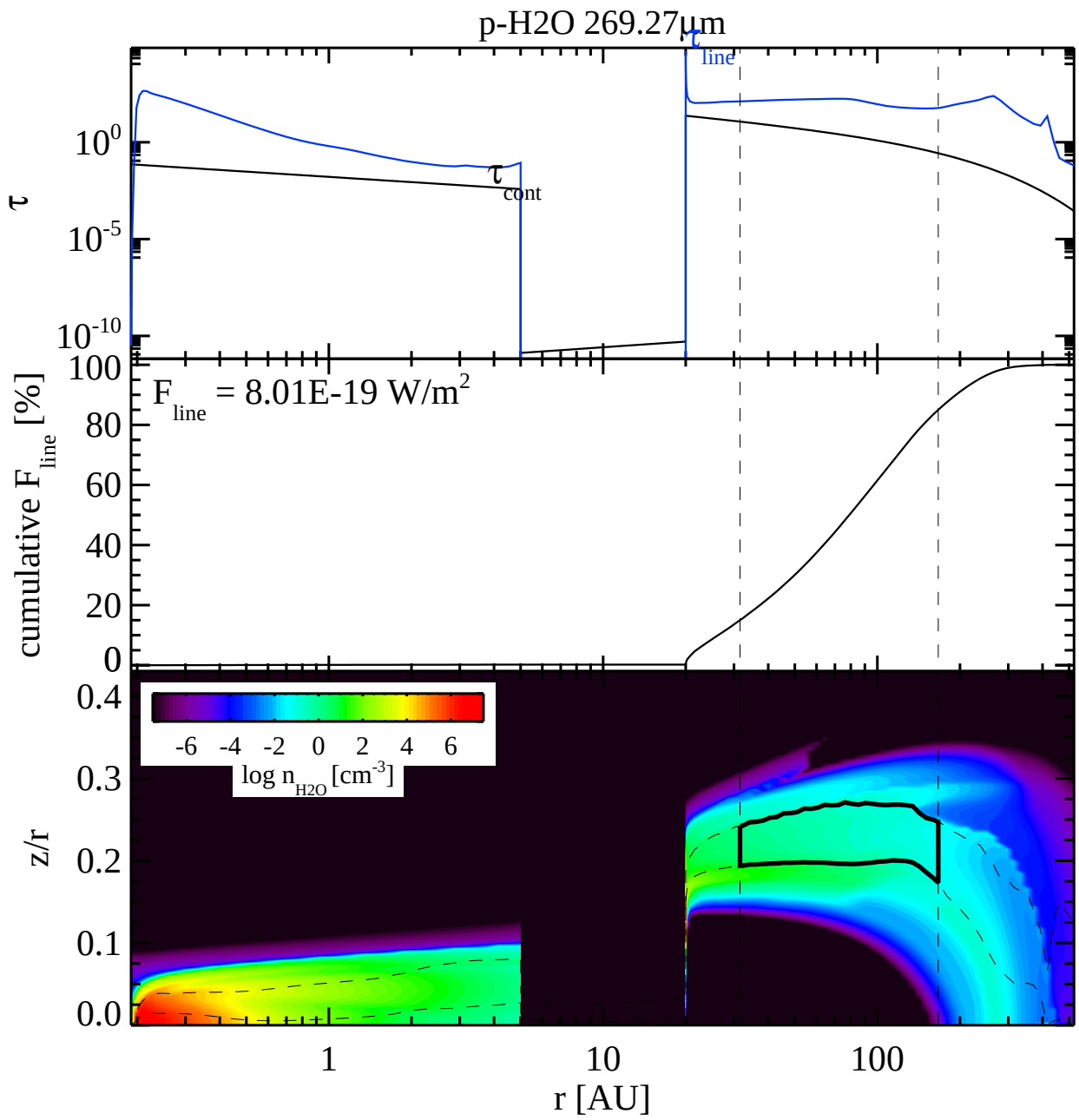

OH 24.61µm
τ
τ cont
τ line
cumulative F line [%]
F line = 3.34E-19 W/m2
z/r
log n OH [cm-3]
-8 -6 -4 -2 0 2 4
r [AU]
1
10
100

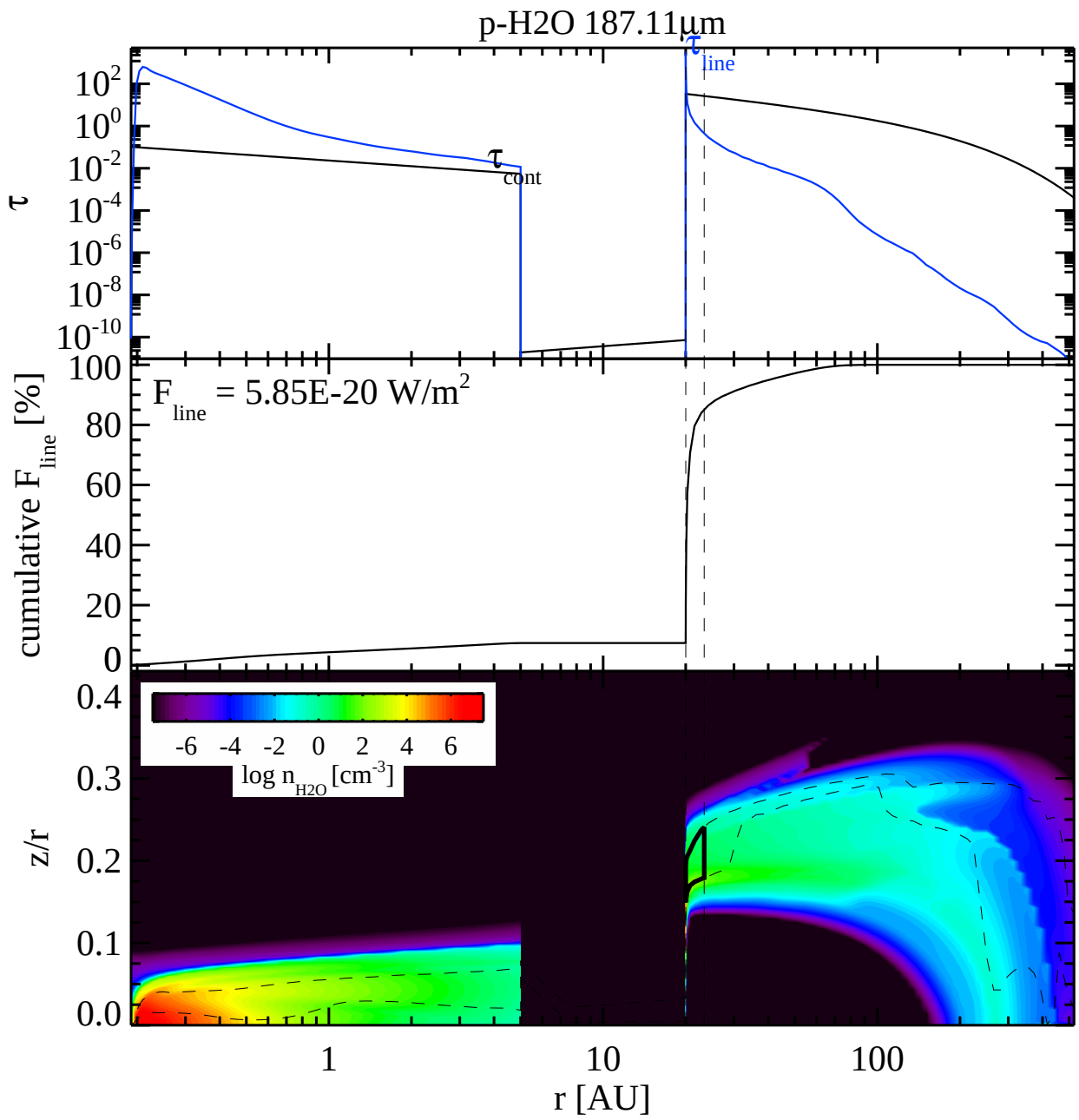

OH_H 27.39µm
τ
τ line
τ cont
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 1.18E-19 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-8 -6 -4 -2 0 2 4
log n OH [cm^-3]
1
10
100
r [AU]

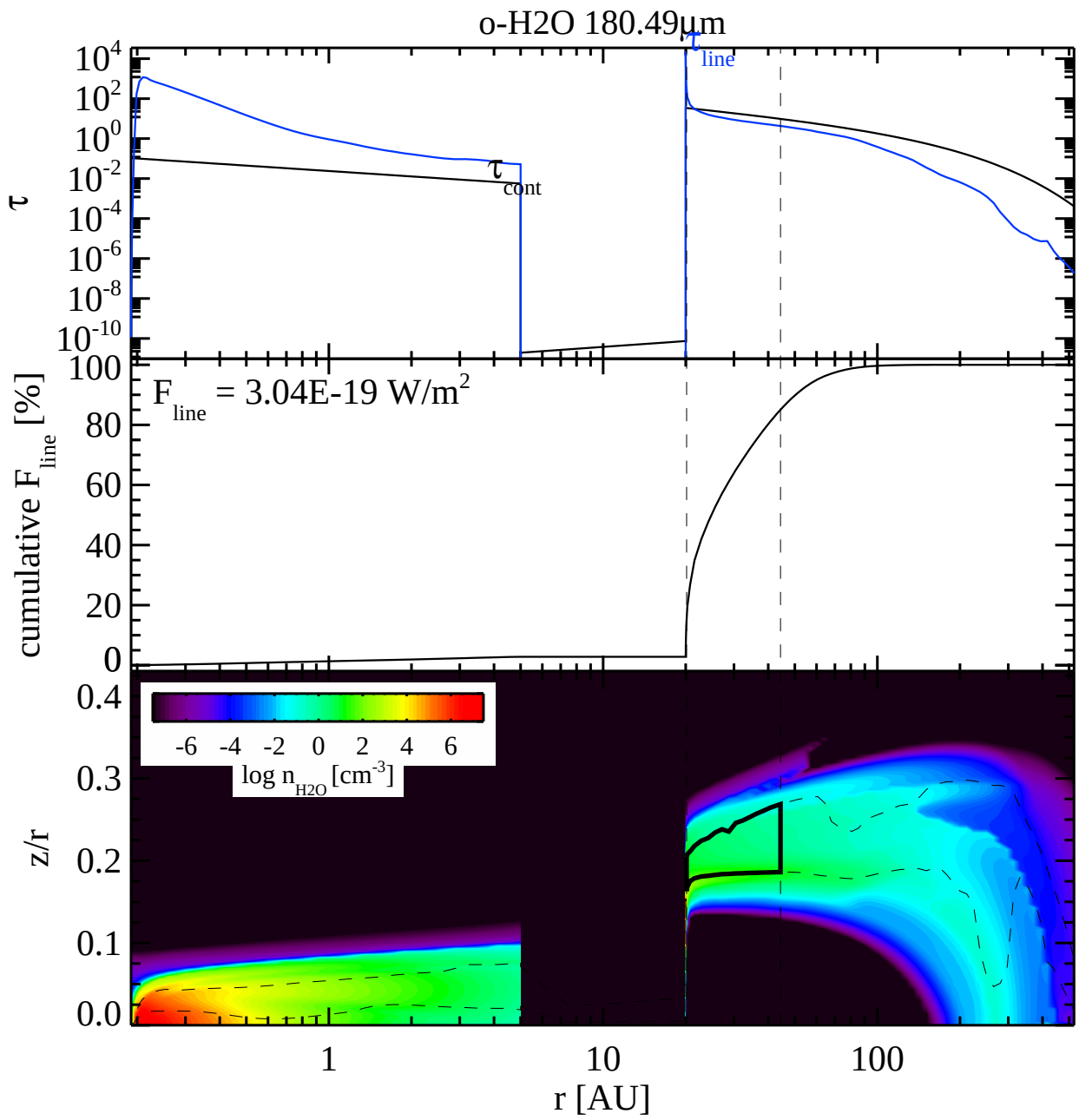

OH_H 30.28µm
τ
τ line
τ cont
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 1.16E-19 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-8 -6 -4 -2 0 2 4
log n OH [cm^-3]
1
10
100
r [AU]

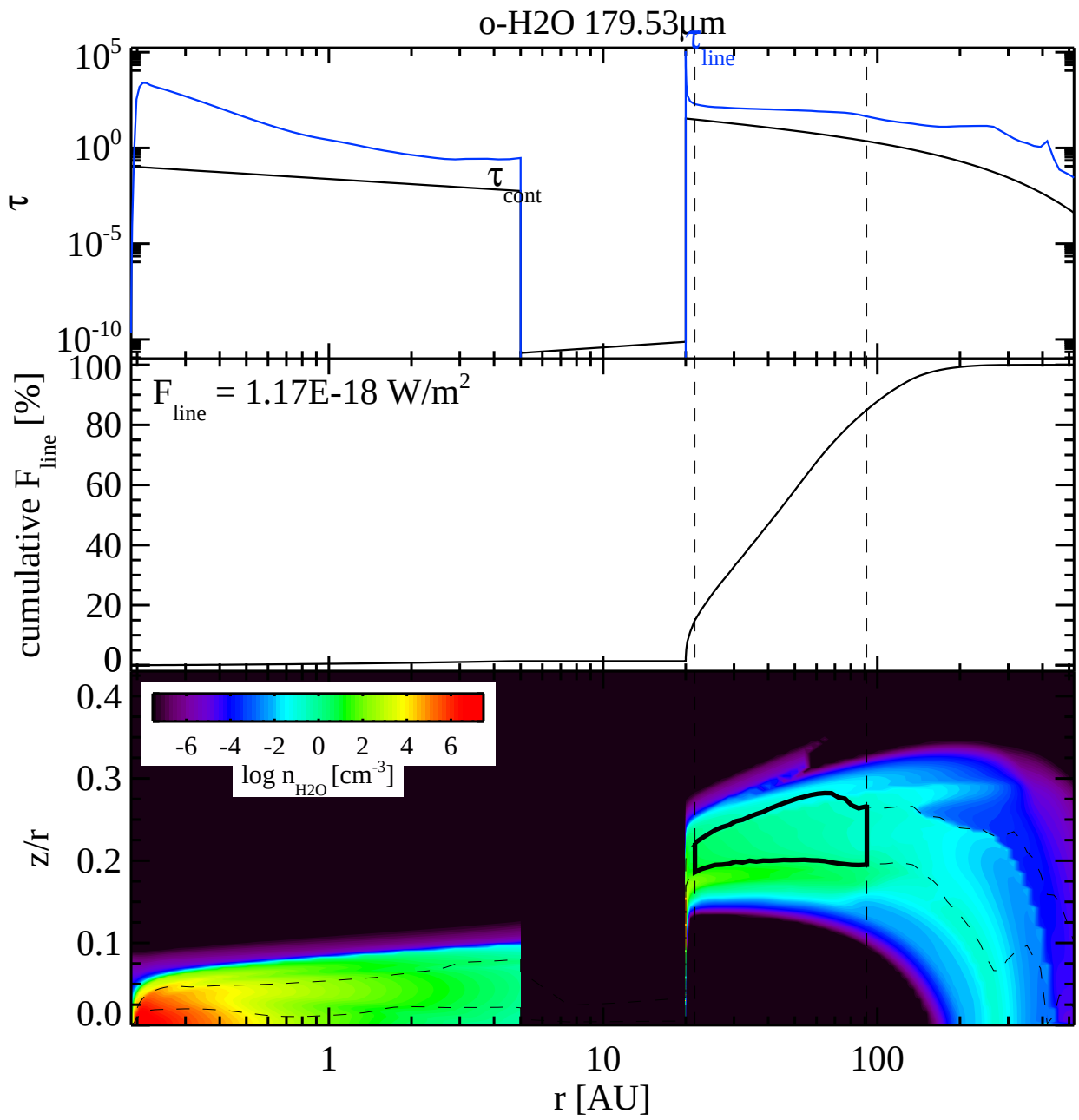

OH_H 33.88µm
τ
τ line
τ cont
cumulative F line [%]
F line = 1.16E-19 W/m2
log n OH [cm-3]
z/r
r [AU]

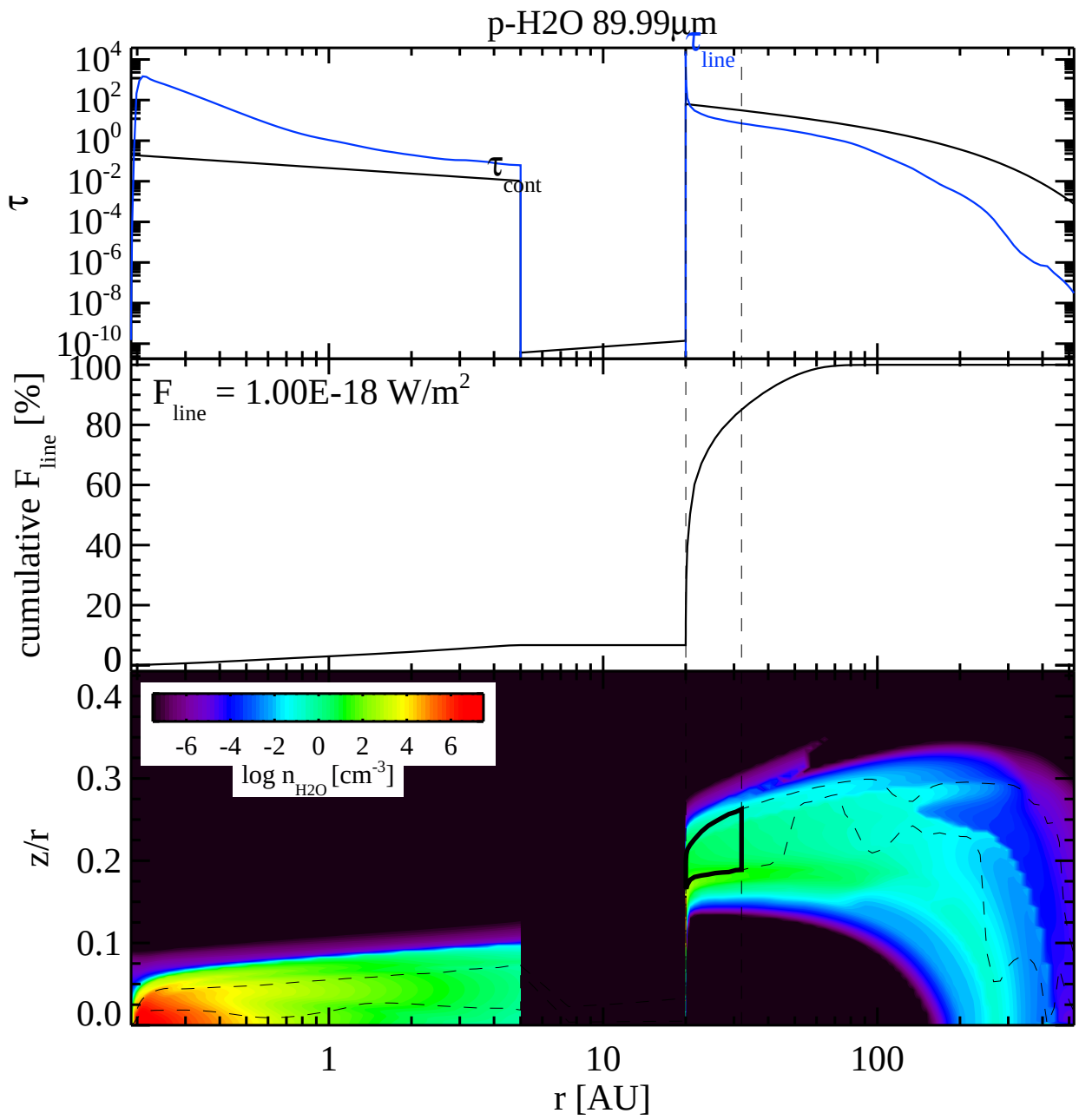

o-H2O 538.29µm
τ line
τ cont
τ
10^0
10^-5
10^-10
F line = 1.99E-19 W/m^2
cumulative F line [%]
100
80
60
40
20
0
-6 -4 -2 0 2 4 6
log n H2O [cm^-3]
z/r
0.4
0.3
0.2
0.1
0.0
1
10
100
r [AU]

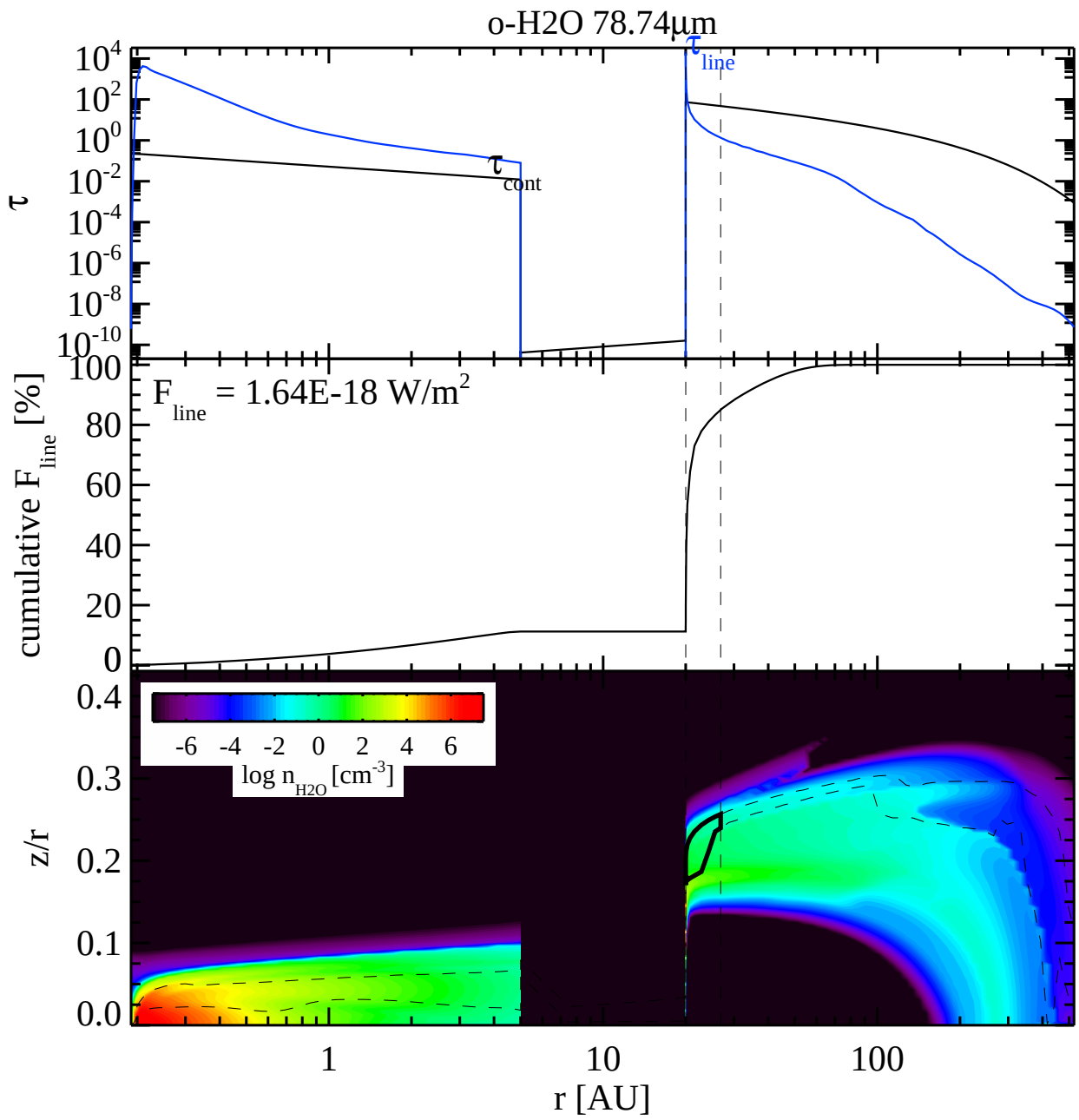

p-H2O 269.27µm
τ line
τ cont
τ
10^0
10^-5
10^-10
F line = 8.01E-19 W/m^2
cumulative F line [%]
100
80
60
40
20
0
-6 -4 -2 0 2 4 6
log n H2O [cm^-3]
z/r
0.4
0.3
0.2
0.1
0.0
1
10
100
r [AU]

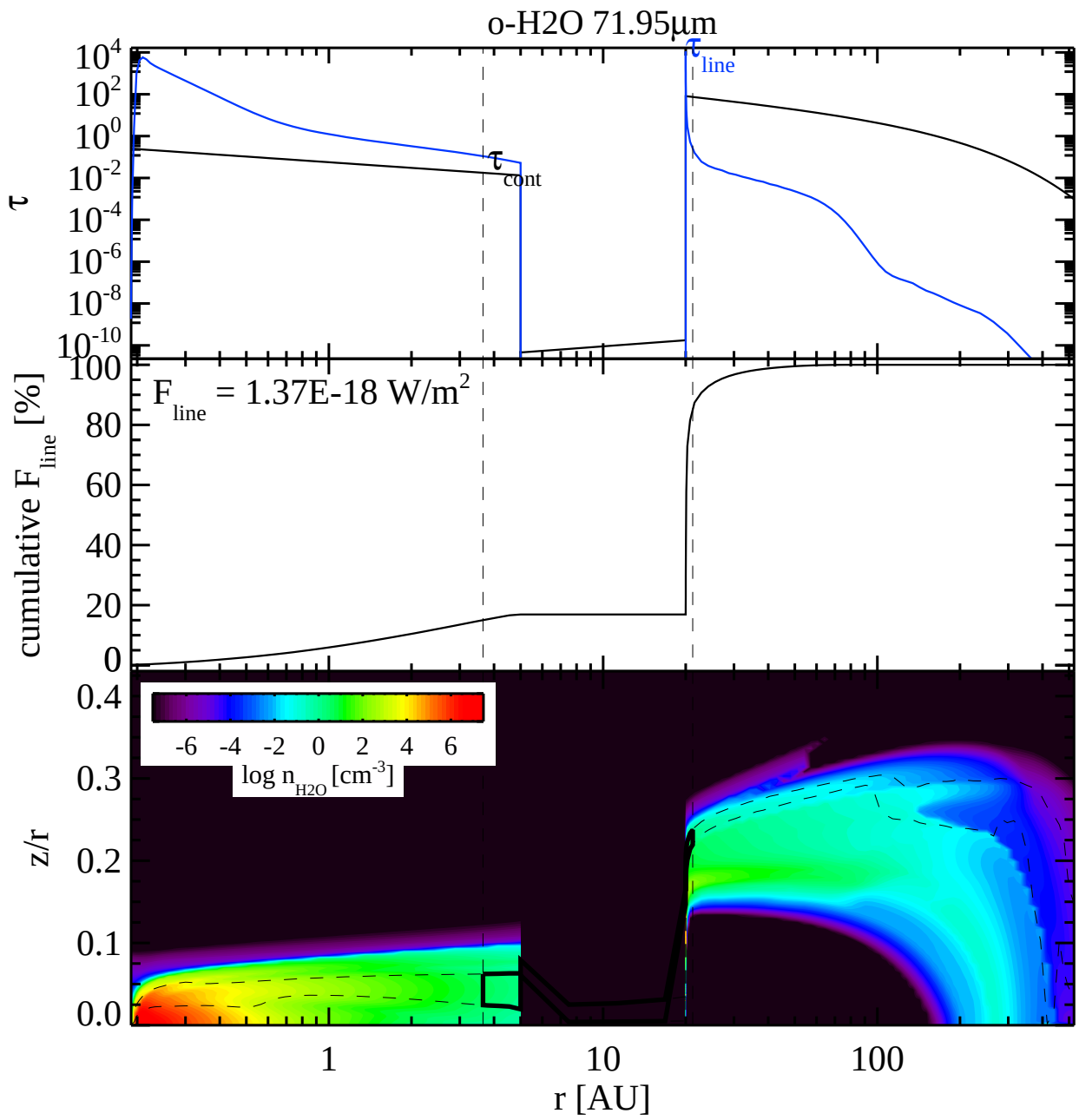

p-H2O 187.11µm
τ
τ line
τ cont
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 5.85E-20 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n H2O [cm^-3]
1
10
100
r [AU]

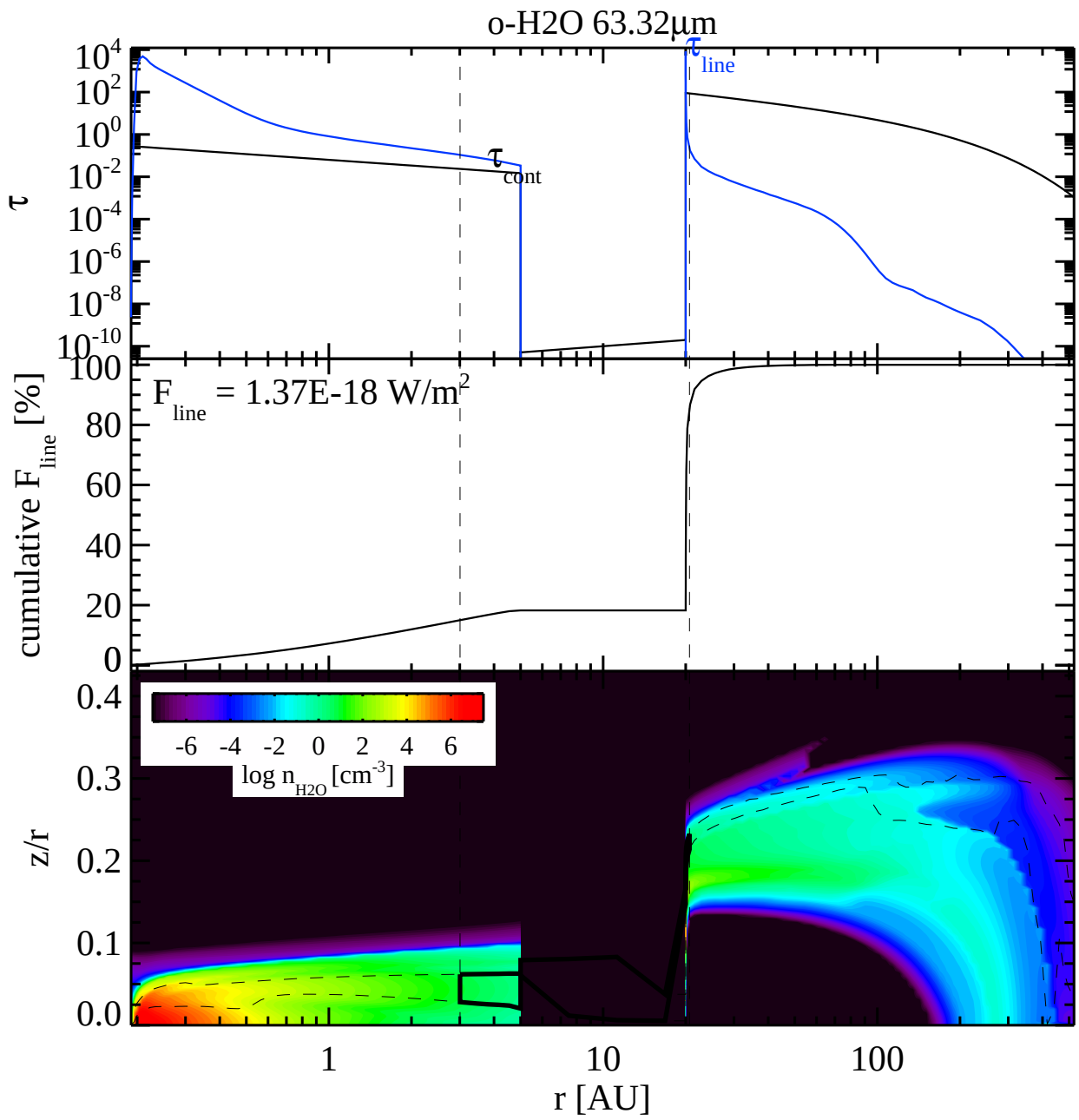

o-H2O 180.49µm
τ
τ line
τ cont
cumulative F line [%]
F line = 3.04E-19 W/m2
log n H2O [cm-3]
z/r
r [AU]

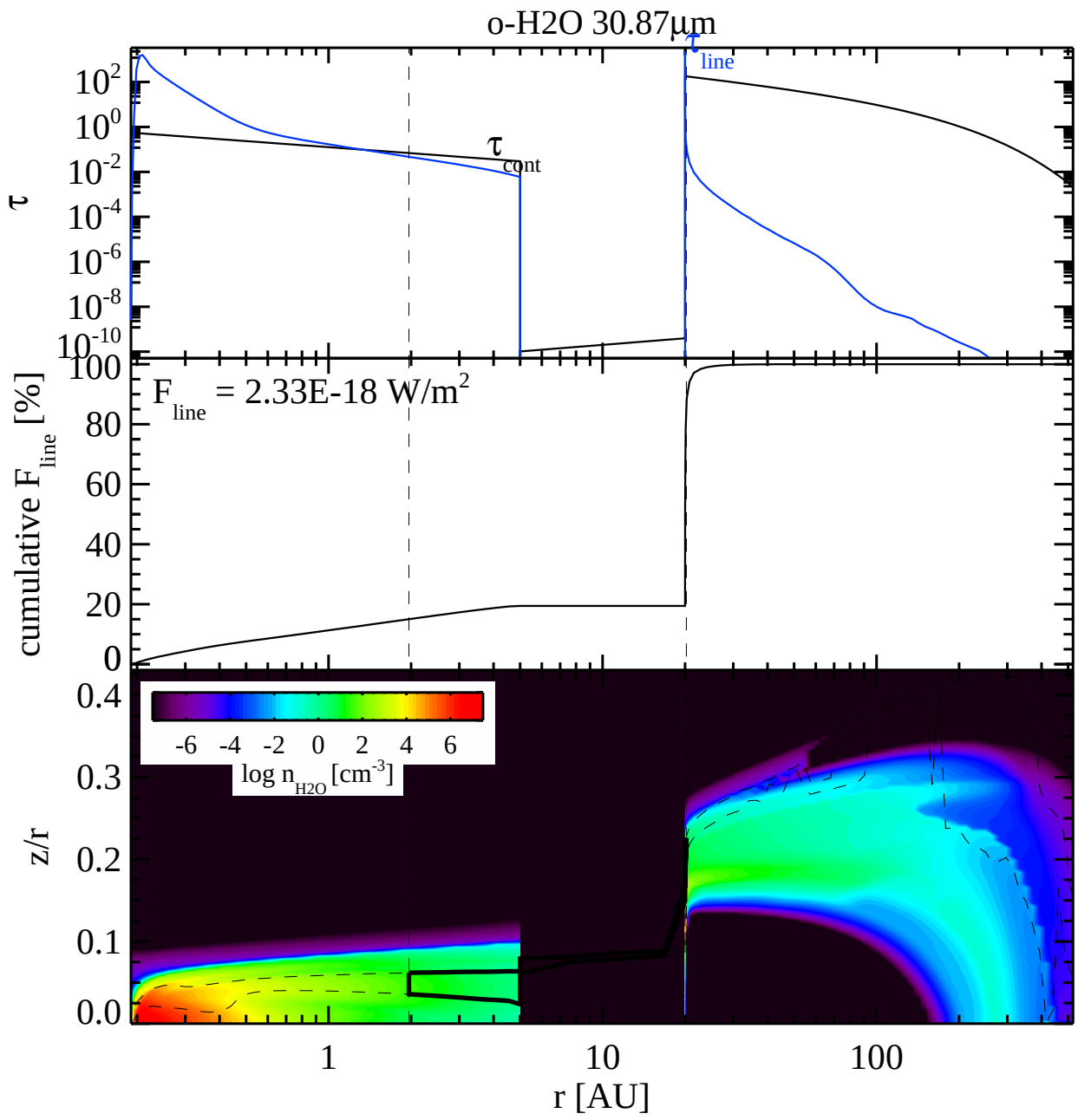

o-H2O 179.53µm
τ
line
τ cont
cumulative F line [%]
F line = 1.17E-18 W/m2
log n H2O [cm-3]
z/r
r [AU]

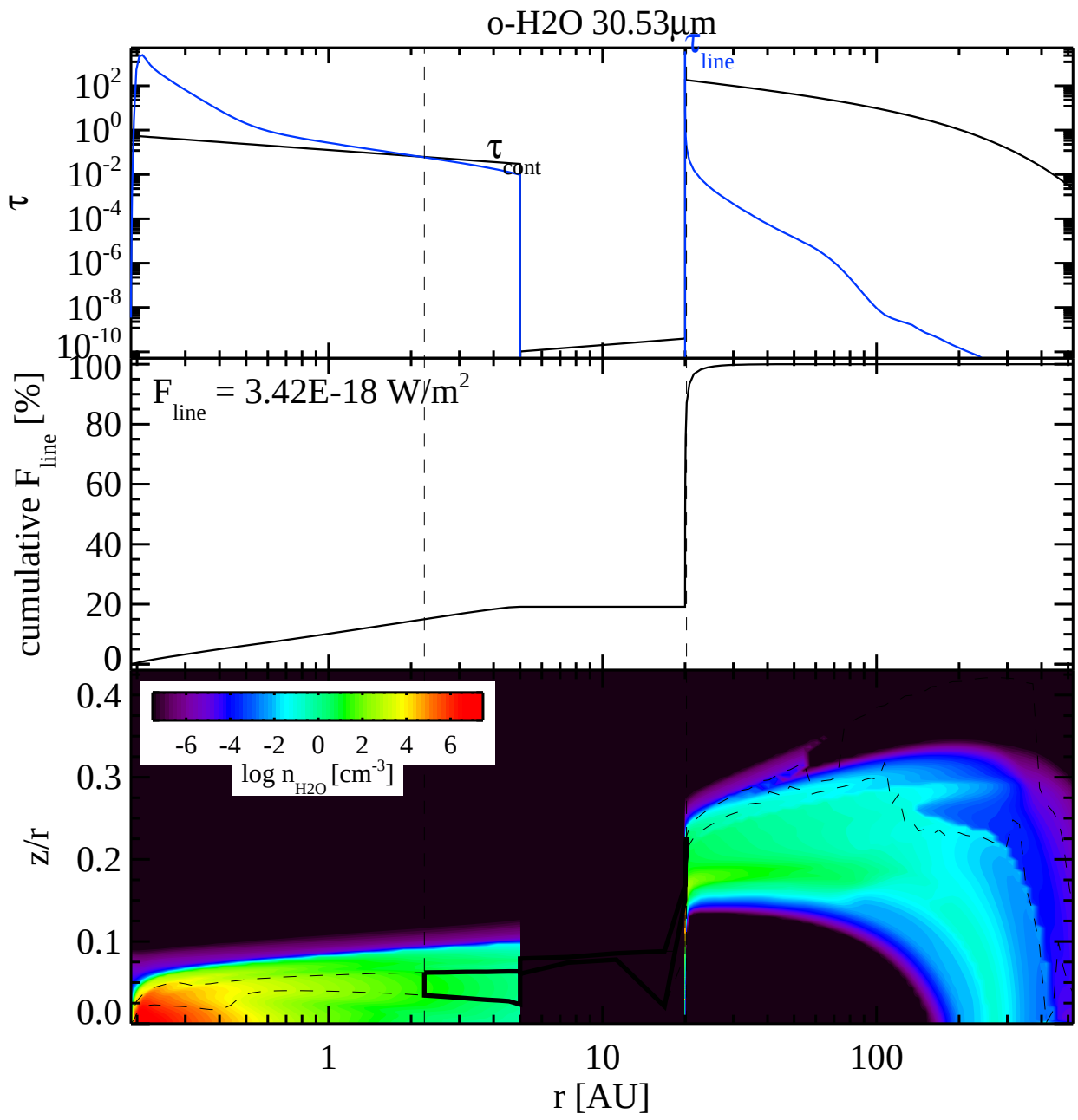

p-H2O 89.99µm
τ
τ line
τ cont
cumulative F line [%]
F line = 1.00E-18 W/m2
log n H2O [cm-3]
-6 -4 -2 0 2 4 6
z/r
r [AU]
1
10
100

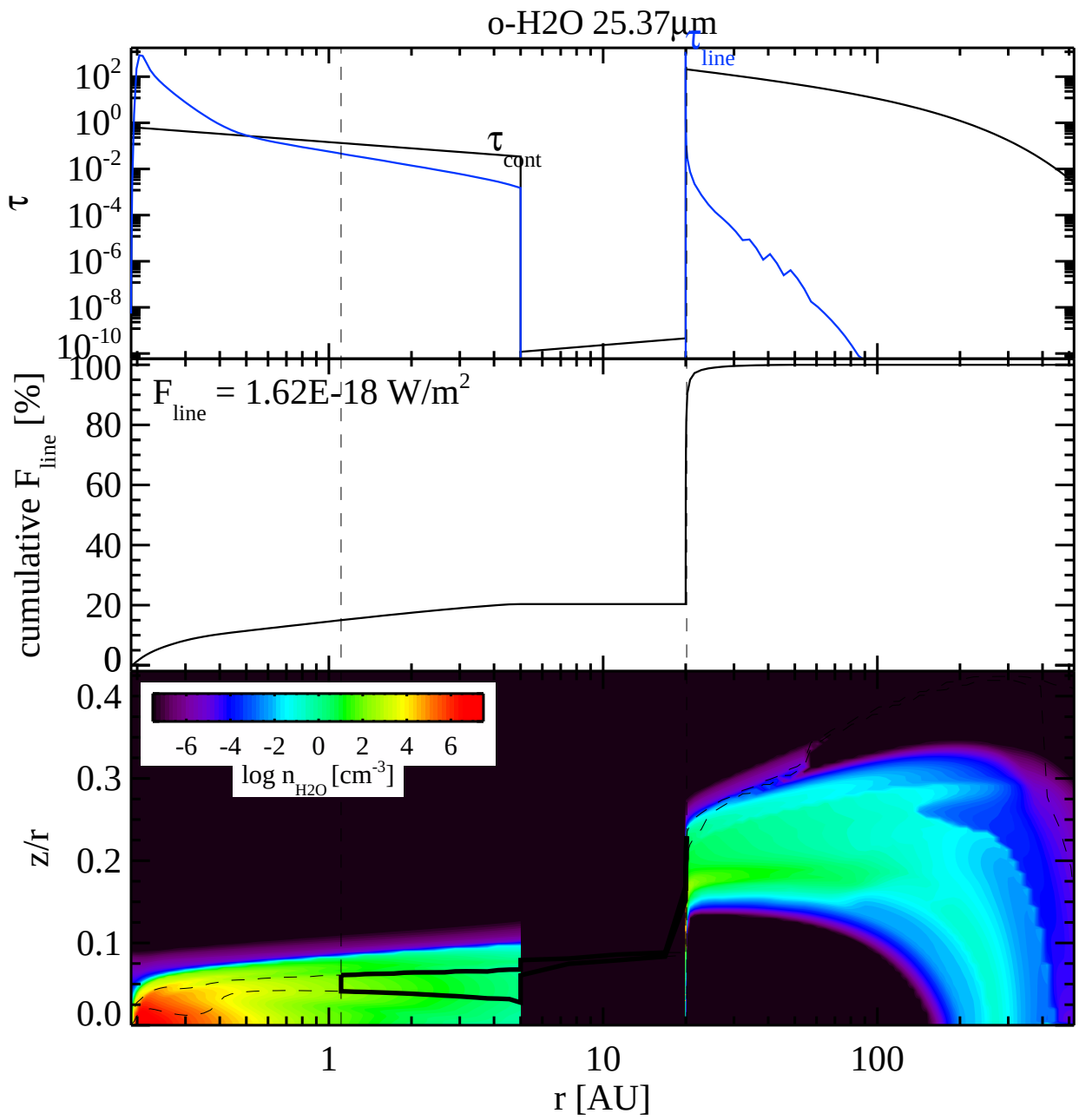

o-H2O 78.74µm
τ
τ line
τ cont
F line = 1.64E-18 W/m2
cumulative F line [%]
log n H2O [cm-3]
z/r
r [AU]

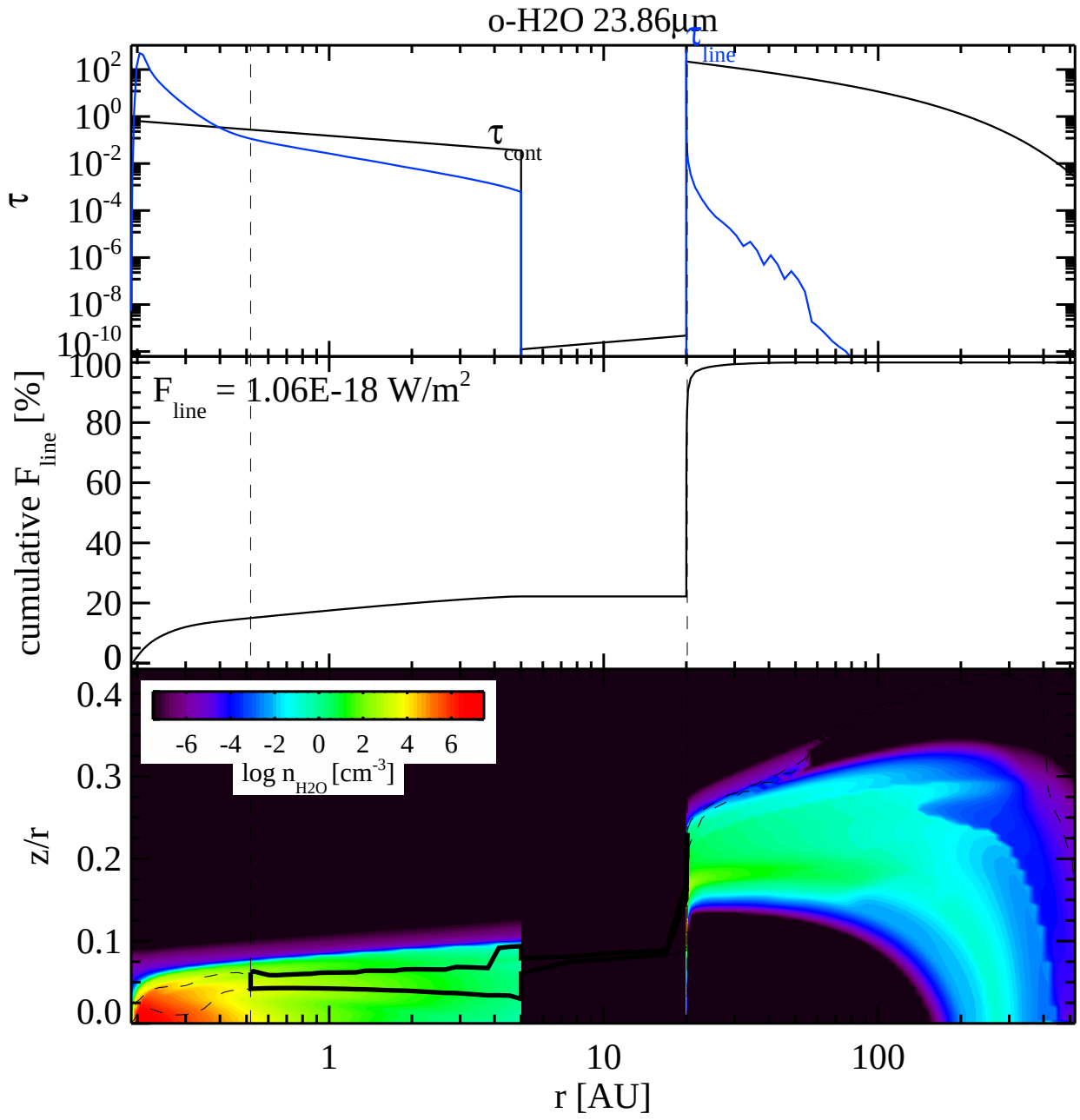

o-H2O 71.95µm
τ
τ line
τ cont
cumulative F line [%]
F line = 1.37E-18 W/m2
log n H2O [cm-3]
z/r
r [AU]

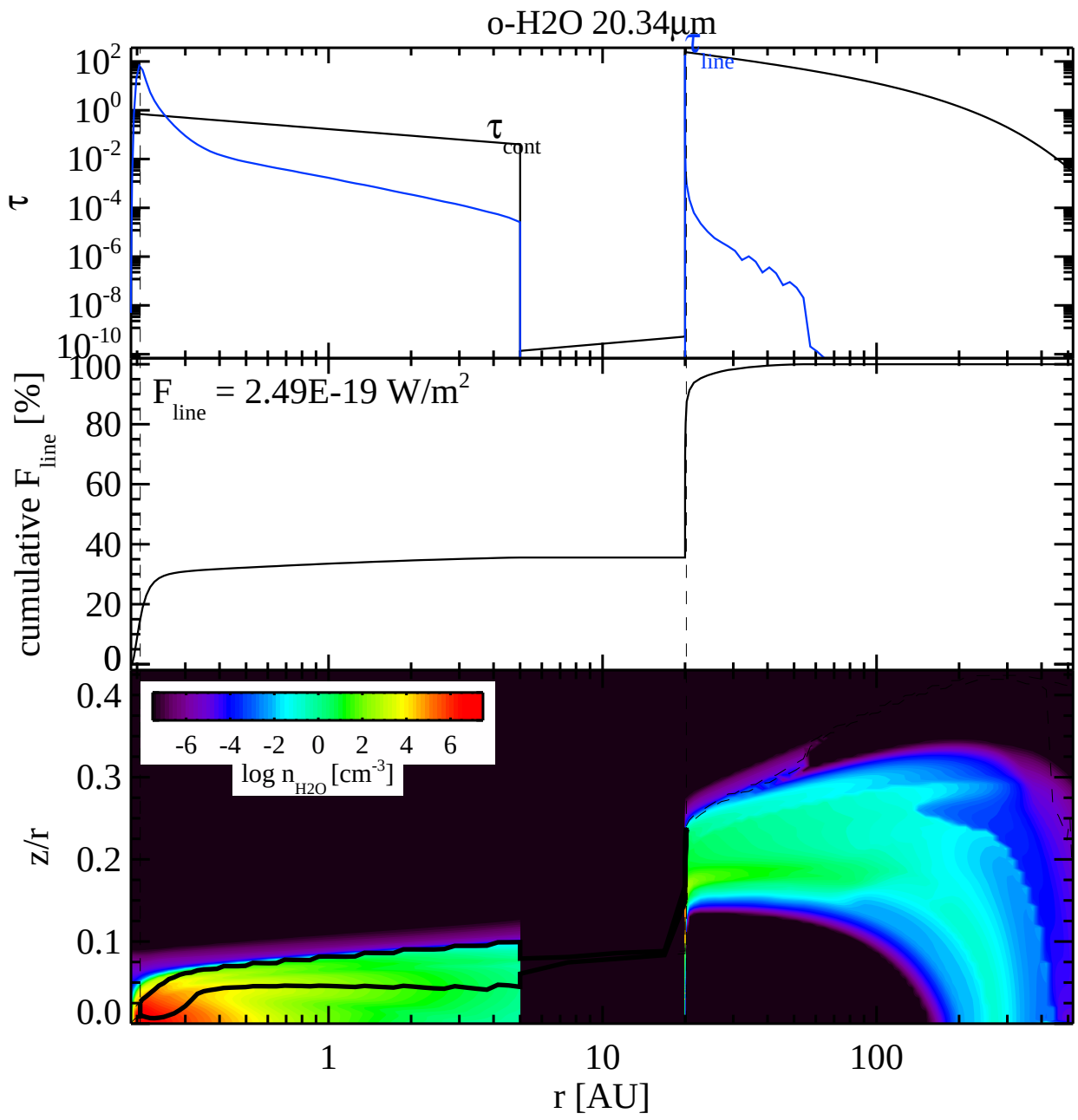

o-H2O 63.32μm
τ
τ line
τ cont
cumulative F line [%]
F line = 1.37E-18 W/m2
log n H2O [cm-3]
z/r
r [AU]

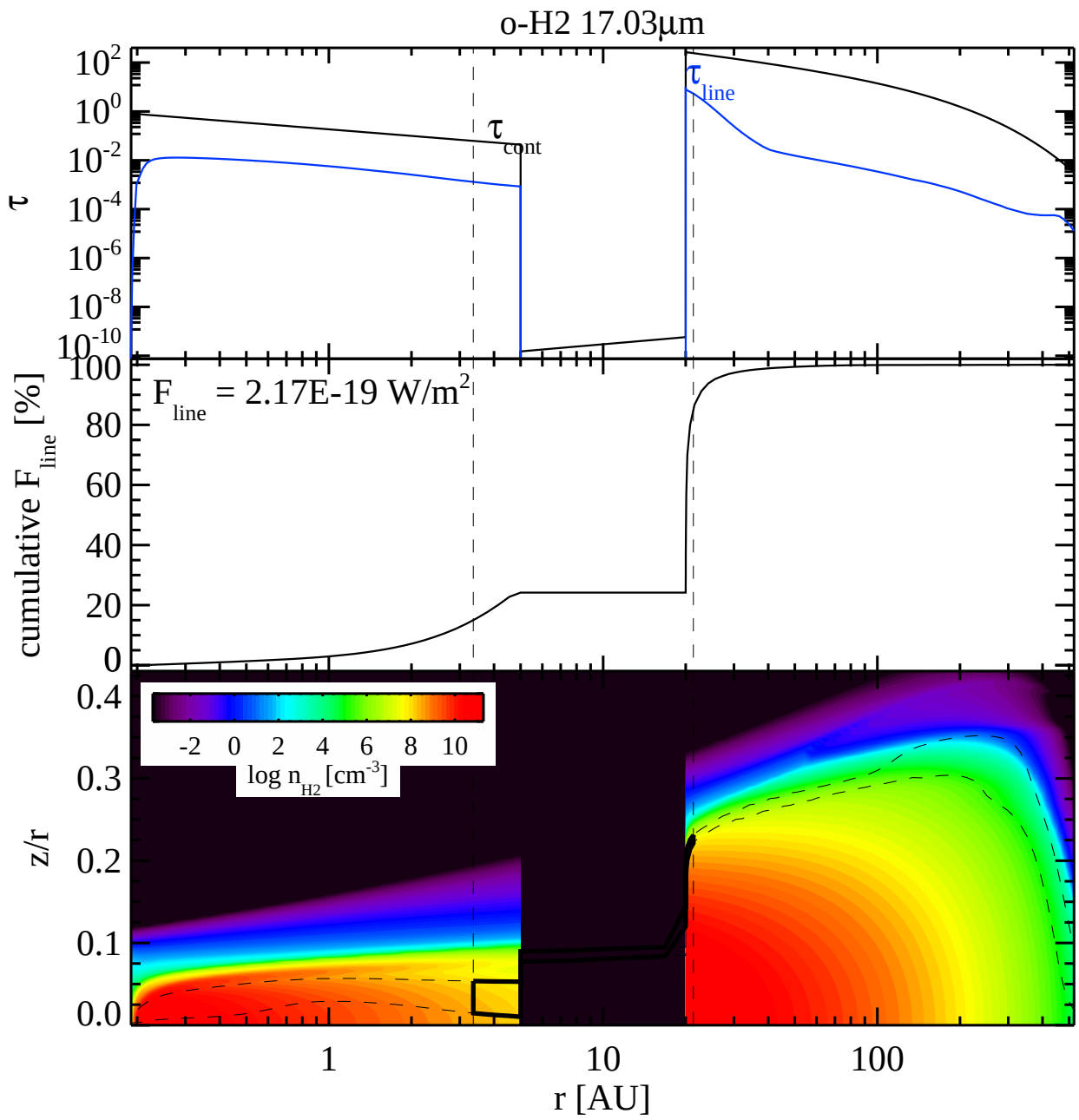

o-H2O 30.87µm
τ
τ line
τ cont
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 2.33E-18 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n H2O [cm^-3]
1
10
100
r [AU]

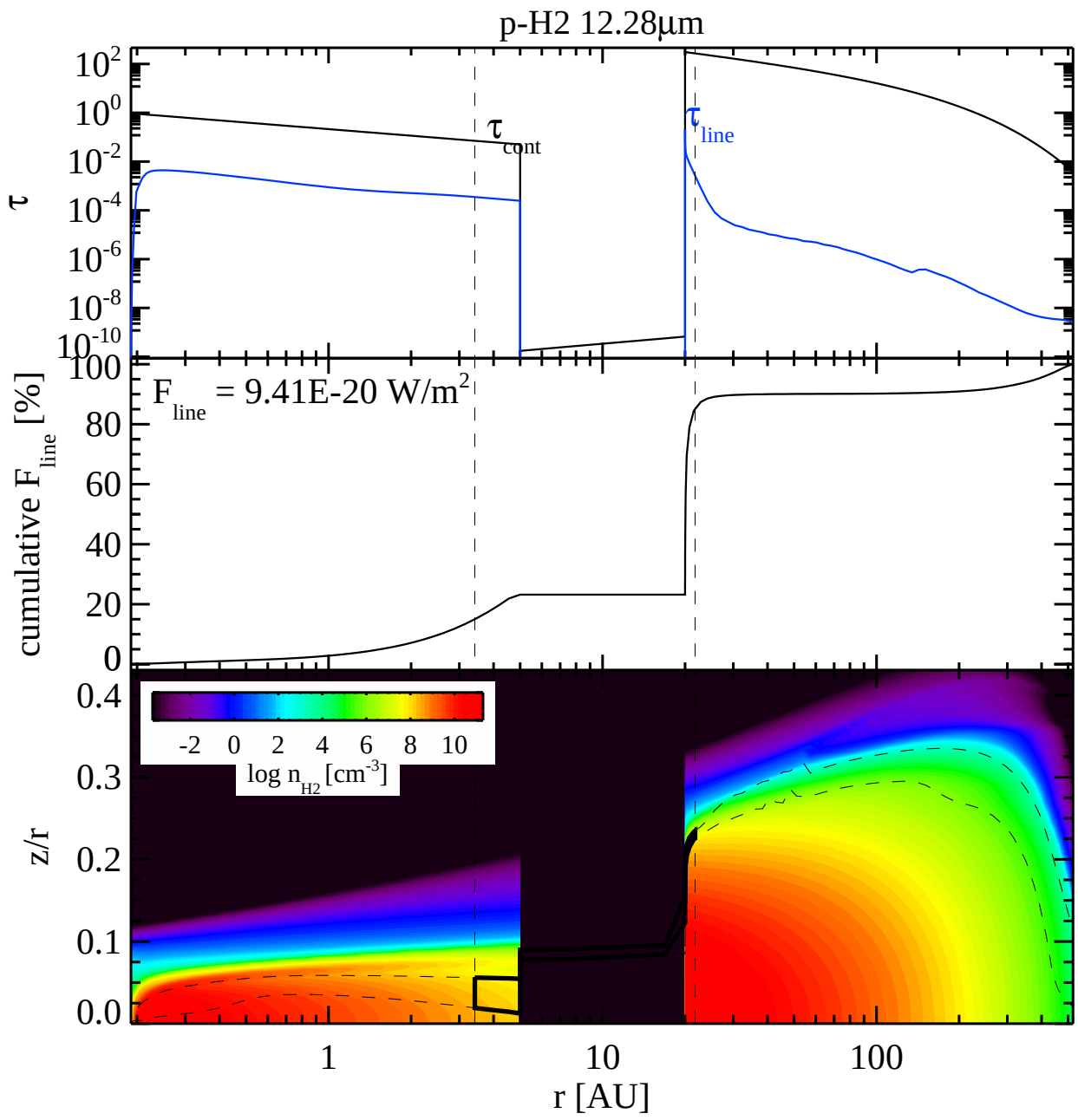

o-H2O 30.53µm
τ
τ line
τ cont
10^2
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 3.42E-18 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-6 -4 -2 0 2 4 6
log n H2O [cm^-3]
1
10
100
r [AU]

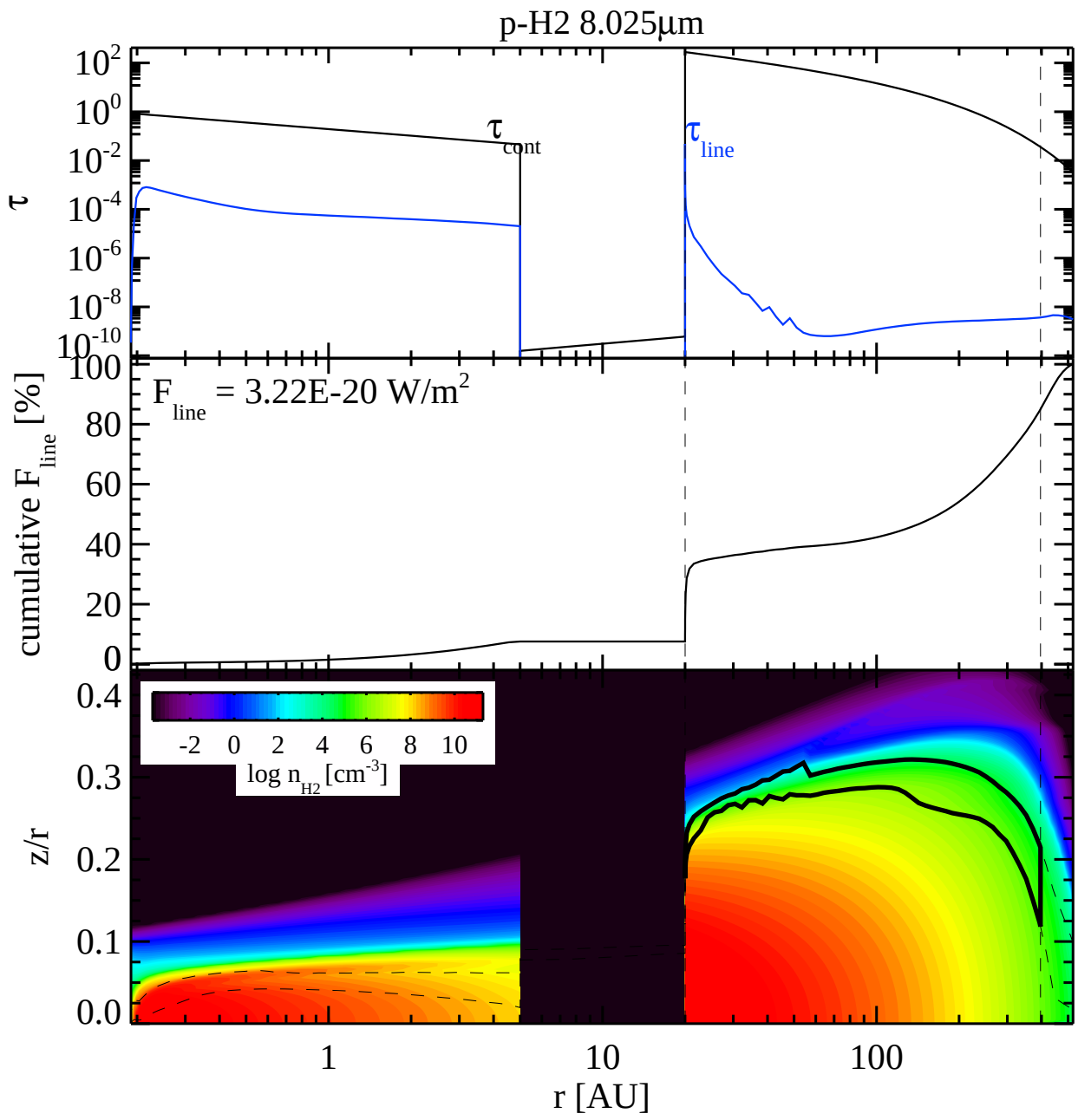

o-H2O 25.37µm
τ
τ line
τ cont
cumulative F line [%]
F line = 1.62E-18 W/m2
log n H2O [cm-3]
z/r
r [AU]

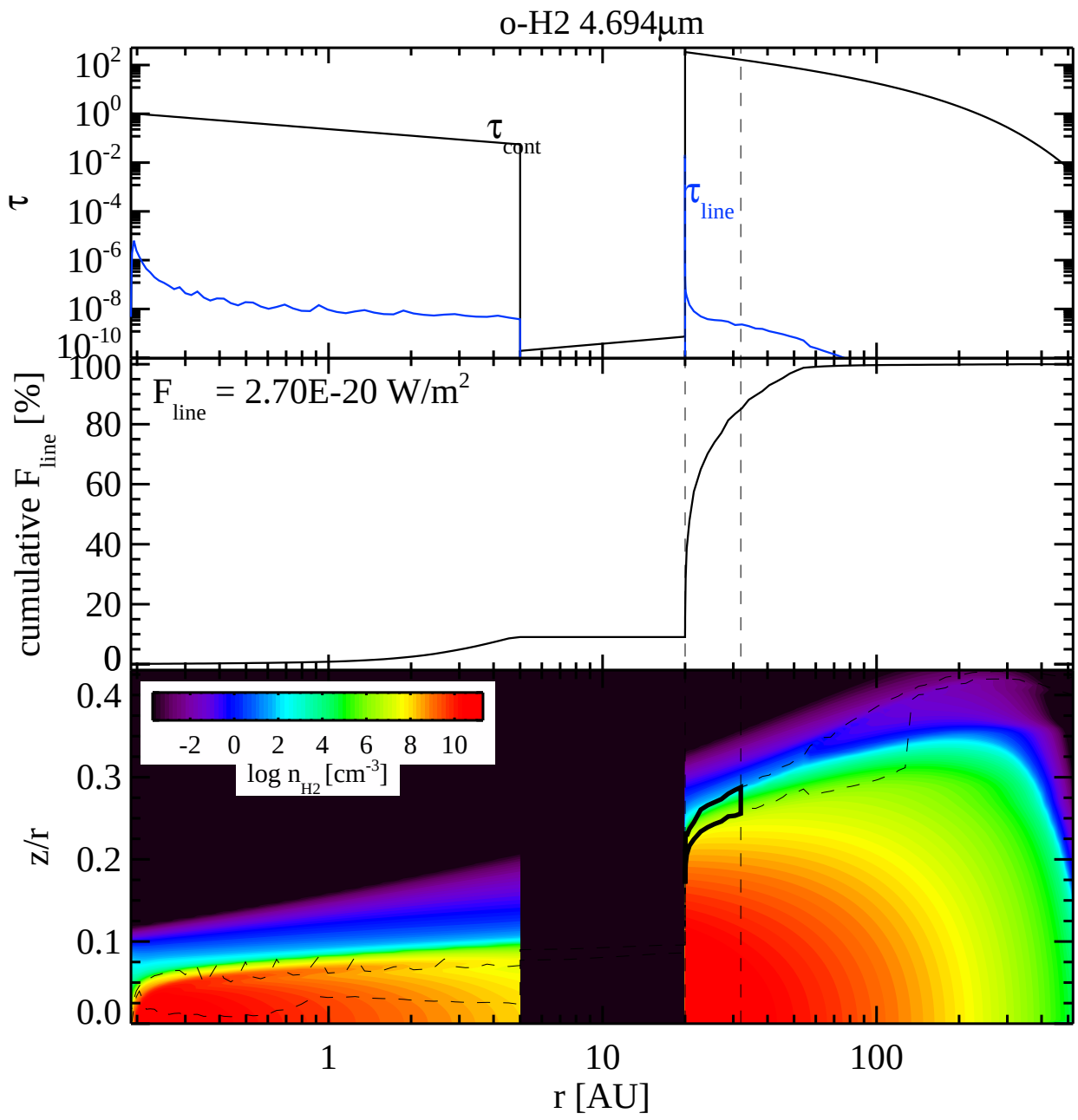

o-H2O 23.86µm
τ
τ line
τ cont
cumulative F line [%]
F line = 1.06E-18 W/m2
z/r
log n H2O [cm-3]
r [AU]

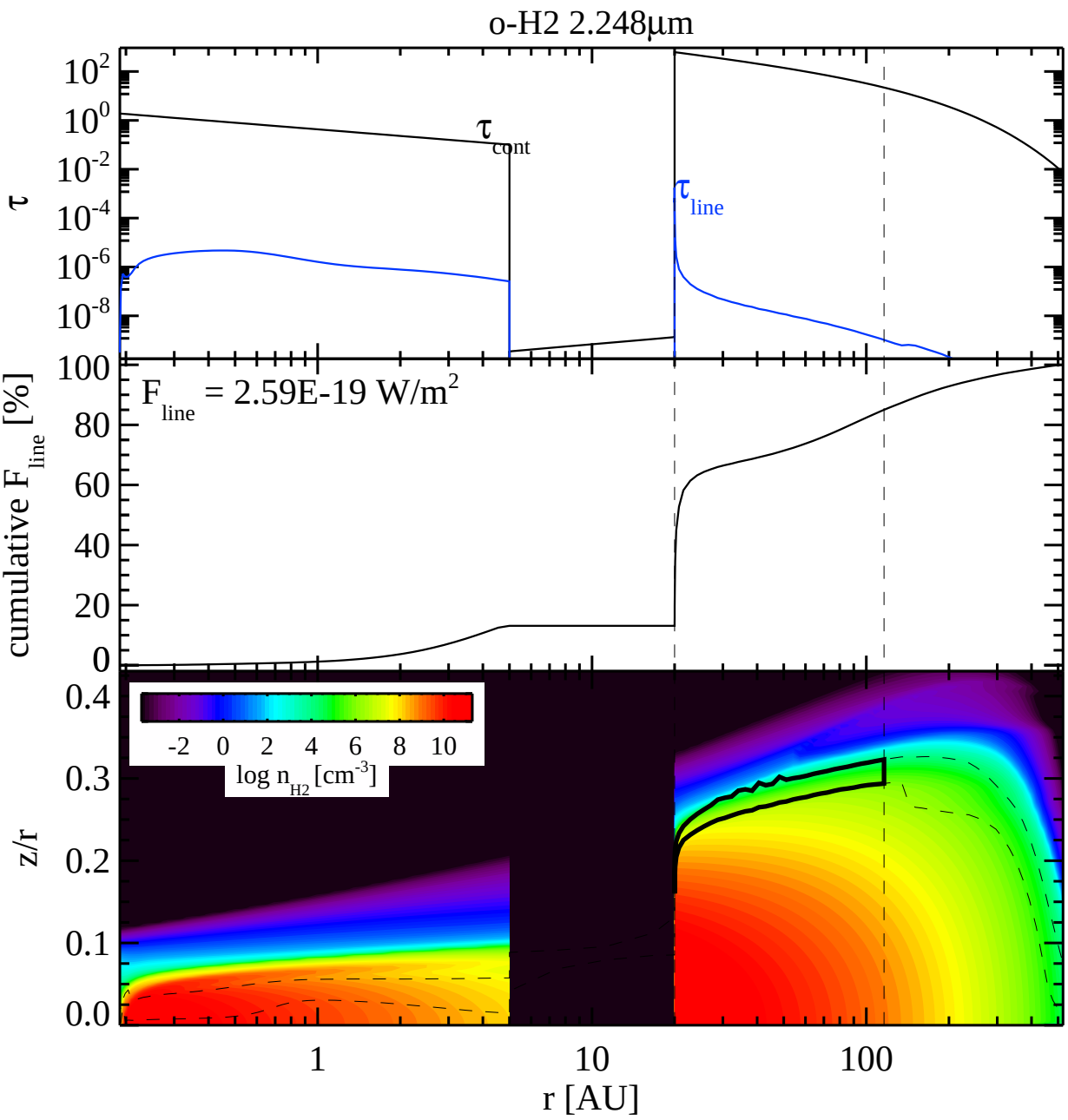

o-H2O 20.34μm
τ
τ cont
τ line
cumulative F line [%]
F line = 2.49E-19 W/m2
log n H2O [cm-3]
z/r
r [AU]

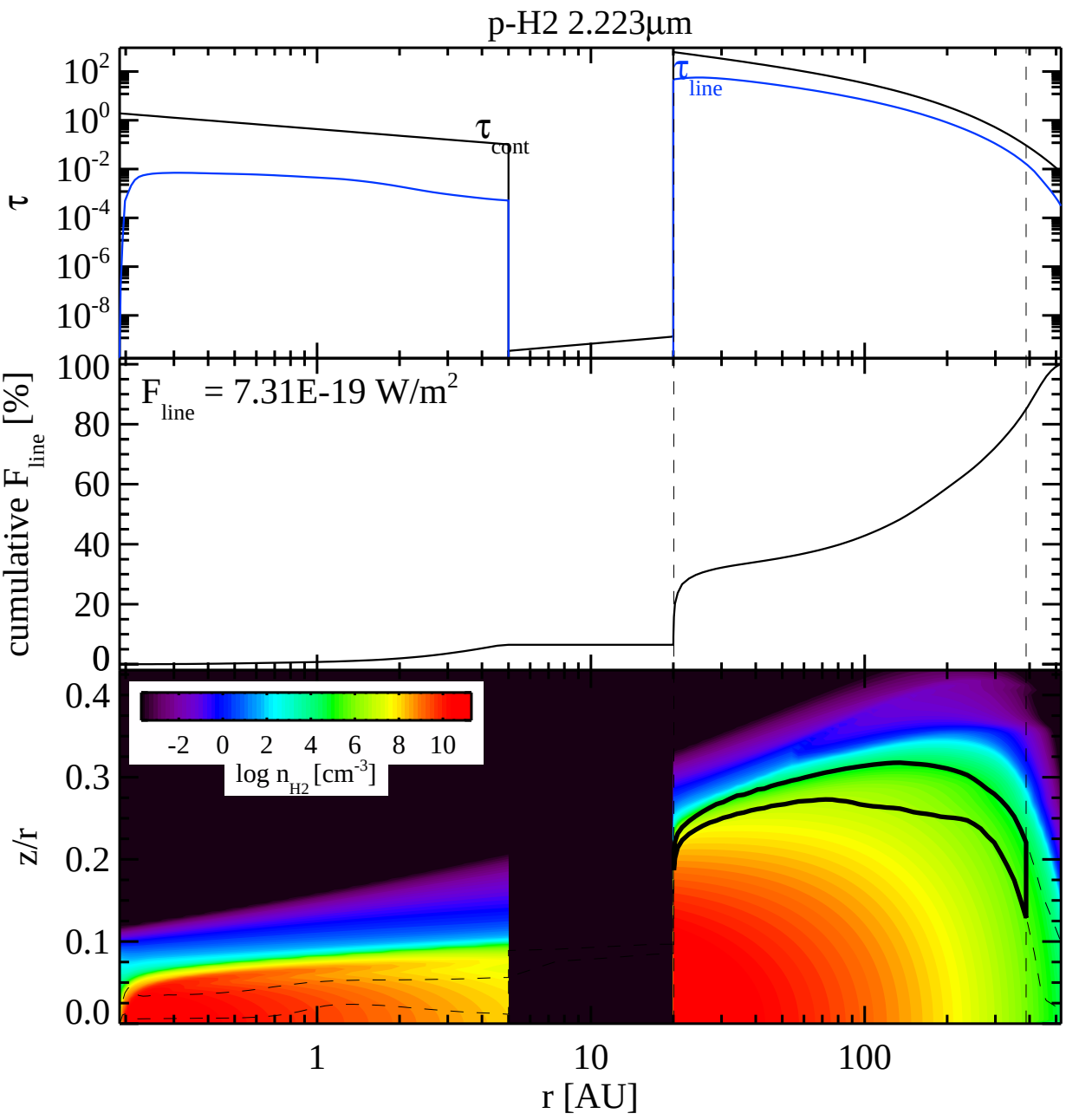

o-H2 17.03µm
τ
τ cont
τ line
cumulative F line [%]
F line = 2.17E-19 W/m2
log n H2 [cm-3]
z/r
r [AU]

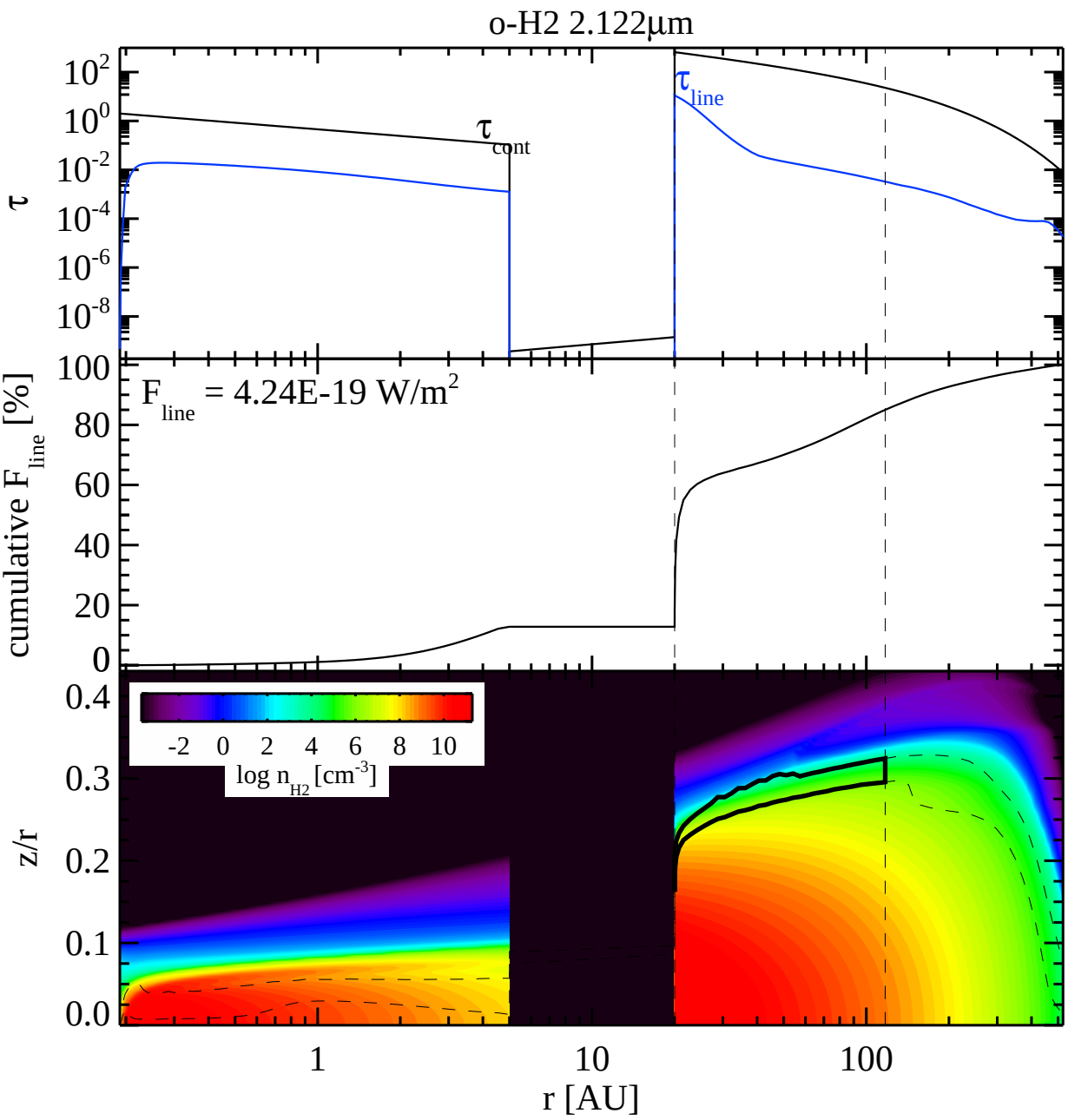

p-H2 12.28µm
τ
τ cont
τ line
cumulative F line [%]
F line = 9.41E-20 W/m2
log n H2 [cm-3]
-2 0 2 4 6 8 10
z/r
r [AU]
1
10
100

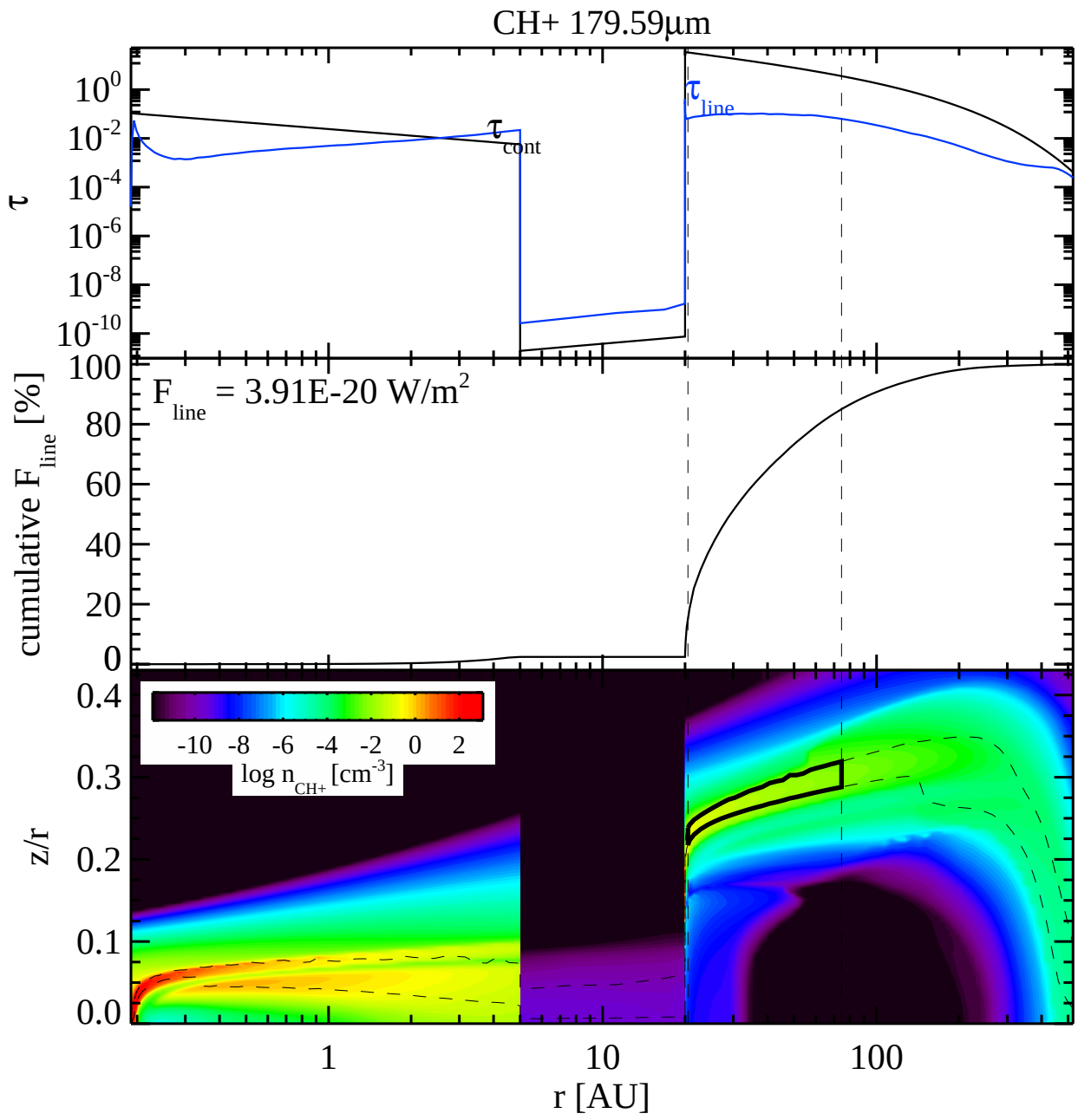

p-H2 8.025µm
τ
τ cont
τ line
cumulative F line [%]
F line = 3.22E-20 W/m2
log n H2 [cm-3]
-2 0 2 4 6 8 10
z/r
r [AU]
1
10
100

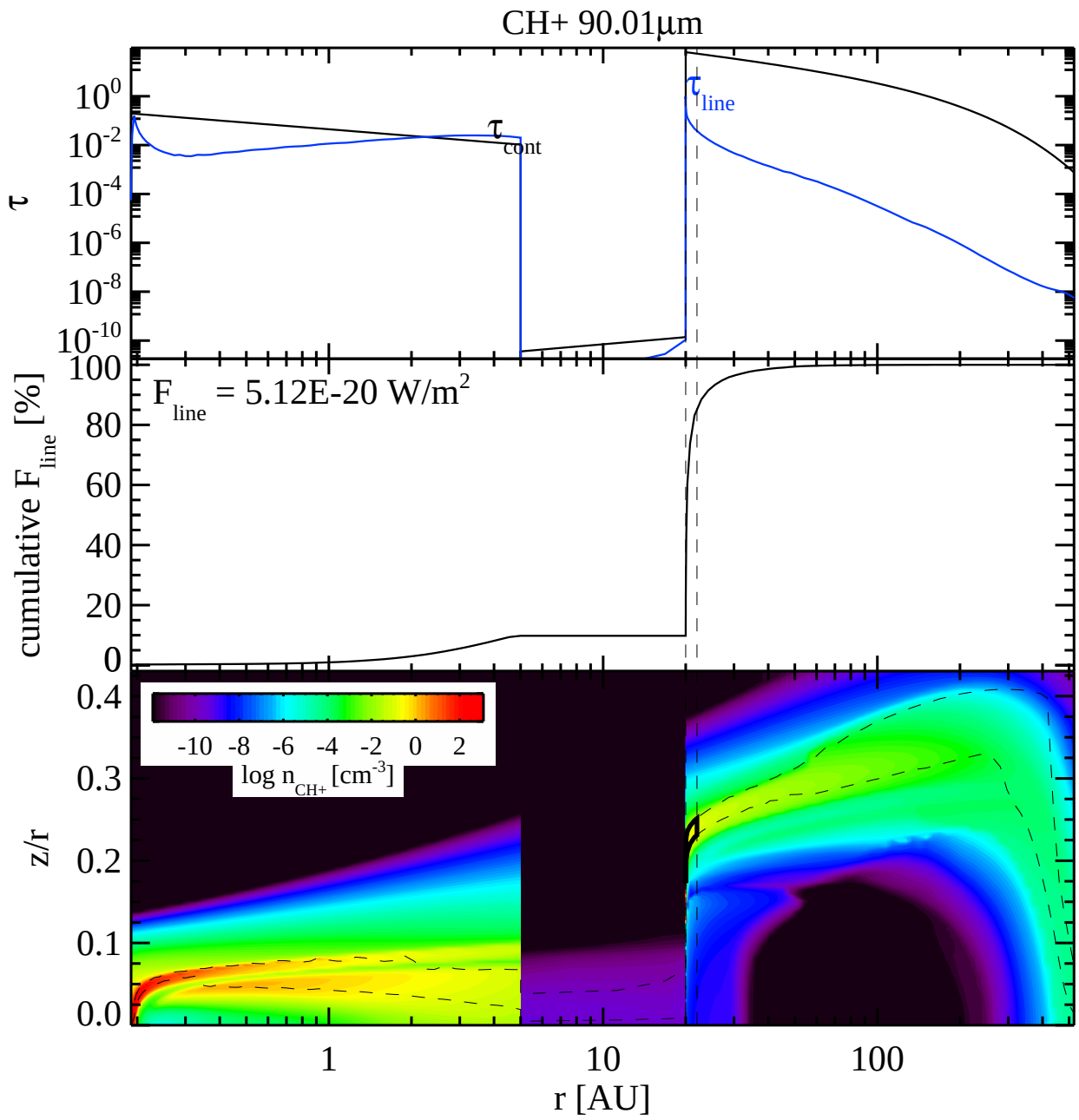

o-H2 4.694µm
τ
10^{2}
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
F_{line} = 2.70E-20 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-2 0 2 4 6 8 10
log n_{H2} [cm^{-3}]
1
10
100
r [AU]

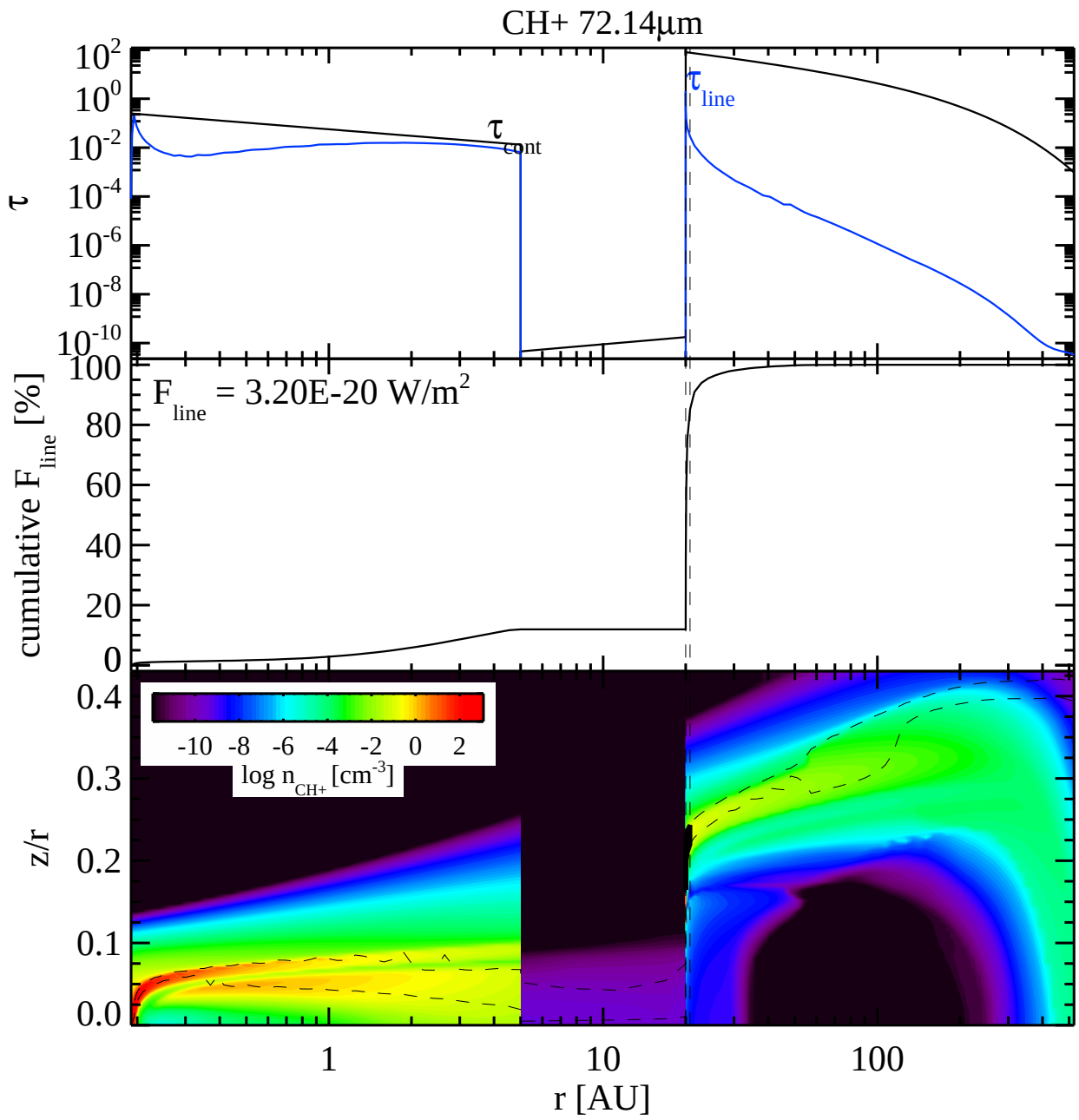

o-H2 2.248µm
τ
τ cont
τ line
cumulative F line [%]
F line = 2.59E-19 W/m2
log n H2 [cm-3]
z/r
r [AU]

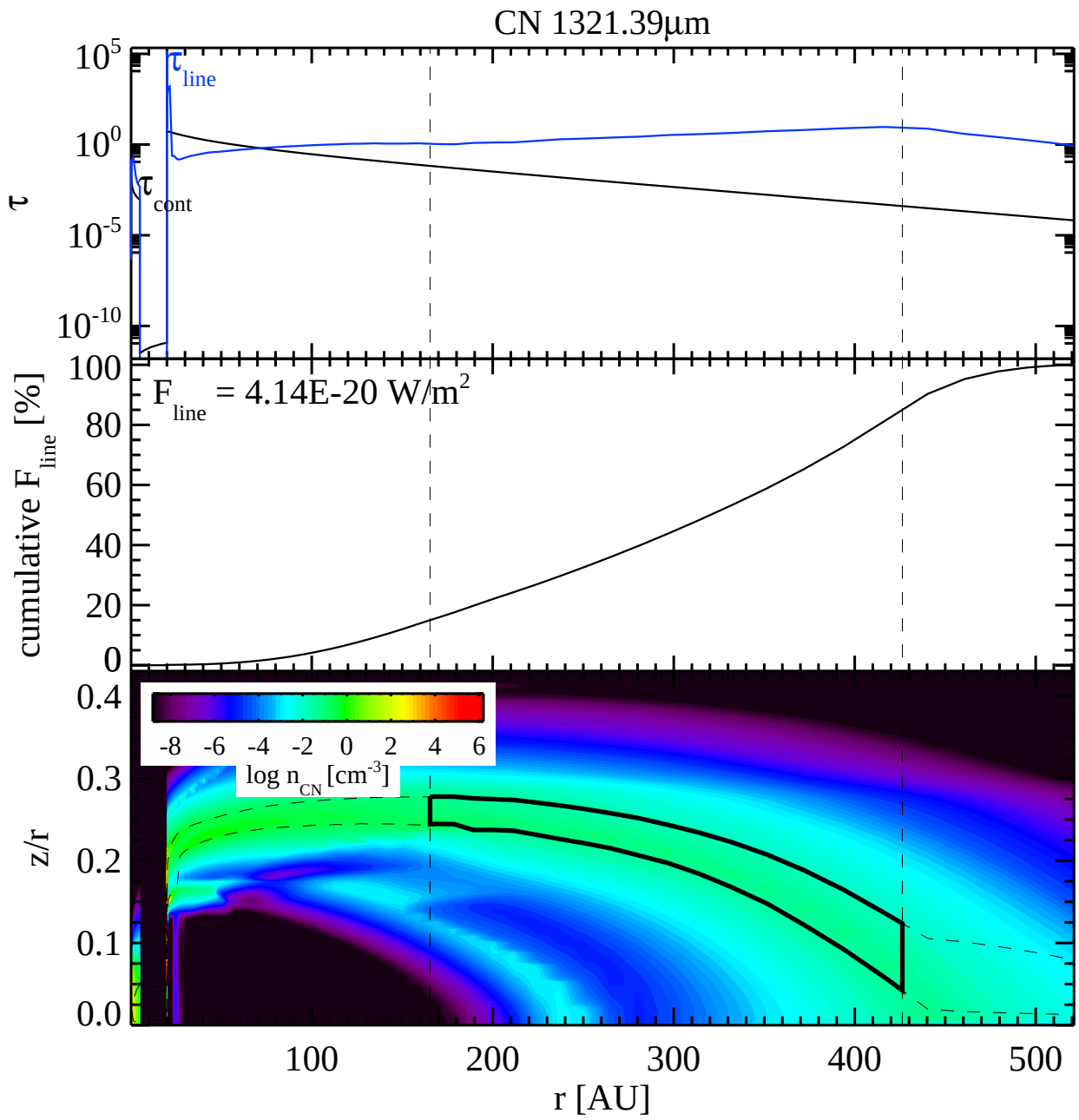

p-H2 2.223µm
τ
τ cont
τ line
cumulative F line [%]
F line = 7.31E-19 W/m2
log n H2 [cm-3]
-2 0 2 4 6 8 10
z/r
r [AU]
1
10
100

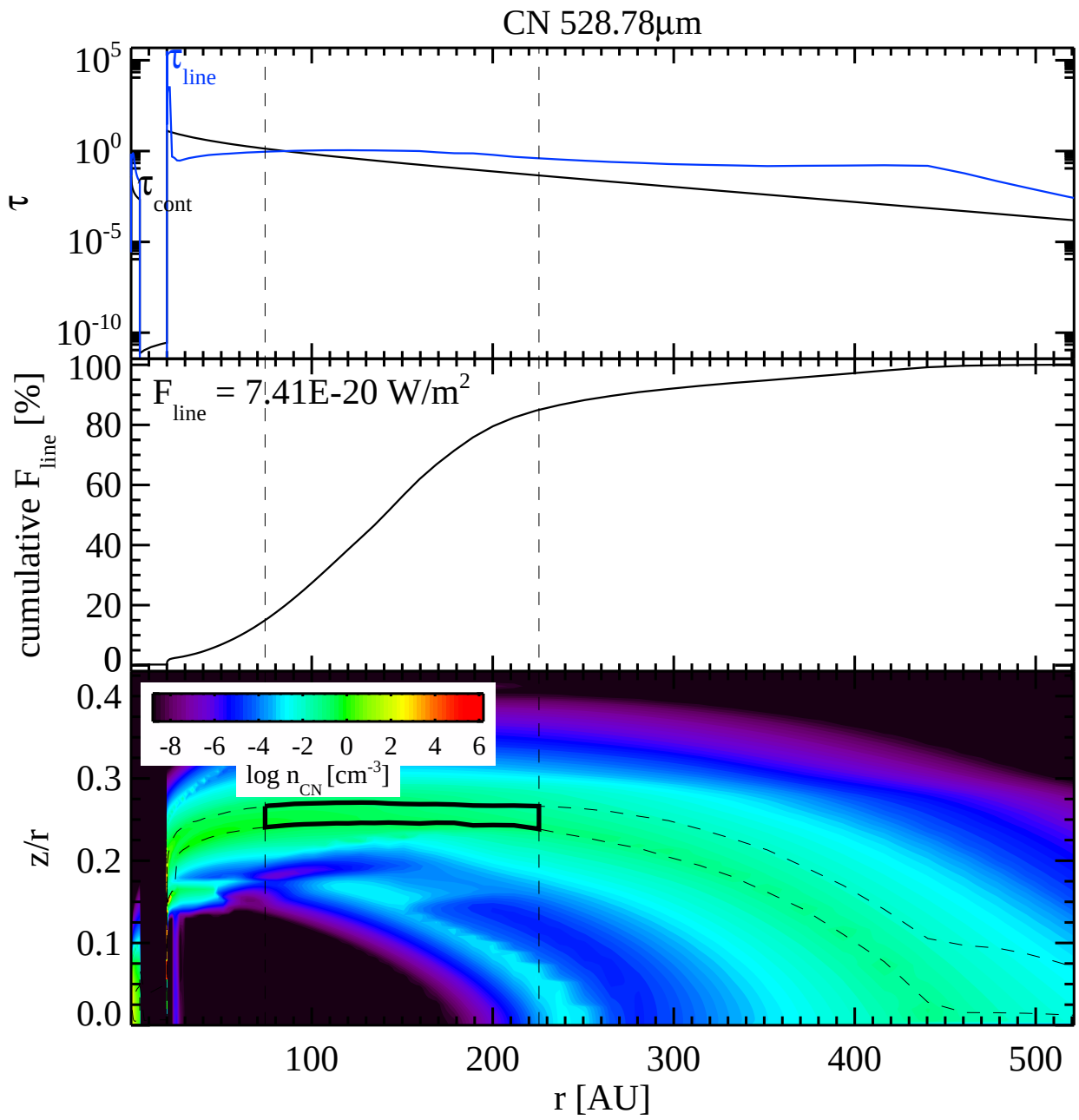

o-H2 2.122µm
τ
τ cont
τ line
cumulative F line [%]
F line = 4.24E-19 W/m2
log n H2 [cm-3]
-2 0 2 4 6 8 10
z/r
r [AU]
1
10
100

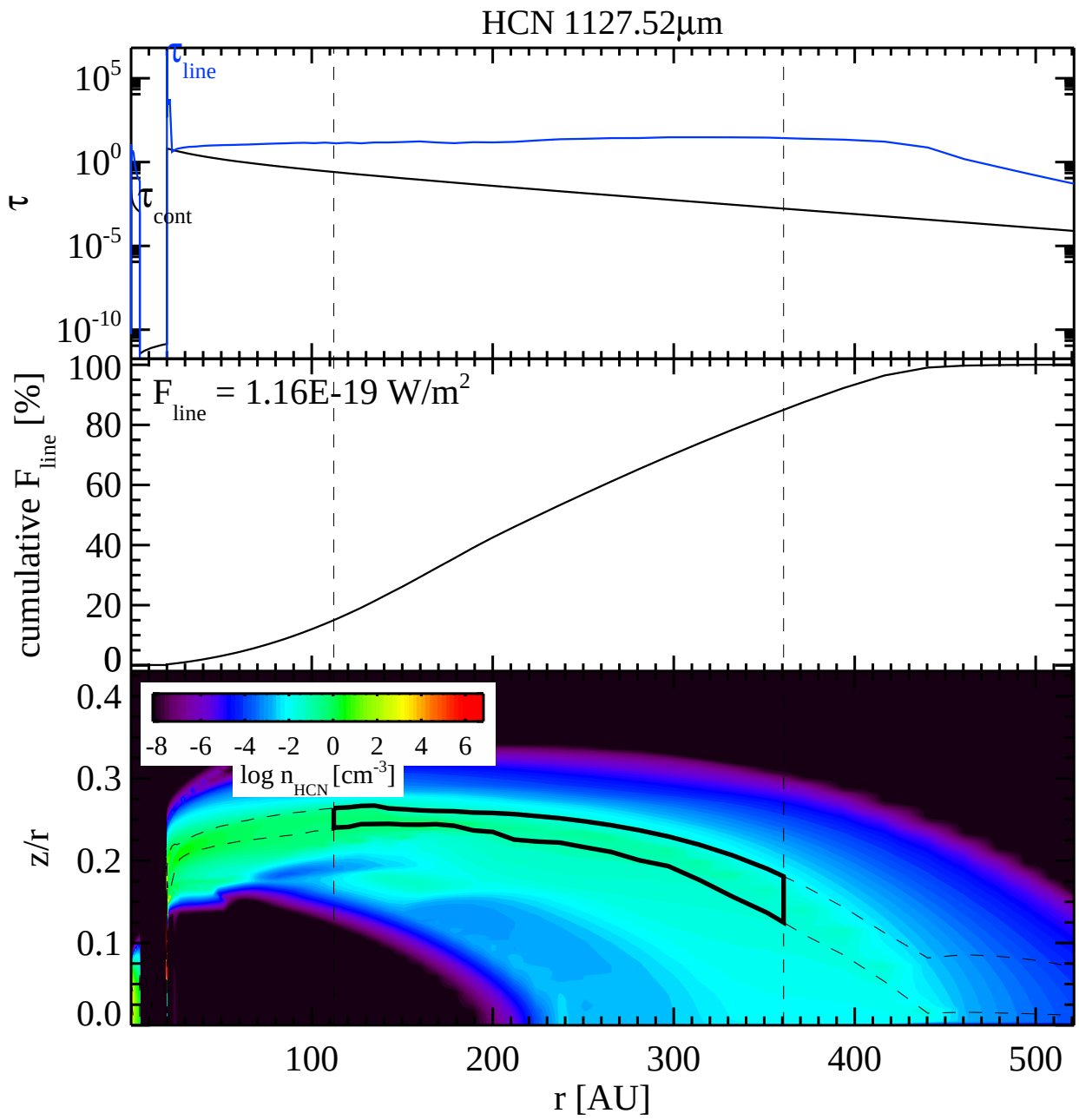

CH+ 179.59µm
τ
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
100
80
60
40
20
0
F_{line} = 3.91E-20 W/m^2
z/r
0.4
0.3
0.2
0.1
0.0
-10 -8 -6 -4 -2 0 2
log n_{CH+} [cm^{-3}]
1
10
100
r [AU]

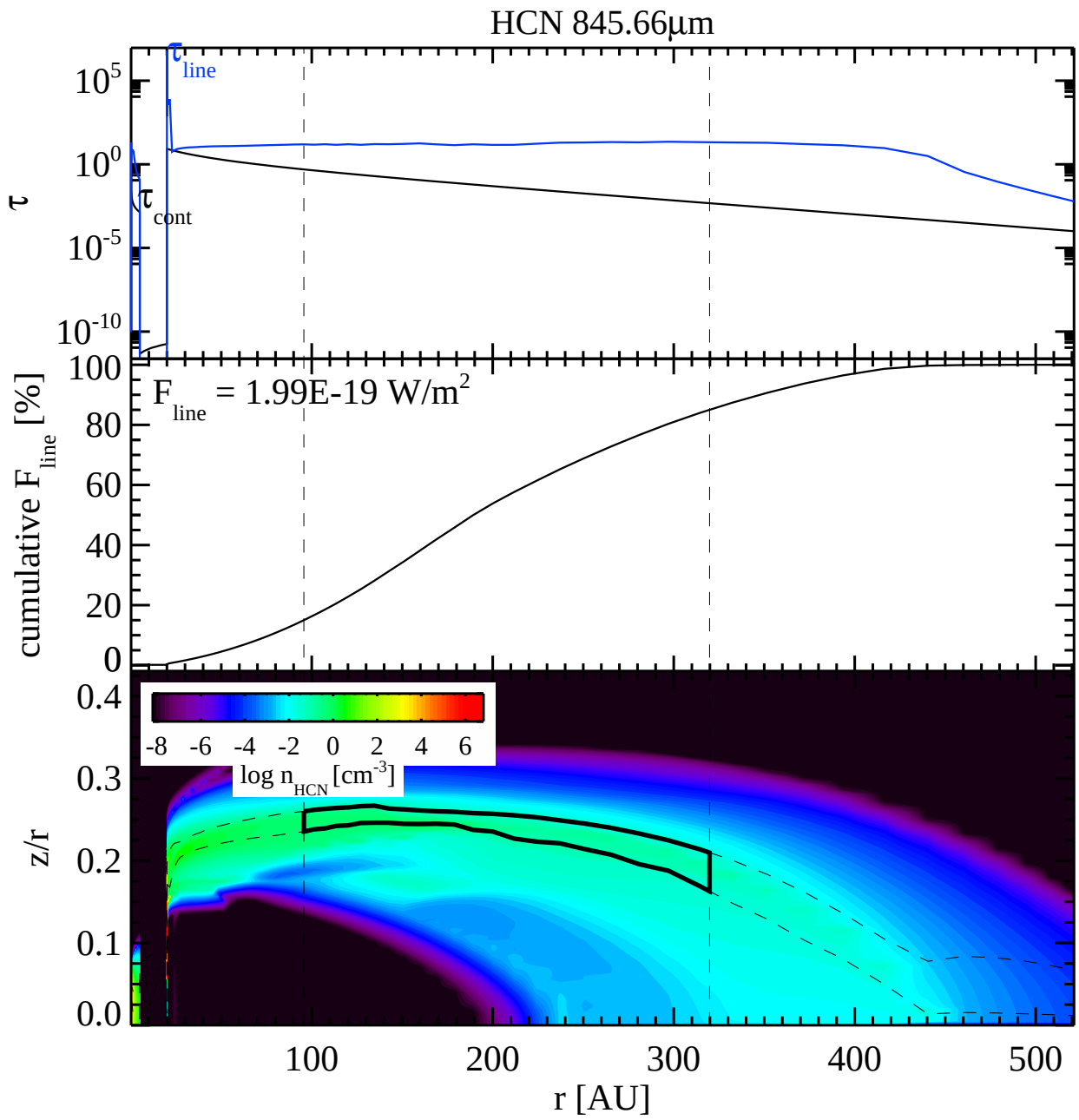

CH+ 90.01µm
τ
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
100
80
60
40
20
0
F_{line} = 5.12E-20 W/m^2
z/r
0.4
0.3
0.2
0.1
0.0
-10 -8 -6 -4 -2 0 2
log n_{CH+} [cm^{-3}]
1
10
100
r [AU]

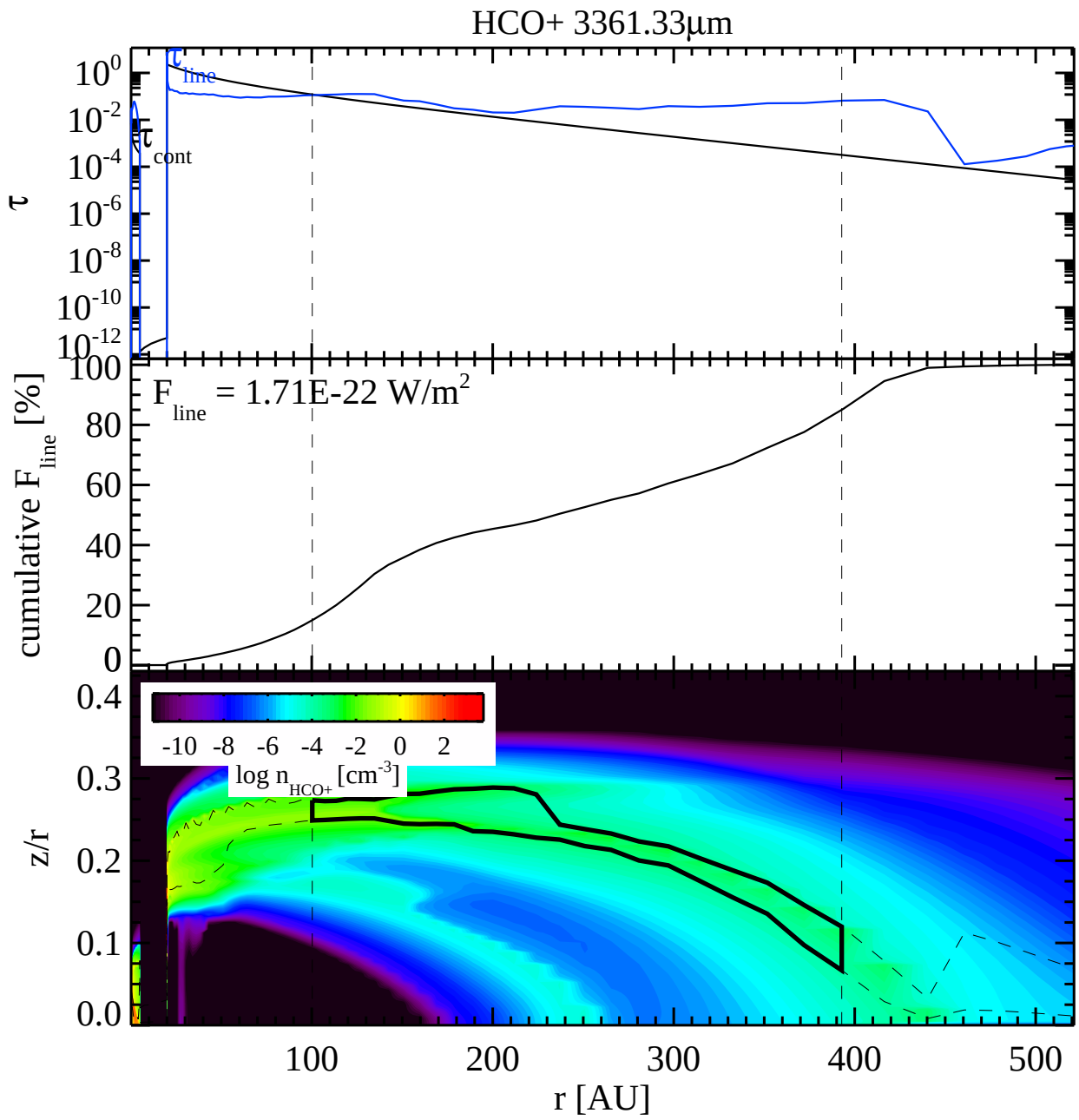

CH+ 72.14μm
τ
τ cont
τ line
cumulative F line [%]
F line = 3.20E-20 W/m2
log n CH+ [cm-3]
-10 -8 -6 -4 -2 0 2
z/r
r [AU]
1
10
100

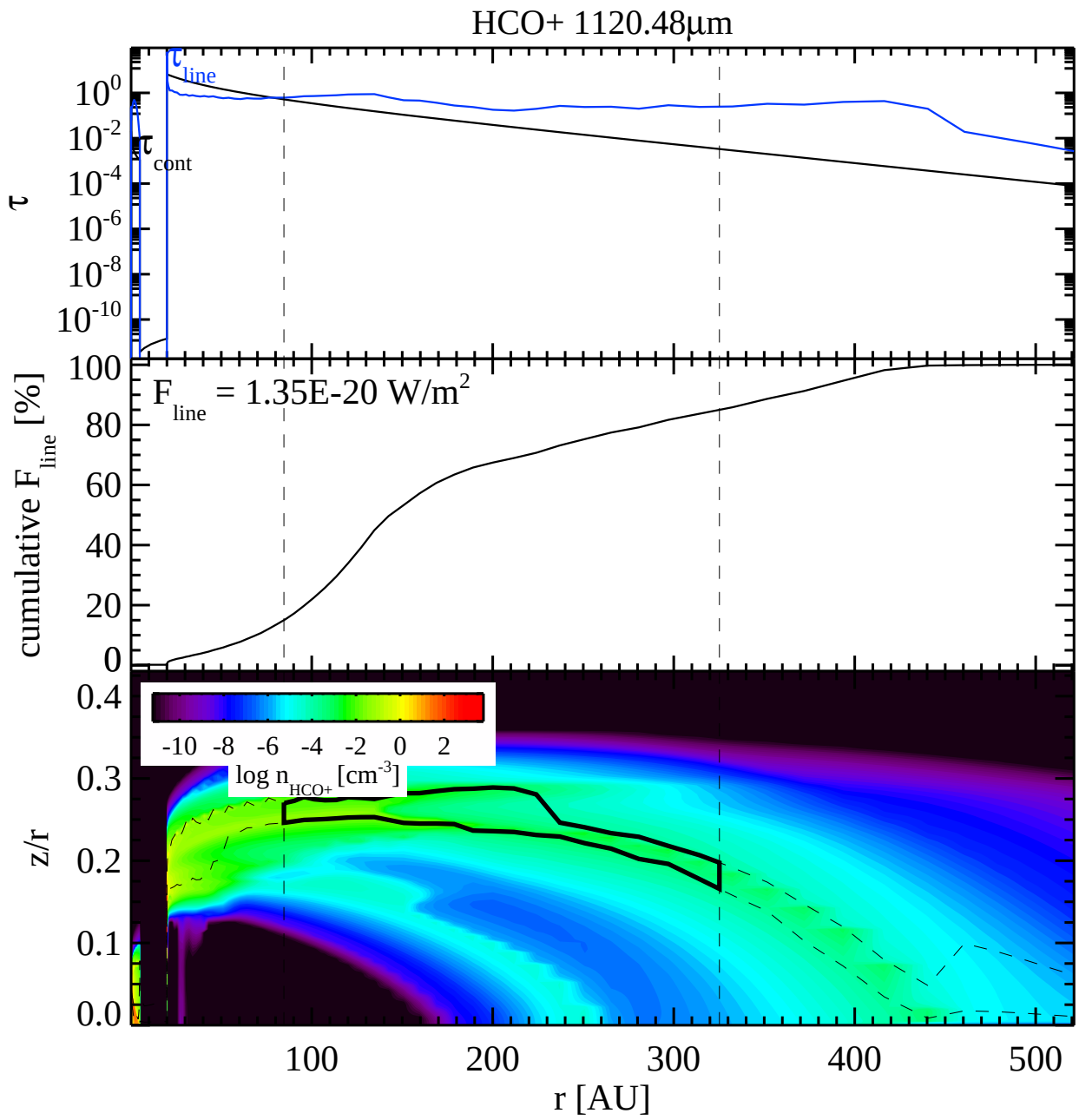

CN 1321.39µm
τ
τ line
τ cont
cumulative F line [%]
F line = 4.14E-20 W/m2
log n CN [cm-3]
z/r
r [AU]

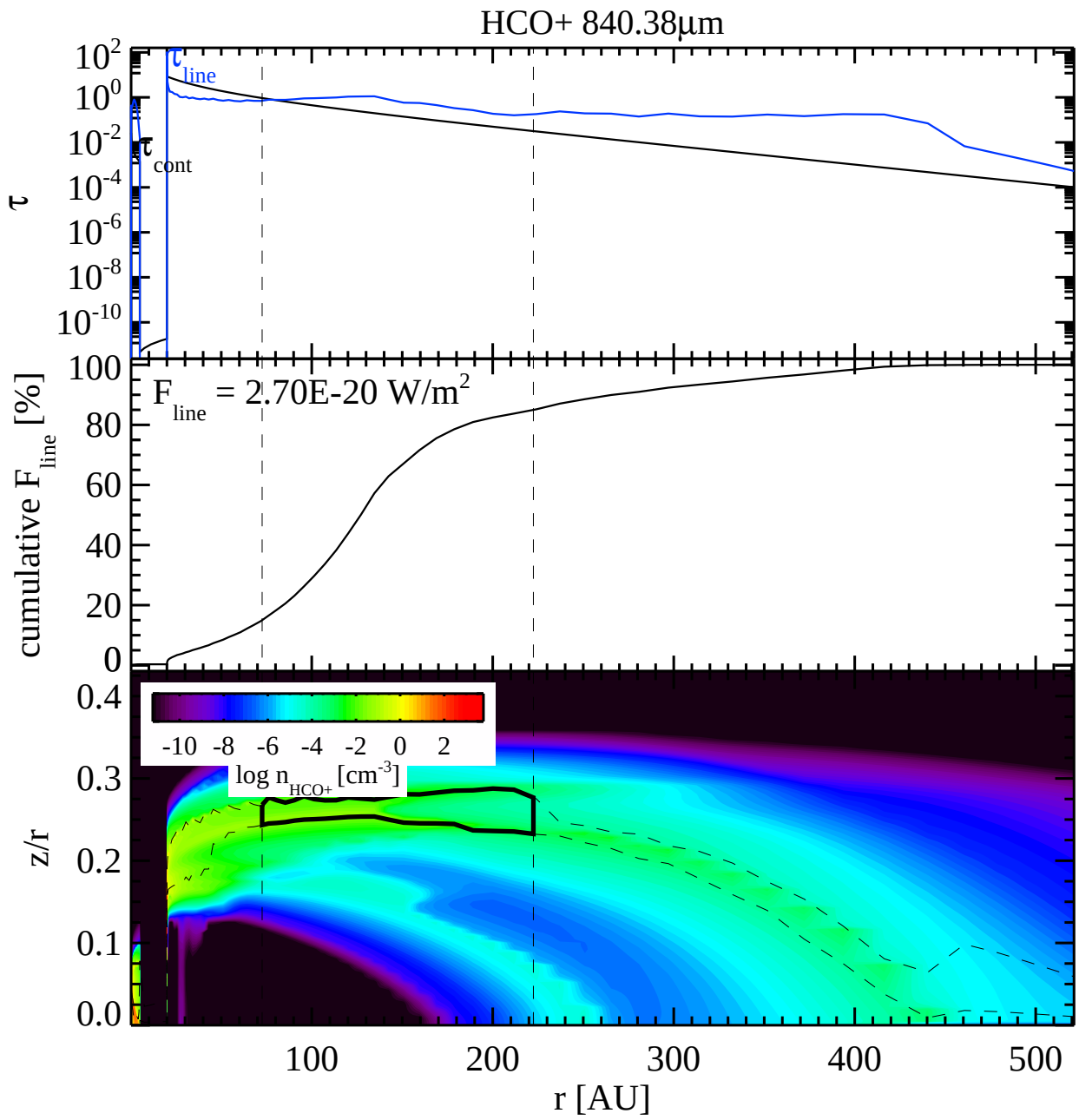

CN 528.78µm
τ
τ line
τ cont
cumulative F line [%]
F line = 7.41E-20 W/m2
log n CN [cm-3]
z/r
r [AU]

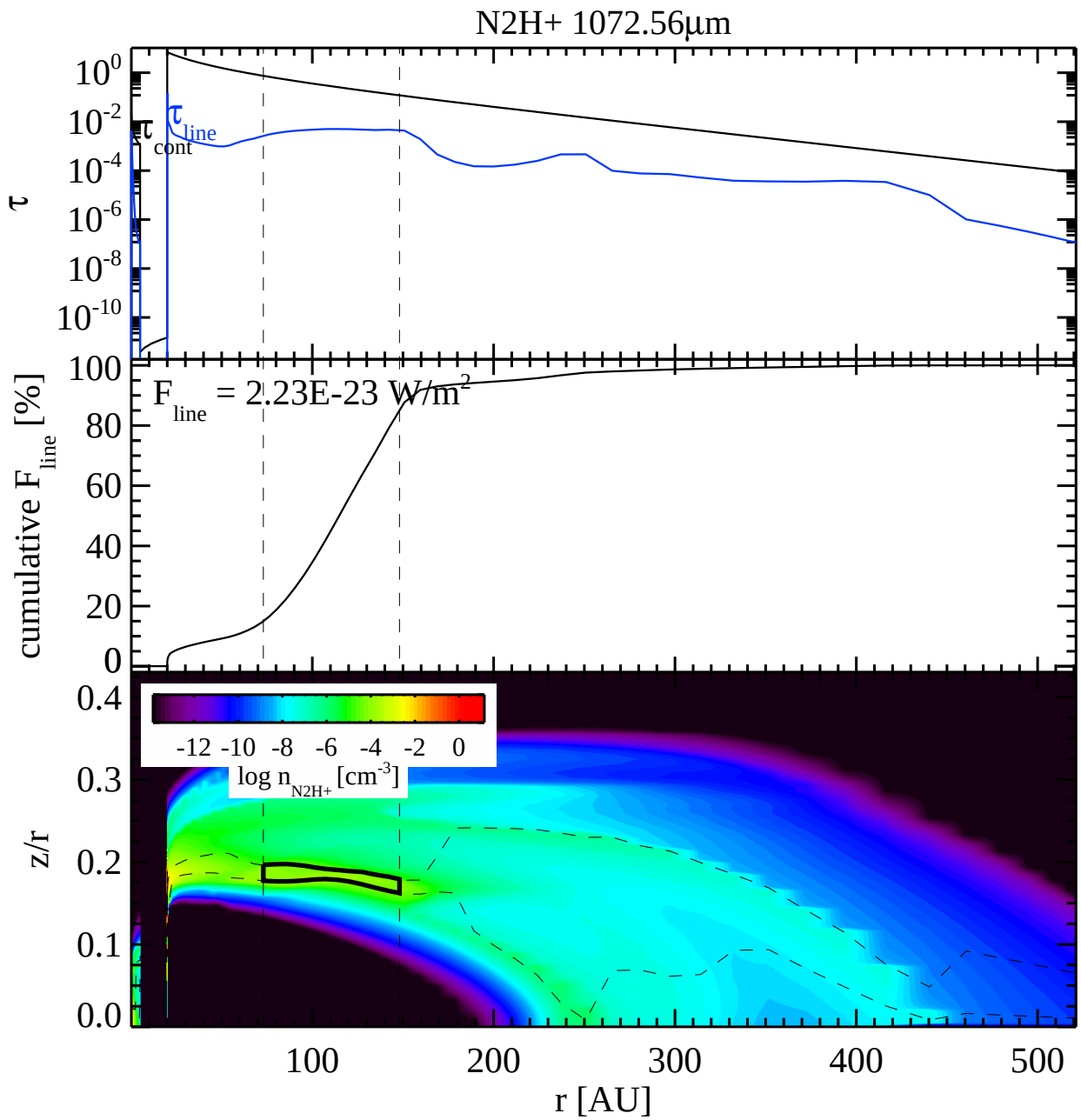

HCN 1127.52µm
τ
τ line
τ cont
10^5
10^0
10^-5
10^-10
cumulative F line [%]
F line = 1.16E-19 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-8 -6 -4 -2 0 2 4 6
log n HCN [cm^-3]
100
200
300
400
500
r [AU]

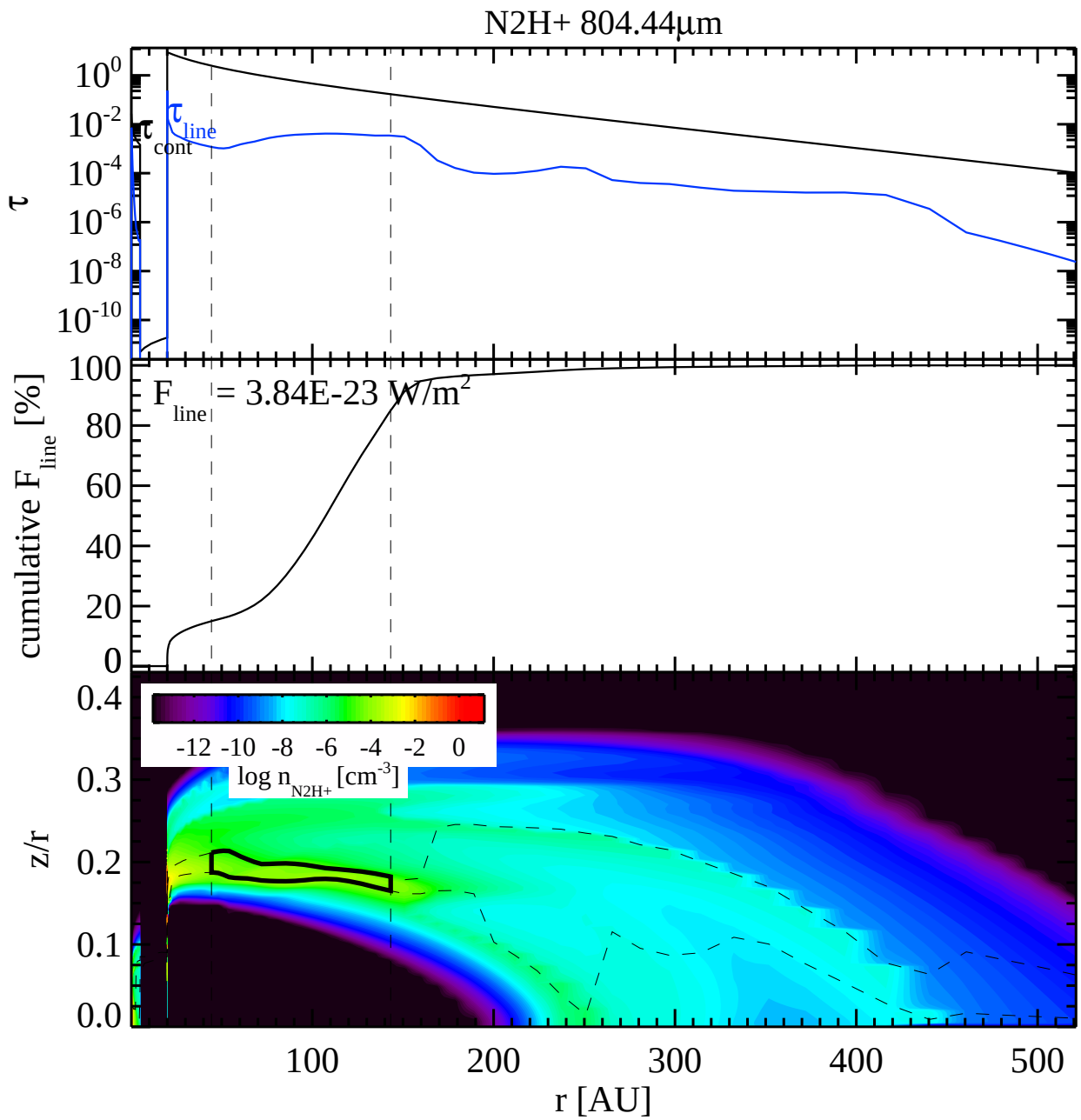

HCN 845.66µm
τ
line
cont
10^{5}
10^{0}
10^{-5}
10^{-10}
cumulative F_{line} [%]
F_{line} = 1.99E-19 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-8 -6 -4 -2 0 2 4 6
log n_{HCN} [cm^{-3}]
100
200
300
400
500
r [AU]

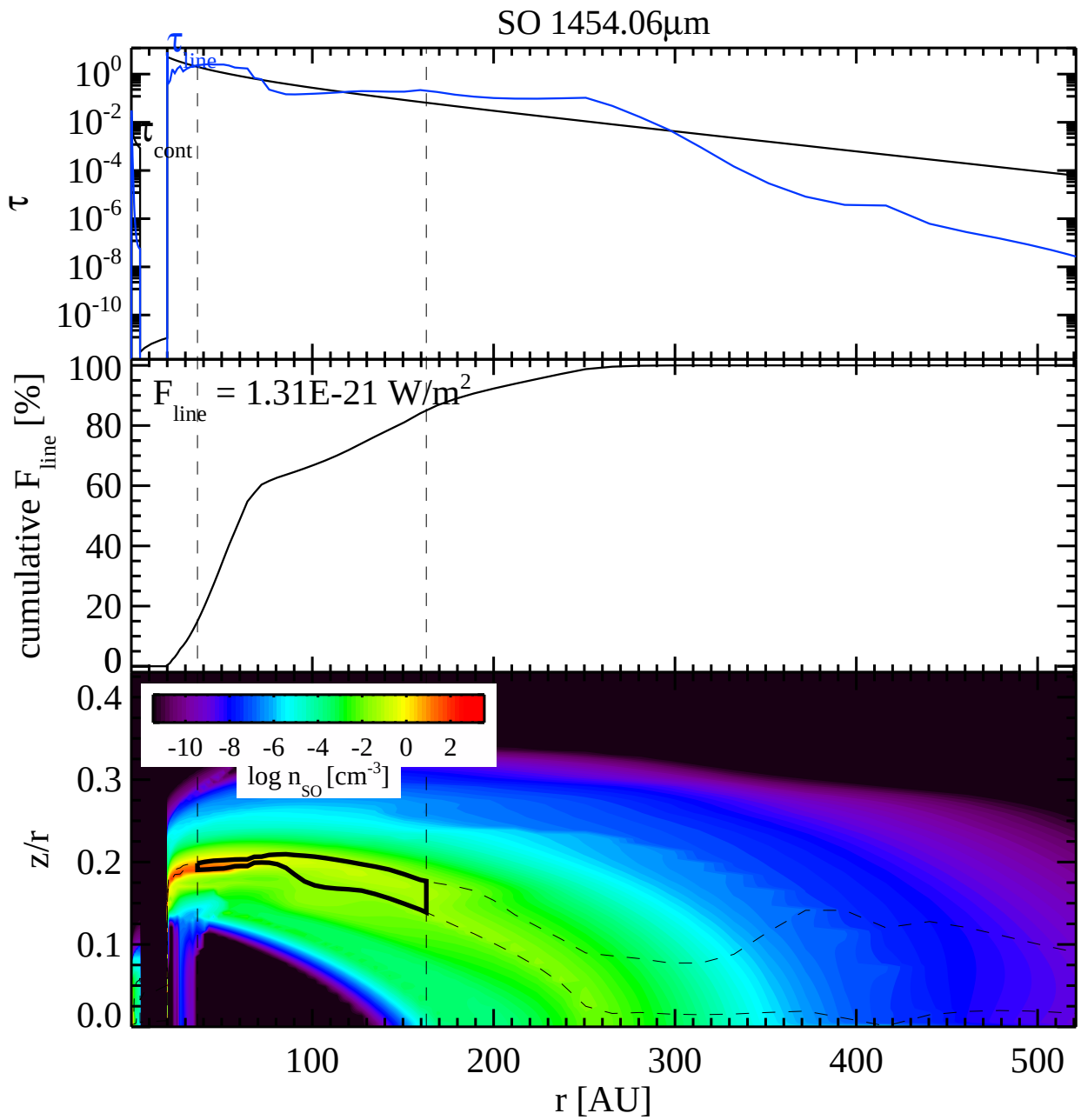

HCO+ 3361.33µm
τ
τ line
τ cont
cumulative F line [%]
F line = 1.71E-22 W/m2
log n HCO+ [cm-3]
z/r
r [AU]

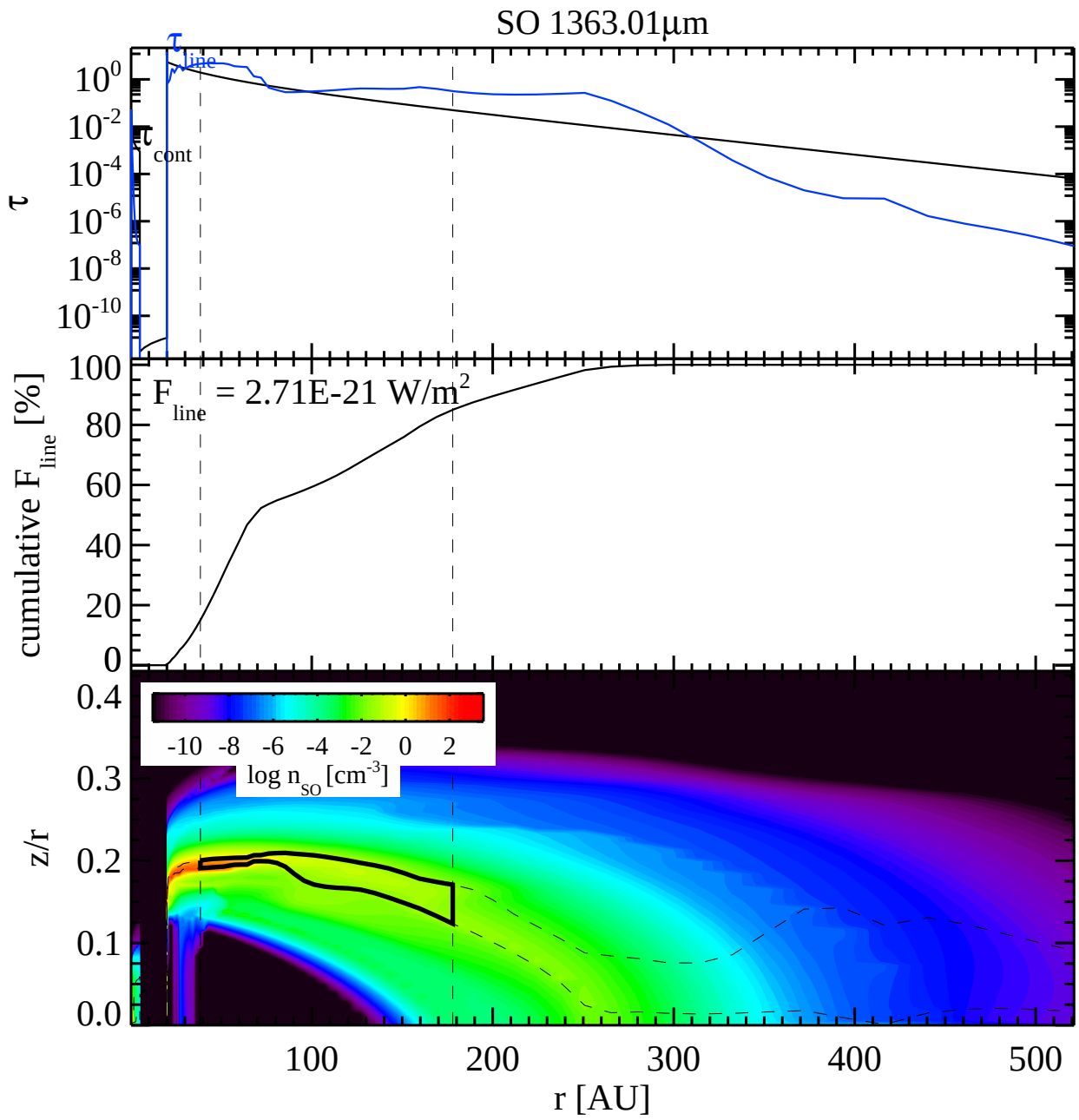

HCO+ 1120.48µm
τ
τ line
τ cont
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 1.35E-20 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-10 -8 -6 -4 -2 0 2
log n HCO+ [cm^-3]
100
200
300
400
500
r [AU]

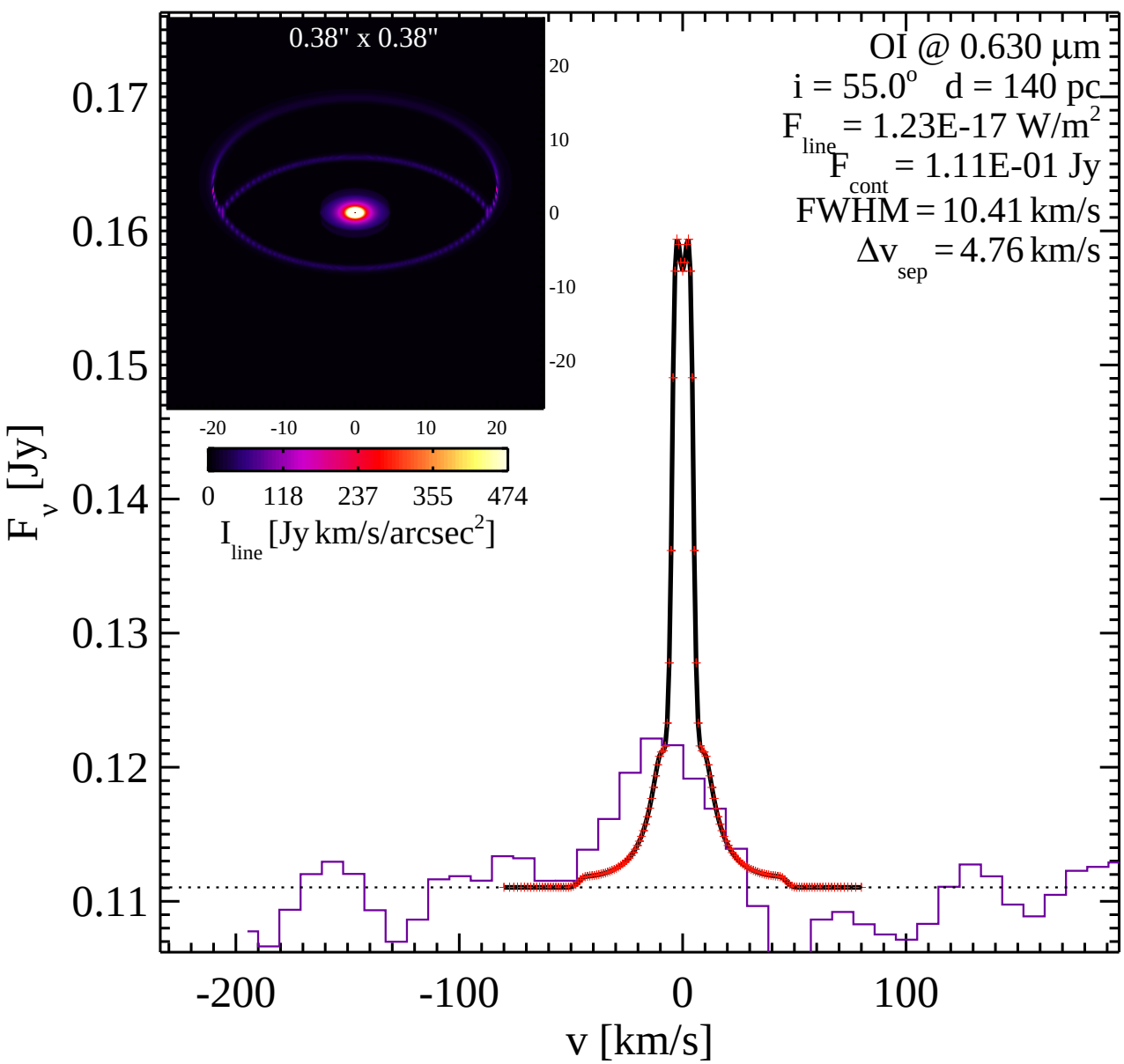

HCO+ 840.38µm
τ
τ line
τ cont
cumulative F line [%]
F line = 2.70E-20 W/m2
z/r
log n HCO+ [cm-3]
-10 -8 -6 -4 -2 0 2
r [AU]

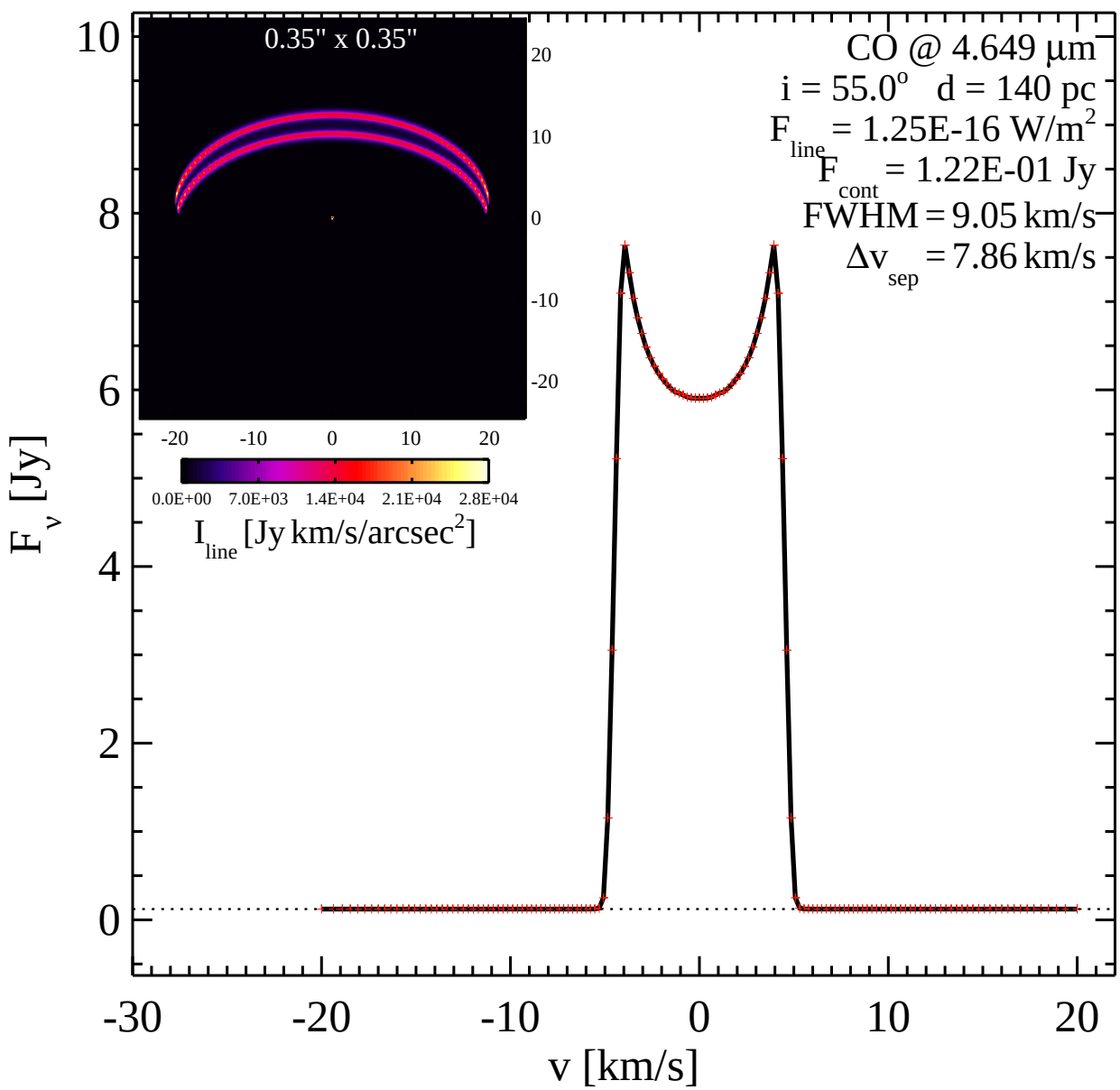

N2H+ 1072.56µm
τ
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
100
80
60
40
20
0
F_{line} = 2.23E-23 W/m^2
z/r
0.4
0.3
0.2
0.1
0.0
-12 -10 -8 -6 -4 -2 0
log n_{N2H+} [cm^{-3}]
100
200
300
400
500
r [AU]

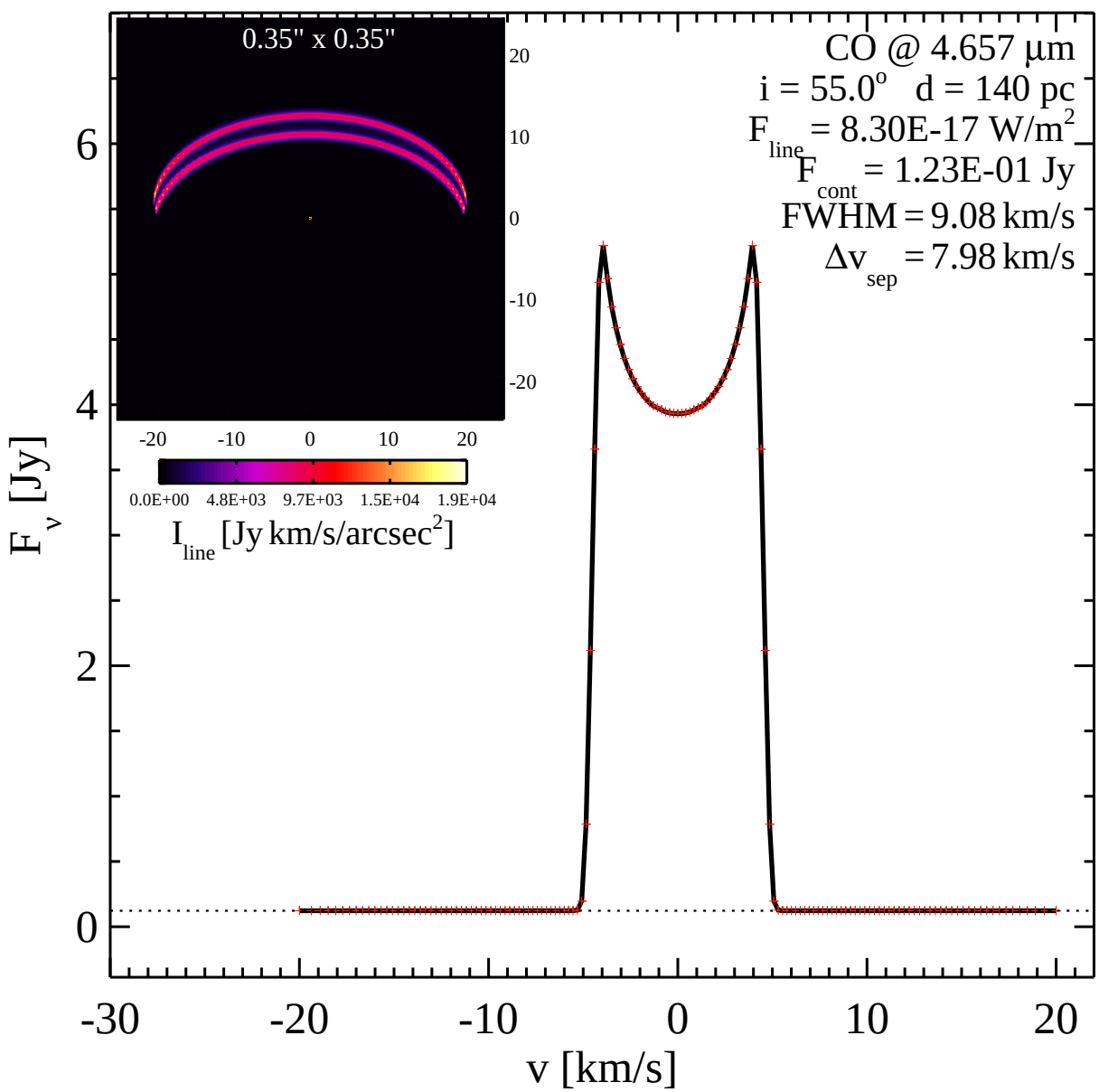

N2H+ 804.44µm
τ
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
τ_{cont}
τ_{line}
cumulative F_{line} [%]
100
80
60
40
20
0
F_{line} = 3.84E-23 W/m^2
z/r
0.4
0.3
0.2
0.1
0.0
-12 -10 -8 -6 -4 -2 0
log n_{N2H+} [cm^{-3}]
100
200
300
400
500
r [AU]

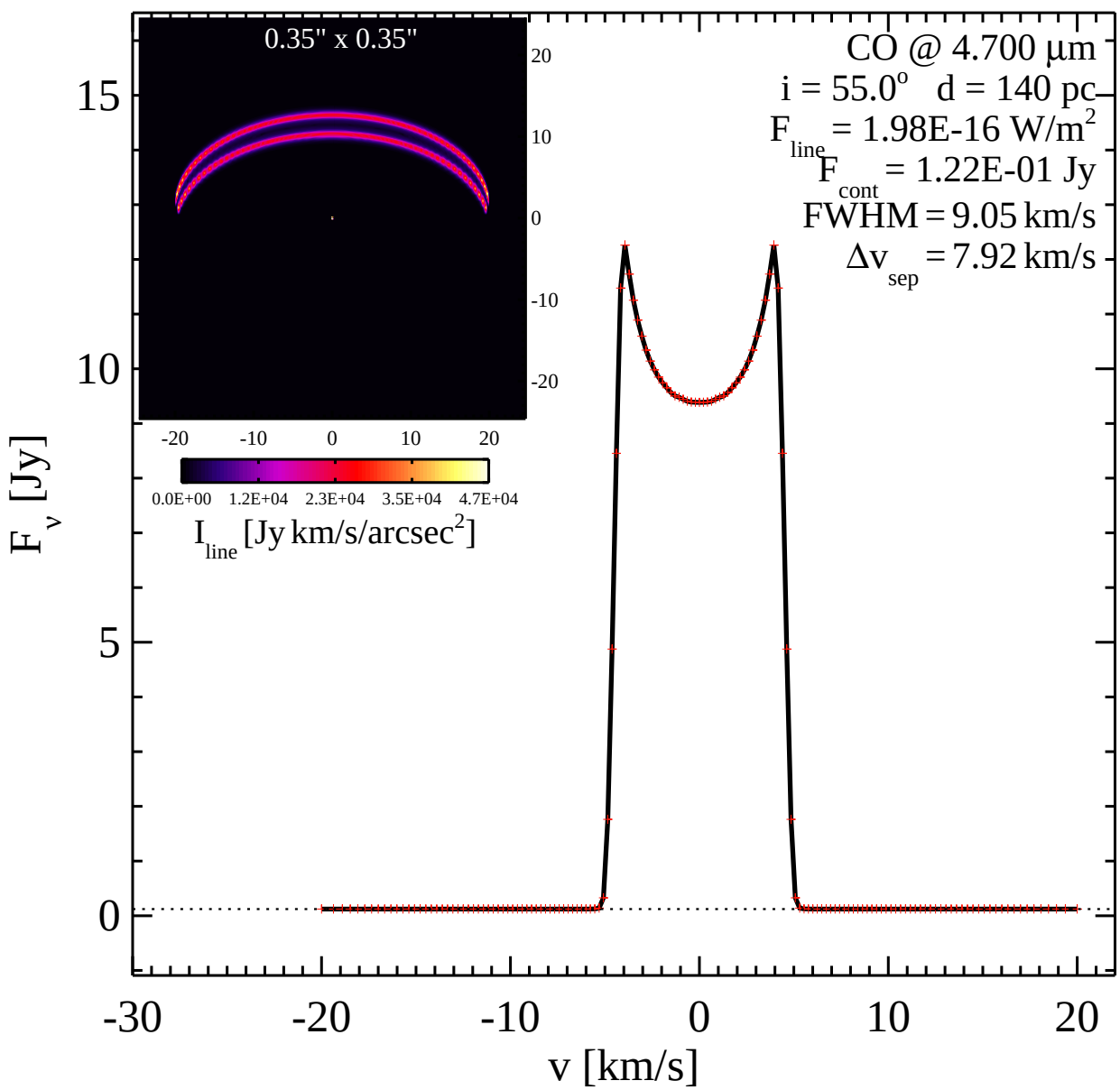

SO 1454.06µm
τ
τ line
τ cont
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 1.31E-21 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-10 -8 -6 -4 -2 0 2
log n SO [cm^-3]
100
200
300
400
500
r [AU]

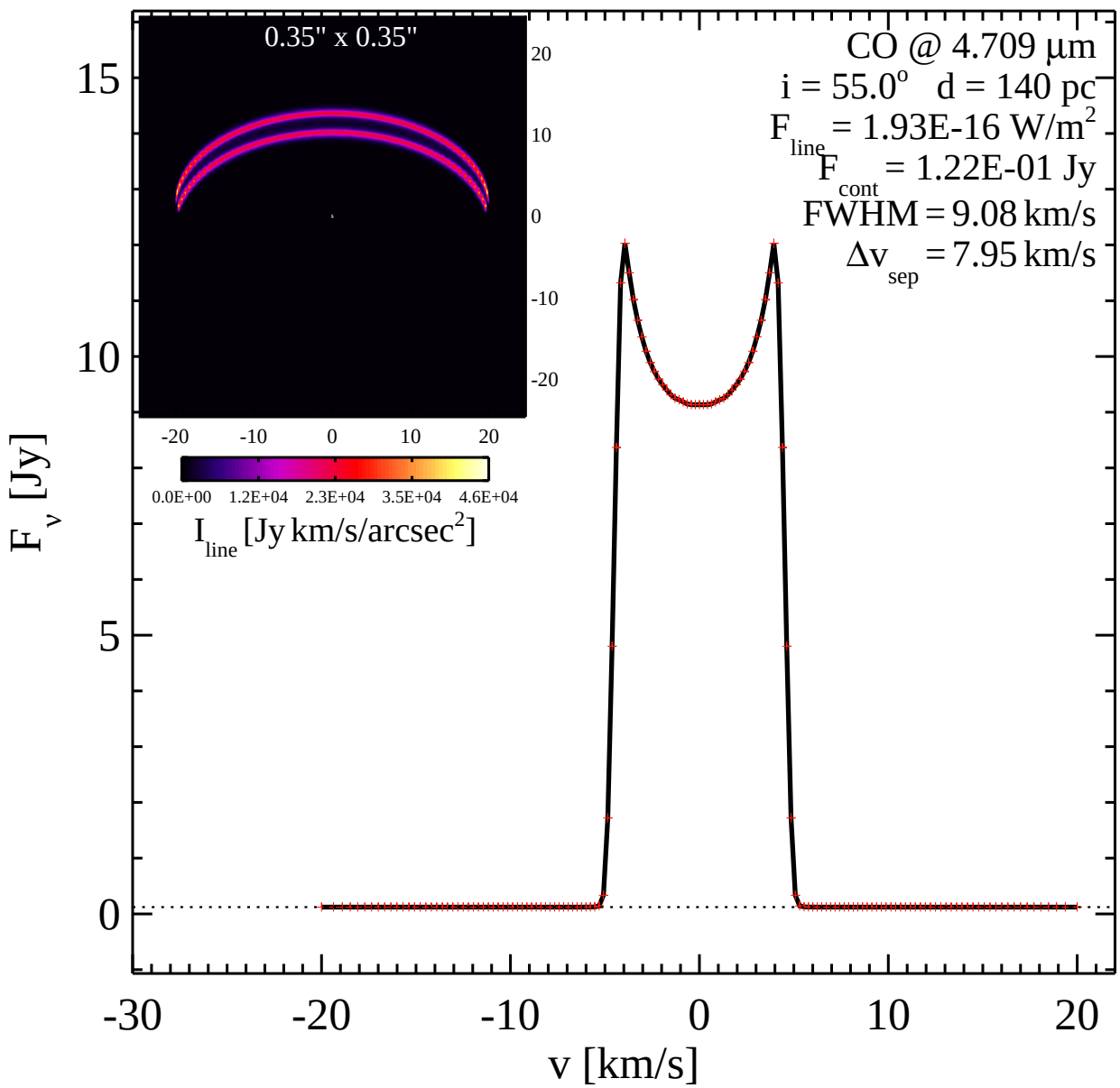

SO 1363.01µm
τ
τ line
τ cont
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
cumulative F line [%]
F line = 2.71E-21 W/m^2
100
80
60
40
20
0
z/r
0.4
0.3
0.2
0.1
0.0
-10 -8 -6 -4 -2 0 2
log n SO [cm^-3]
100
200
300
400
500
r [AU]

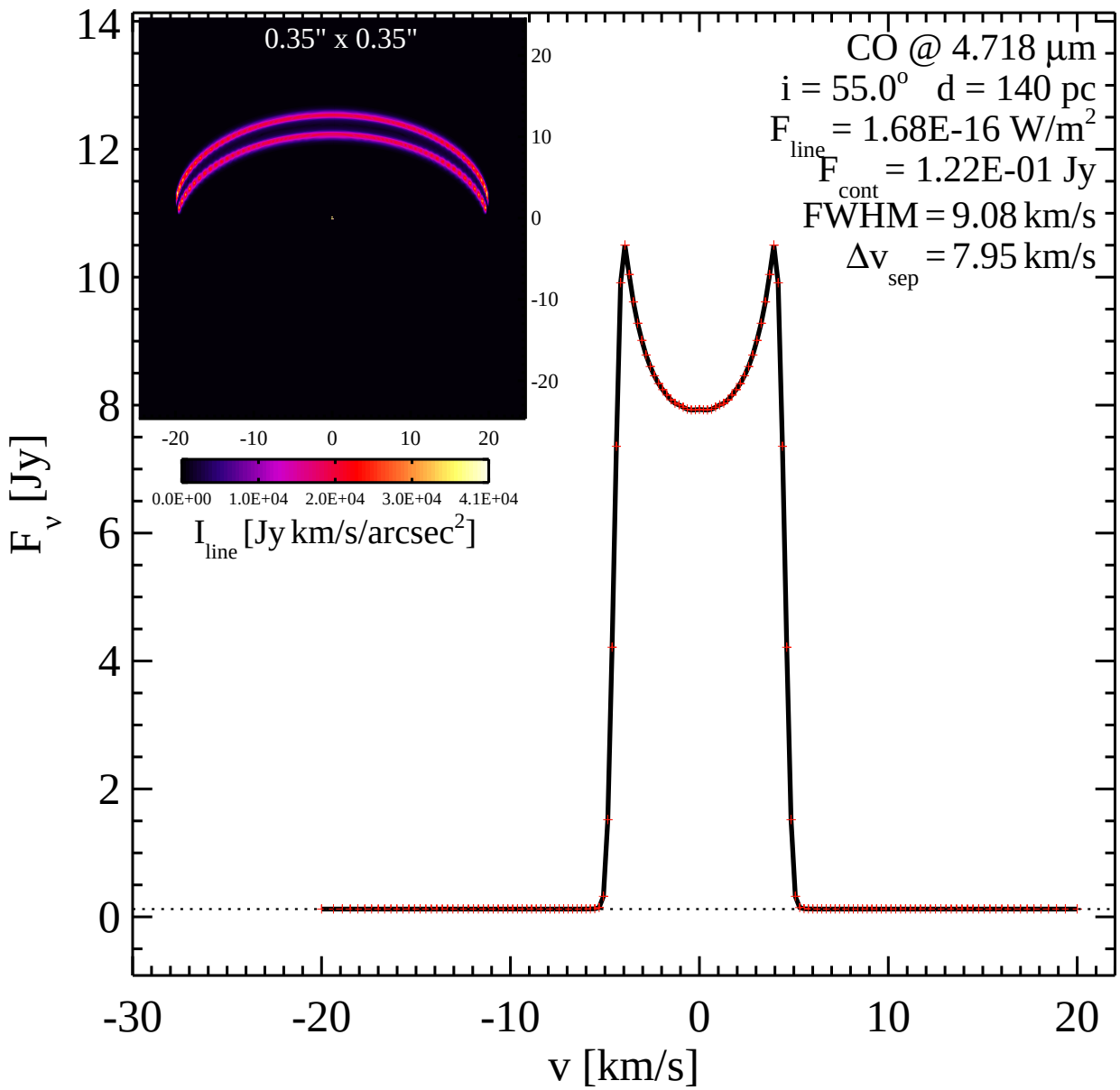

0.38" x 0.38"
20
10
0
-10
-20
-20 -10 0 10 20
0 118 237 355 474
I line [Jy km/s/arcsec2]
OI @ 0.630 µm
i = 55.0o d = 140 pc
F line = 1.23E-17 W/m2
F cont = 1.11E-01 Jy
FWHM = 10.41 km/s
Δv sep = 4.76 km/s
F v [Jy]
0.17
0.16
0.15
0.14
0.13
0.12
0.11
-200
-100
0
100
v [km/s]

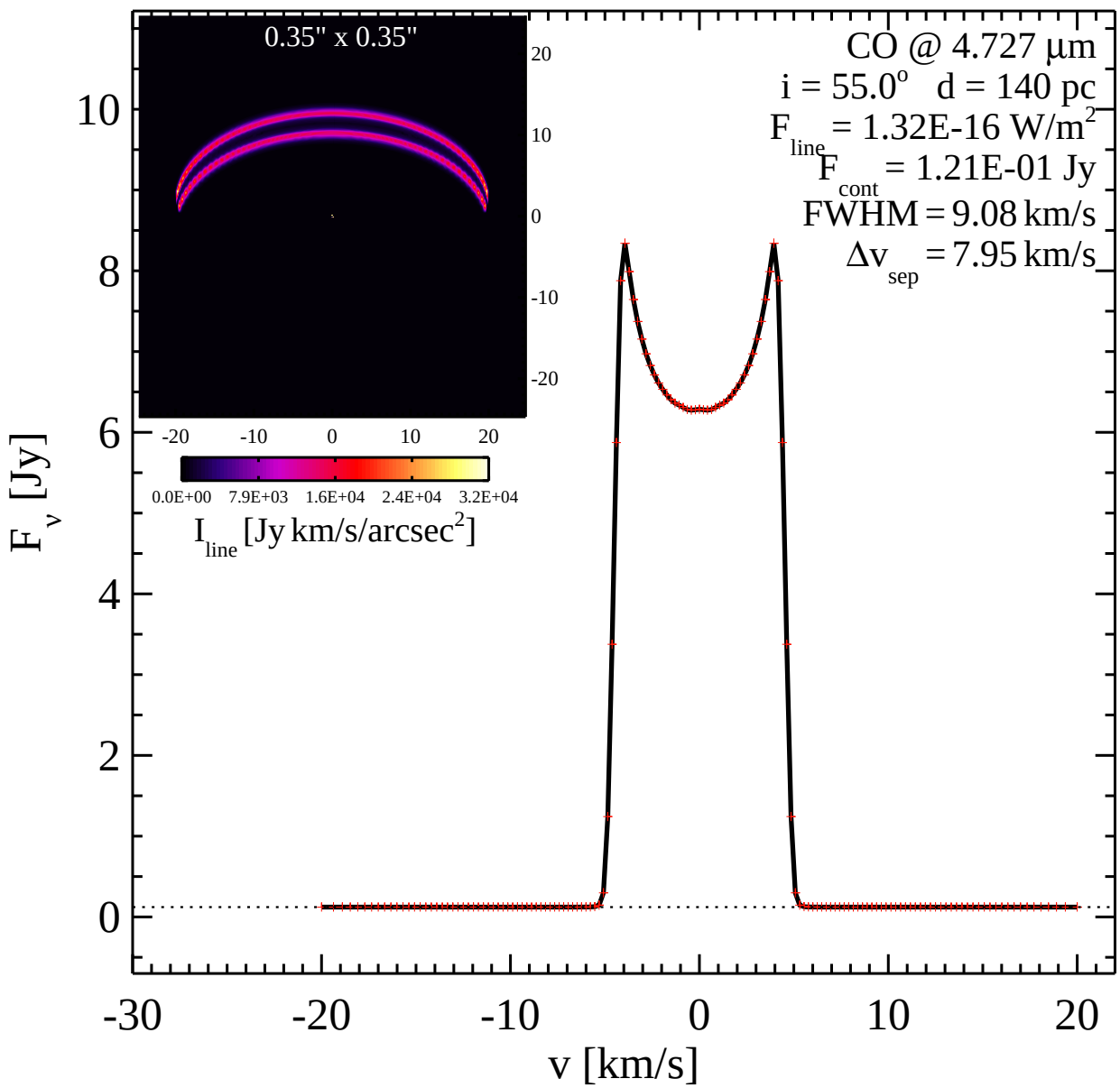

0.35" x 0.35"
20
10
0
-10
-20
-20 -10 0 10 20
0.0E+00 7.0E+03 1.4E+04 2.1E+04 2.8E+04
I line [Jy km/s/arcsec2]
CO @ 4.649 µm
i = 55.0o d = 140 pc
F line = 1.25E-16 W/m2
F cont = 1.22E-01 Jy
FWHM = 9.05 km/s
Δv sep = 7.86 km/s
F v [Jy]
10
8
6
4
2
0
-30 -20 -10 0 10 20
v [km/s]

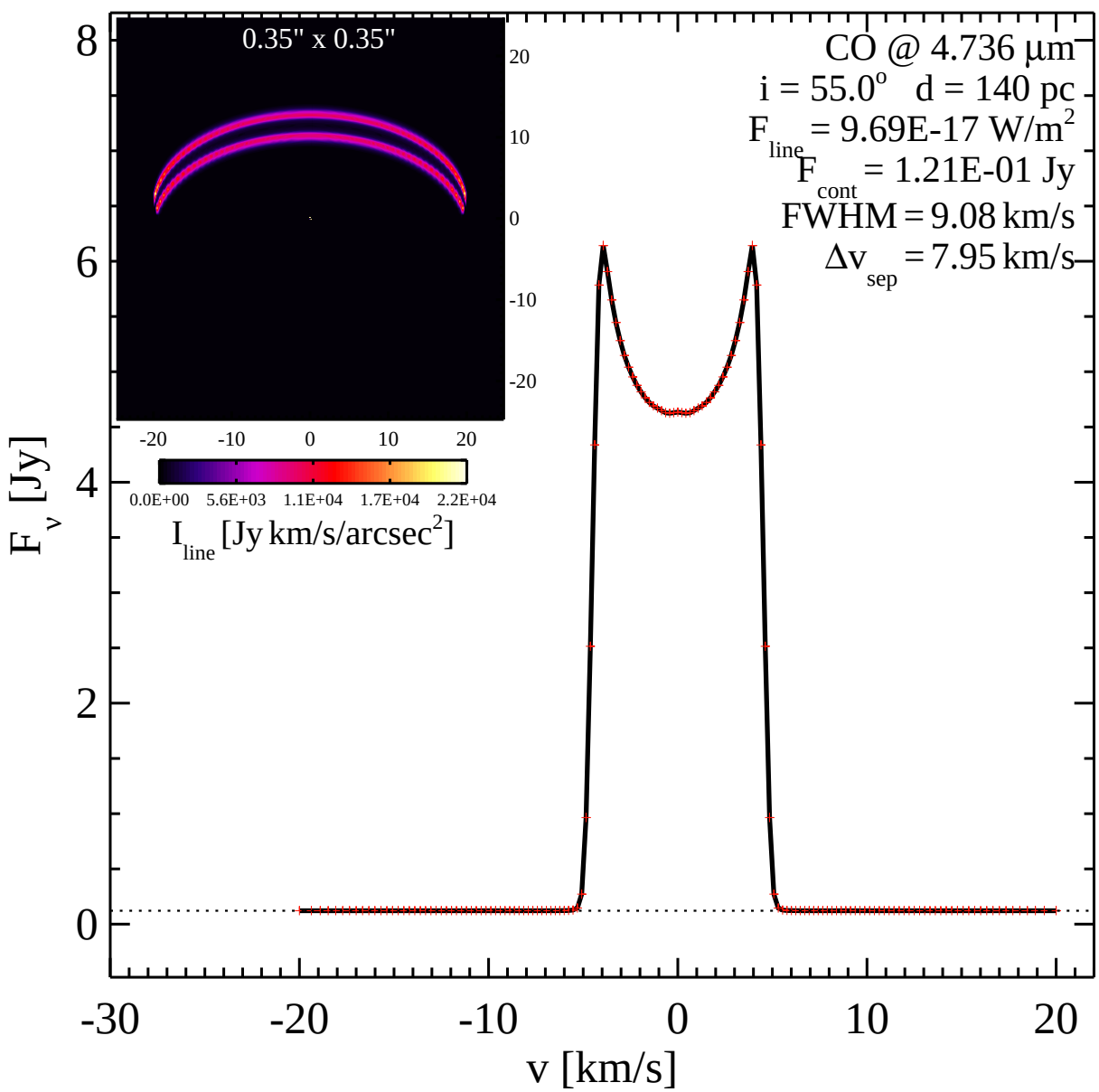

0.35" x 0.35"
20
10
0
-10
-20
-20 -10 0 10 20
0.0E+00 4.8E+03 9.7E+03 1.5E+04 1.9E+04
I line [Jy km/s/arcsec2]
CO @ 4.657 µm
i = 55.0o d = 140 pc
F line = 8.30E-17 W/m2
F cont = 1.23E-01 Jy
FWHM = 9.08 km/s
Δv sep = 7.98 km/s
F v [Jy]
0
2
4
6
-30 -20 -10 0 10 20
v [km/s]

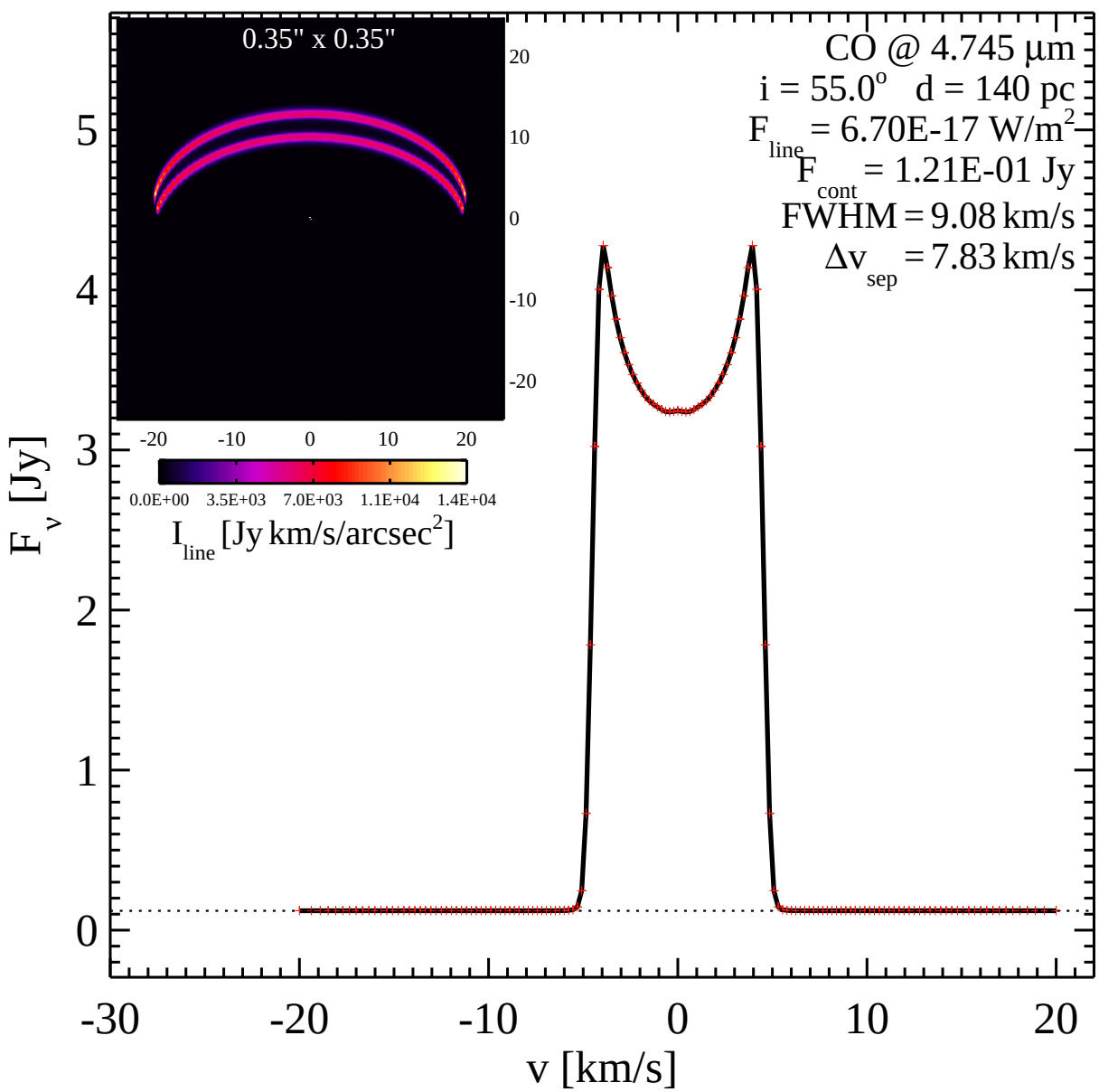

0.35" x 0.35"
20
10
0
-10
-20
-20 -10 0 10 20
0.0E+00 1.2E+04 2.3E+04 3.5E+04 4.7E+04
I line [Jy km/s/arcsec2]
CO @ 4.700 µm
i = 55.0o d = 140 pc
F line = 1.98E-16 W/m2
F cont = 1.22E-01 Jy
FWHM = 9.05 km/s
Δv sep = 7.92 km/s
F v [Jy]
15
10
5
0
-30 -20 -10 0 10 20
v [km/s]

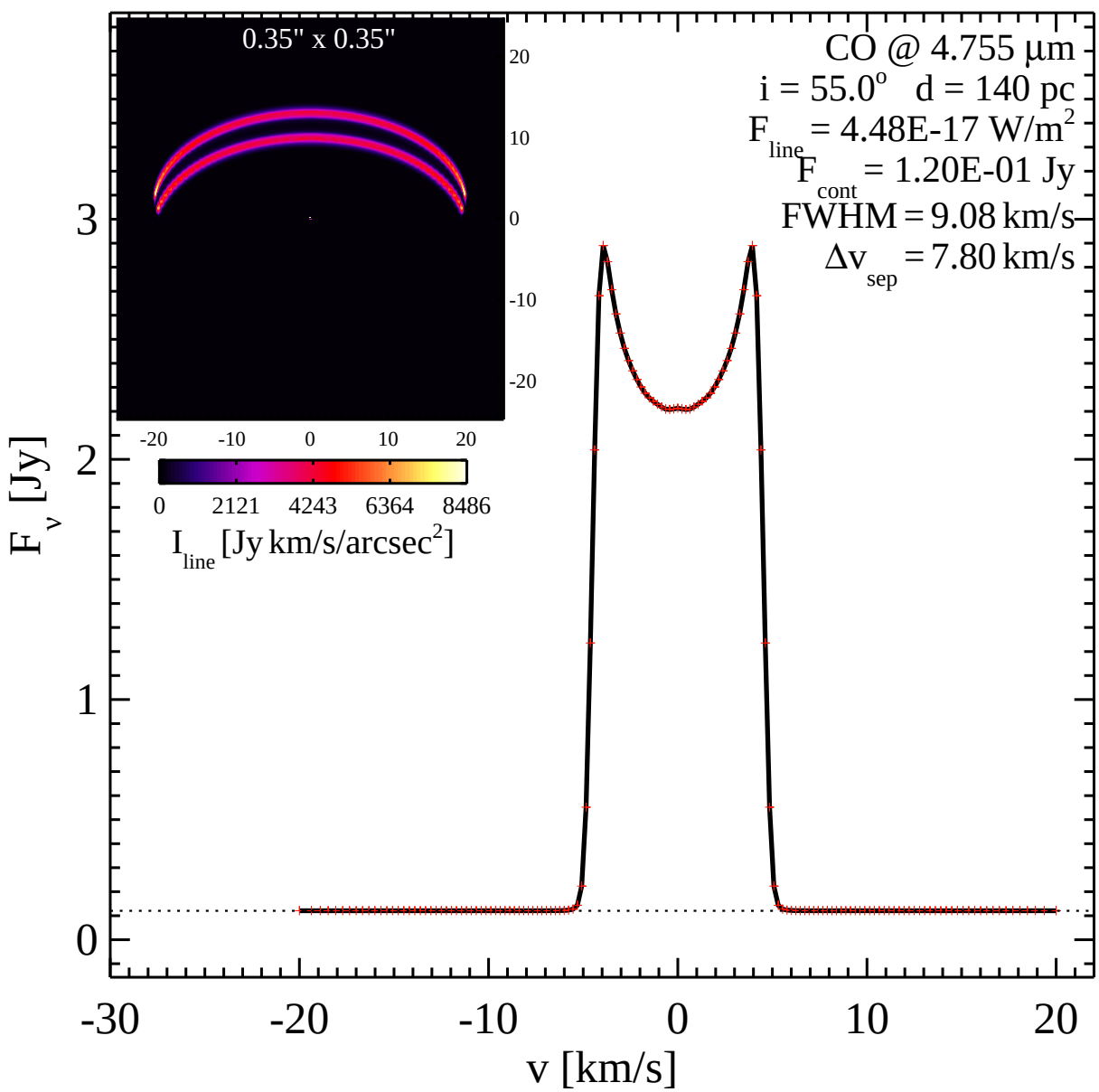

0.35" x 0.35"
CO @ 4.709 µm
i = 55.0° d = 140 pc
F line = 1.93E-16 W/m2
F cont = 1.22E-01 Jy
FWHM = 9.08 km/s
Δv sep = 7.95 km/s
F v [Jy]
v [km/s]
I line [Jy km/s/arcsec2]
0.0E+00 1.2E+04 2.3E+04 3.5E+04 4.6E+04

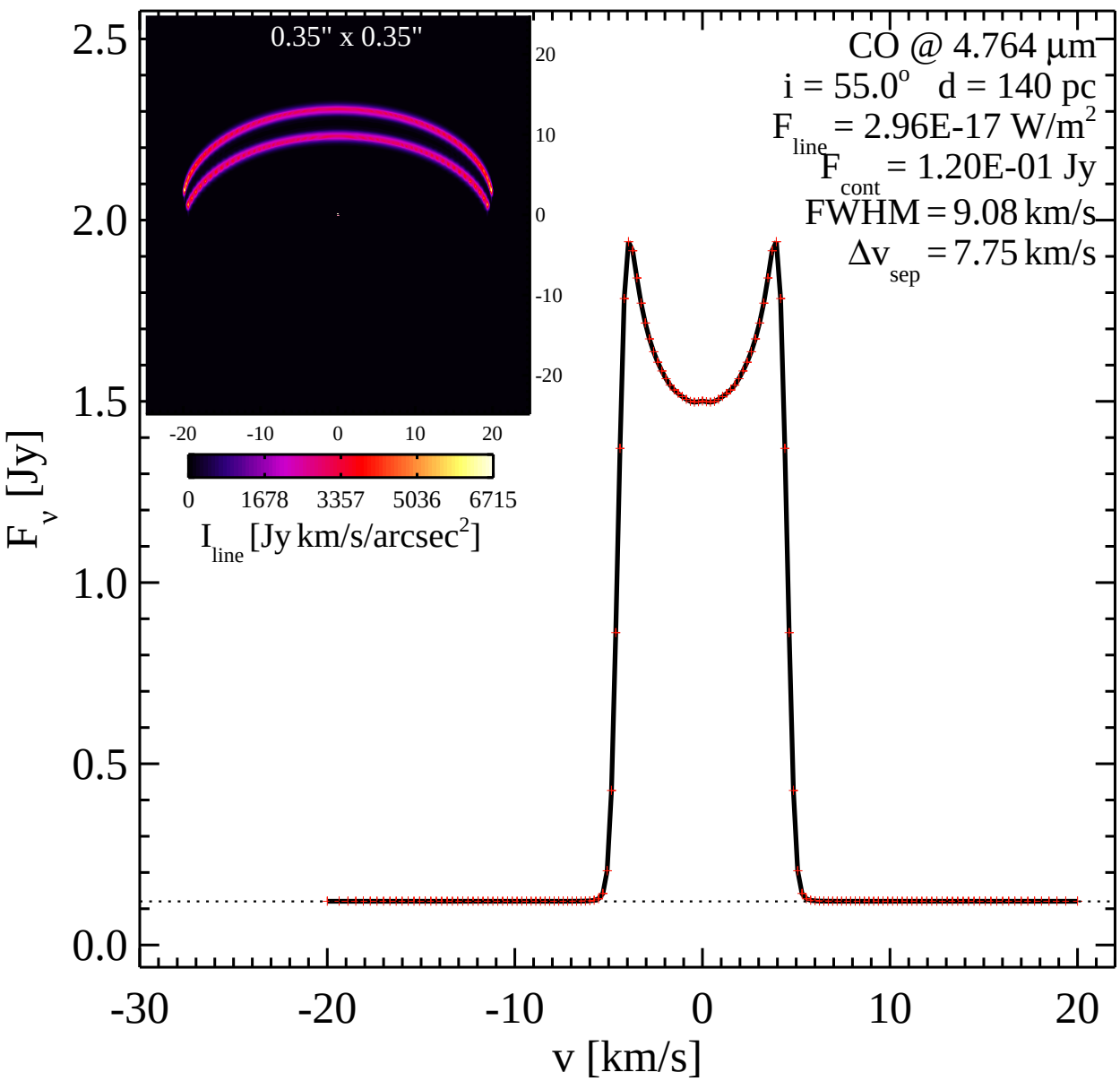

0.35" x 0.35"
20
10
0
-10
-20
-20 -10 0 10 20
0.0E+00 1.0E+04 2.0E+04 3.0E+04 4.1E+04
I line [Jy km/s/arcsec2]
CO @ 4.718 µm
i = 55.0o d = 140 pc
F line = 1.68E-16 W/m2
F cont = 1.22E-01 Jy
FWHM = 9.08 km/s
Δv sep = 7.95 km/s
F v [Jy]
14
12
10
8
6
4
2
0
-30 -20 -10 0 10 20
v [km/s]

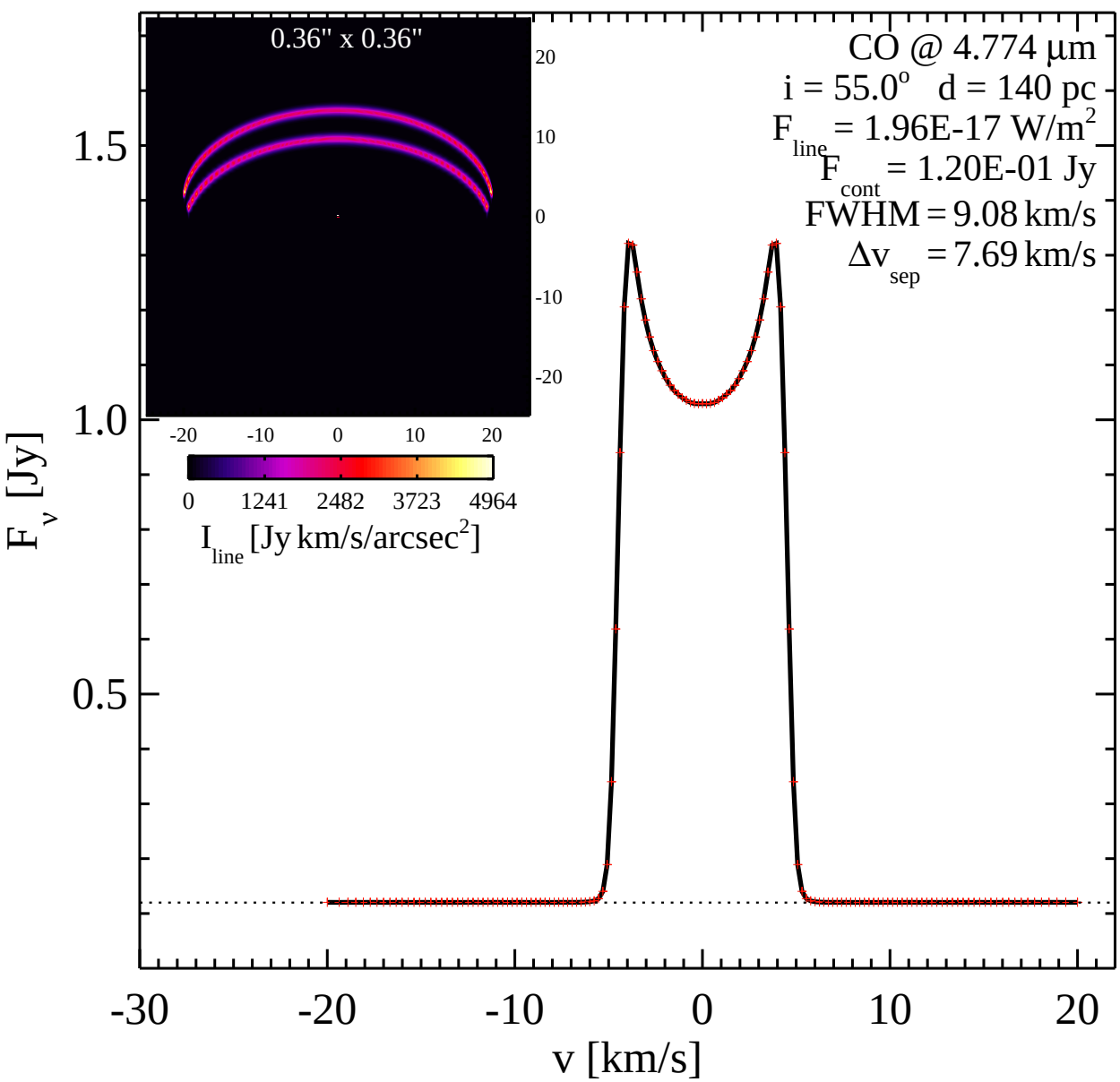

0.35" x 0.35"
20
10
0
-10
-20
-20
-10
0
10
20
0.0E+00
7.9E+03
1.6E+04
2.4E+04
3.2E+04
I line [Jy km/s/arcsec2]
CO @ 4.727 µm
i = 55.0o d = 140 pc
F line = 1.32E-16 W/m2
F cont = 1.21E-01 Jy
FWHM = 9.08 km/s
Δv sep = 7.95 km/s
F v [Jy]
0
2
4
6
8
10
-30
-20
-10
0
10
20
v [km/s]

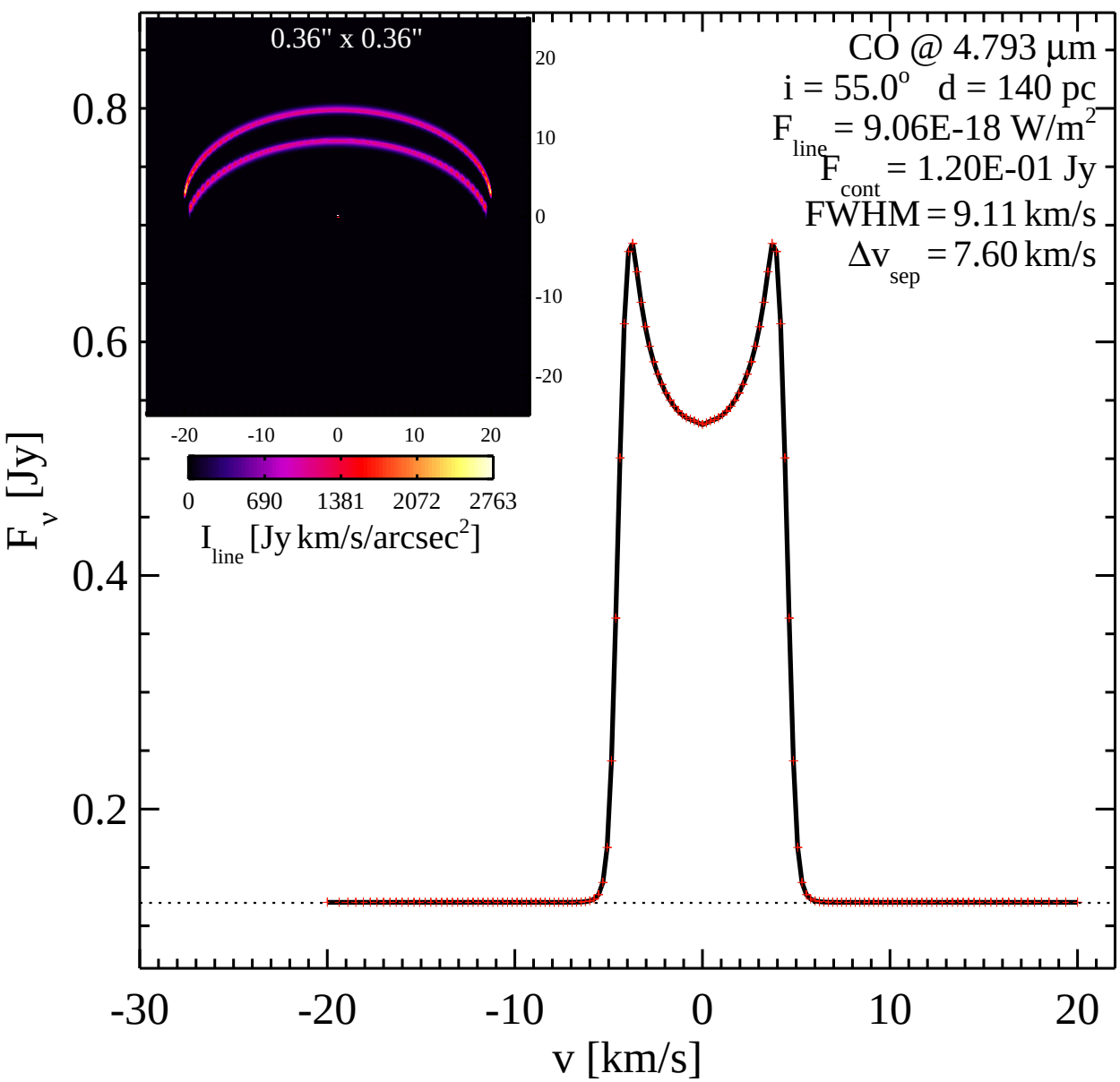

0.35" x 0.35"
20
10
0
-10
-20
-20 -10 0 10 20
0.0E+00 5.6E+03 1.1E+04 1.7E+04 2.2E+04
I line [Jy km/s/arcsec2]
CO @ 4.736 µm
i = 55.0o d = 140 pc
F line = 9.69E-17 W/m2
F cont = 1.21E-01 Jy
FWHM = 9.08 km/s
Δv sep = 7.95 km/s
F v [Jy]
8
6
4
2
0
-30 -20 -10 0 10 20
v [km/s]

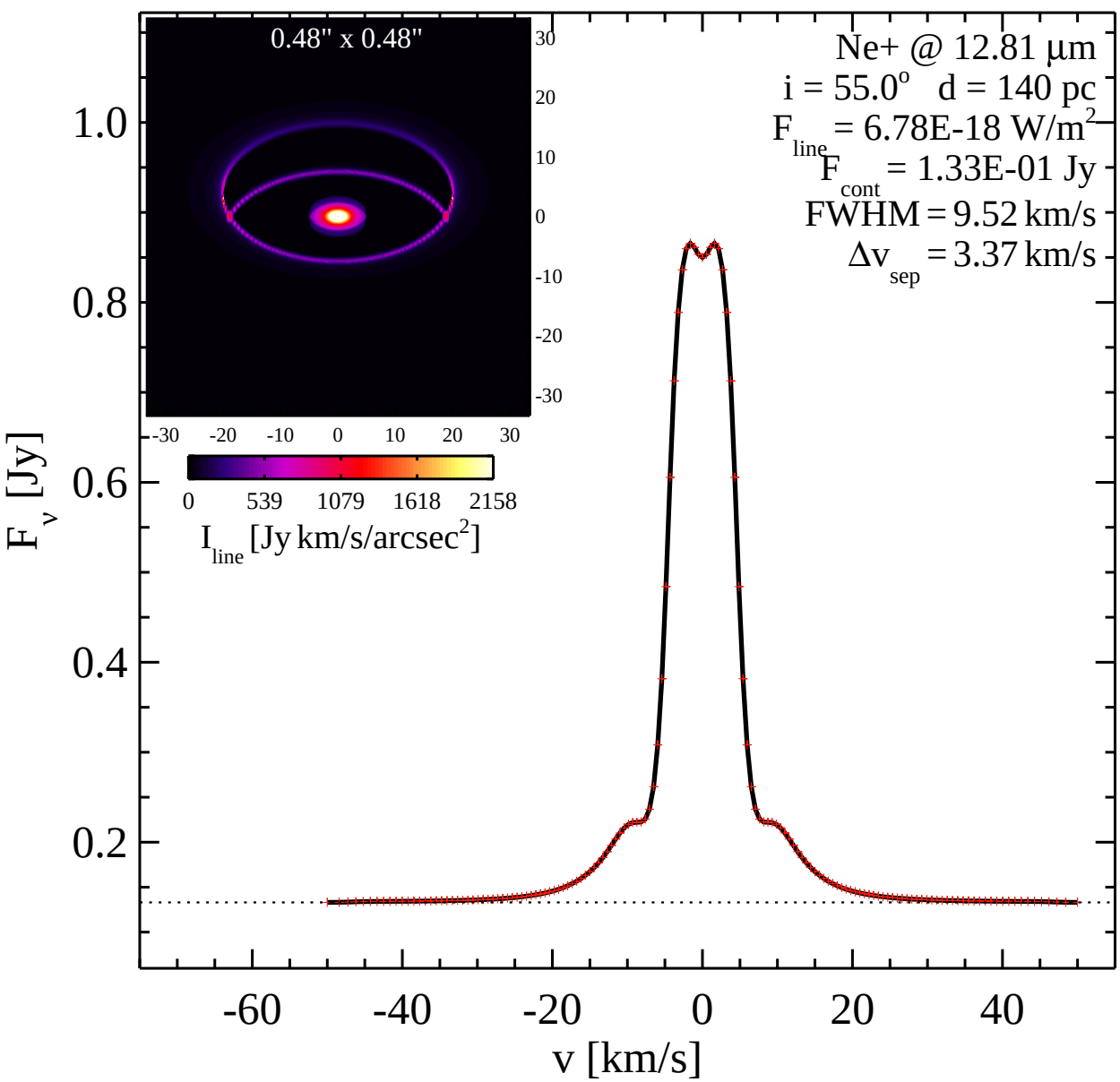

0.35" x 0.35"
20
10
0
-10
-20
-20 -10 0 10 20
0.0E+00 3.5E+03 7.0E+03 1.1E+04 1.4E+04
I line [Jy km/s/arcsec2]
CO @ 4.745 µm
i = 55.0o d = 140 pc
F line = 6.70E-17 W/m2
F cont = 1.21E-01 Jy
FWHM = 9.08 km/s
Δv sep = 7.83 km/s
F v [Jy]
0
1
2
3
4
5
-30 -20 -10 0 10 20
v [km/s]

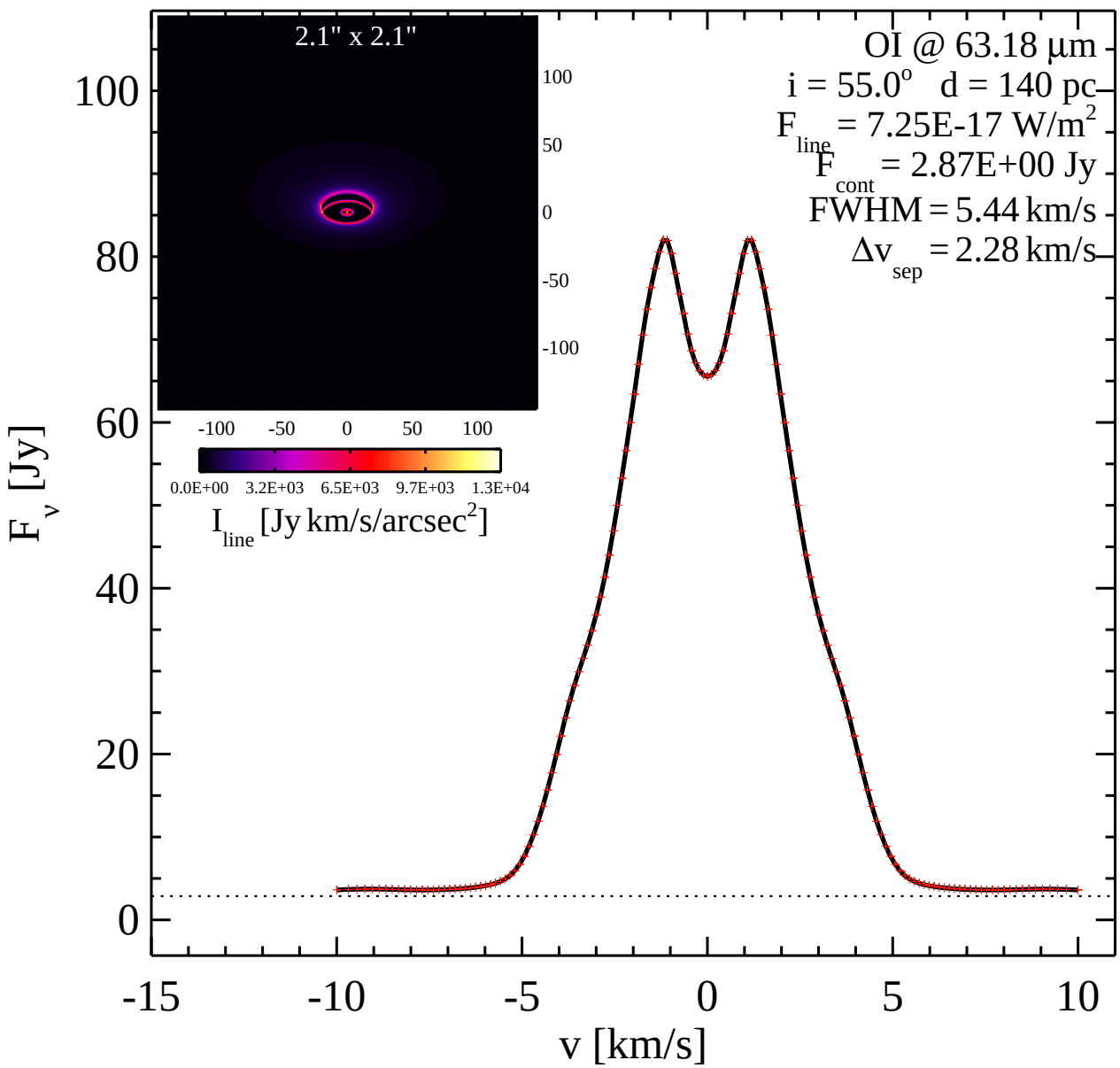

0.35" x 0.35"
20
10
0
-10
-20
-20 -10 0 10 20
0 2121 4243 6364 8486
I line [Jy km/s/arcsec2]
CO @ 4.755 µm
i = 55.0o d = 140 pc
F line = 4.48E-17 W/m2
F cont = 1.20E-01 Jy
FWHM = 9.08 km/s
Δv sep = 7.80 km/s
F v [Jy]
0
1
2
3
-30 -20 -10 0 10 20
v [km/s]

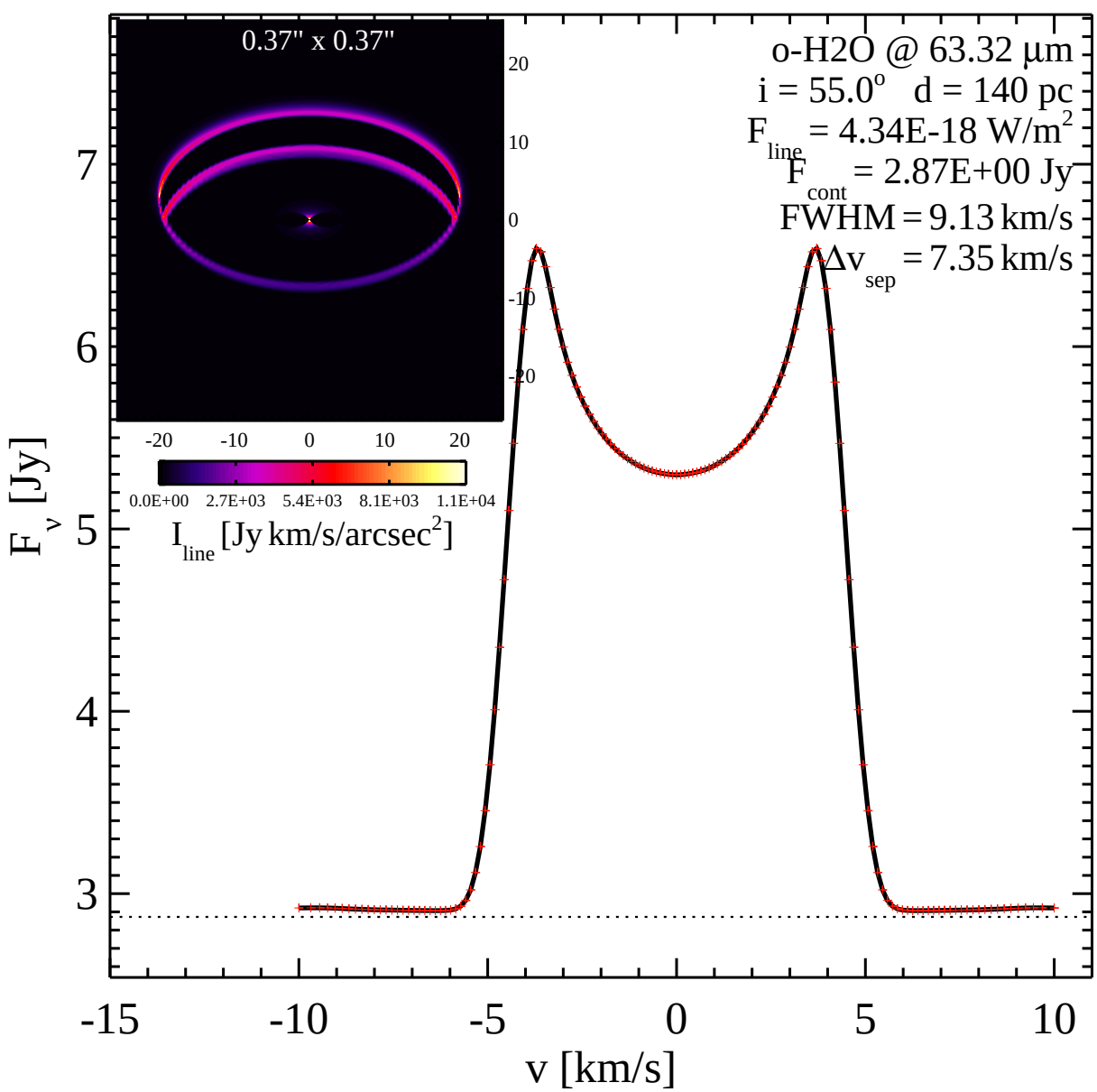

0.35" x 0.35"
20
10
0
-10
-20
-20 -10 0 10 20
0 1678 3357 5036 6715
I line [Jy km/s/arcsec2]
CO @ 4.764 µm
i = 55.0° d = 140 pc
F line = 2.96E-17 W/m2
F cont = 1.20E-01 Jy
FWHM = 9.08 km/s
Δv sep = 7.75 km/s
F v [Jy]
2.5
2.0
1.5
1.0
0.5
0.0
-30 -20 -10 0 10 20
v [km/s]

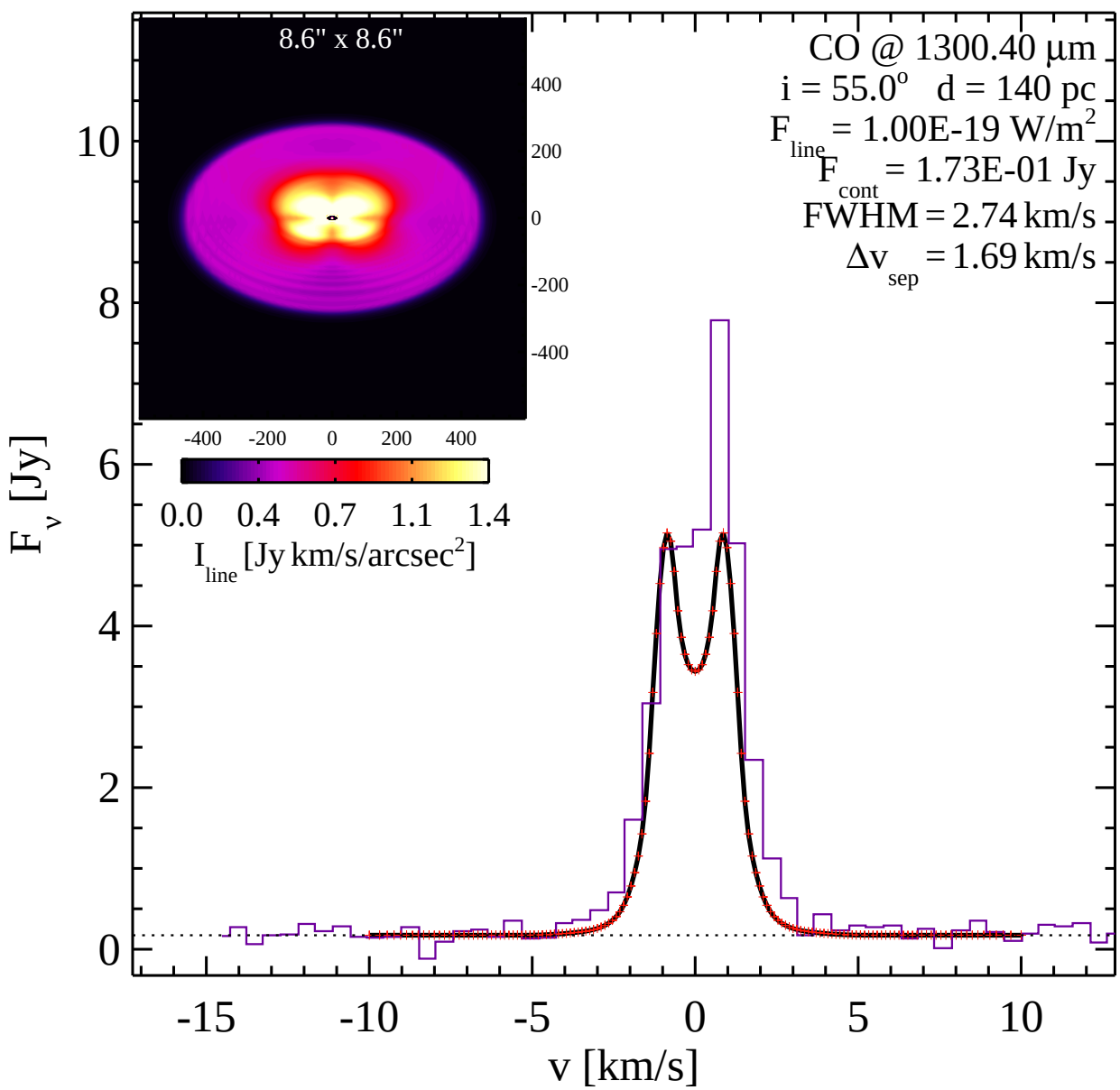

0.36" x 0.36"
20
10
0
-10
-20
-20 -10 0 10 20
0 1241 2482 3723 4964
I line [Jy km/s/arcsec2]
CO @ 4.774 µm
i = 55.0o d = 140 pc
F line = 1.96E-17 W/m2
F cont = 1.20E-01 Jy
FWHM = 9.08 km/s
Δv sep = 7.69 km/s
F v [Jy]
1.5
1.0
0.5
-30 -20 -10 0 10 20
v [km/s]

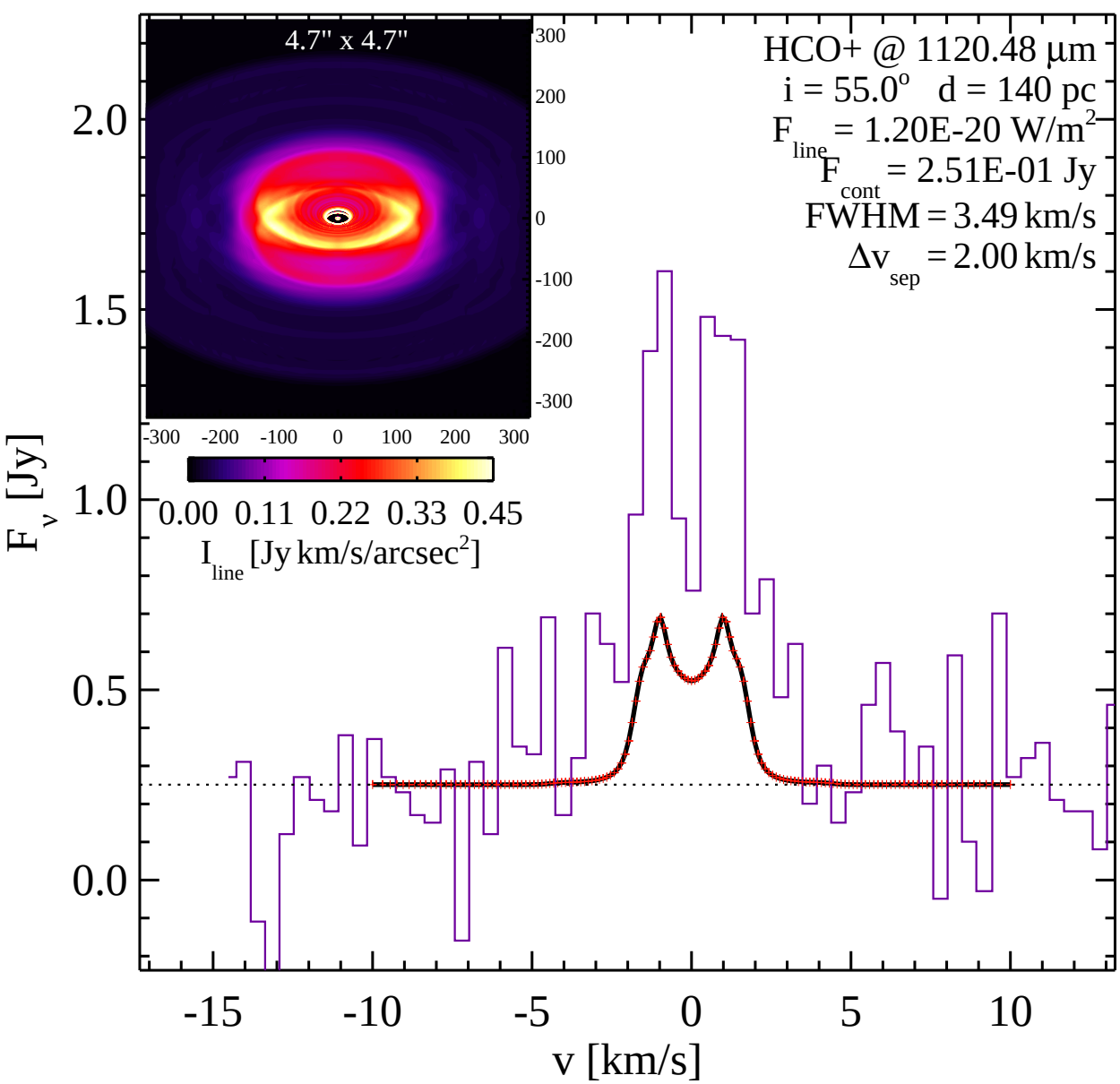

0.36" x 0.36"
20
10
0
-10
-20
-20 -10 0 10 20
0 690 1381 2072 2763
I line [Jy km/s/arcsec2]
CO @ 4.793 µm
i = 55.0o d = 140 pc
F line = 9.06E-18 W/m2
F cont = 1.20E-01 Jy
FWHM = 9.11 km/s
Δv sep = 7.60 km/s
F v [Jy]
0.8
0.6
0.4
0.2
-30 -20 -10 0 10 20
v [km/s]


0.48" x 0.48"
Ne+ @ 12.81 μm
i = 55.0° d = 140 pc
F line = 6.78E-18 W/m2
F cont = 1.33E-01 Jy
FWHM = 9.52 km/s
Δv sep = 3.37 km/s
F v [Jy]
v [km/s]
I line [Jy km/s/arcsec2]
0 539 1079 1618 2158
-30 -20 -10 0 10 20 30
1.0
0.8
0.6
0.4
0.2
-60 -40 -20 0 20 40


2.1" x 2.1"
100
50
0
-50
-100
-100 -50 0 50 100
0.0E+00 3.2E+03 6.5E+03 9.7E+03 1.3E+04
I line [Jy km/s/arcsec2]
OI @ 63.18 µm
i = 55.0o d = 140 pc
F line = 7.25E-17 W/m2
F cont = 2.87E+00 Jy
FWHM = 5.44 km/s
Δv sep = 2.28 km/s
F v [Jy]
0
20
40
60
80
100
-15 -10 -5 0 5 10
v [km/s]


0.37" x 0.37"
20
10
0
-10
-20
-20 -10 0 10 20
0.0E+00 2.7E+03 5.4E+03 8.1E+03 1.1E+04
I line [Jy km/s/arcsec2]
o-H2O @ 63.32 µm
i = 55.0° d = 140 pc
F line = 4.34E-18 W/m2
F cont = 2.87E+00 Jy
FWHM = 9.13 km/s
Δv sep = 7.35 km/s
F v [Jy]
7
6
5
4
3
-15 -10 -5 0 5 10
v [km/s]


8.6" x 8.6"
400
200
0
-200
-400
-400 -200 0 200 400
0.0 0.4 0.7 1.1 1.4
I line [Jy km/s/arcsec2]
CO @ 1300.40 µm
i = 55.0o d = 140 pc
F line = 1.00E-19 W/m2
F cont = 1.73E-01 Jy
FWHM = 2.74 km/s
Δv sep = 1.69 km/s
F v [Jy]
v [km/s]
0
2
4
6
8
10
-15
-10
-5
0
5
10


4.7" x 4.7"
HCO+ @ 1120.48 µm
i = 55.0° d = 140 pc
F line = 1.20E-20 W/m2
F cont = 2.51E-01 Jy
FWHM = 3.49 km/s
Δv sep = 2.00 km/s
F v [Jy]
v [km/s]
I line [Jy km/s/arcsec2]
0.00 0.11 0.22 0.33 0.45
-300 -200 -100 0 100 200 300
2.0
1.5
1.0
0.5
0.0
-15 -10 -5 0 5 10