```
data = Import["C:1090.dat"];
RC = Table[{data[[i, 1]], data[[i, 3]]}, {i, 1, 24}];
Rgas = Table[{data[[i, 1]], data[[i, 4]]}, {i, 1, 24}];
Erro = Table[data[[i, 5]], {i, 1, 24}];
TableForm[data, TableHeadings → {{"NGC 1090"}, {"Raio", "", "Vtotal", "Vgas", "Erro"}}];
Vgas = Interpolation[Rgas]
Vd[r_, M_]:=((G * (10^9 * M) * (r/Rd)^2) * (BesselI[0, r/(2 * Rd)] * BesselK[0, r/(2 * Rd)]−

BesselI[1, r/(2 * Rd)] * BesselK[1, r/(2 * Rd)]))/(2 * Rd);
Vme[r_, R_, P_]:=(6.4 * G * ((P * 10^7) * R^3) * ((1/2) * Log[(r/R)^2 + 1] + Log[r/R + 1]−

ArcTan[r/R]))/r;
G:=4.302/10^6;
Rd:=3.4;
Vt[r_, M_, R_, P_]:=Sqrt[Vd[r, M] + Vme[r, R, P] + Vgas[r]^2]
Ajuste = NonlinearModelFit[RC, Vt[r, M, R, P], {{R, 1, 50}, {P, 1, 10}, {M, 1, 50}}, r,
  Weights → 1/Erro^2]
Ajuste["ParameterTable"]
Needs["ErrorBarPlots"]
Gas = Plot[Igas[], {, "0.27931", 29.2}, PlotStyle → {Black, Dashed},
  AxesLabel → {"R (Kpc)", "V (Km/s)"}];
Vstars = Plot[Sqrt[Vd[r, M]]/.M → 36.5, {r, 0, 29.4}, PlotStyle → {Black, Dotted}];
Vhalo = Plot[Sqrt[Vme[r, R, P]]/.{R → 7.8, P → 2.3}, {r, 0, 29.4},
  PlotStyle → {Black, DotDashed}];
VRC = ErrorListPlot[{Table[{RC[[i]], ErrorBar[Erro[[i]]]}, {i, 24}]}, PlotStyle → Black,
  MeshStyle → PointSize[Large]];
RCtotal = Plot[Vt[r, M, R, P]/.{M → 36.5, R → 7.8, P → 2.3}, {r, 0, 29.4}, PlotStyle → Black,
  PlotRange → {{0, 30}, {0, 190}}];
Show[RCtotal, VRC, Vstars, Vhalo, Gas, Frame → True, PlotRange → {{0, 30}, {0, 190}},
  PlotLabel → "NGC 1090", FrameLabel → {"R(Kpc)", "V(Km/s)"}];
```

```
ErrorListPlot[{Table[{Table[{data[[i, 1]], Ajuste["FitResiduals"][[i]]}, {i, 26}][[i]],
ErrorBar[Erro[[i]]]}, {i, 24}]}, PlotStyle → Black, MeshStyle → PointSize[Large],
    PlotRange → {−40, 20}, Frame → True, AspectRatio → 0.2];
```

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