A 'constant Lagrangian' fit of the galaxy rotation curves of the complete SPARC database of 175 galaxies.

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In this paper I apply the 'constant Lagrangian' model for galactic dynamics to the complete SPARC database of 175 galaxies. For twenty five percent, 43 out of 175, of the galaxies of the series, a single fit model already remains nicely within the error margins. Fifteen galaxies are more complicated and clearly need a threefold fit. One exceptional galaxy justified five fits. So 116 galaxies, 66 percent, have a dual fit. The multiple fit appears to follow the mass composition of galaxies as composed of a bulge, possibly a disk and mostly extended gas clouds. As in previous papers, I will first repeat a presentation of the 'constant Lagrangian' approach. The original part of this paper is the fit of the complete set of the SPARC database and a first categorization of the result in single, dual, triple or multiple fit galaxies. Through the extensive database fit, the 'constant Lagrangian' approach can be inverted from a deductive to an inductive result: huge stretches of all galaxies can be fitted on a constant Lagrangian curve, while remaining within the empirical margin of errors. This paper's galaxy fits prove this restricted claim beyond doubt. The issue then becomes to explain this empirical, inductive result.

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CONTENTS

I. INTRODUCTION

In a previous paper I introduced the 'constant Lagrangian' model for galactic dynamics (de Haas, 2018b). In two sub-sequential papers I made a first qualitative attempt at fitting real rotational velocity curves using the proposed model (de Haas, 2018d,c). In (de Haas, 2018e) paper I gave a more quantitative analysis by including the error bars of the measured velocity. This approach was applied to a subset of 25 galaxies of the SPARC database, including the error margins, as provided by (Lelli et al., 2016). In that subset, non of the F-series galaxies were included. In a subsequent paper the 'constant Lagrangian' fit of the F-series was presented (de Haas, 2018a). In this paper, I present the full quantitative fit of the SPARC database of 175 galaxy rotation curves.

But as with the previous papers, I start by introducing the 'constant Lagrangian' model of galactic dynamics. Then I include the dual fit approach that proved to be the best way to model most galaxies. After that, the fit of the F series is presented. The introduction of the model is mostly a copy of the previous three papers and the presentation of the dual fit approach is copied from the previous ones, (de Haas, 2018a). The reason to include these two paragraphs again in this paper is to make this paper as more or less stand alone. The original part of this paper, its justification, is the fit of all the galaxies from the SPARC database.

II. THE 'CONSTANT LAGRANGIAN' MODEL FOR GALACTIC DYNAMICS

I start by repeating the essentials of this model, which I then apply to the rotation curve of galaxy NGC 1560. The Lagrangian equation of motion reads

$$\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}}\right) - \frac{\partial L}{\partial q} = 0. \tag{1}$$

In classical gravitational dynamics I assume circular orbits with $\dot{q} = v$ and $q = r$. The Lagrangian itself is then given by $L = K - V$, with V the Newtonian potential gravitational energy and K the kinetic energy. One then gets

$$\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}}\right) = \frac{dp}{dt} = F. \tag{2}$$

The other part gives

$$\frac{\partial L}{\partial q} = -\frac{dV}{dr}, \tag{3}$$

so one gets Newton's equation of motion in a central field of gravity

$$F_g = -\frac{dV}{dr}. \tag{4}$$

Further analysis of the context results in the identification of the Hamiltonian of the system, $H = K + V$, as being a constant of the orbital motion and the virial theorem as describing a relation between K and V in one single orbit but also between different orbits, $2K + V = 0$.

The previous analysis is problematic relative to the notion of geodetic motion in General Relativity. The problem can best be described in a semi-relativistic approach using the classical Lagrangian equation of motion for geodetic orbits. The most important aspect of geodetic motion in GR is that it requires no force to move on a geodetic. This has important implications for the Lagrangian equation of motion, because $F = 0$ on a geodetic. One gets

$$\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}}\right) = F_g = 0 \tag{5}$$

and as a consequence also

$$\frac{\partial L}{\partial q} = -\frac{dL}{dr} = 0. \tag{6}$$

As a result, one gets the crucial

$$L = K - V = constant \tag{7}$$

on geodetic orbits.

This result, the Lagrangian of the system as being the constant of the geodetic motion, is used on a daily basis by many of us because it is used by GNSS systems for the relativistic correction of atomic clocks in their satellites. Let's elaborate this a bit further. If we apply the Schwarzschild metric in polar coordinates, we have (Ruggiero et al., 2008)

$$ds^2 = \left(1 + \frac{2\Phi}{c^2}\right) c^2 dt^2 - \left(1 + \frac{2\Phi}{c^2}\right)^{-1} dr^2 - r^2 d\theta^2 - r^2 sin^2\theta d\phi^2. \tag{8}$$

In case of a clock on a circular geodesic on the equator of a central non-rotating mass M we have $\frac{dr}{dt} = 0$, $\frac{d\theta}{dt} = 0$, $sin\theta = 1$ and $\frac{d\phi}{dt} = \omega$. We thus get, with $v_{orbit} = r\omega$, the GR result

$$\frac{d\tau}{dt} = \sqrt{1 + \frac{2\Phi}{c^2} - \frac{v_{orbit}^2}{c^2}} \tag{9}$$

with $d\tau$ as the clock-rate of a standard clock A in a geodetic orbit and dt as the 'universal' clock-rate G of a standard clock at rest in infinity, the only condition for which $d\tau = dt$. The result of Eqn. (9) is the basic relativistic correction used in GNSS clock frequencies, with the first as the gravity effect or gravitational potential correction and the second as the velocity effect or the correction due to Special Relativity (Ashby, 2002; Hećimović, 2013; Delva and Lodewyck, 2013).

Given the classical definitions of $K = \frac{mv_{orbit}^2}{2}$ and $V = m\Phi$, we get

$$\frac{d\tau}{dt} = \sqrt{1 - \frac{2L}{U_0}}. \tag{10}$$

All the satellites of a GNSS system are being installed on a similar orbit and thus syntonized relative to one another because they share the same high and velocity and have constant L and $\frac{d\tau}{dt}$ on those orbits. But different GNSS systems, as for example GPS compared to GALILEO, are functioning on different orbits with different velocities and those systems aren't syntonized relative to one another. This non-syntonization between satellites on orbits with different heights and virial theorem connected velocities is very annoying for the effort towards realizing an integration of the different GNSS systems into one single global network.

Fundamental in the approach of this paper is to analyze gravity using relative frequency shifts, and thus $\frac{d\tau}{dt}$, as one of the basic experimental inputs. Such a method is also looming in today's geodesy. In modern gravitational geodesy scientists are investigating the relativistic frequency shift as a new observable type for gravity field recovery (Mayrhofer and Pail, 2012). Driven by this development, modern geodesy is about to go through a change from the Newtonian paradigm to Einstein's theory of general relativity (Kopeikin et al., 2017). A new generation of atomic clock is the game changer for this new domain of chronometric geodesy, and requires additional new techniques to be developed in the field of frequency transfer and comparison (Delva and Lodewyck, 2013). The paradigm shift towards gravitational divergence recovery is based on the principle of frequency comparison between two clocks on different space-time locations in order to measure the frequency shift between them (Delva and Lodewyck, 2013). The knowledge of the Earth's gravitational field has often been used to predict frequency shifts between distant clocks. In relativistic geodesy, the problem is reversed and the measurement of frequency shifts between distant clocks now provides knowledge of the gravitational field (Delva and Lodewyck, 2013). This reversal also looms

in my postulate of the 'constant Lagrangian' model. A constant Lagrangian implies a zero divergence in the syntonization of atomic oscillators and thus an absence of gravitational stress. A divergence in the Lagrangian implies a divergence in the time dilation factor $\frac{d\tau}{dt}$ and thus a non-zero gravitational stress.

The 'constant Lagrangian' model for galactic dynamics starts with the postulate that the geodetic Lagrangian $L = K - V$ is a galactic constant, not just an orbital constant. In this 'time bubble halo' model the classical Newtonian potential is assumed valid. This potential in the case of a model galaxy with a perfect quasi-solid bulge and a perfect Schwarzschild emptiness around it is given in Fig.(1). My model galaxy is build of a model bulge with mass M and radius R and a Schwarzschild metric emptiness around it. The model bulge has constant density $\rho_0 = \frac{M}{V} = \frac{3M}{4\pi R^3}$ and its composing stars rotate on geodetics in a quasi-solid way. So all those stars in the bulge have equal angular velocity on their geodetic orbits, with $v = \omega r$. On the boundary between the quasi solid spherical bulge and the emptiness outside of it, the orbital velocities are behaving smoothly. So the last star in the bulge and the first star in the Schwarzschild region have equal velocities and potentials. I also assume that the Newtonian potential itself is unchanged and unchallenged, remains classical in the whole galaxy and its surroundings. Such a model galaxy doesn't have a SMBH in the center of its bulge and it only has some very lonely stars in the space outside the bulge.

The 'constant Lagrangian model postulates $L = K - V = constant$ in the entire galaxy, without changing the Newtonian potential. As a result, in such a model bulge, L is a constant of the motion, not only in one orbit but also between orbits.

$$\frac{L}{m} = \frac{v_{orbit}^2}{2} + \frac{GM}{r} = \frac{3GM}{2R} = constant. \tag{11}$$

For the region $0 \leq r \leq R$ we get

$$v_{orbit}^2 = \frac{GM}{R} \cdot \frac{r^2}{R^2} \tag{12}$$

and outside the model bulge, where $R \leq r \leq \infty$, we have

$$v_{orbit}^2 = \frac{3GM}{R} - \frac{GM}{r}. \tag{13}$$

From the perspective of a free fall Einstein elevator observer, the free fall on a radial geodetic from infinity towards the center of the bulge, the other free fall tangential geodetics seem to abide the law of conservation of energy, because the escape kinetic energy plus the orbital kinetic energy is a constant on my model galaxy with galactic constant L. An

Point	Relation	Expression
Outside the **bulge**	r > R	$-\frac{GM}{r}$
On the Surface	r = R	$-\frac{GM}{R}$
Inside the **bulge**	r < R	$-GM\left[\frac{3R^2-r^2}{2R^3}\right]$
At the centre	r = 0	$-\frac{3}{2}\left(\frac{GM}{R}\right)$

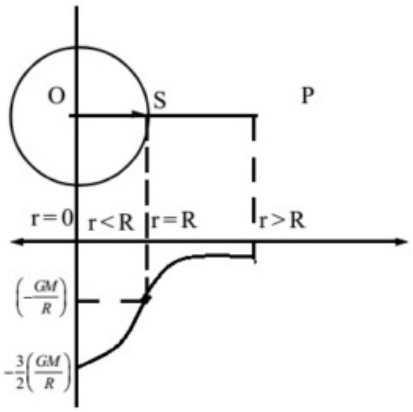

FIG. 1. The potential inside and out of a model bulge

Einstein elevator system with test mass m that would be put in an orbital collapse situation, magically descending from orbit to orbit in a process in thermodynamic equilibrium, would have constant total kinetic energy, from the radial free fall perspective. This can be expressed as $L = K_{orbit} - V = K_{orbit} + K_{escape} = K_{final}$. In Fig.(2) I sketched the result, with $-V = +K_{escape}$.

Such a model galaxy would also be a GNSS engineer's dream come true because the whole model galaxy is in one single syntonized time-bubble.

$$\frac{d\tau}{dt} = \sqrt{1 - \frac{2L}{U_0}}. \tag{14}$$

Given the Baryonic Tully-Fisher relation in Milgrom's version $v_{final}^4 = Ga_0M$ with $2\pi a_0 \approx cH_0$, with a_0 as Milgrom's galactic minimum acceleration and H_0 as the Hubble constant

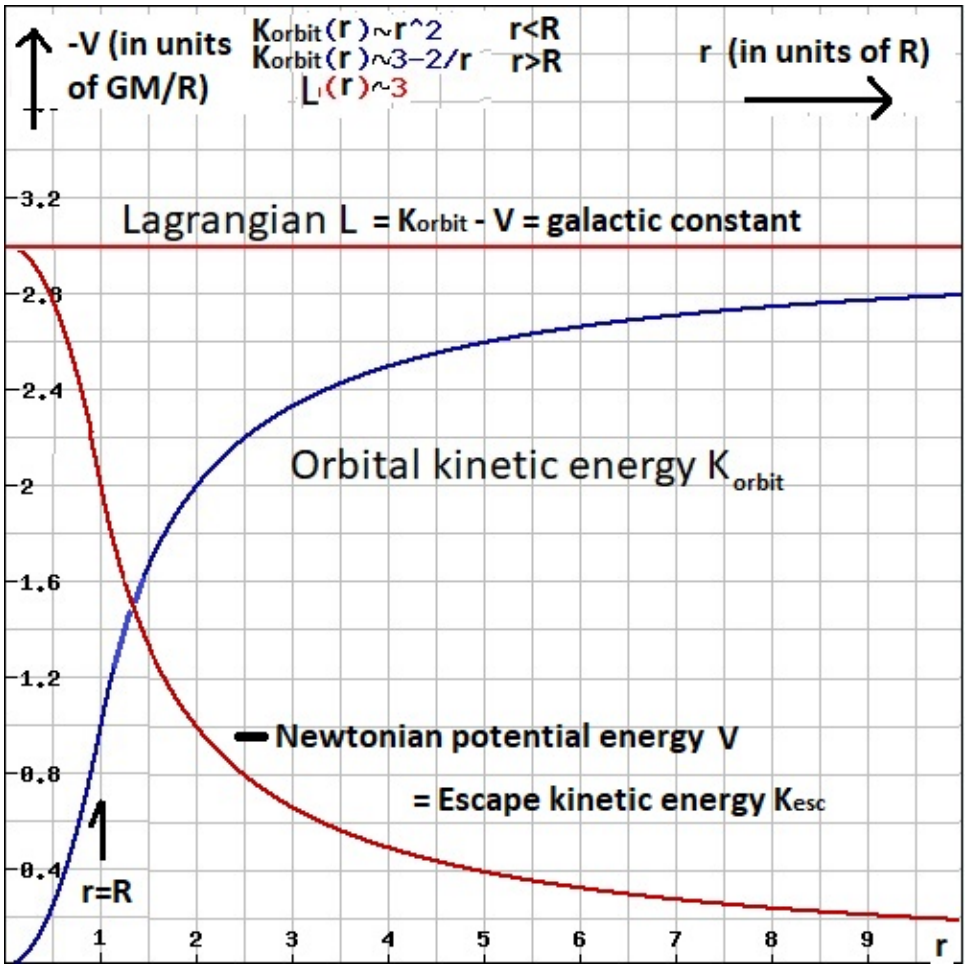

FIG. 2. The square of the orbital velocity profile in the model galaxy with $L = constant$.

(Milgrom, 1983; McGaugh, 2005), we get as a galactic time bubble fix

$$\frac{d\tau}{dt} = \sqrt{1 - \frac{2L}{U_0}} = \sqrt{1 - \frac{v_{final}^2}{c^2}} = \sqrt{1 - \sqrt{\frac{v_{final}^4}{c^4}}} = \tag{15}$$

$$\sqrt{1 - \sqrt{\frac{Ga_0M}{c^4}}} = \sqrt{1 - \sqrt{\frac{GH_0M}{2\pi c^3}}} = \sqrt{1 - \sqrt{\frac{M}{2\pi M_U}}}, \tag{16}$$

in which I used $L = 3GM/R = K_{final} = \frac{1}{2}mv_{final}^2$ and $M_U = \frac{c^3}{GH_0}$. This last constant can be referred to as an apparent mass of the Universe, a purely theoretical number constant, see (Mercier, 2015).

In a model Universe, this would imply that my model galaxy would be in a proper time bubble with clock-rate $d\tau$ relative to the universal clock-rate dt in proportion to the masses of galaxy M and Universe M_U. In my model galaxy theoretical environment the Baryonic Tully-Fisher relationship implies that the galactic time bubble is fixed through the mass of

my model galaxy and that this fix is a cosmological one. So what is a universal acceleration minimum a_0 in MOND can be interpreted as a universally correlated (through M_U) but still local (through M) time bubble fix in my model galaxy geodetic environment. In such a model Universe, the time bubble of a galaxy immediately functions as a gravitational lens, because $\frac{d\tau}{dt}$, as measuring the curvature of the metric, also determines the gravitational index of refraction of the time bubble relative to Cosmic space where $dt = d\tau$. In my model, the Dark Matter halo is above all present as a time bubble halo, determined by the factor $\frac{d\tau}{dt}$.

III. THE DUAL FIT APPROACH TOWARDS ROTATION CURVES

Having determined the model galactic velocity rotation curve based on the Lagrangian as a galactic constant of orbital motion, the question is to what extend real galaxies can be modeled in this way. In my Lagrangian approach I analyze the plot of v_{orb}^2, in $(km/s)^2$ against r, in kpc. This in contrast to the usual rotation curves where v_{orb}, in $(km/s)^2$ against r, in kpc. In the Lagrangian approach, the energies, not the velocities, are primary. In each plot the experimental values in red stars with vertical error bars and the theoretical values in black circles and black triangles. The fitting plot is with one single fit for M, in units of $10^{10} Msolar$, and R, in units of kpc. The most important cut in the model is the change from the model bulge to the model empty space around it. In the model bulge, $V_{orb}^2 \propto r^2$, outside the model bulge $V_{orb}^2 \propto -r^{-1}$. In the dual approach, another important part is the shift from the first (M_1, R_1)-fit to the second (M_2, R_2)-fit.

This shift from a first fit to a second fit for the rotation curve of one single galaxy grew out of the analysis of the data. The justification of this dual approach is situated in the difference between the pure model with a perfect bulge and an emptiness around it with only some spare stars and some H1-gas. In reality, galaxies are way more complicated, as being composed of an inner bulge, a disk and H1 gas clouds. The constant Lagrangian' model includes the classical Newtonian potential and that allows for the use of inner and outer shells in the model approach. A shell of H1-gas that is treated as a perfect outside shell can be ignored for the inner shell dynamics. A shell of H1-gas that is an inner shell can be treated as part of the bulge. Going through a shell means leaving the inner model curve and progressing to the outer model curve.

This experimentally driven extension of the pure model with a perfect bulge and a perfect

Schwarzschild empty metric around it appeared first while analyzing the rotation curve of NGC 1560. The velocity rotation curve data of NGC 1560 come from (Broeils, 1992). The comparison with other fitting models came from (Gentile et al., 2010). The rotation curve of NGC 1560 has a peculiar "wiggle". This "wiggle" in the graph of NGC is described in the following quote.

> *In the rotation curve of NGC 1560, as derived by B92, there is a clear "wiggle" in the total rotation velocity, which corresponds very closely to a similar wiggle in the gas contribution to the rotation curve. Mass models such as MOND naturally reproduce the feature, whereas models that include a dominant spherical (or triaxial) halo are too smooth to do so. (Gentile et al., 2010)*

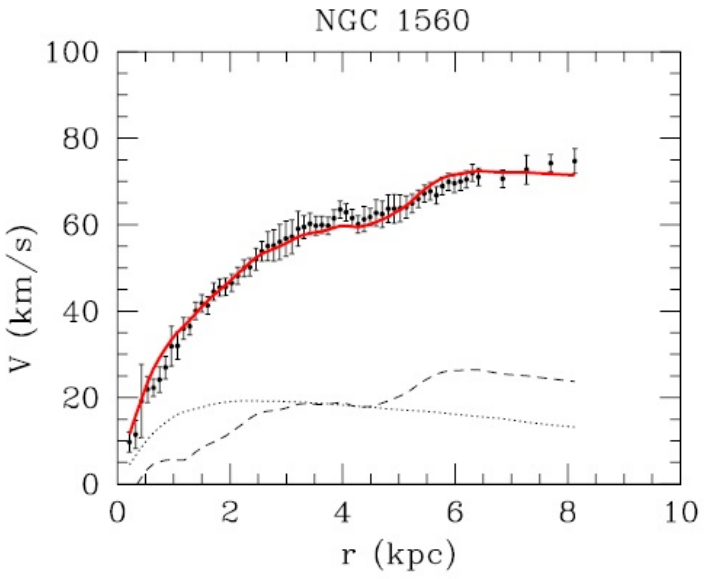

Figure 12. Rotation curve fit using MOND. The best-fit distance is 2.94 Mpc. Lines and symbols are like those in Fig. 10.

FIG. 3. (Gentile et al., 2010) fit of NGC 1560, using MOND. In this graph, the "wiggle" occurs where the stars, represented by the dotted line, give in to the H1 gas clouds, represented by the barred line, around $4-5$ *kpc*.

In my approach, I first have to determine the model galaxy curve that fits best, using the parameters M and R, and then I can use M as a free parameter in order to create a perfect time bubble. In case of NGC 1560 however, its seems that in phase 1 two models partially fit the rotation curve. The first pure model fits NGC 1560 before the "wiggle" the second pure model fits NGC 1560 after the "wiggle", see Fig.(4). Thus in my approach, the 'constant Lagrangian' model, the modeling indicates the underlying dynamics and the real world of unpredictable but observable mass distributions of stars and H1 gas clouds. The "wiggle" divides NGC 1560 in two regions, which both follow their respective pure model relatively smoothly without being disturbed by that other part of the galaxy. The baryonic matter further away from the center than the H1 gas of producing "wiggle" just behaves as if the bulge end where the "wiggle" ends. The baryonic matter closer to the center than the H1 gas of producing "wiggle" just behaves as if the H1 gas of the "wiggle" is a perfect shell which doesn't gravitate inside that shell. So the fact that two pure models can be made to partially fit the rotation curve actually reveals a lot of the underlying dynamics, reproducing known baryonic behavior under the influence of a Newtonian potential.

This fact, that one can only reasonably fit NGC 1560 by using two model fits, appeared to be the case for most galaxies. The shift from on model fit to the other model fit mostly follows the shift from stars dominated mass distribution to H1 gas dominated mass distribution. Sometimes however it follows the shift from bulge to disk.

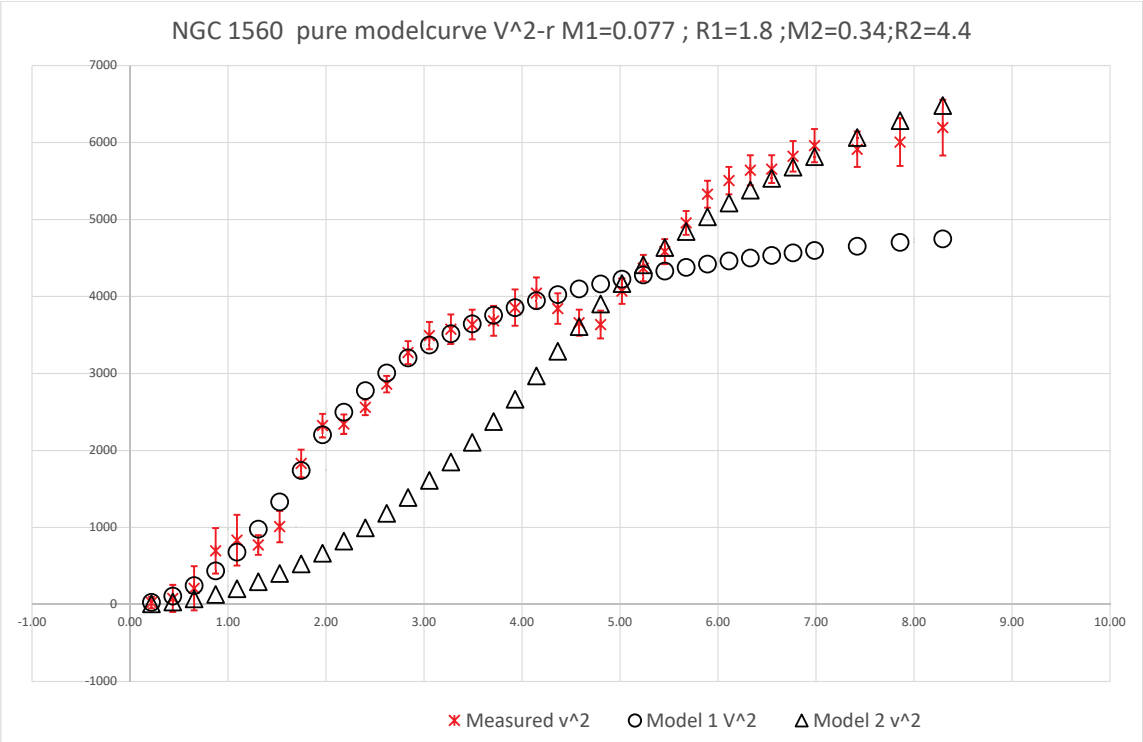

FIG. 4. Dual fit of NGC1560, V_{orb}^2 against r.

While analyzing the SPARC database, this shift proved quite general. In the following I will give one example of such a shift, with galaxy DDO161. First I give the dual plot of the rotation curve, then I compare the result against the mass distribution made available by SPARC (from the MassModels-LTG.zip file).

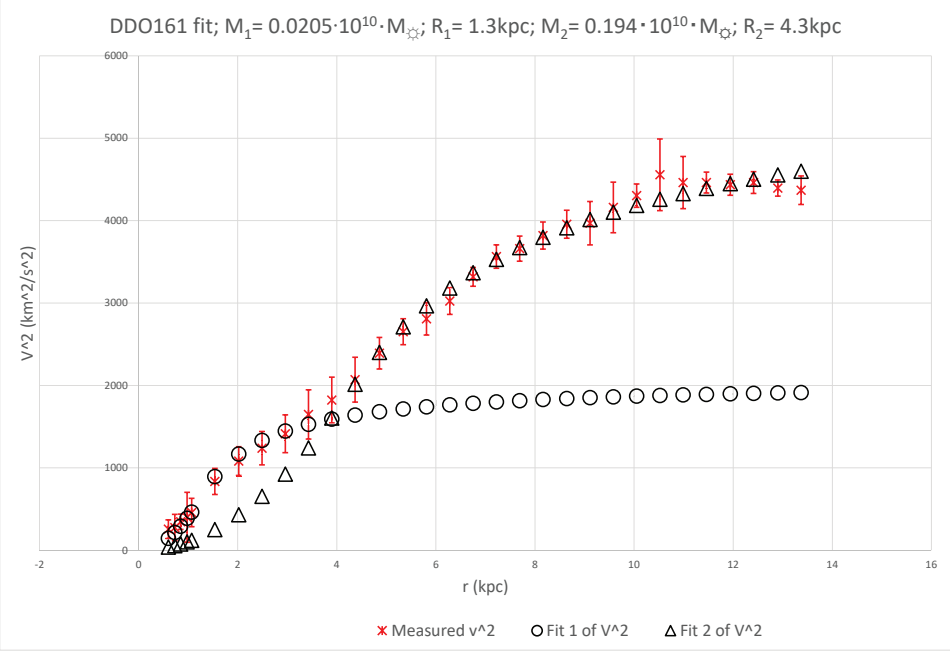

FIG. 5. DDO161, V^2_{orb} against r.

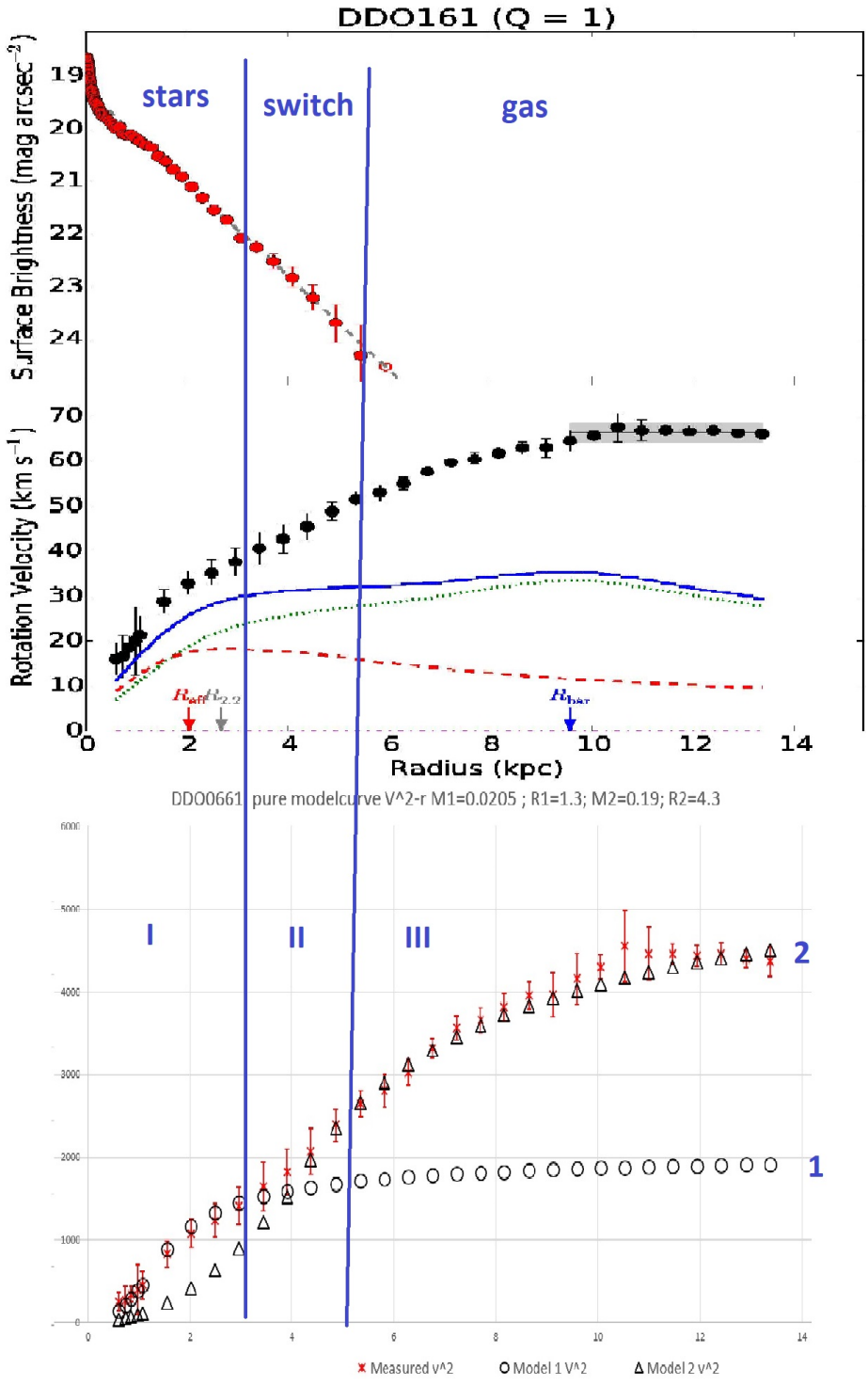

FIG. 6. DDO161, V_{orb}^2 against r, and the stars and gas mass distribution plot. The red dots are the luminous stars, the dotted line the gas contribution to the mass and the red bars line represent the stars contribution to the velocity curved, assuming the virial theorem.

IV. CONCLUSION

Twenty five percent, 43 of 175, of the rotation curves can be fit within the error margins with one model only. Most, 166 of 175, need a dual fit to remain withing the error margins, with the shift from the one to the other as one goes through a distinct mass distribution shell. Some 16 of 175 galaxies are more complicated. The dual fit galaxies can be subdivided into almost single fit to almost three fit, with many clearly distinctive dual fits.

In many cases, the shift from the first model to the second correspond with the shift from star dominated to gas dominated regions as given by the SPARC database. This correspondence happens so often that it cannot be a mere coincidence.

The least daring conclusion of this paper is that huge stretches of galaxy rotation curves can be effectively plotted on constant Lagrangian curves. This needs theoretical explanation and exploration, to say the least. Especially for the more complicated galaxies, with three fits, the sections still following a constant Lagrangian curves as impressive.

The shift from one constant Lagrangian curve to the next constant Lagrangian curve is a region where the constant Lagrangian regime seems to give way to a virial regime. One gets the impression that for those galaxies, some regions appear Einsteinian and others appear Newtonian.

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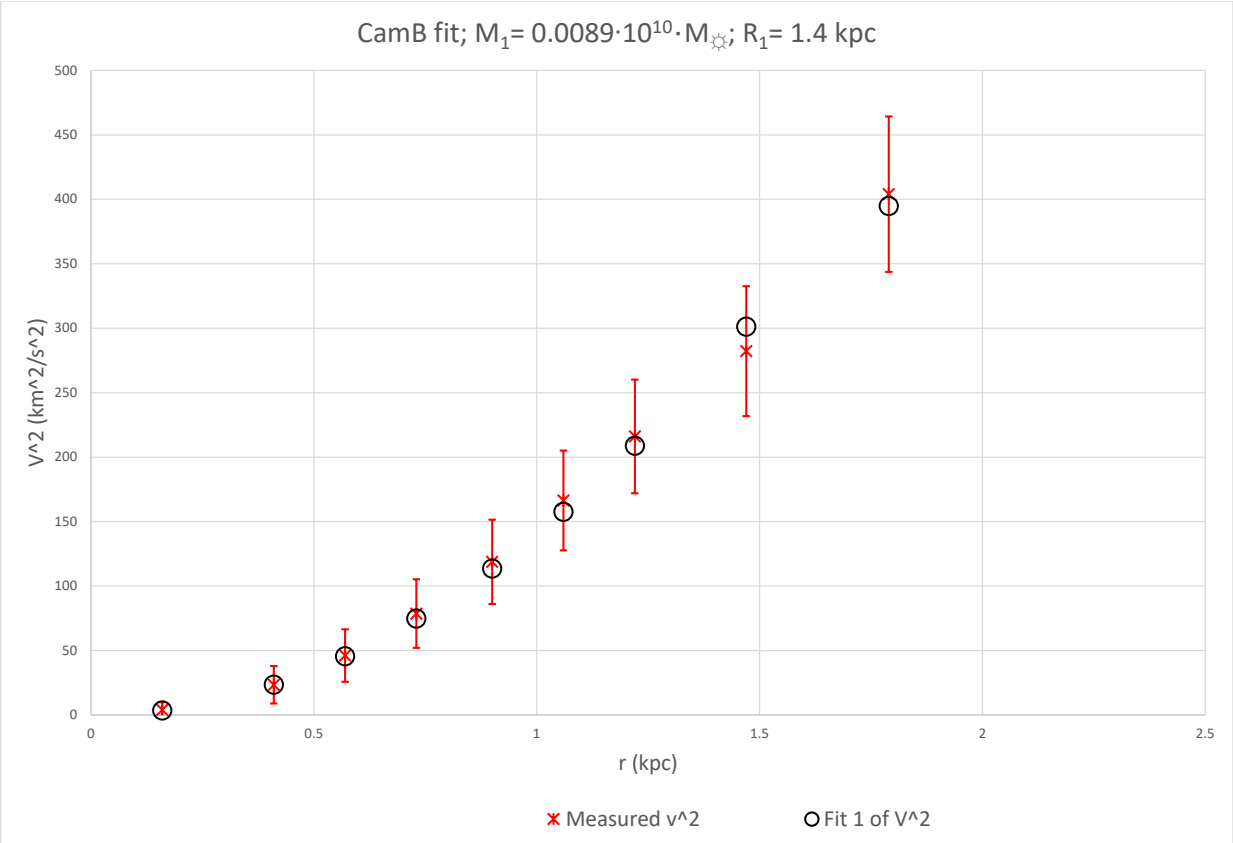
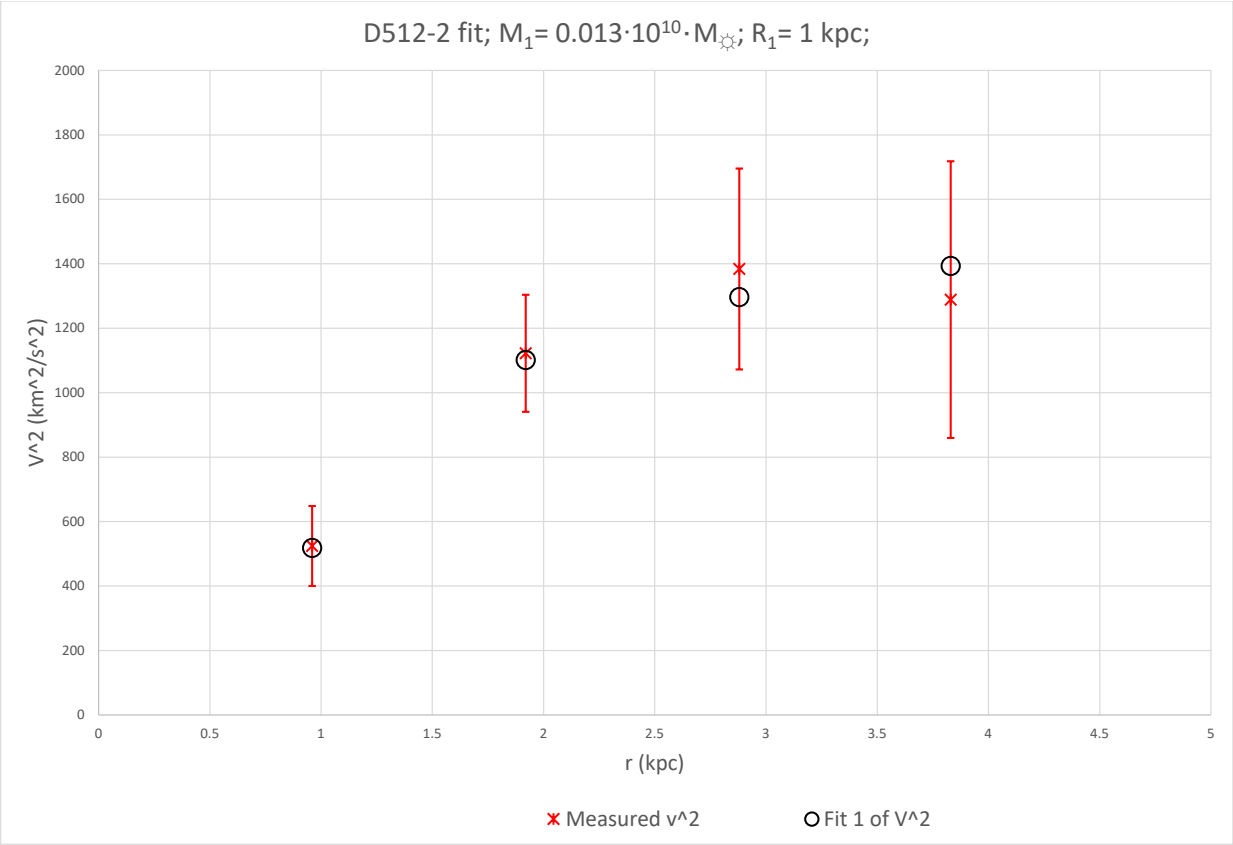
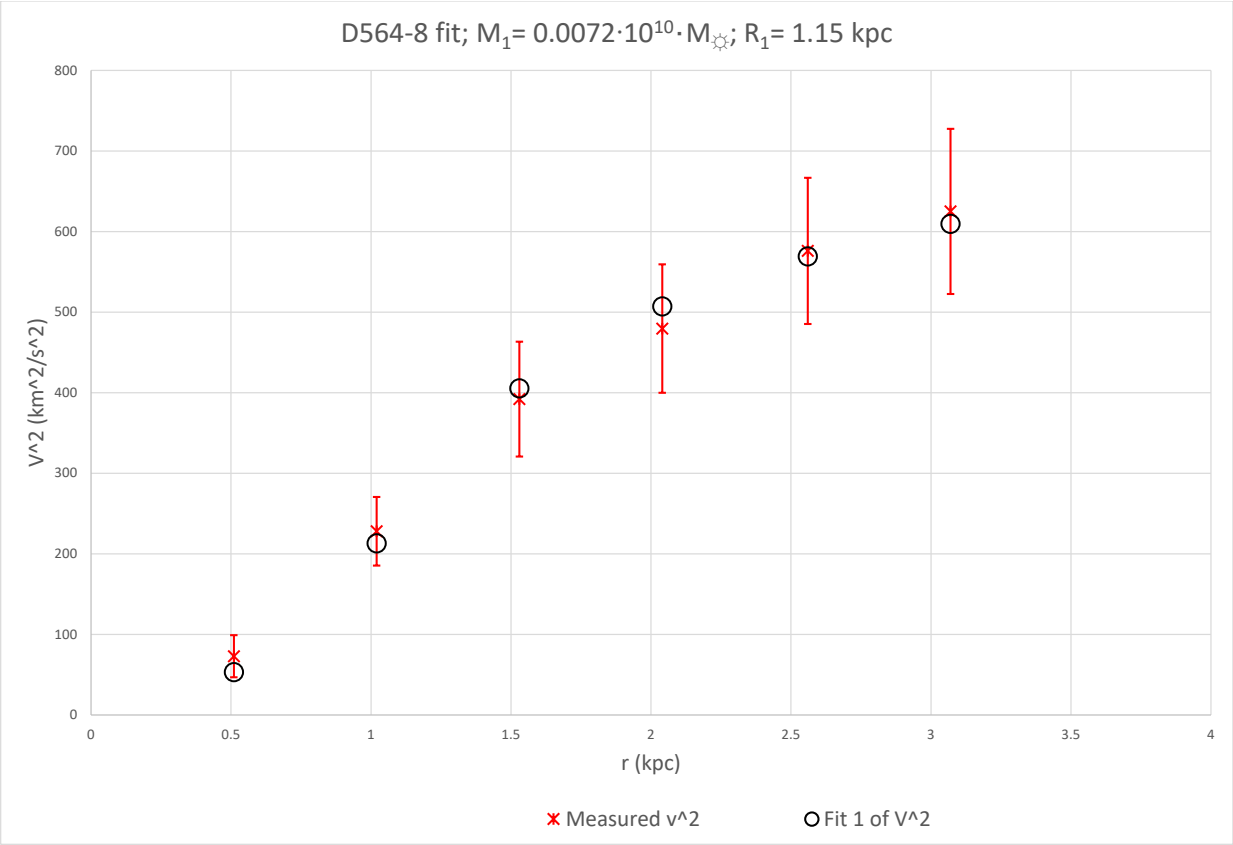
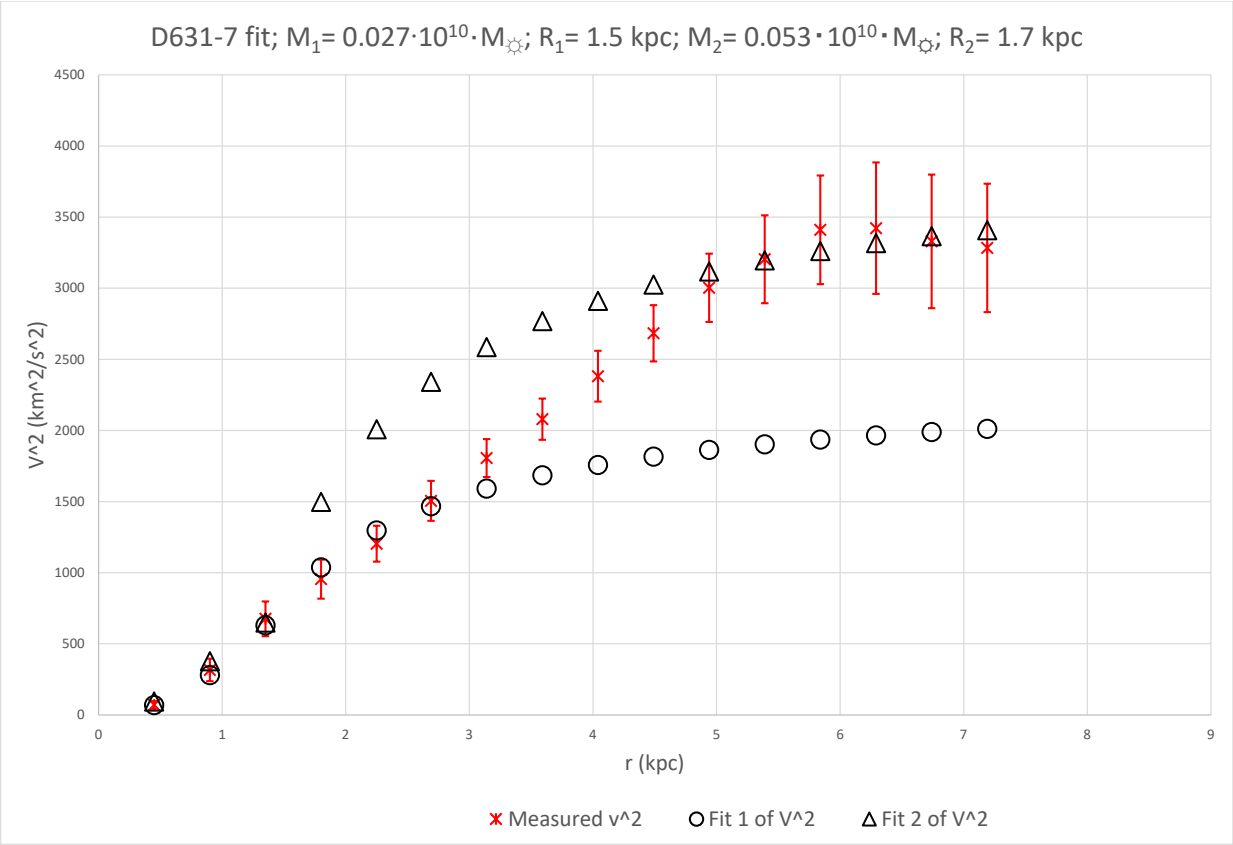
Appendix A: The fit of the 175 SPARC database galaxies.

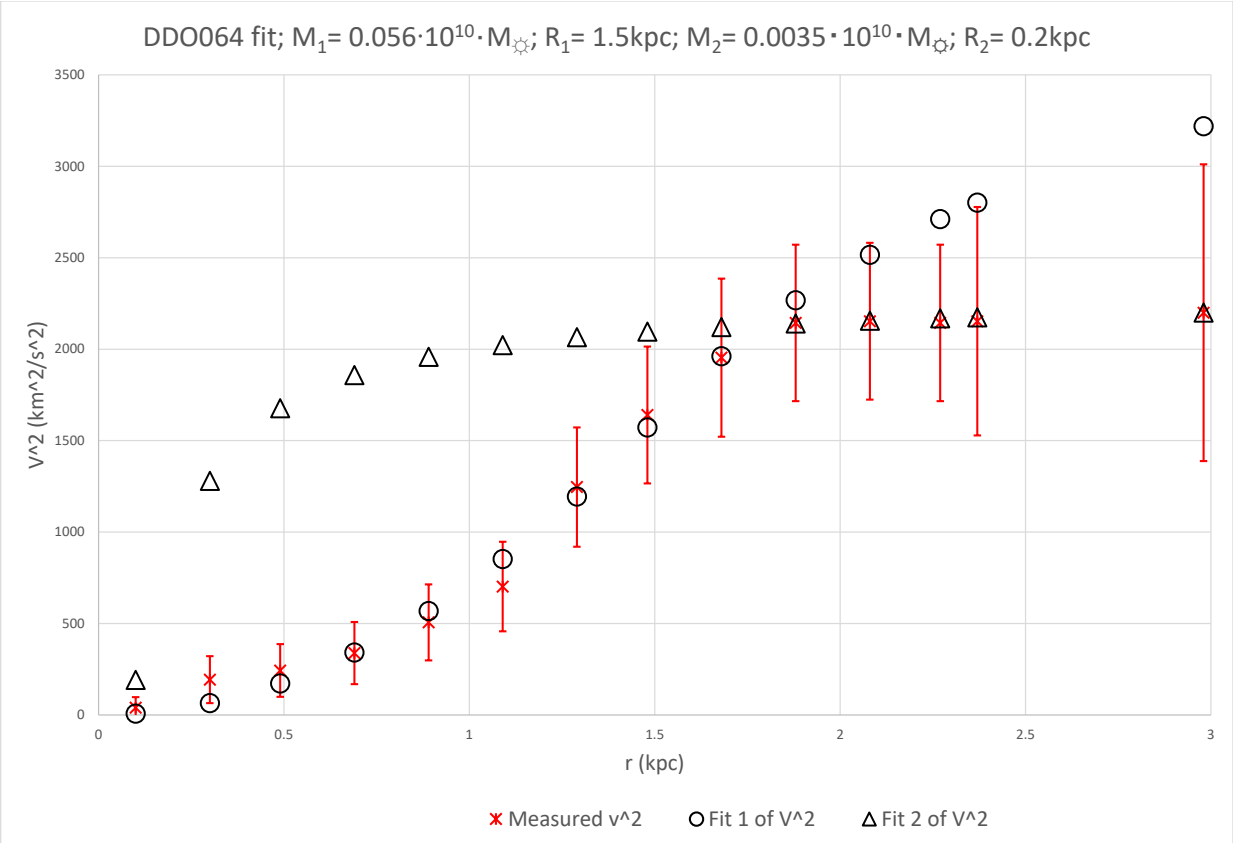
In this appendix, I present the 'constant Lagrangian' rotation curve fits of the sixteen galaxies whose name starts with an F in of the SPARC database, including the error margins, as provided by (Lelli et al., 2016). It is to the reader to compare the results with the mass distribution graphs of SPARC (from the MassModels-LTG.zip file). As an inductive result, the fits of this database shows that, at least, huge stretches of almost all galaxy rotation curves can be plotted on a constant Lagrangian curve.

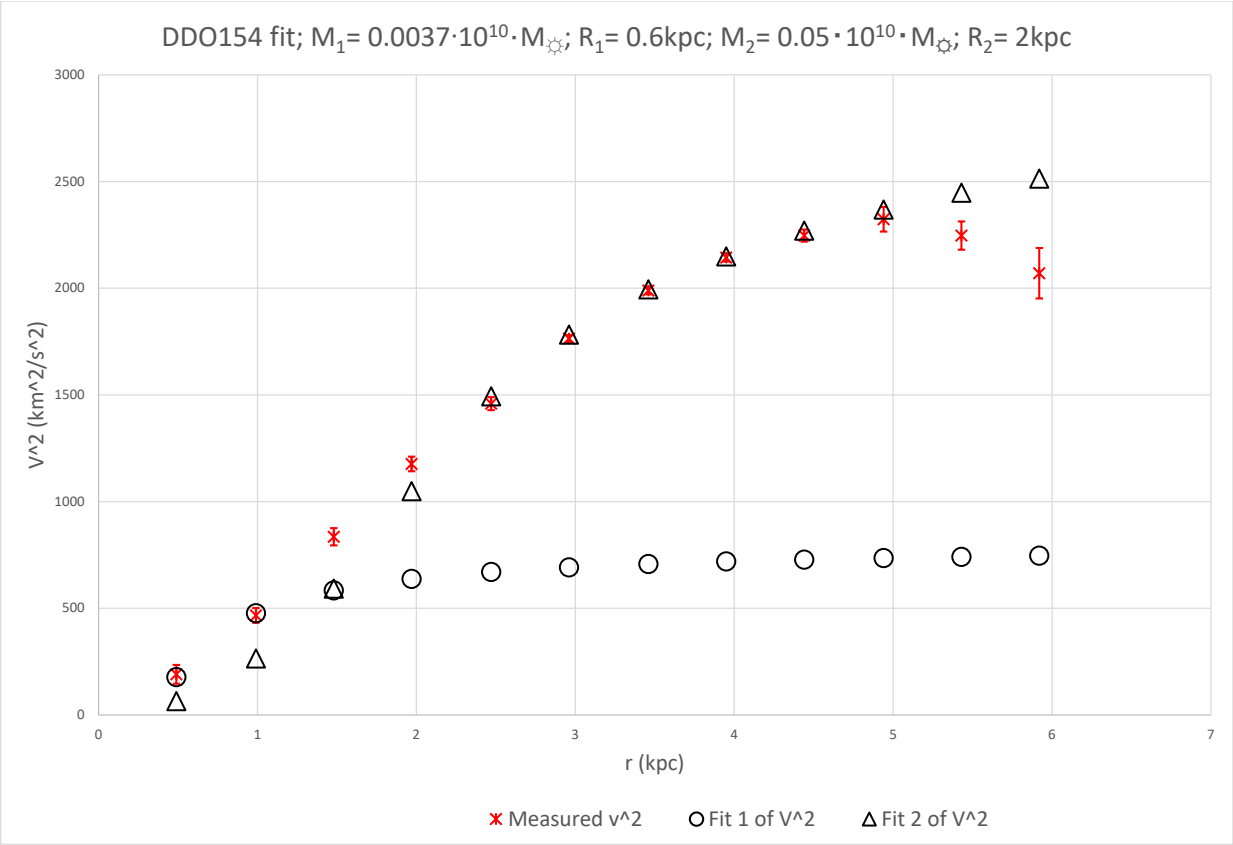

CamB fit; M1= 0.0089·10^10·M☼; R1= 1.4 kpc
V^2 (km^2/s^2)
r (kpc)
0
50
100
150
200
250
300
350
400
450
500
0
0.5
1
1.5
2
2.5
Measured v^2
Fit 1 of V^2

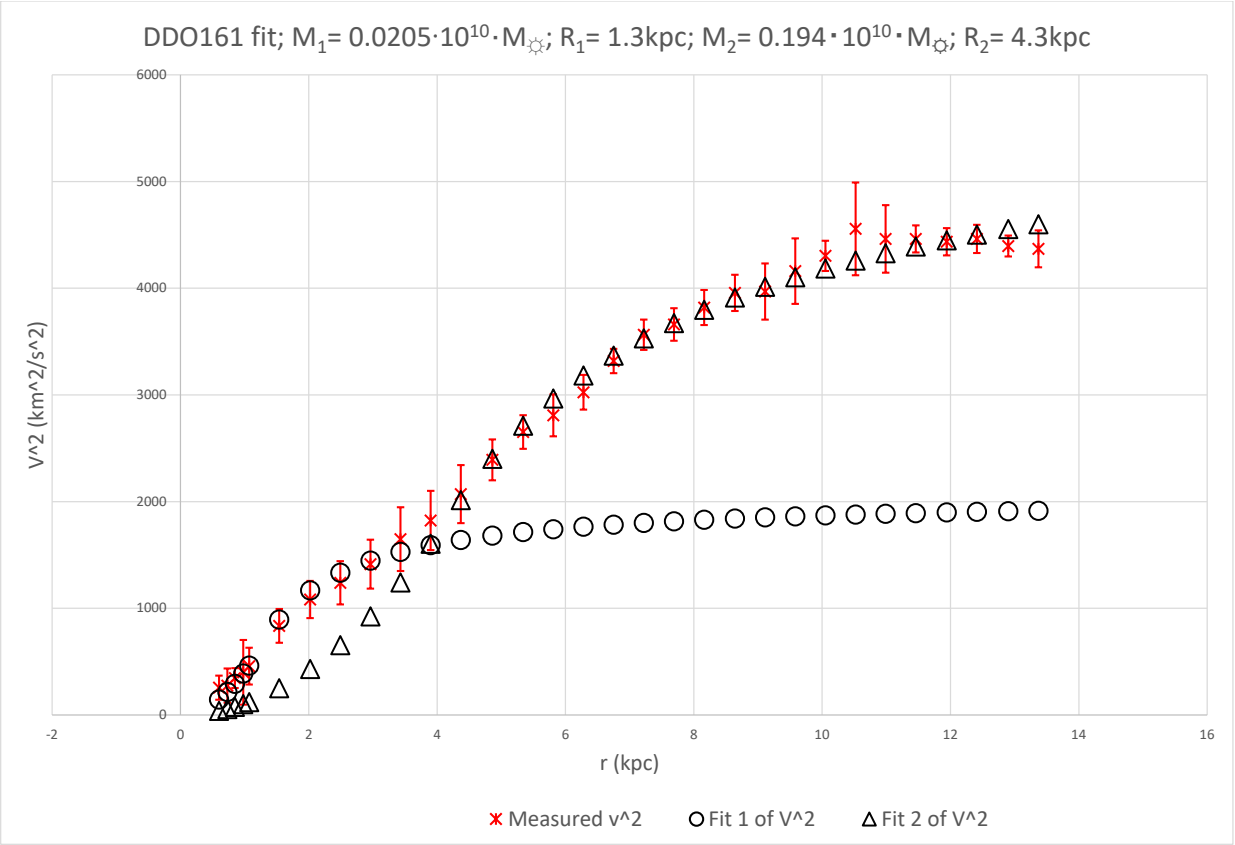

D512-2 fit; M_1= 0.013·10^{10}·$M_\odot$; R_1= 1 kpc;
V^2 (km^2/s^2)
r (kpc)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
Measured v^2
Fit 1 of V^2

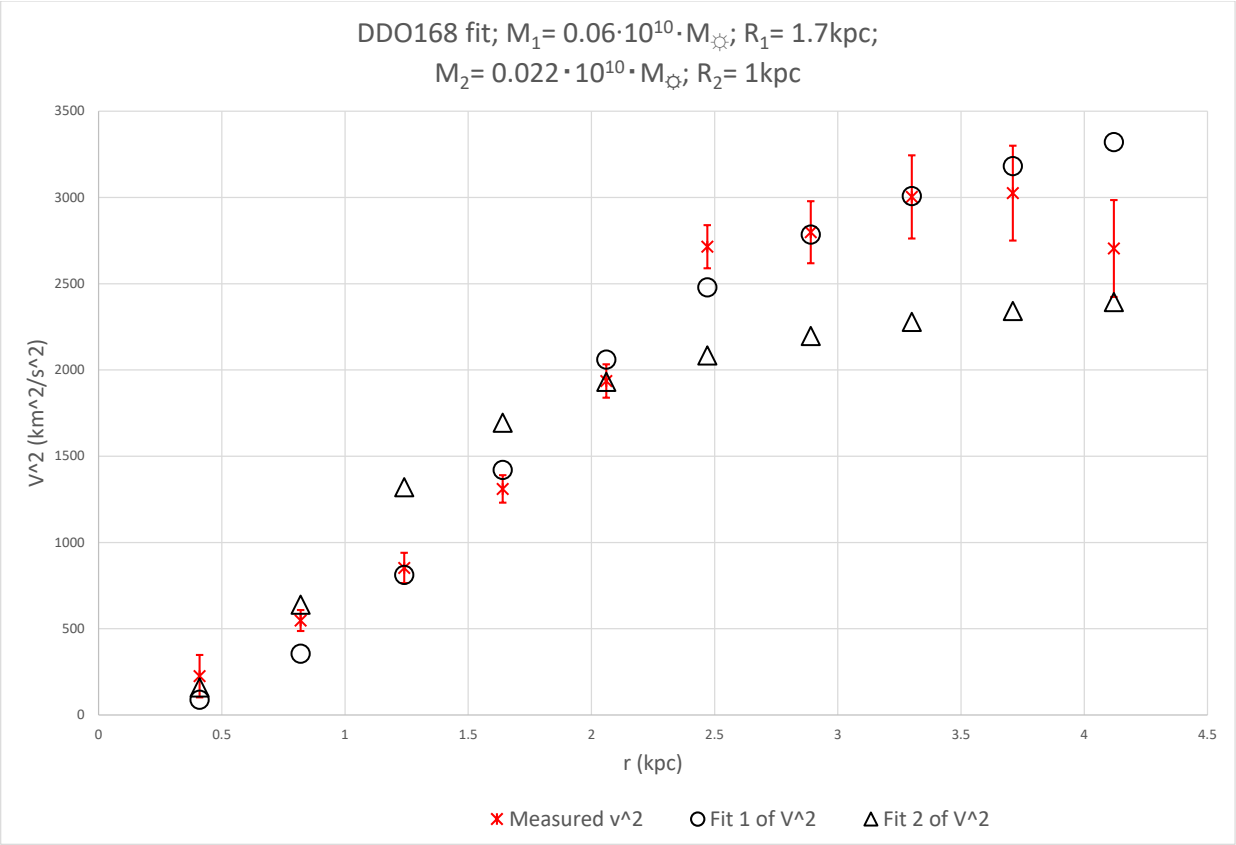

D564-8 fit; M_1= 0.0072·10^{10}·$M_\odot$; R_1= 1.15 kpc
V^2 (km^2/s^2)
r (kpc)
0
100
200
300
400
500
600
700
800
0
0.5
1
1.5
2
2.5
3
3.5
4
Measured v^2
Fit 1 of V^2

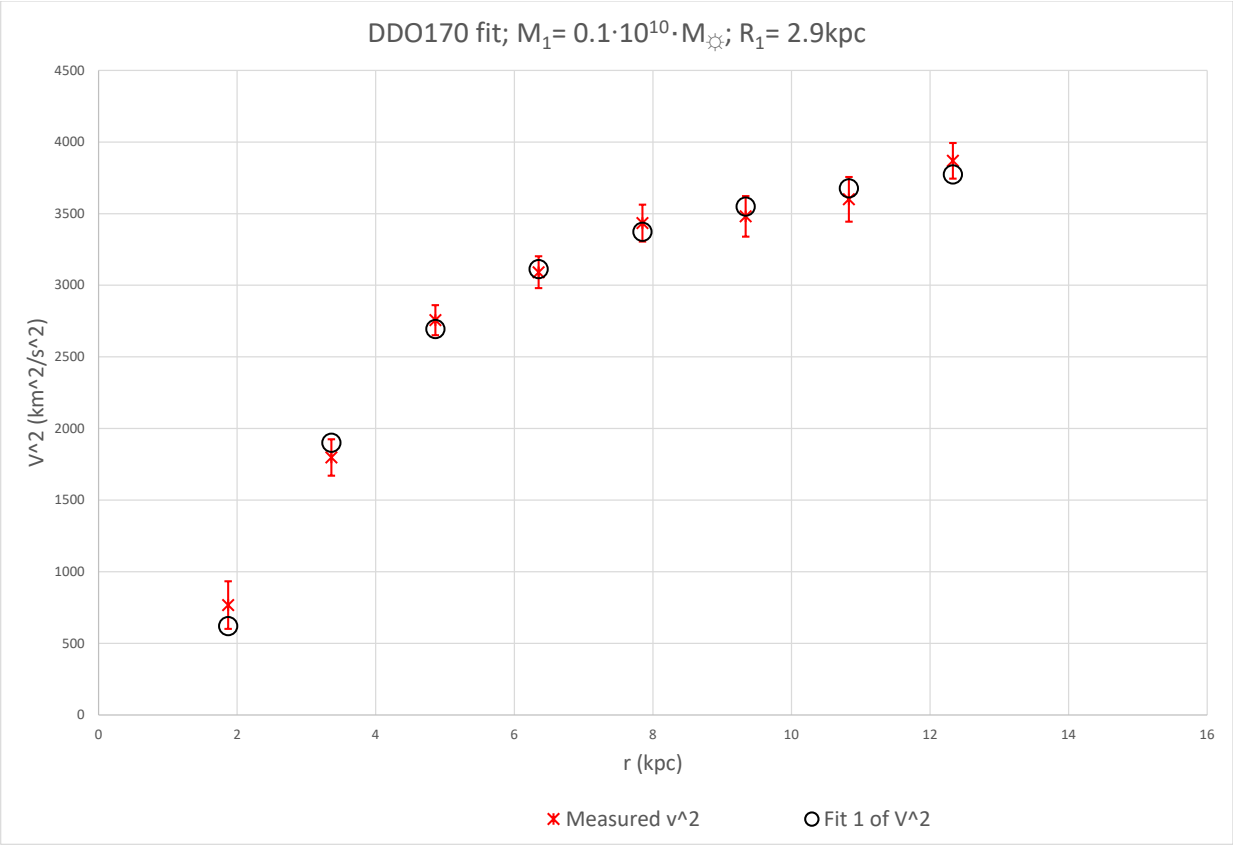

D631-7 fit; M_1= 0.027·10^10·$M_\odot$; R_1= 1.5 kpc; M_2= 0.053·10^10·$M_\odot$; R_2= 1.7 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

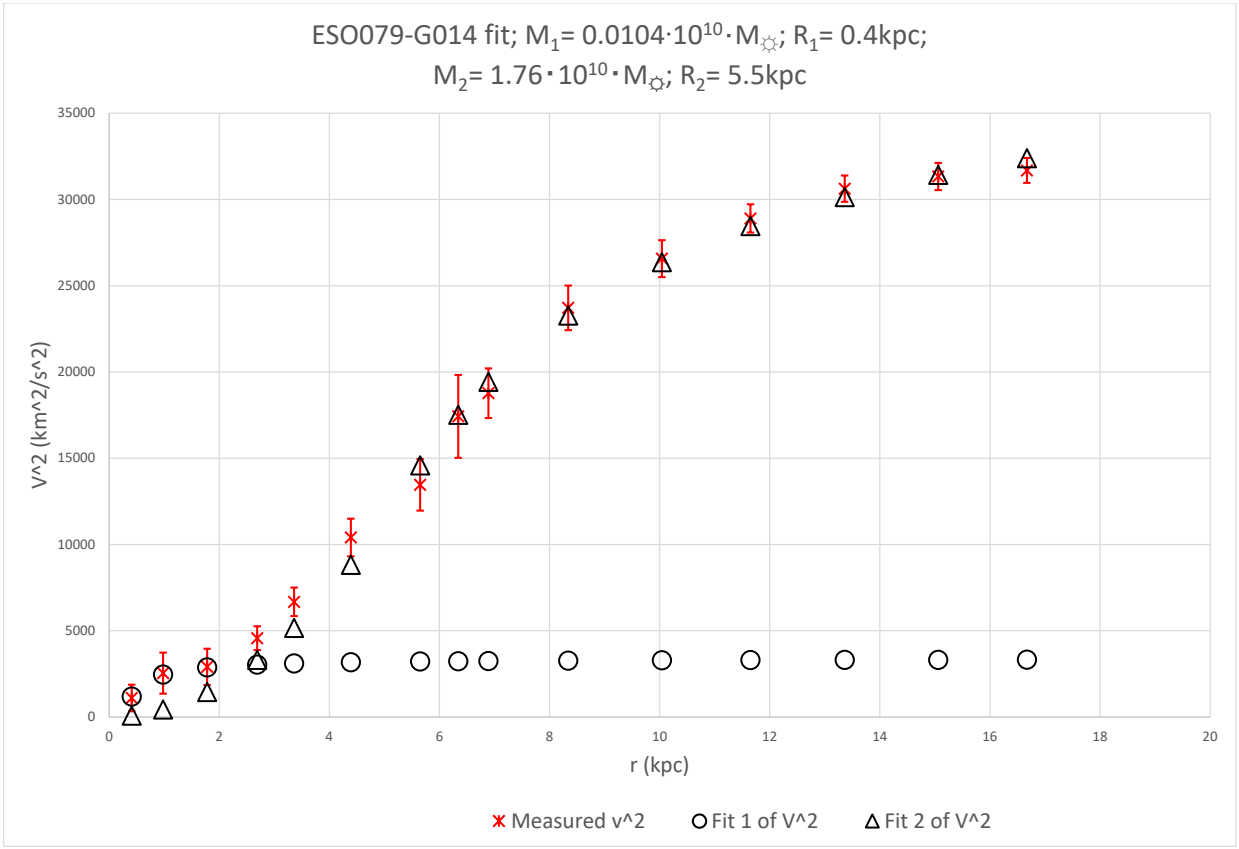

DDO064 fit; M1= 0.056·10^10·M☼; R1= 1.5kpc; M2= 0.0035·10^10·M☼; R2= 0.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

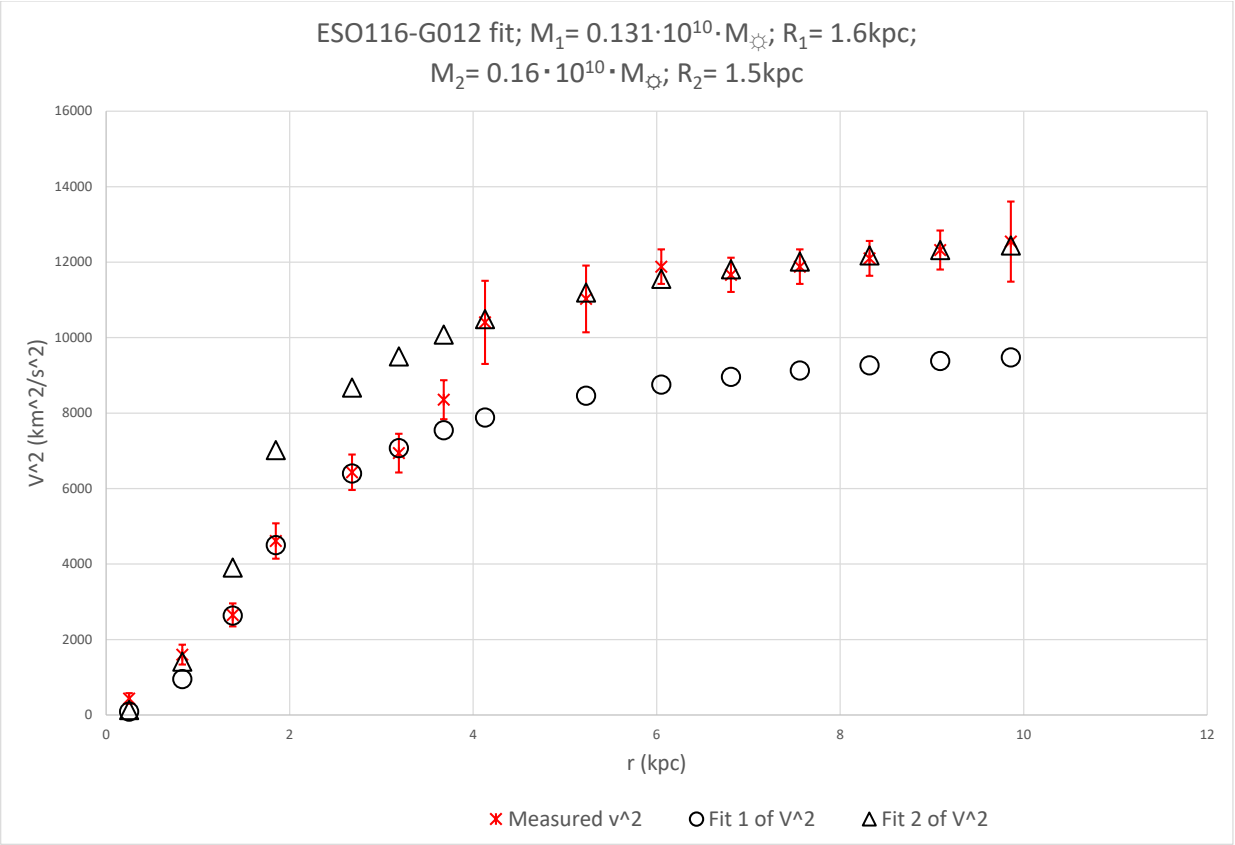

DDO154 fit; M_1= 0.0037·10^{10}·$M_\odot$; R_1= 0.6kpc; M_2= 0.05·10^{10}·$M_\odot$; R_2= 2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

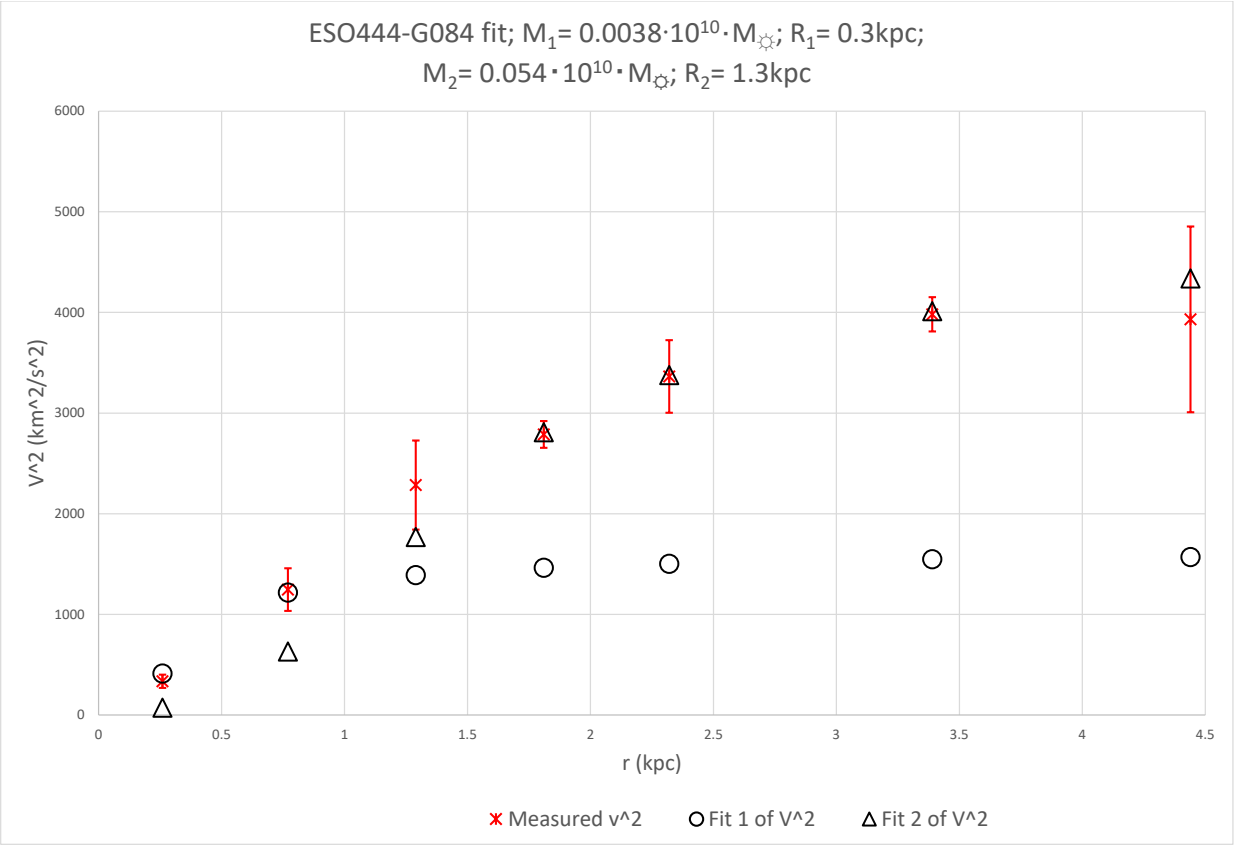

DDO161 fit; M_1= 0.0205·10^{10}·$M_\odot$; R_1= 1.3kpc; M_2= 0.194·10^{10}·$M_\odot$; R_2= 4.3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

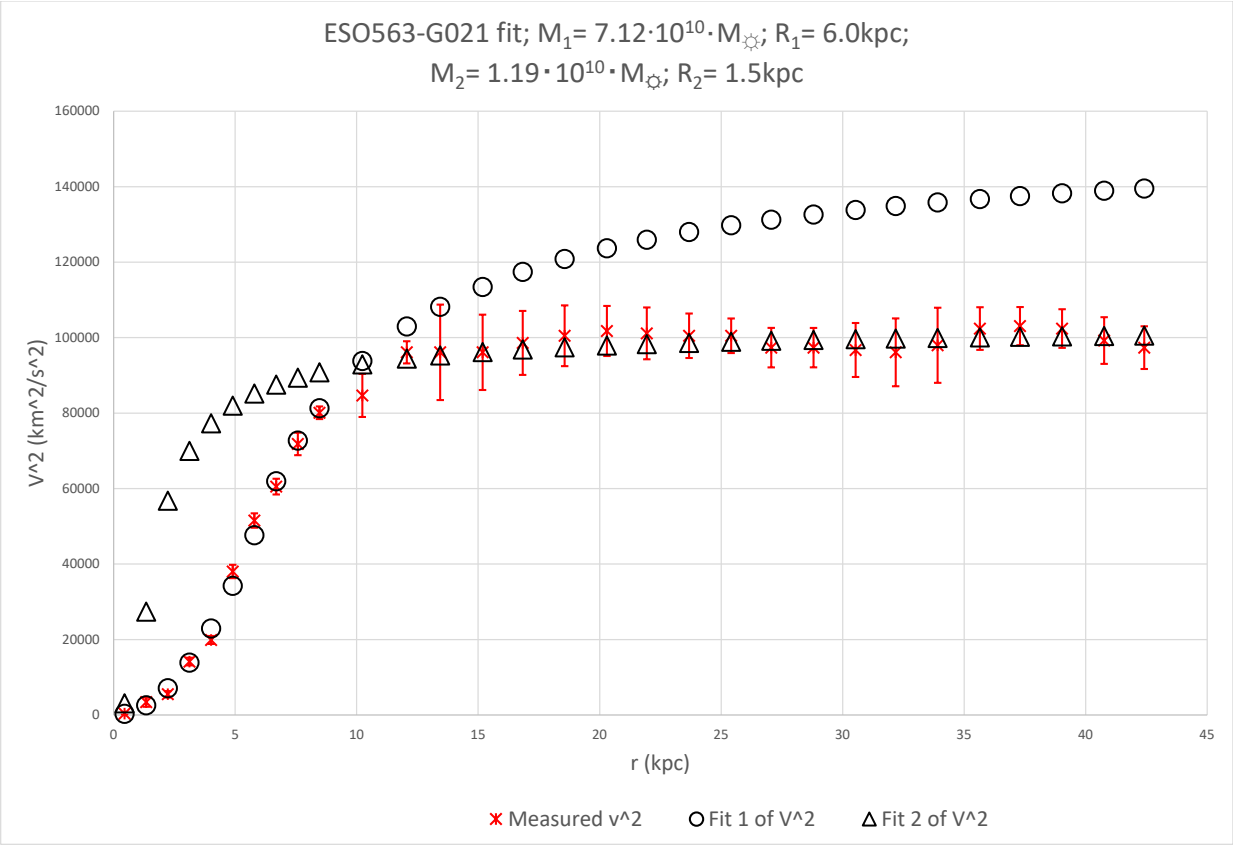

DDO168 fit; M_1= 0.06·10^10·$M_\odot$; R_1= 1.7kpc;
M_2= 0.022·10^10·$M_\odot$; R_2= 1kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

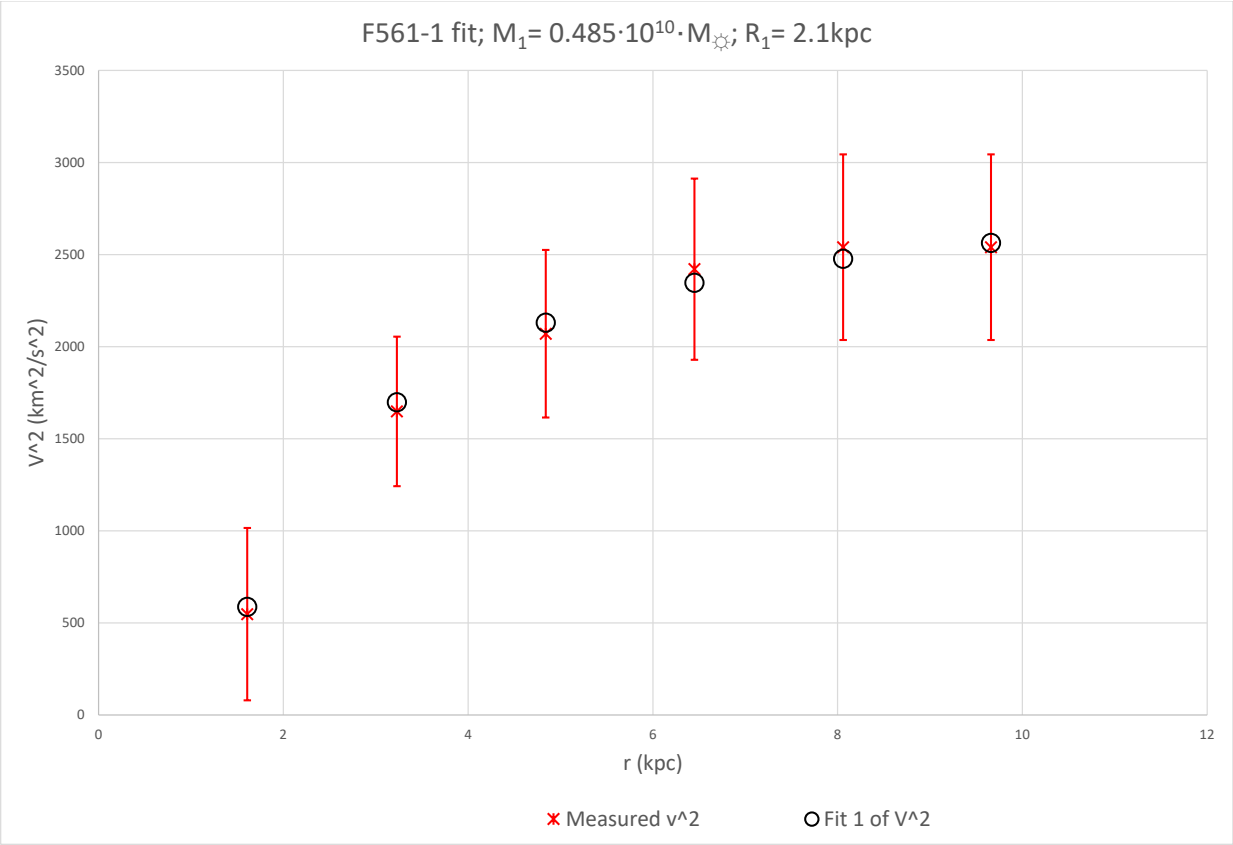

DDO170 fit; M1= 0.1·10^10·M☼; R1= 2.9kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

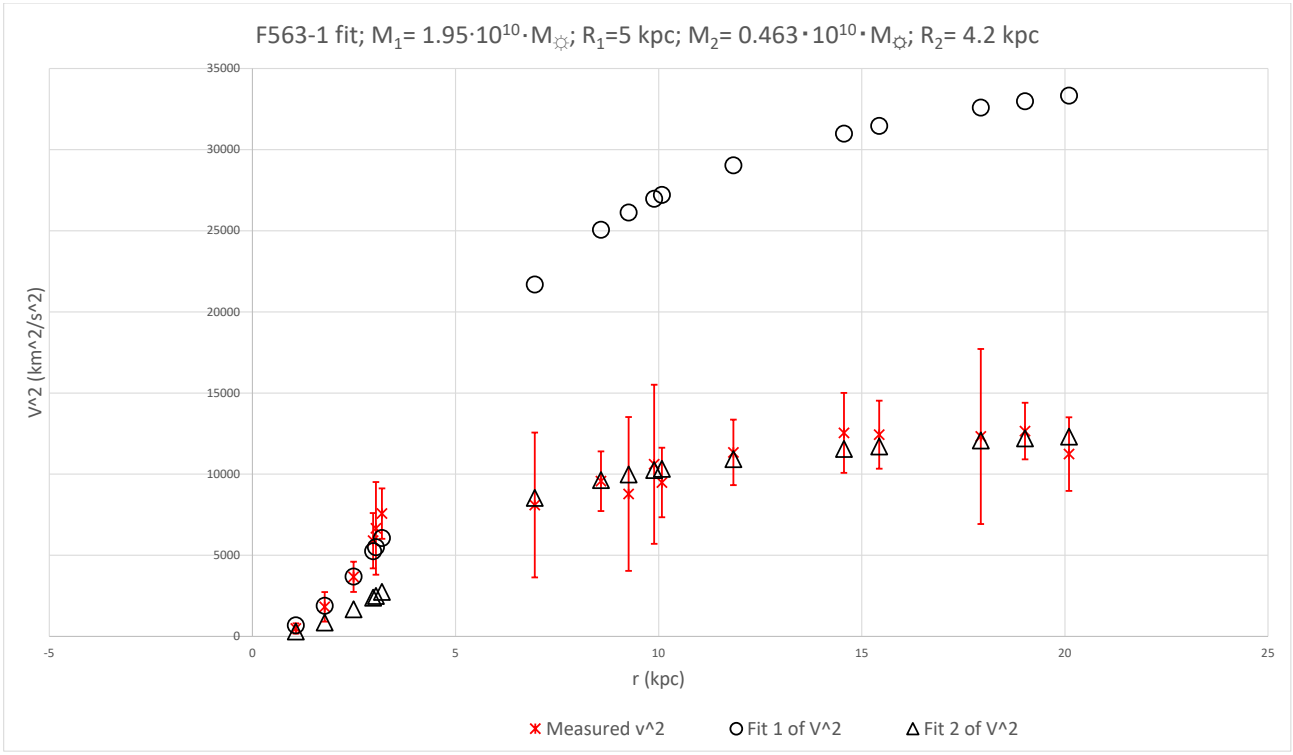

ESO079-G014 fit; M_1= 0.0104·10^10·$M_\odot$; R_1= 0.4kpc;
M_2= 1.76·10^10·$M_\odot$; R_2= 5.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

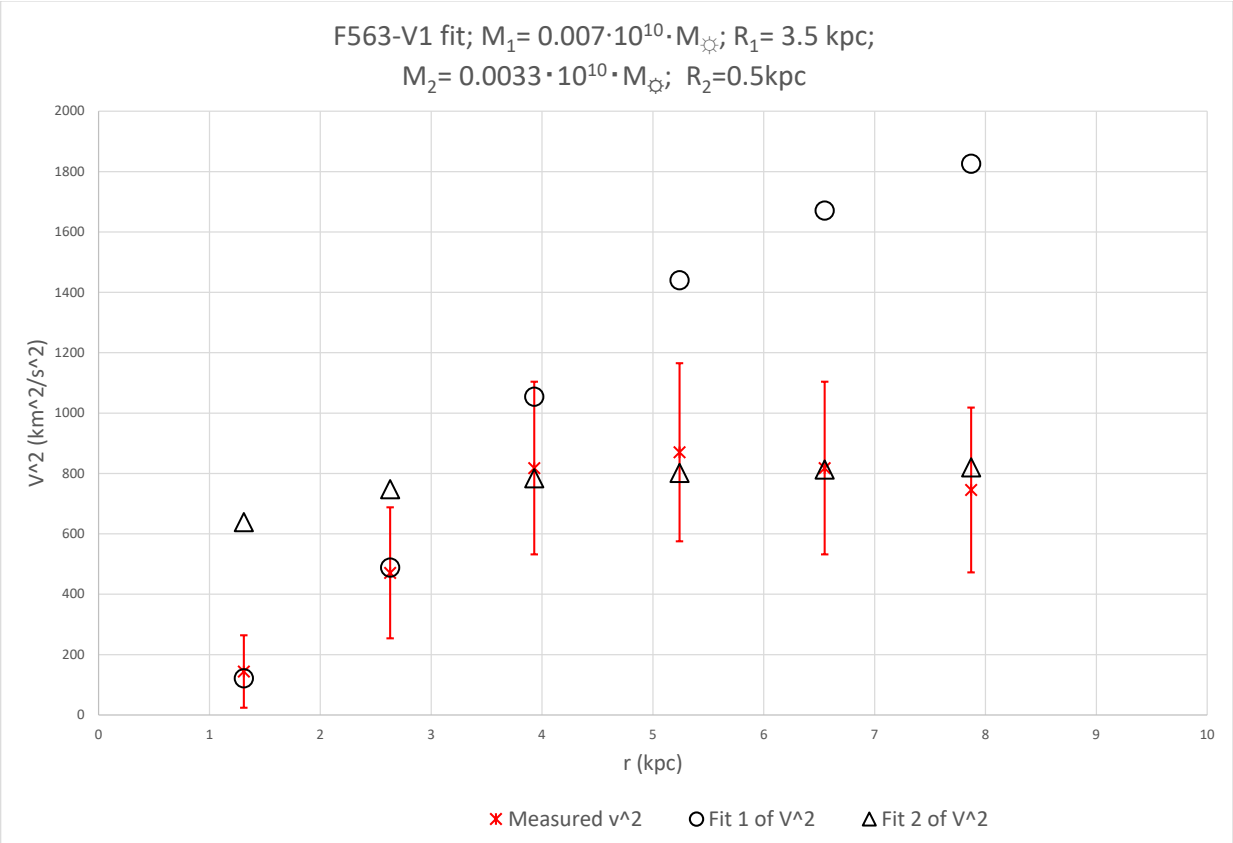

ESO116-G012 fit; M1= 0.131·10^10·M☼; R1= 1.6kpc;
M2= 0.16·10^10·M☼; R2= 1.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

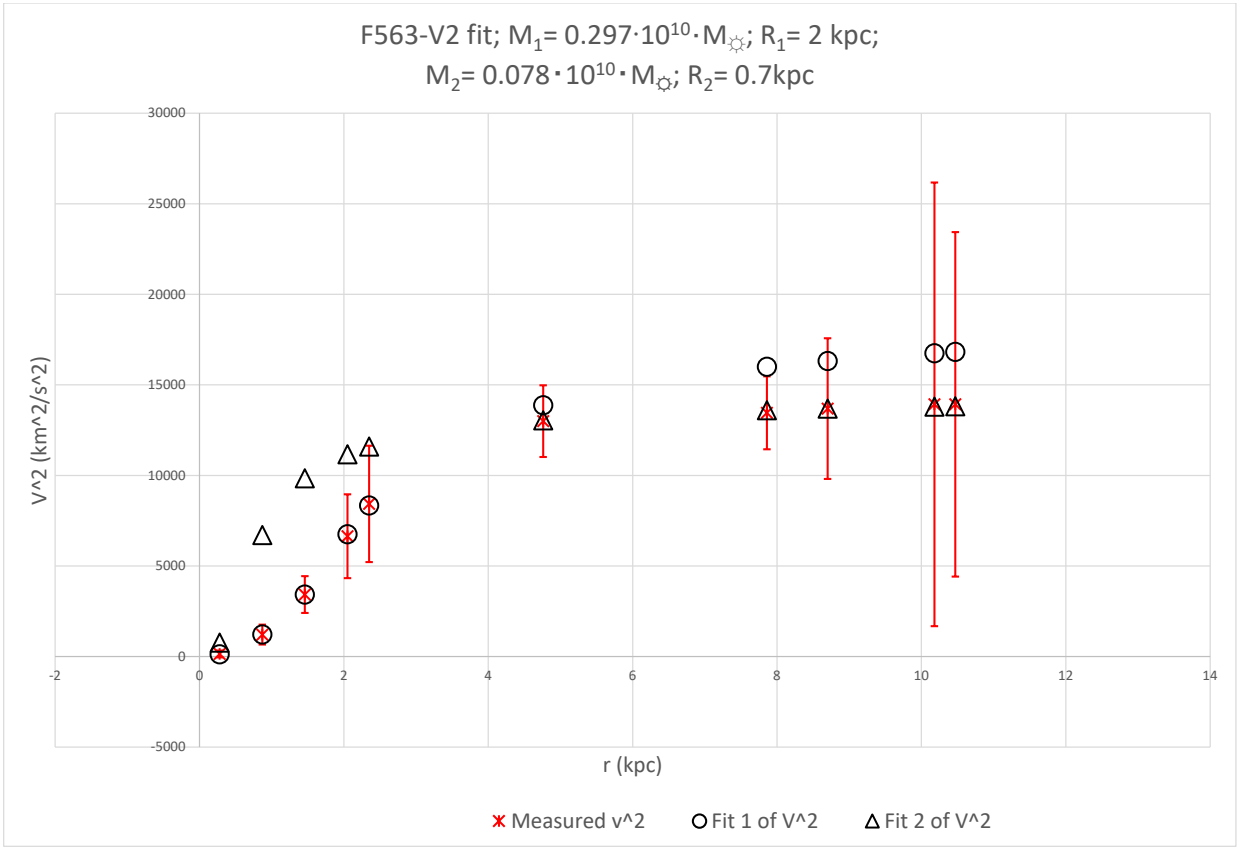

ESO444-G084 fit; M_1= 0.0038·10^{10}·$M_\odot$; R_1= 0.3kpc;
M_2= 0.054·10^{10}·$M_\odot$; R_2= 1.3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

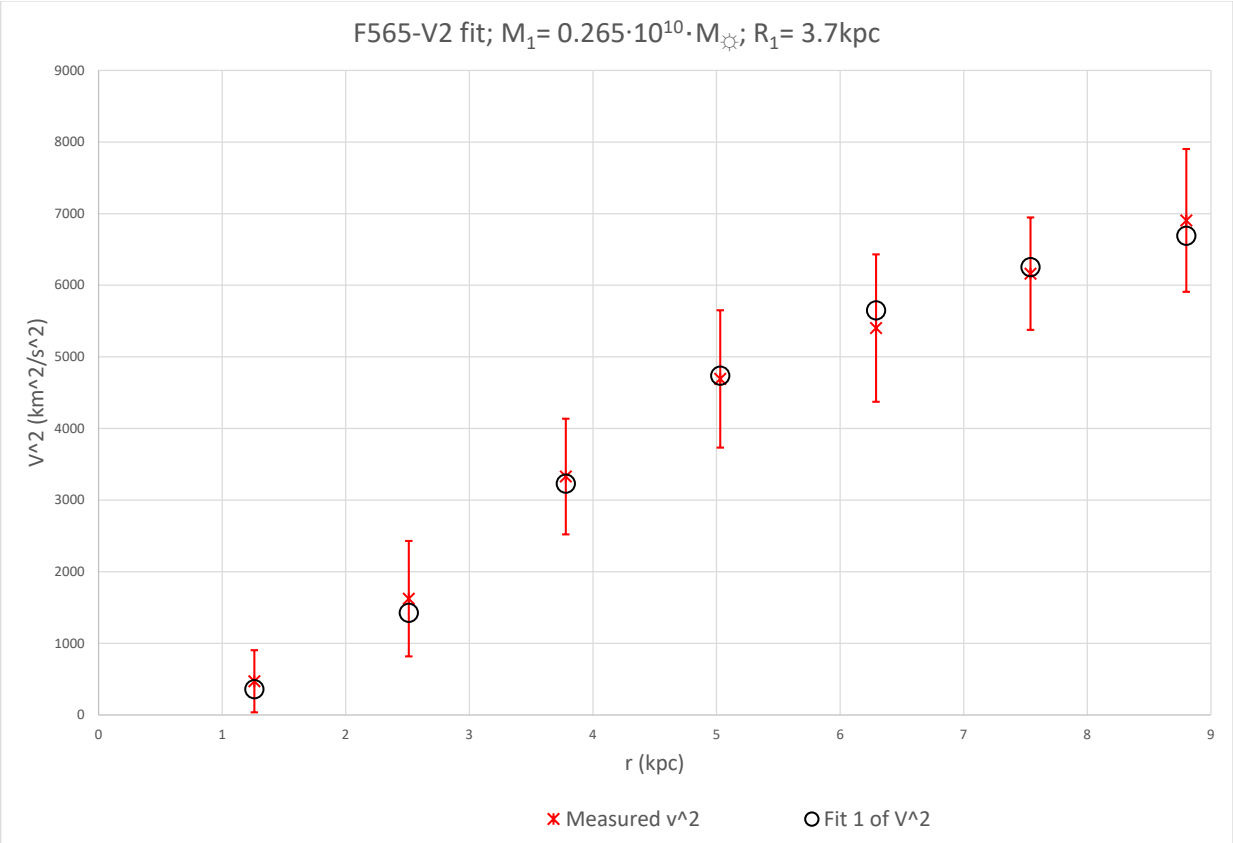

ESO563-G021 fit; M1= 7.12·10^10·M☼; R1= 6.0kpc;
M2= 1.19·10^10·M☼; R2= 1.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

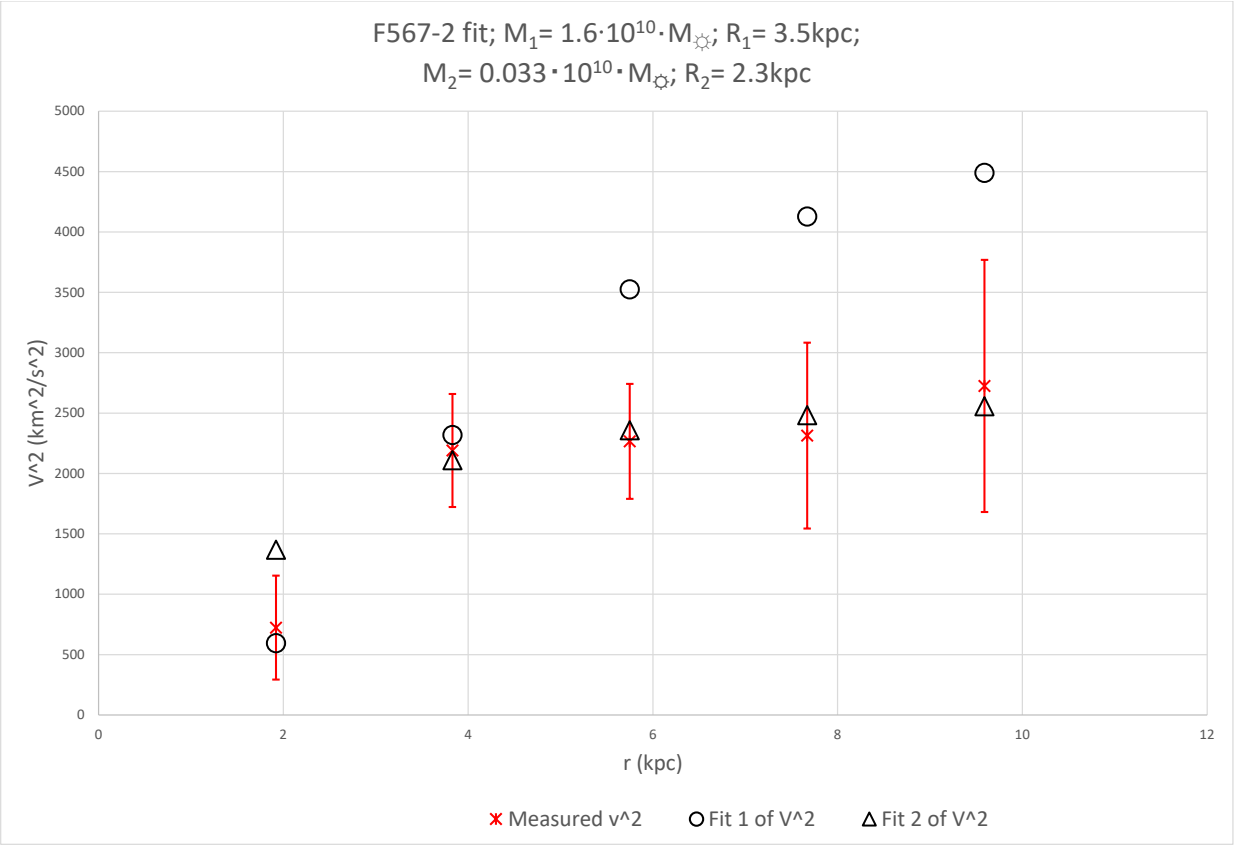

F561-1 fit; M1= 0.485·10^10·M☼; R1= 2.1kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

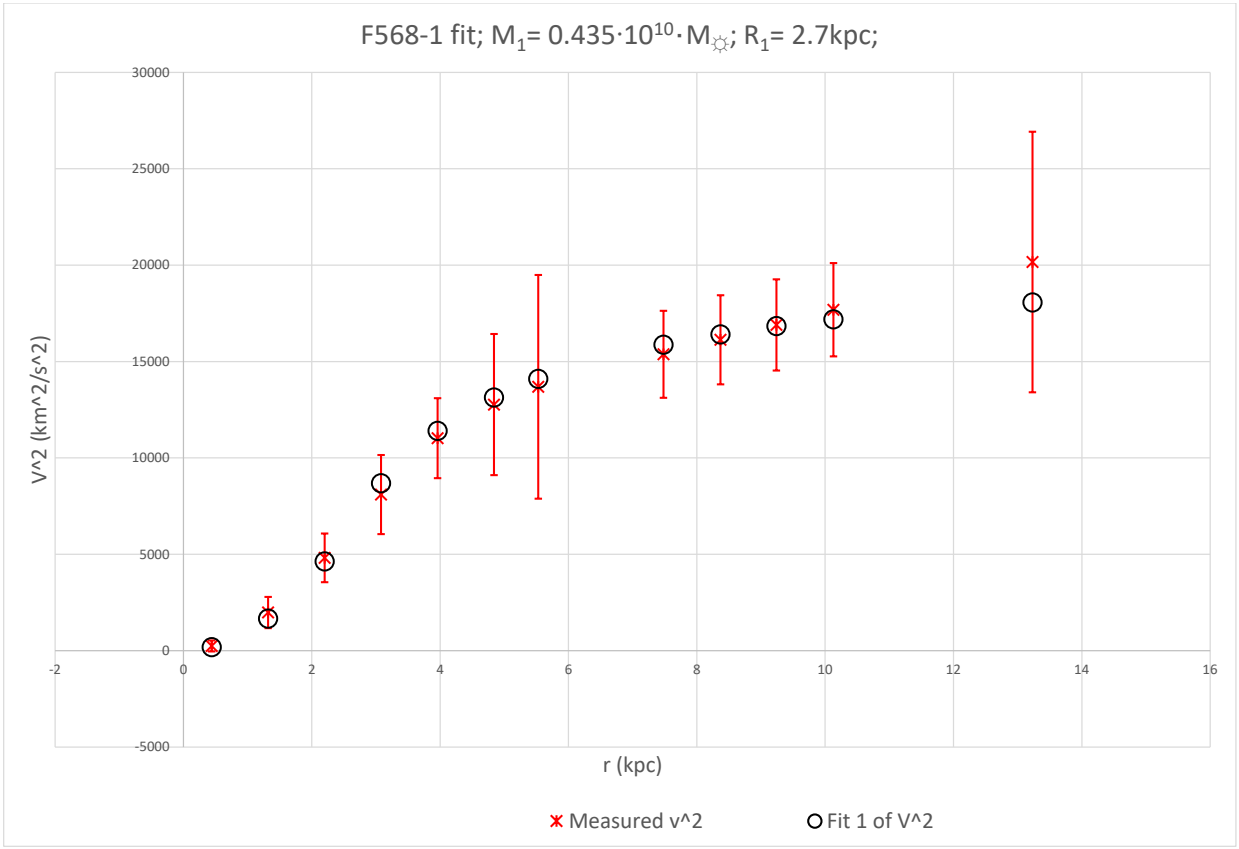

F563-1 fit; M_1= 1.95·10^10·$M_\odot$; R_1=5 kpc; M_2= 0.463·10^10·$M_\odot$; R_2= 4.2 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

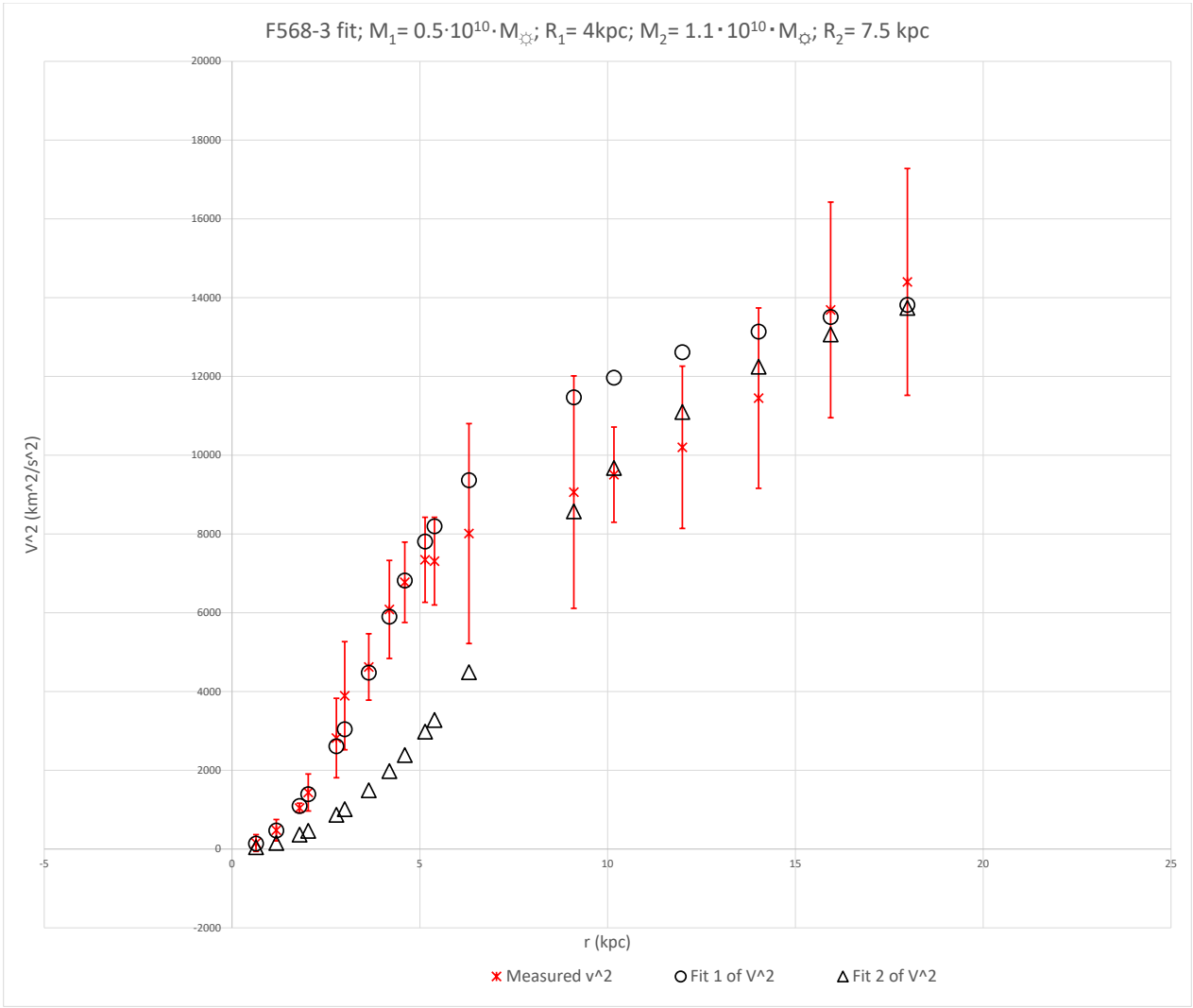

F563-V1 fit; M1= 0.007·10^10·M☼; R1= 3.5 kpc;
M2= 0.0033·10^10·M☼; R2=0.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

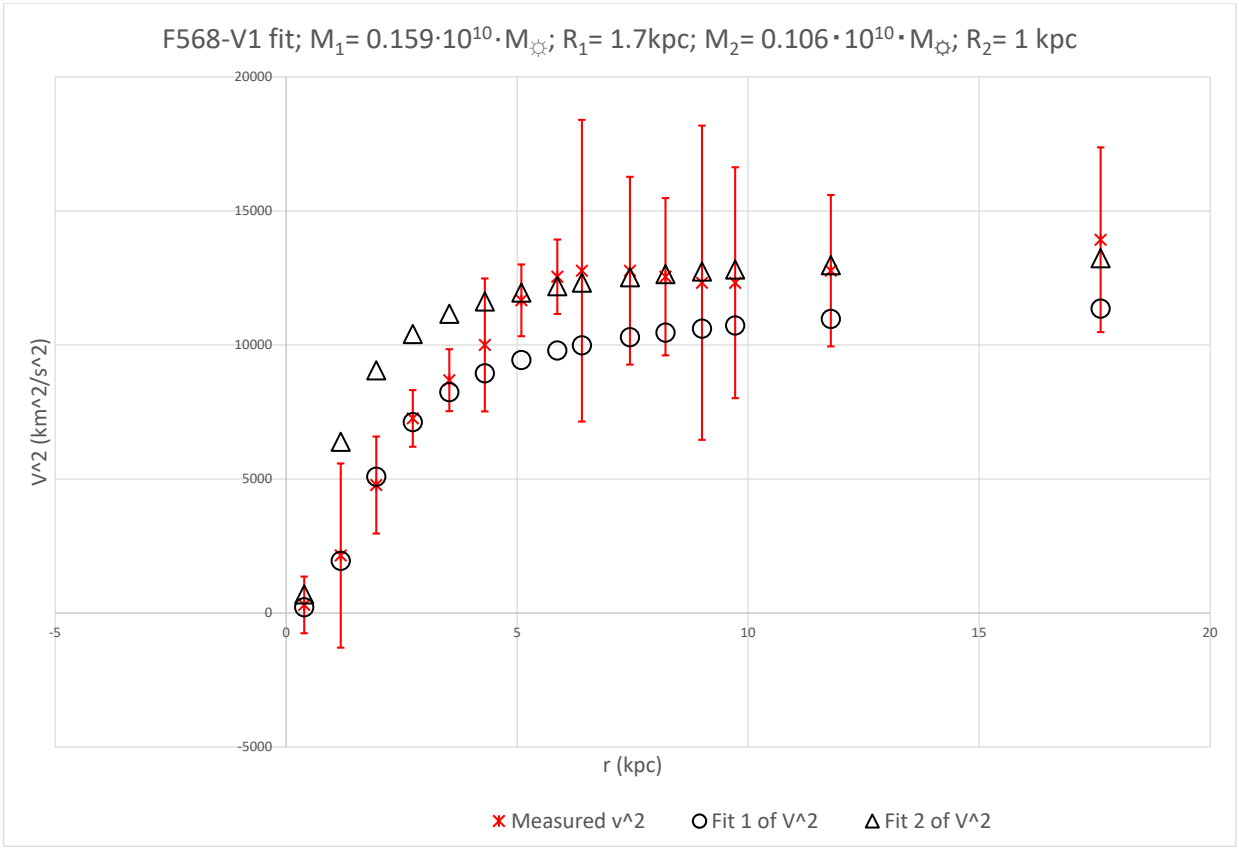

F563-V2 fit; M_1= 0.297·10^{10}·$M_\odot$; R_1= 2 kpc;
M_2= 0.078·10^{10}·$M_\odot$; R_2= 0.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

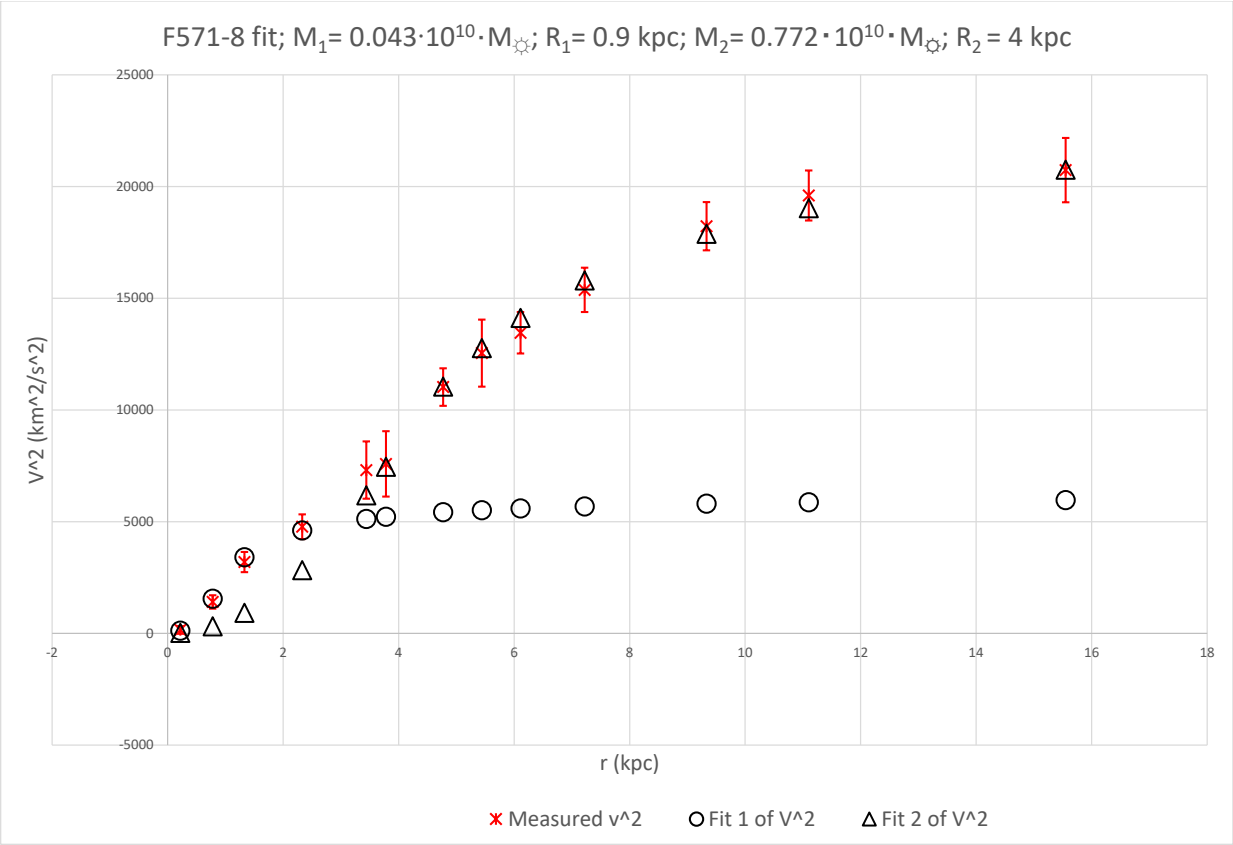

F565-V2 fit; M_1= 0.265·10^{10}·$M_\odot$; R_1= 3.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

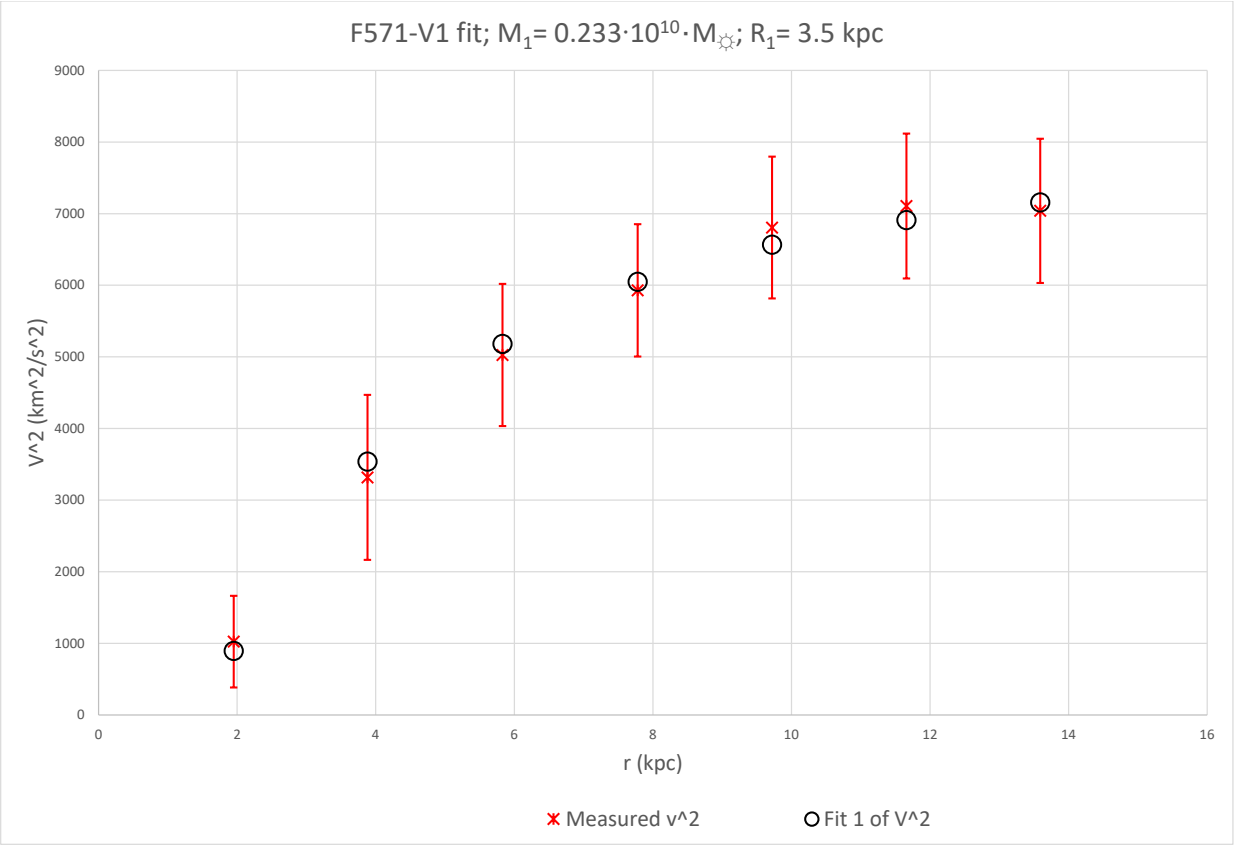

F567-2 fit; M_1= 1.6·10^10·$M_\odot$; R_1= 3.5kpc;
M_2= 0.033·10^10·$M_\odot$; R_2= 2.3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

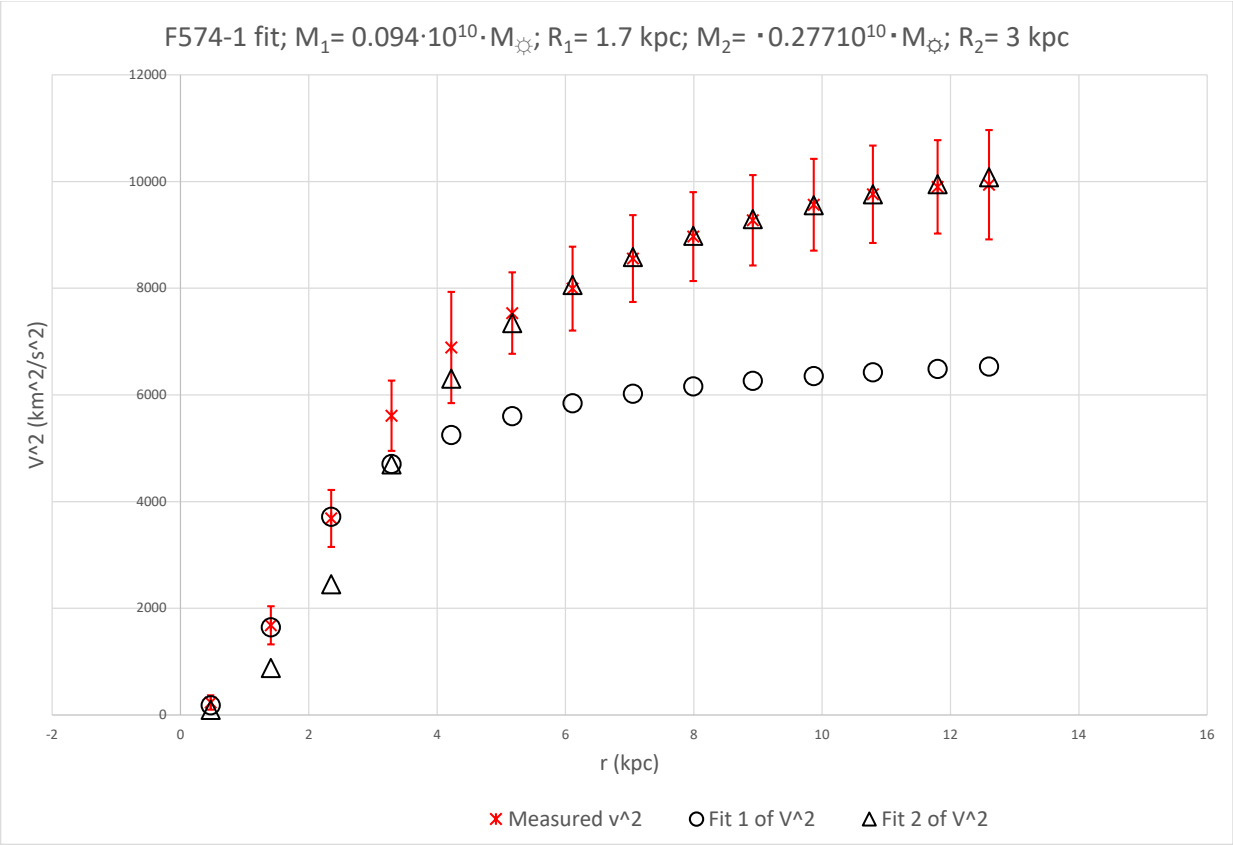

F568-1 fit; M_1= 0.435·10^{10}·$M_\odot$; R_1= 2.7kpc;
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

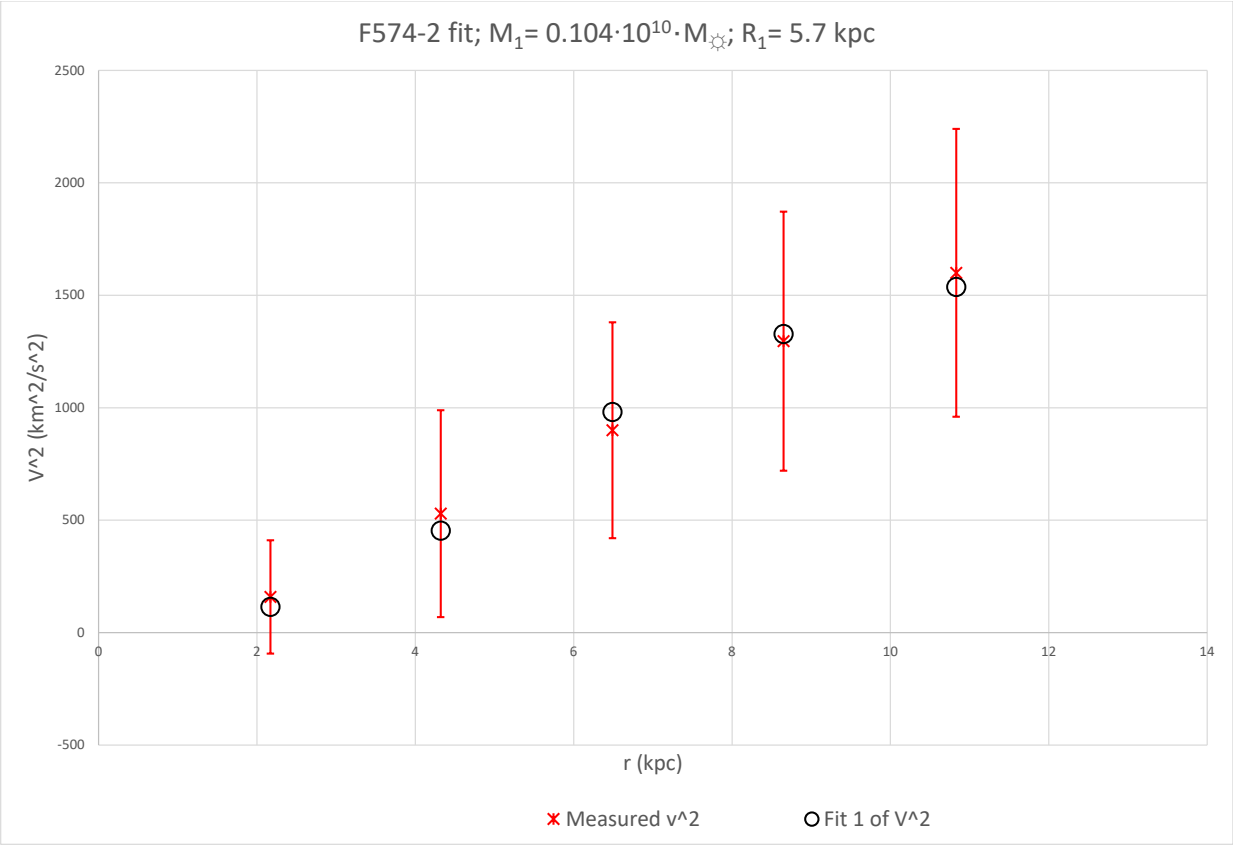

F568-3 fit; M_1= 0.5·10^10·$M_\odot$; R_1= 4kpc; M_2= 1.1·10^10·$M_\odot$; R_2= 7.5 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

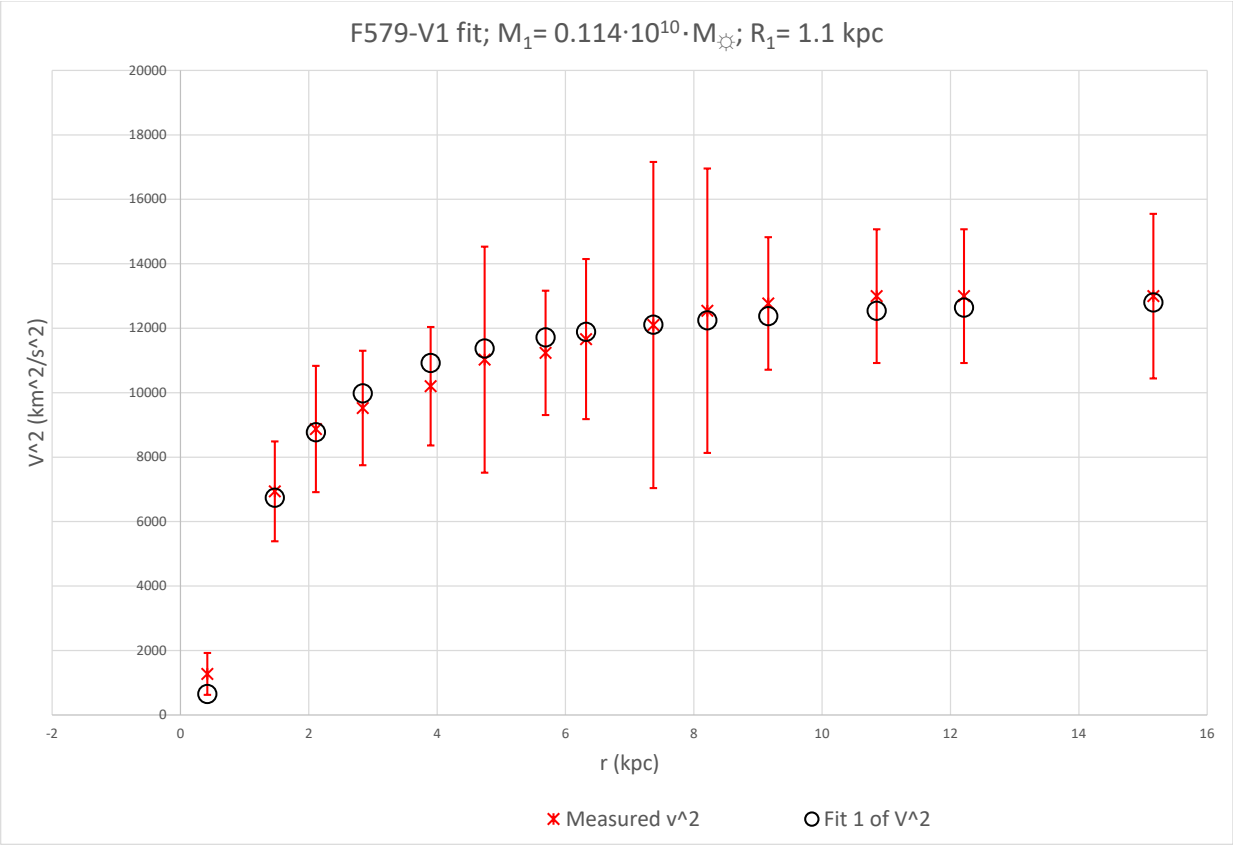

F568-V1 fit; M_1= 0.159·10^10·M☼; R_1= 1.7kpc; M_2= 0.106·10^10·M☼; R_2= 1 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

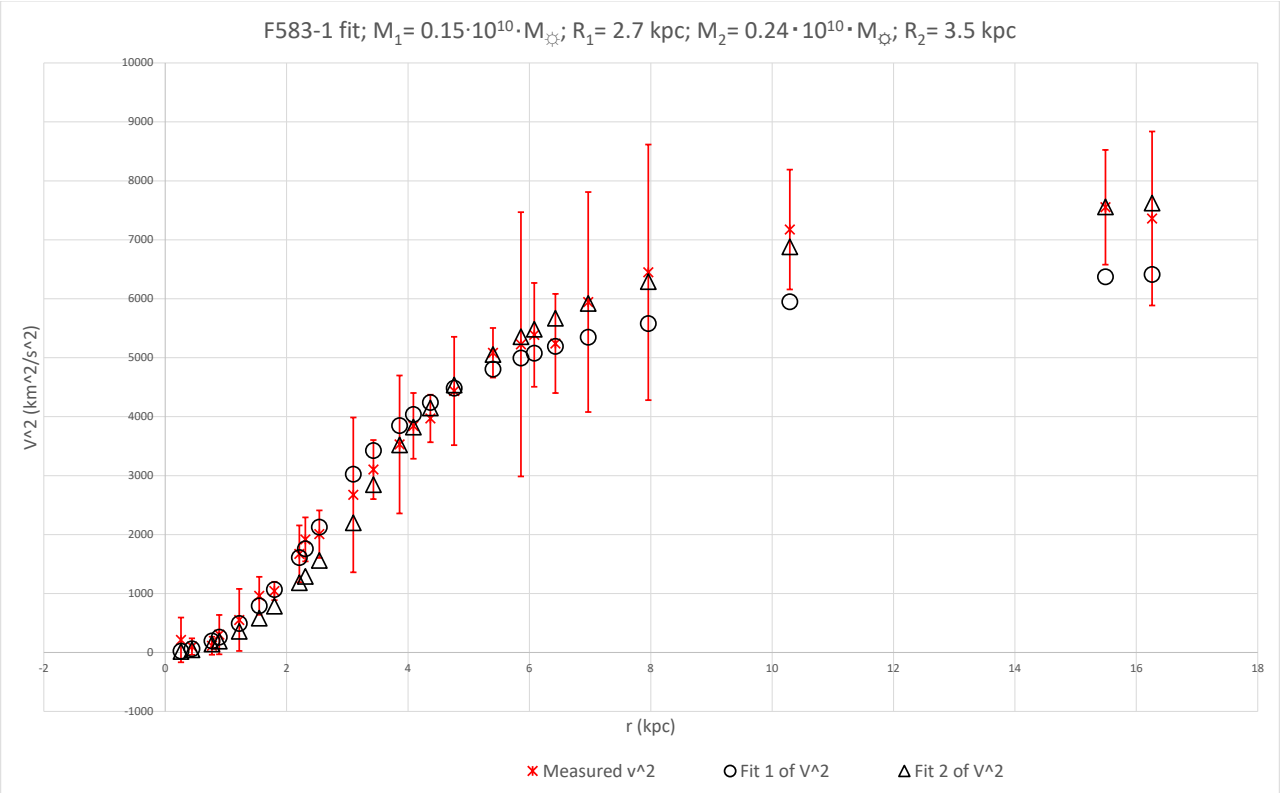

F571-8 fit; M1= 0.043·10^10·M☼; R1= 0.9 kpc; M2= 0.772·10^10·M☼; R2 = 4 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

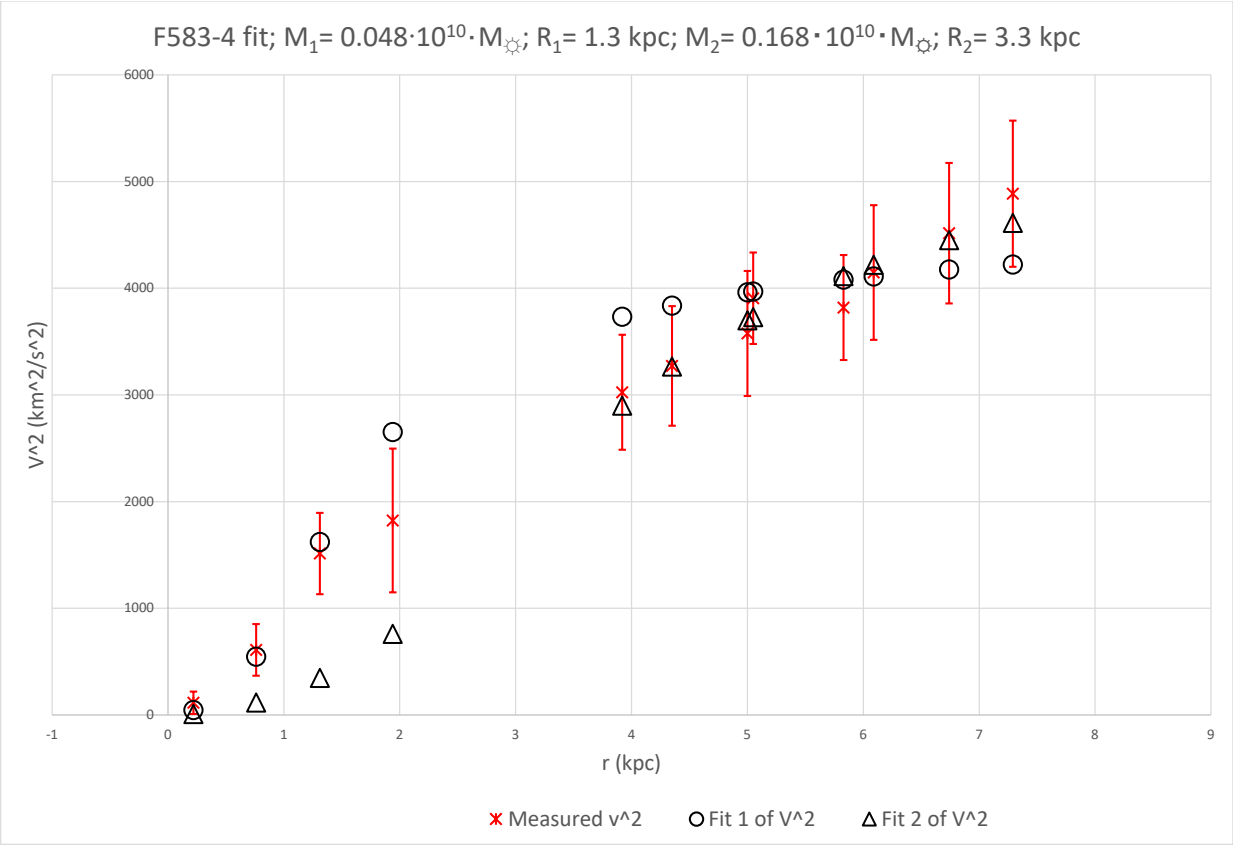

F571-V1 fit; M1= 0.233·10^10·M☼; R1= 3.5 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

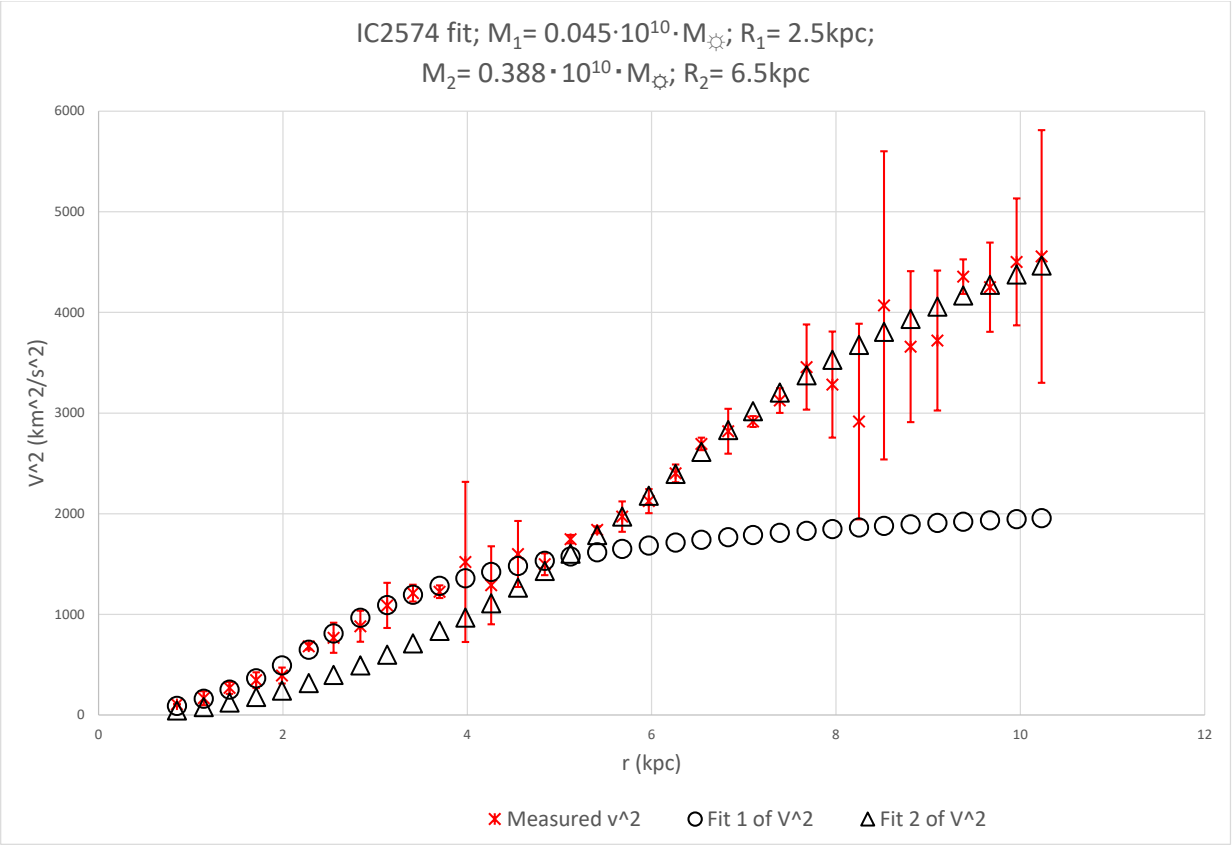

F574-1 fit; M1= 0.094·10^10·M☼; R1= 1.7 kpc; M2= ·0.27710^10·M☼; R2= 3 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

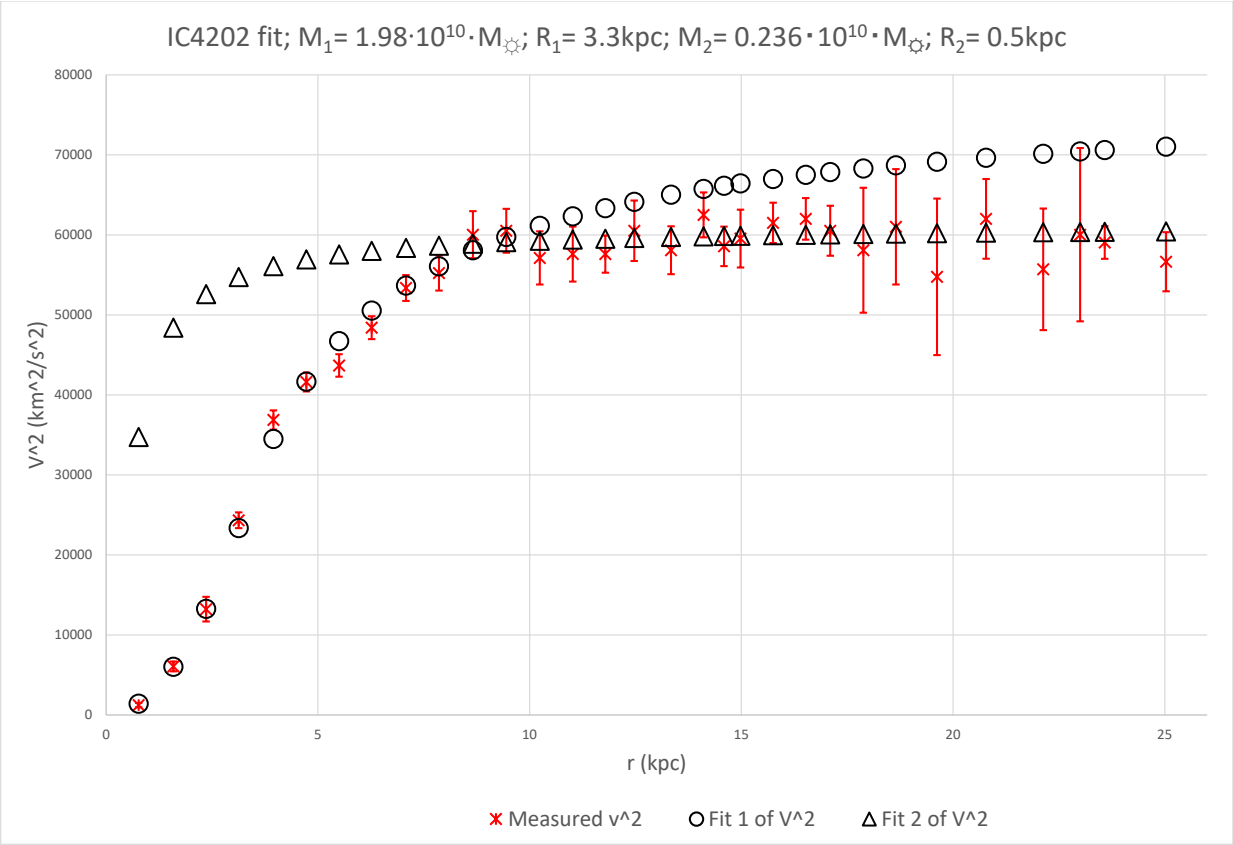

F574-2 fit; M_1= 0.104·10^{10}·$M_\odot$; R_1= 5.7 kpc
V^2 (km^2/s^2)
2500
2000
1500
1000
500
0
-500
0
2
4
6
8
10
12
14
r (kpc)
Measured v^2
Fit 1 of V^2

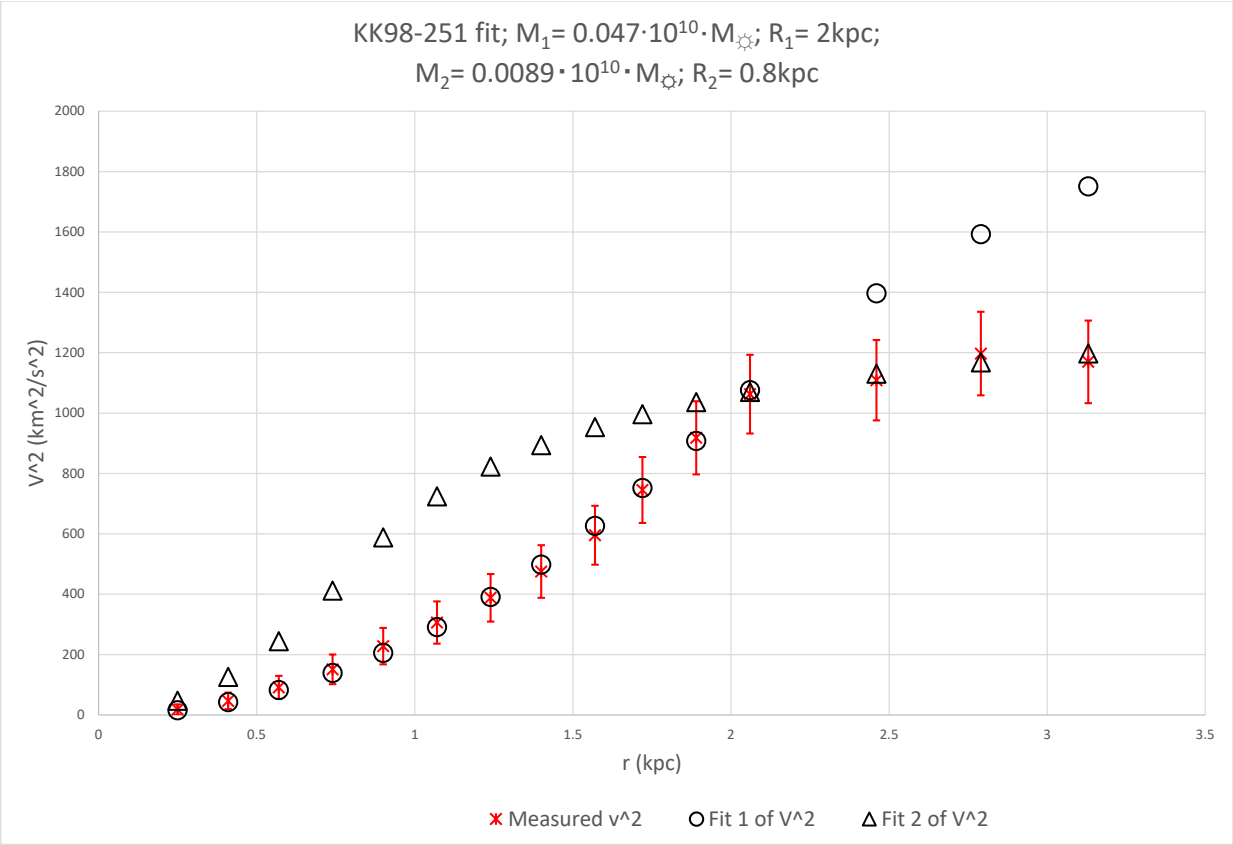

F579-V1 fit; M_1= 0.114·10^{10}·$M_\odot$; R_1= 1.1 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

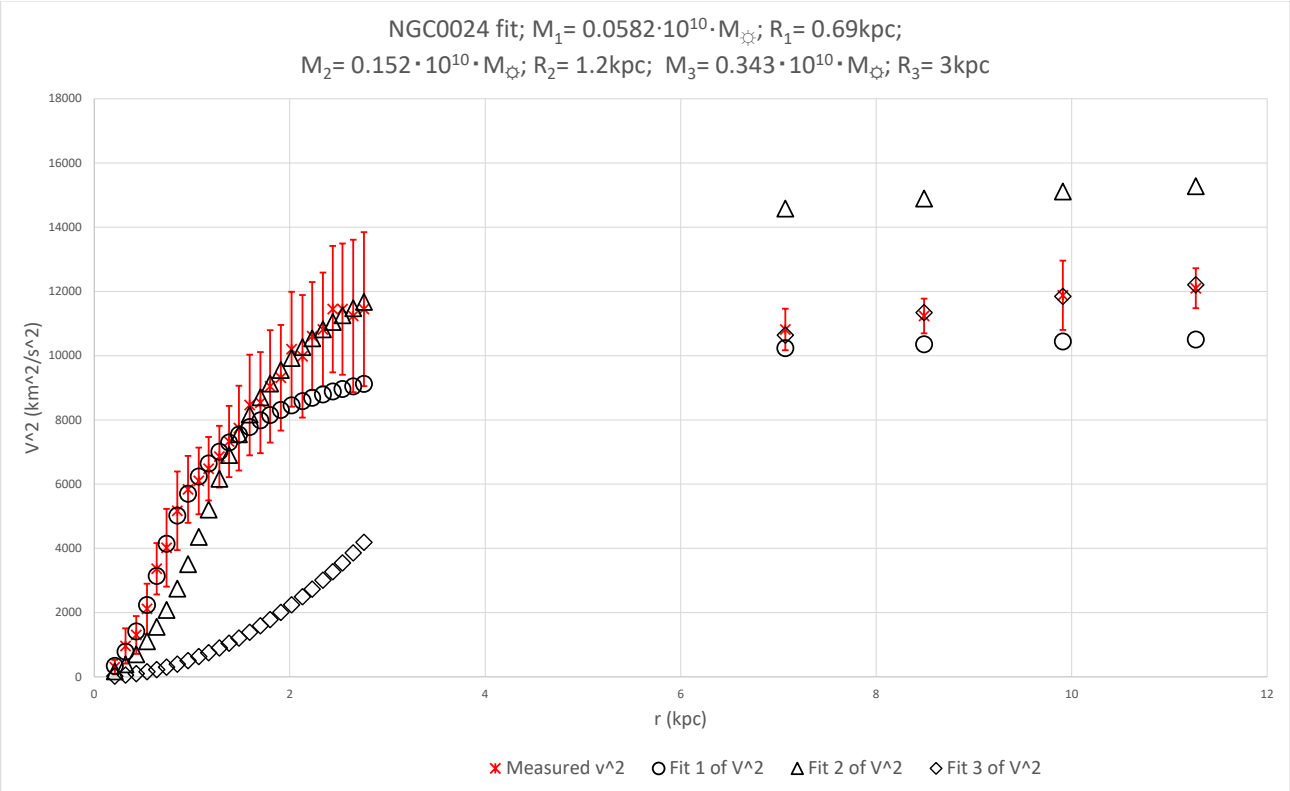

F583-1 fit; M1= 0.15·10^10·M☼; R1= 2.7 kpc; M2= 0.24·10^10·M☼; R2= 3.5 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

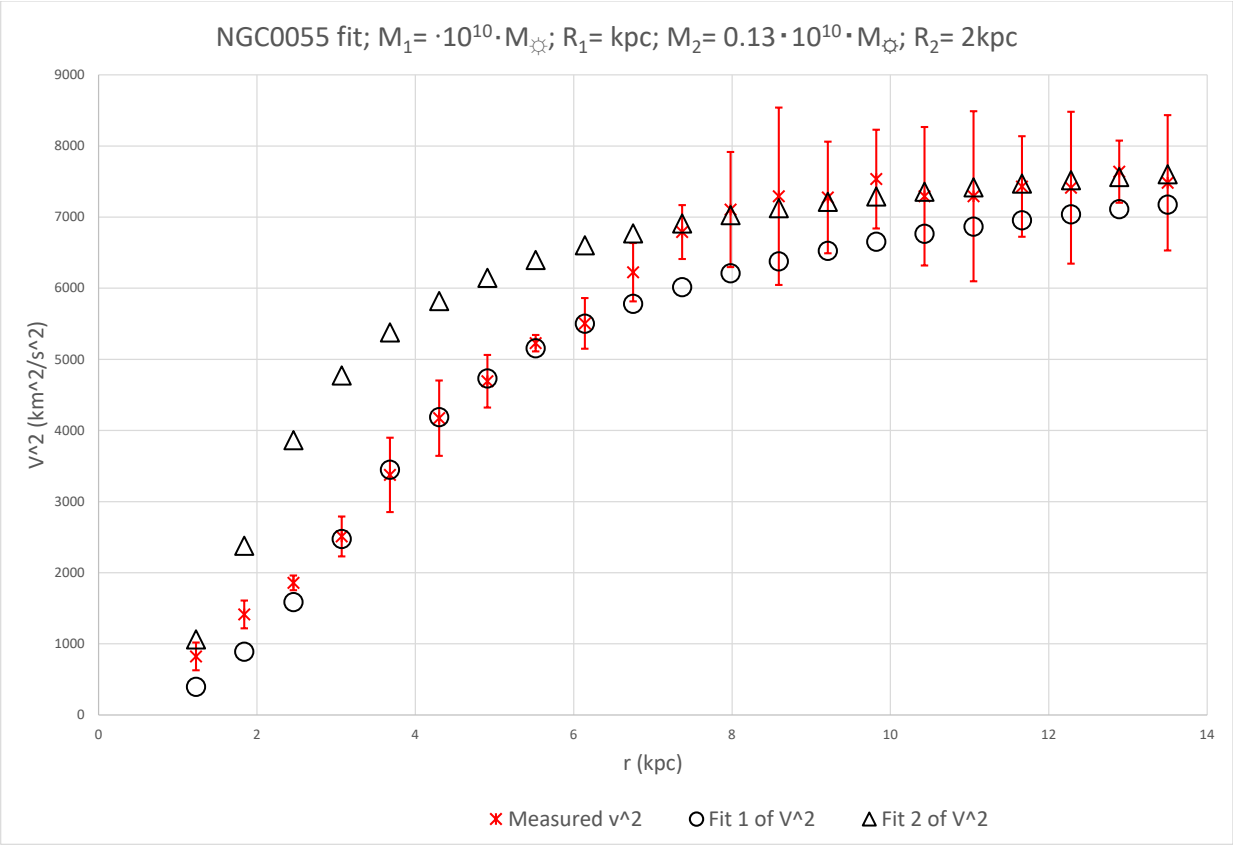

F583-4 fit; M_1= 0.048·10^10·$M_\odot$; R_1= 1.3 kpc; M_2= 0.168·10^10·$M_\odot$; R_2= 3.3 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

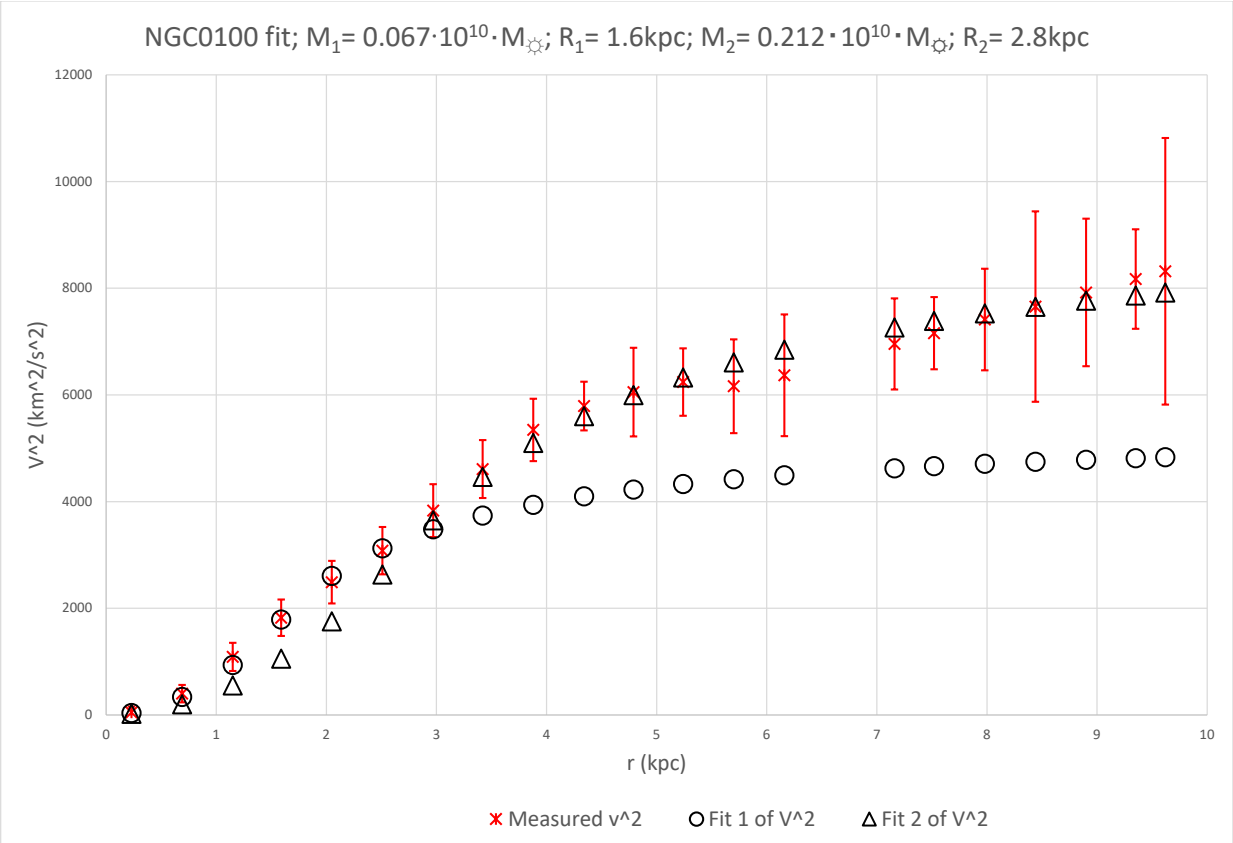

IC2574 fit; M1= 0.045·10^10·M☼; R1= 2.5kpc;
M2= 0.388·10^10·M☼; R2= 6.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

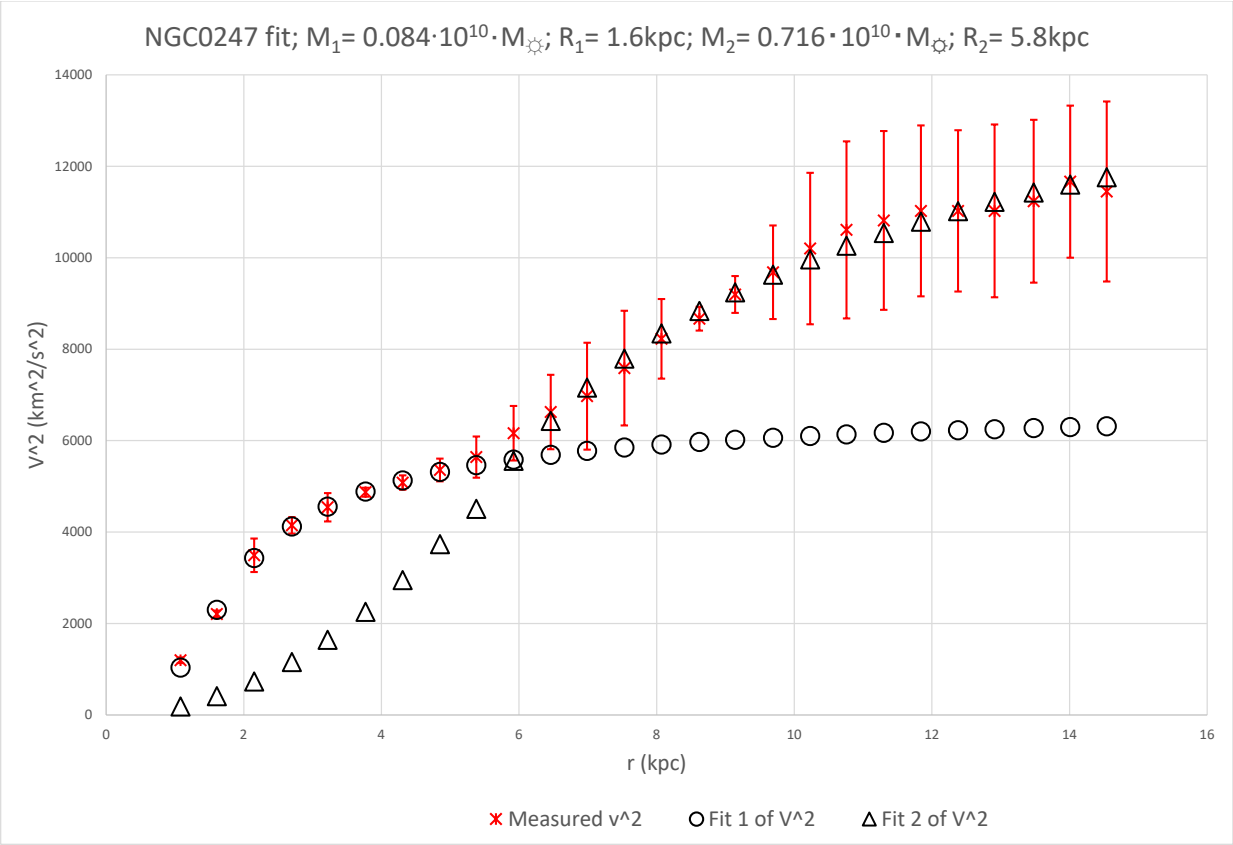

IC4202 fit; M1= 1.98·10^10·M☼; R1= 3.3kpc; M2= 0.236·10^10·M☼; R2= 0.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

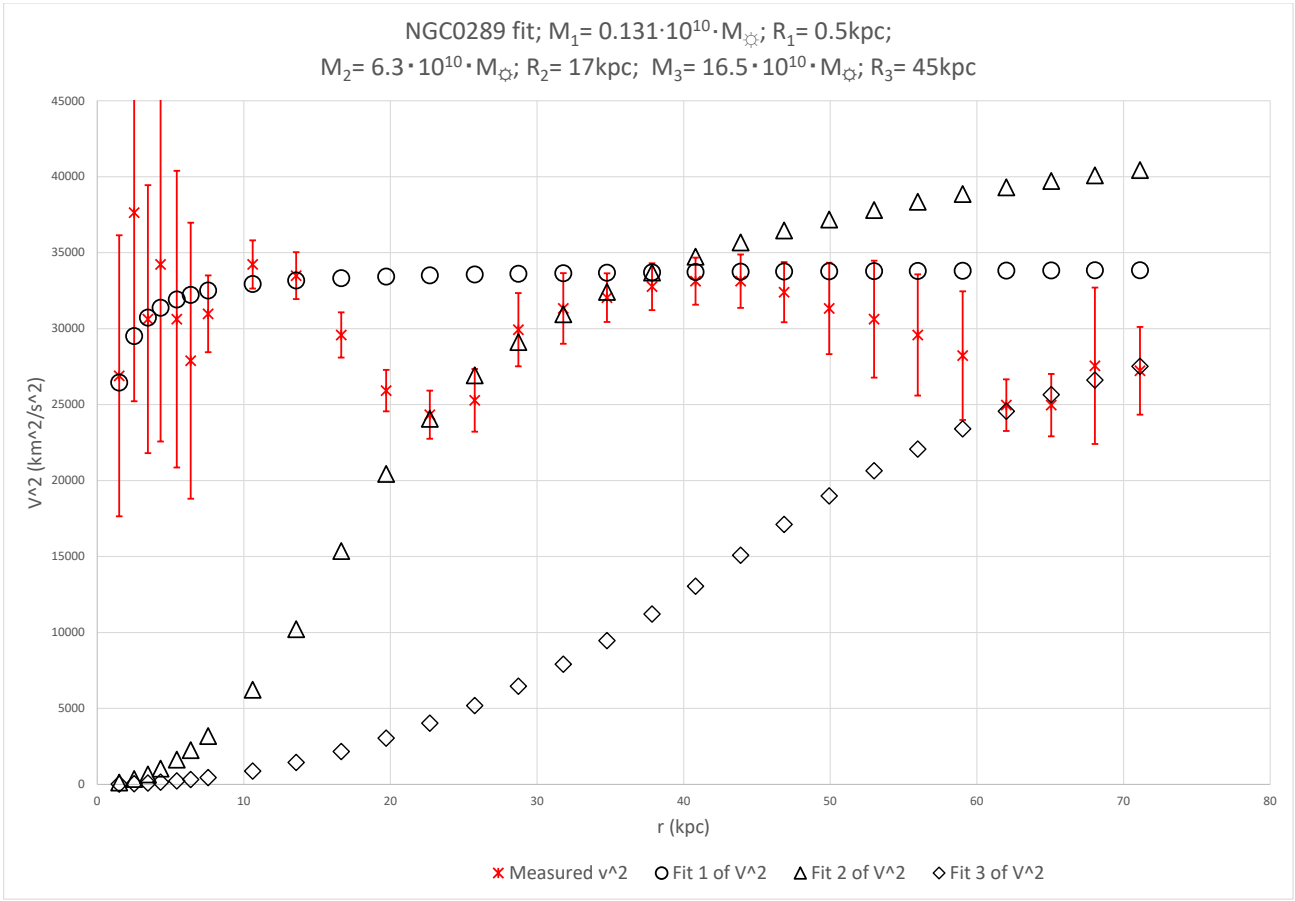

KK98-251 fit; M1= 0.047·10^10·M☼; R1= 2kpc;
M2= 0.0089·10^10·M☼; R2= 0.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

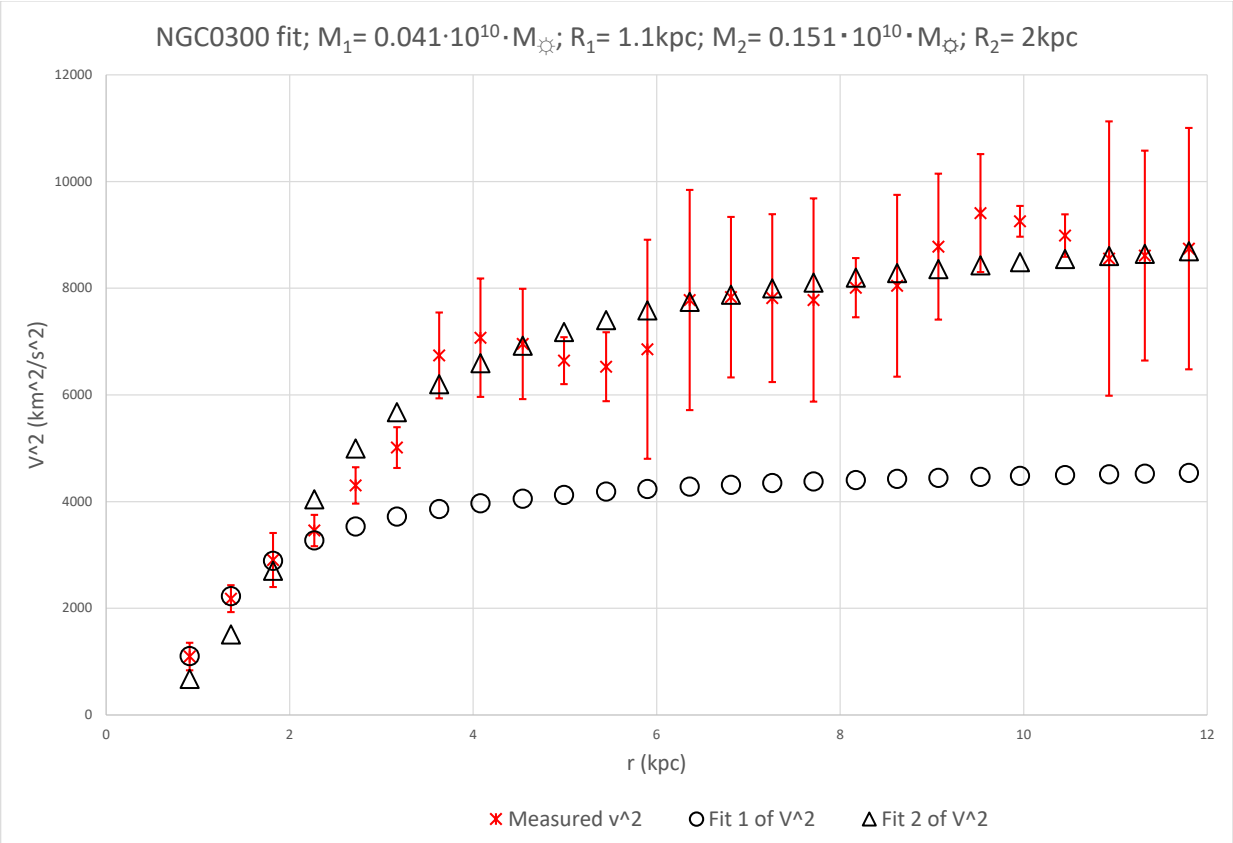

NGC0024 fit; M1= 0.0582·10^10·M☼; R1= 0.69kpc;
M2= 0.152·10^10·M☼; R2= 1.2kpc; M3= 0.343·10^10·M☼; R3= 3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

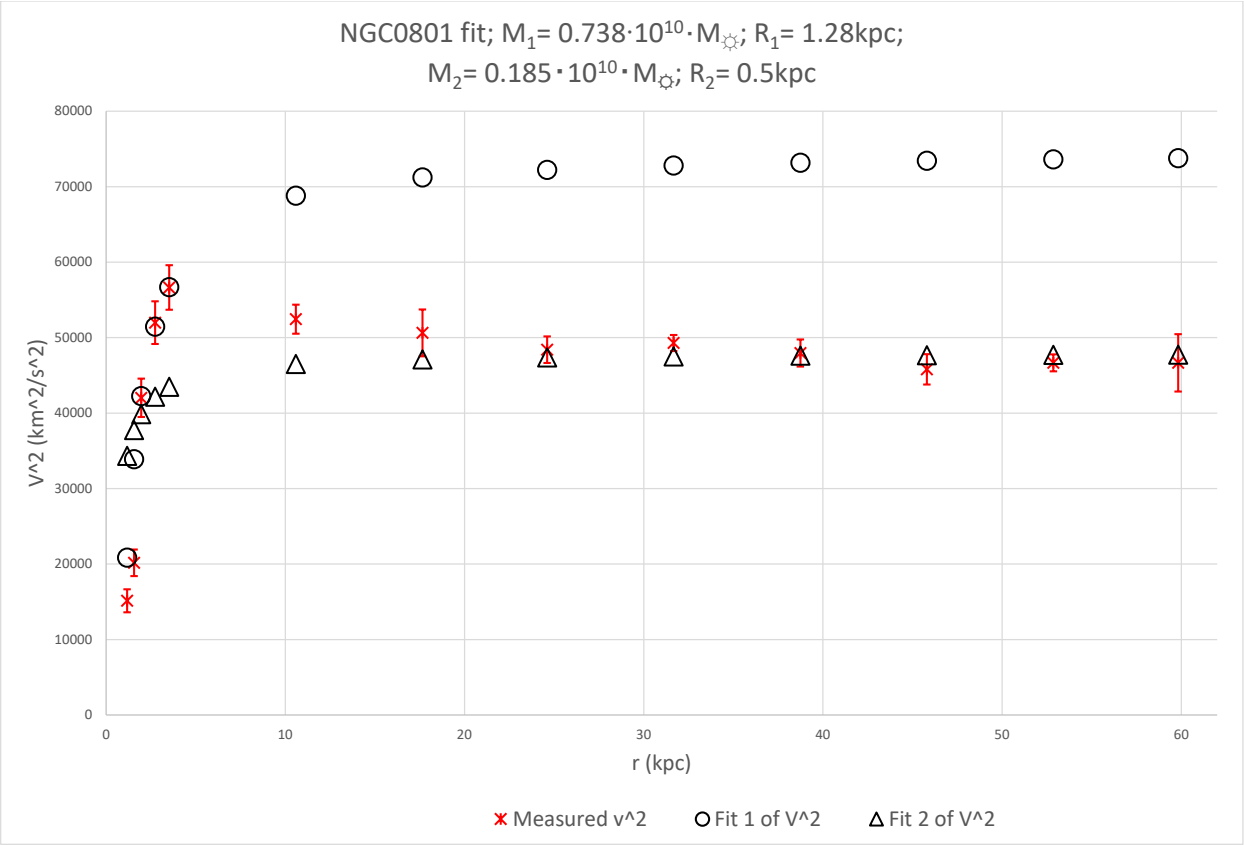

NGC0055 fit; M1= ·10^10·M☼; R1= kpc; M2= 0.13·10^10·M☼; R2= 2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

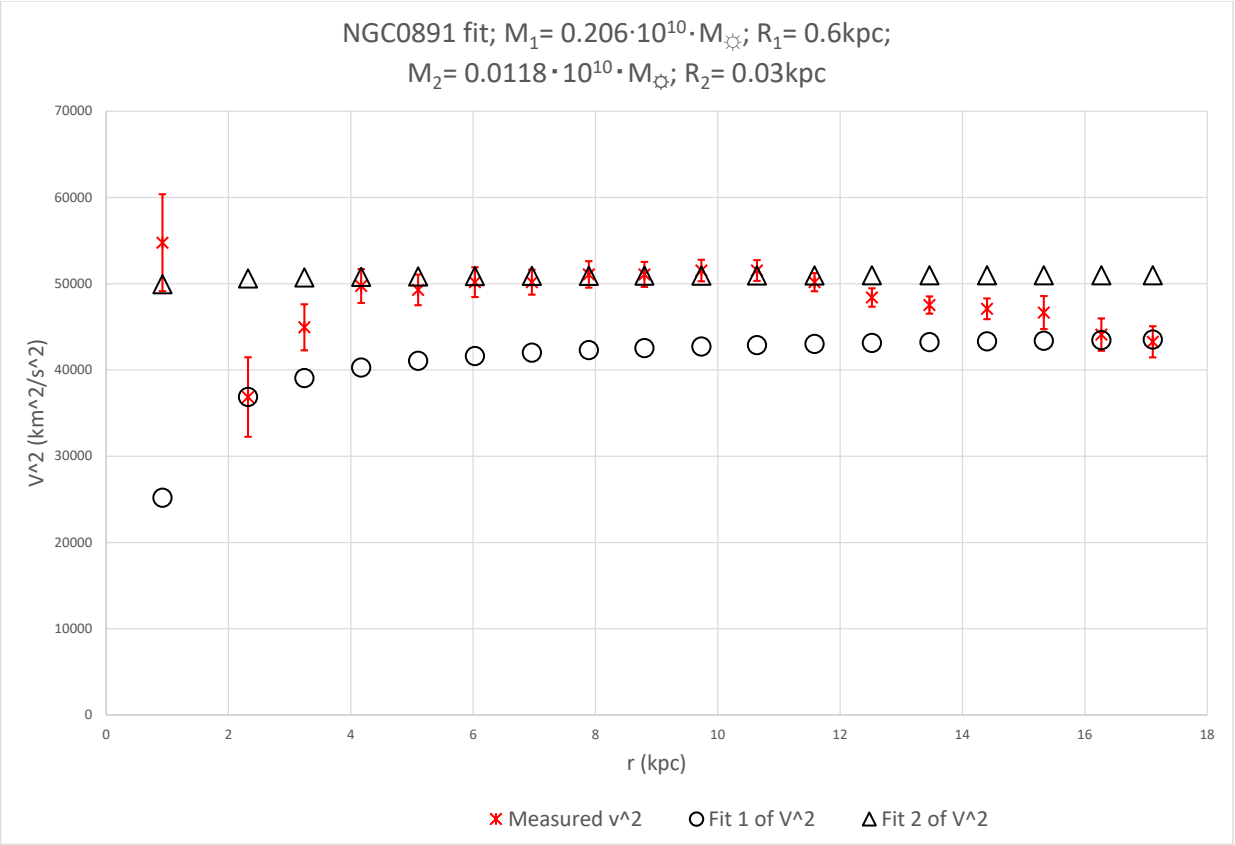

NGC0100 fit; M_1= 0.067·10^{10}·$M_\odot$; R_1= 1.6kpc; M_2= 0.212·10^{10}·$M_\odot$; R_2= 2.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

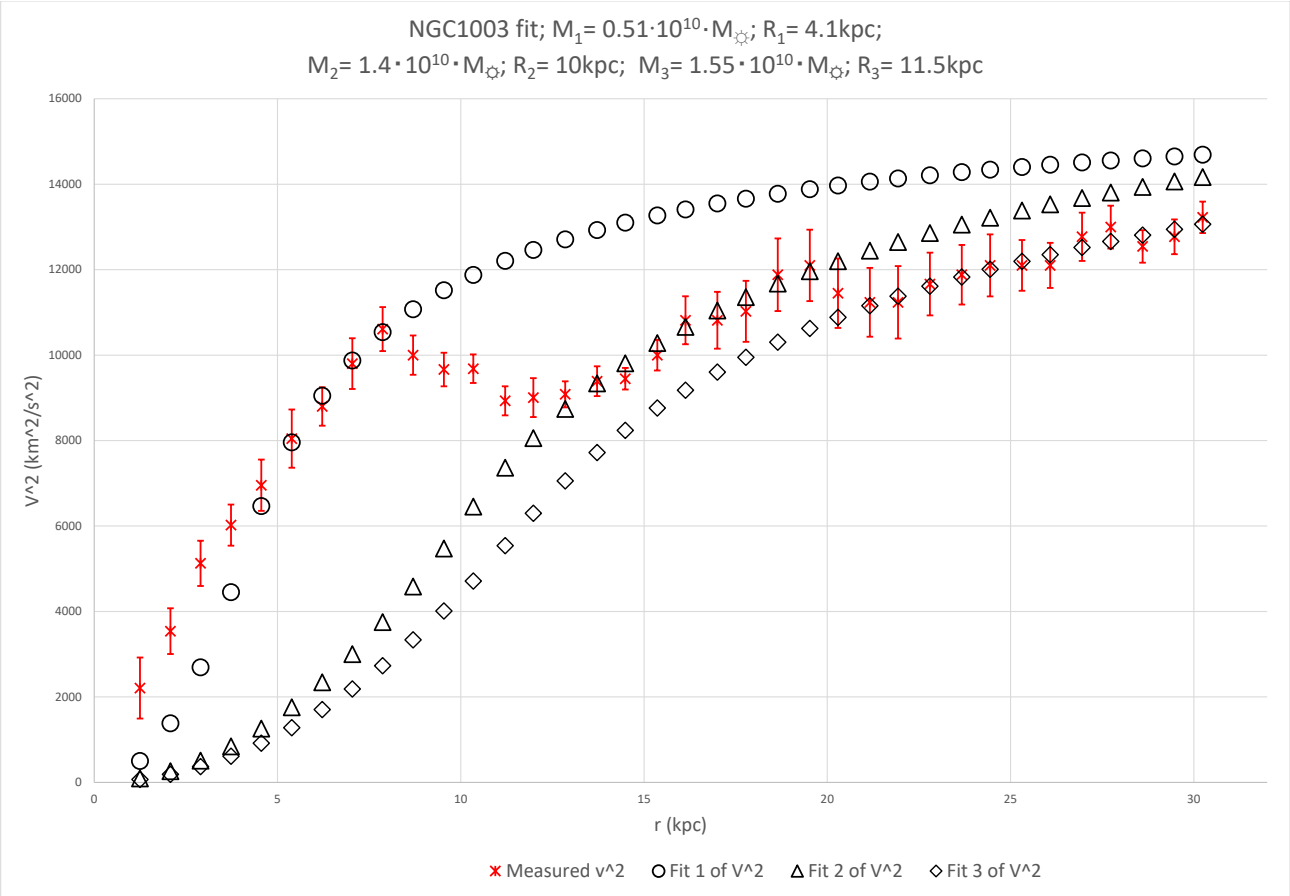

NGC0247 fit; M_1= 0.084·10^{10}·$M_\odot$; R_1= 1.6kpc; M_2= 0.716·10^{10}·$M_\odot$; R_2= 5.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

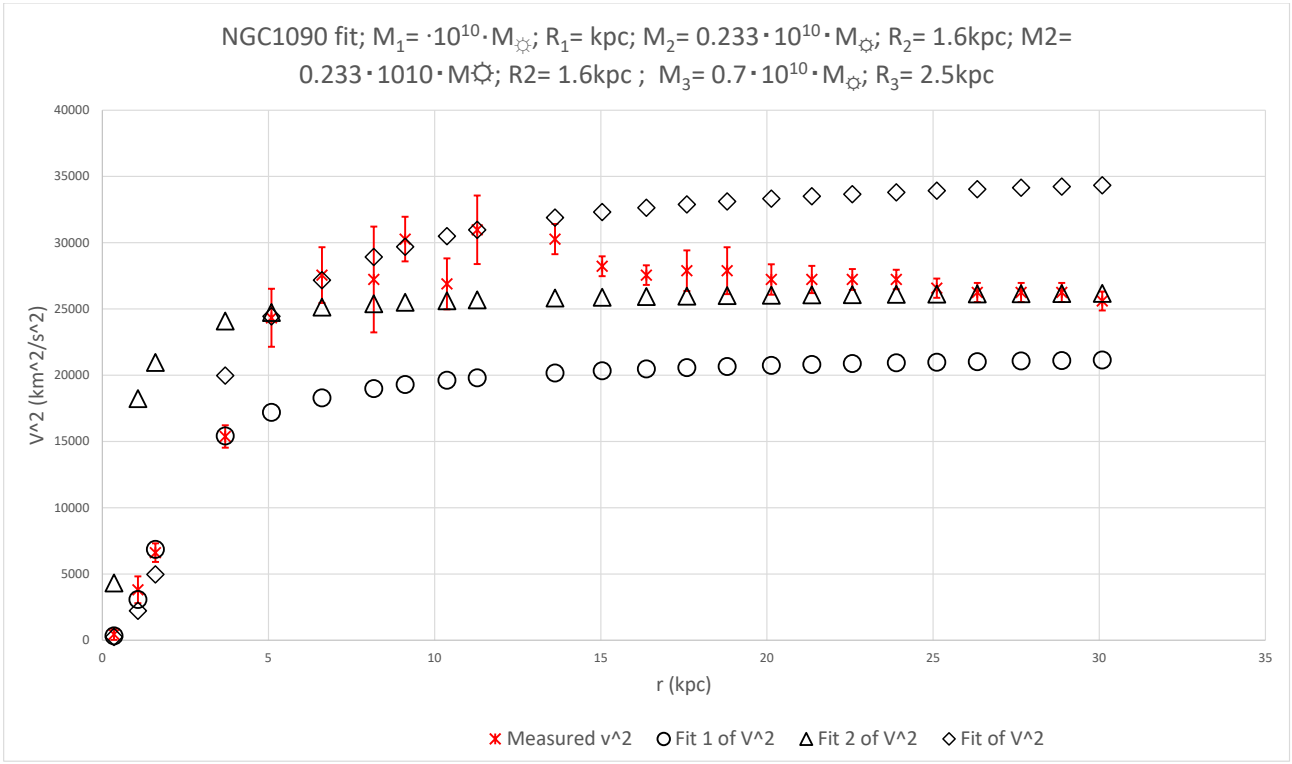

NGC0289 fit; M1= 0.131·10^10·M☼; R1= 0.5kpc;
M2= 6.3·10^10·M☼; R2= 17kpc; M3= 16.5·10^10·M☼; R3= 45kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

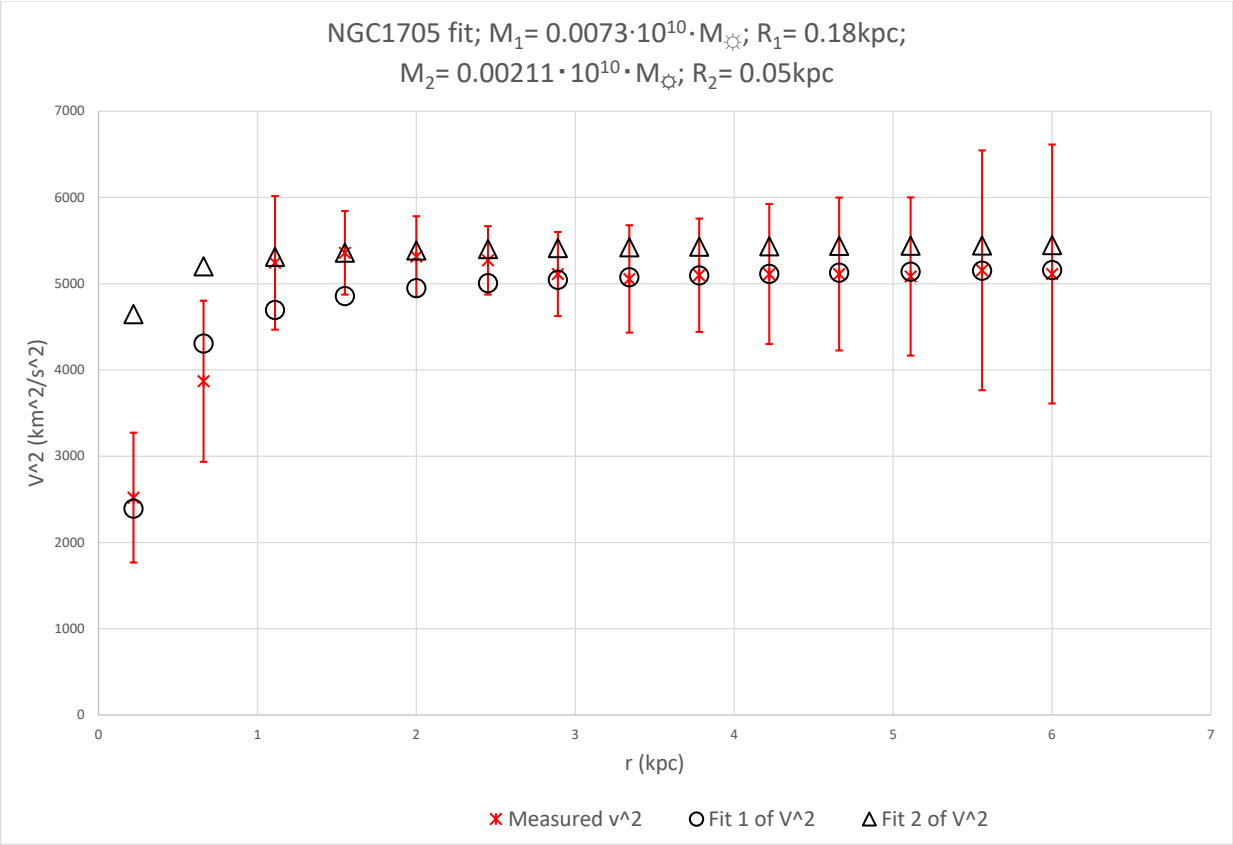

NGC0300 fit; M1= 0.041·10^10·M☼; R1= 1.1kpc; M2= 0.151·10^10·M☼; R2= 2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

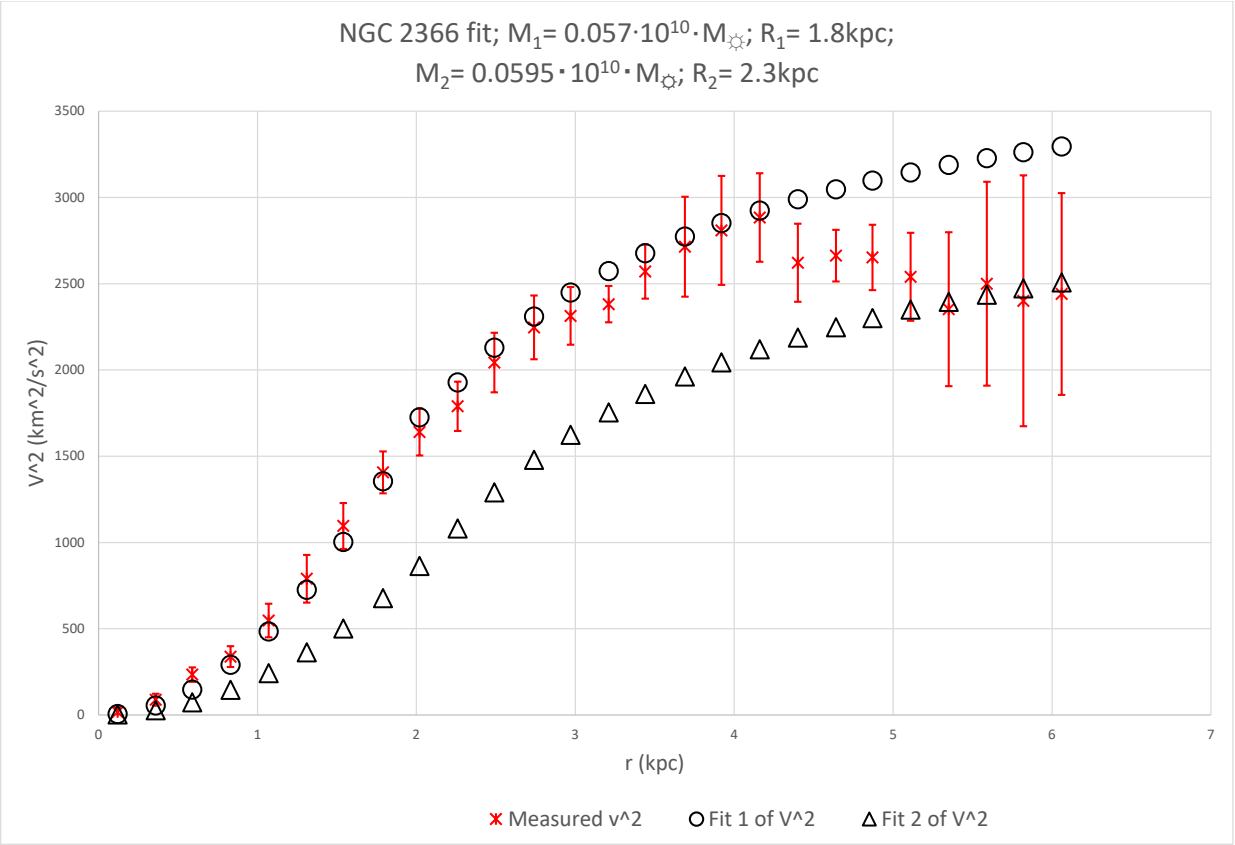

NGC0801 fit; M_1= 0.738·10^10·$M_\odot$; R_1= 1.28kpc;
M_2= 0.185·10^10·$M_\odot$; R_2= 0.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

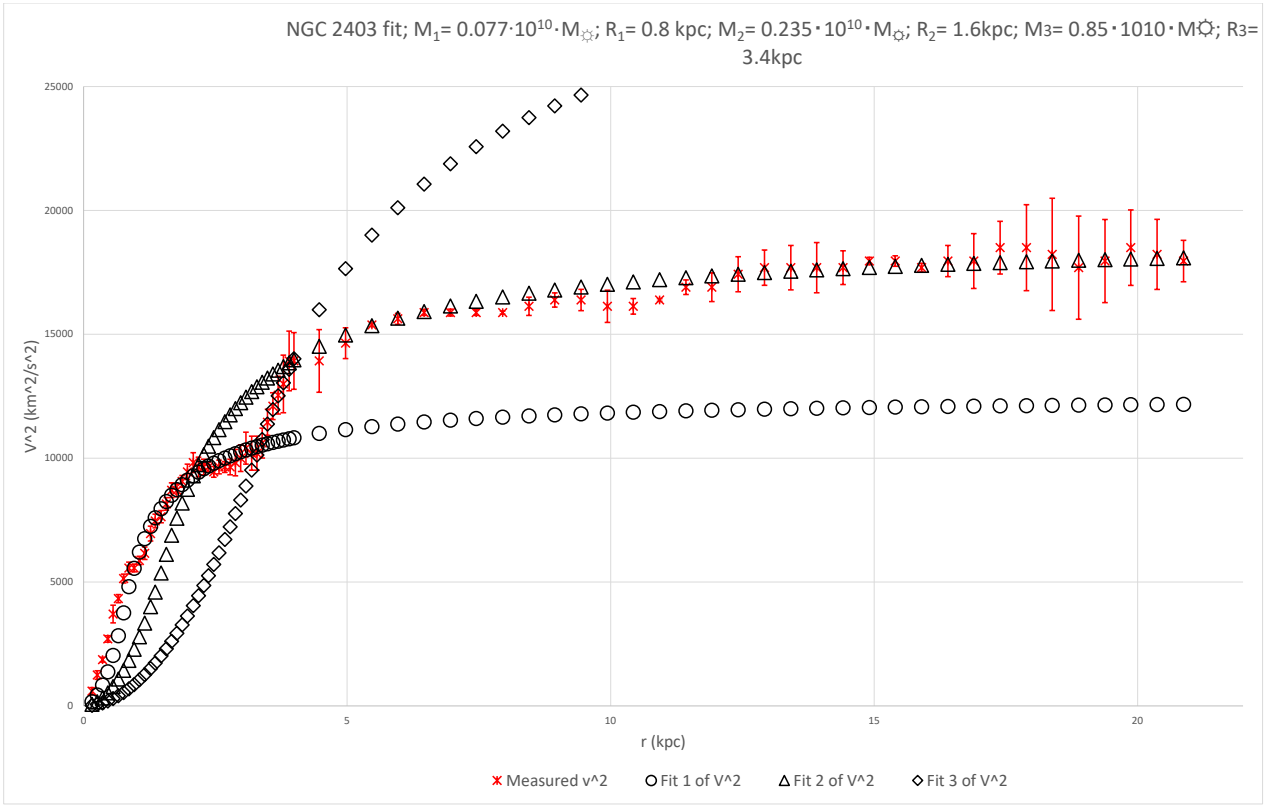

NGC0891 fit; M1= 0.206·10^10·M☼; R1= 0.6kpc;
M2= 0.0118·10^10·M☼; R2= 0.03kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

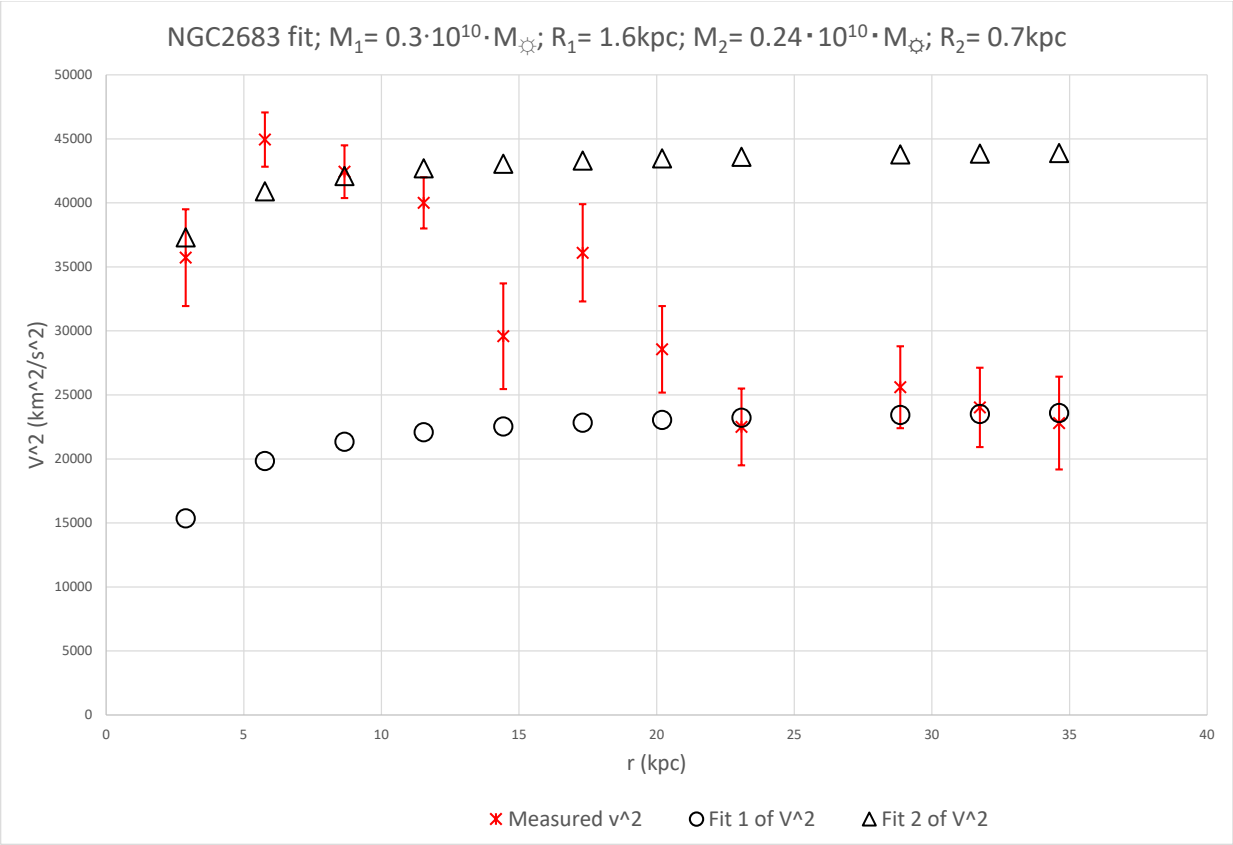

NGC1003 fit; M1= 0.51·10^10·M☼; R1= 4.1kpc;
M2= 1.4·10^10·M☼; R2= 10kpc; M3= 1.55·10^10·M☼; R3= 11.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

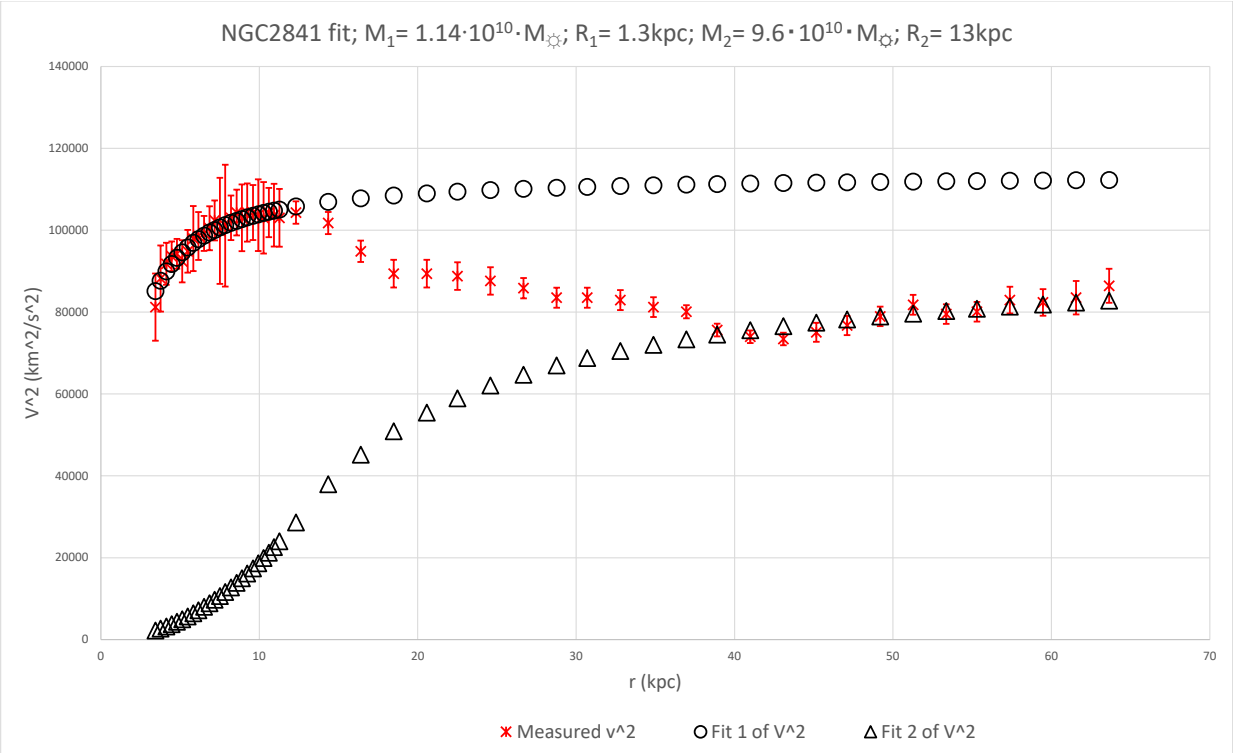

NGC1090 fit; M1= ·10^10·M☼; R1= kpc; M2= 0.233·10^10·M☼; R2= 1.6kpc; M2= 0.233·1010·M☼; R2= 1.6kpc ; M3= 0.7·10^10·M☼; R3= 2.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit of V^2

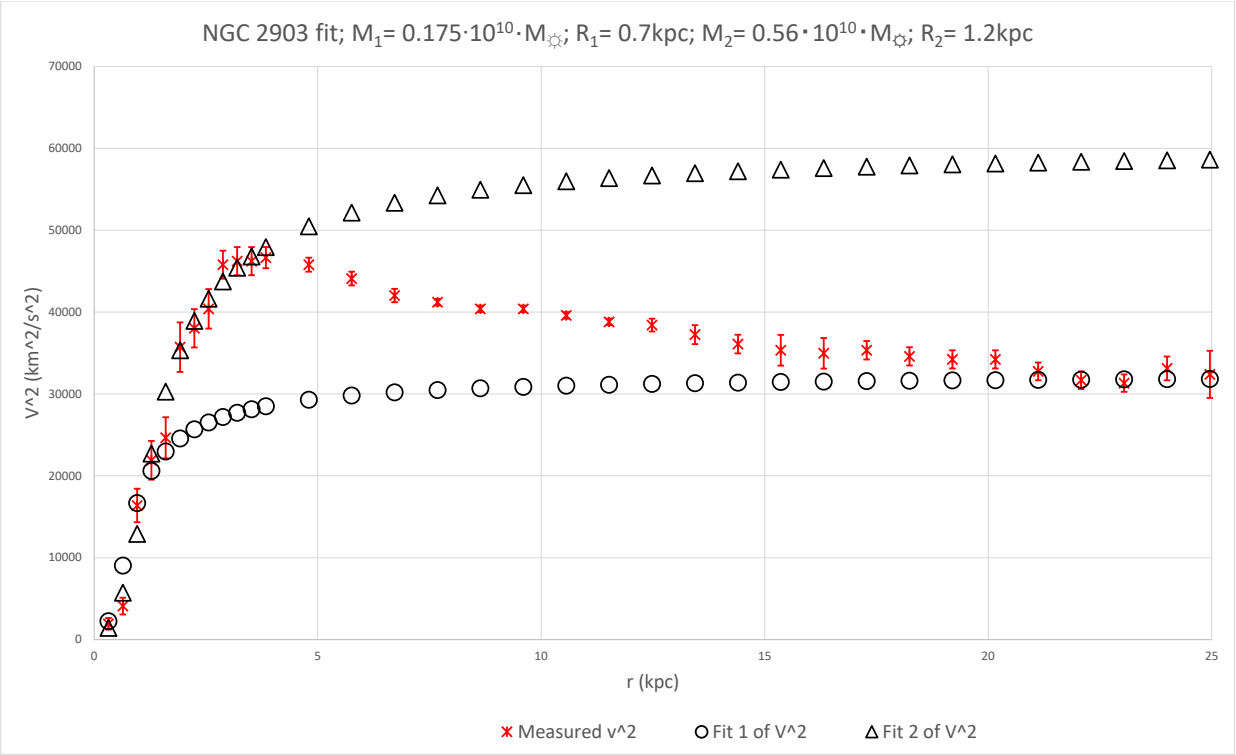

NGC1705 fit; M1= 0.0073·10^10·M☼; R1= 0.18kpc;
M2= 0.00211·10^10·M☼; R2= 0.05kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

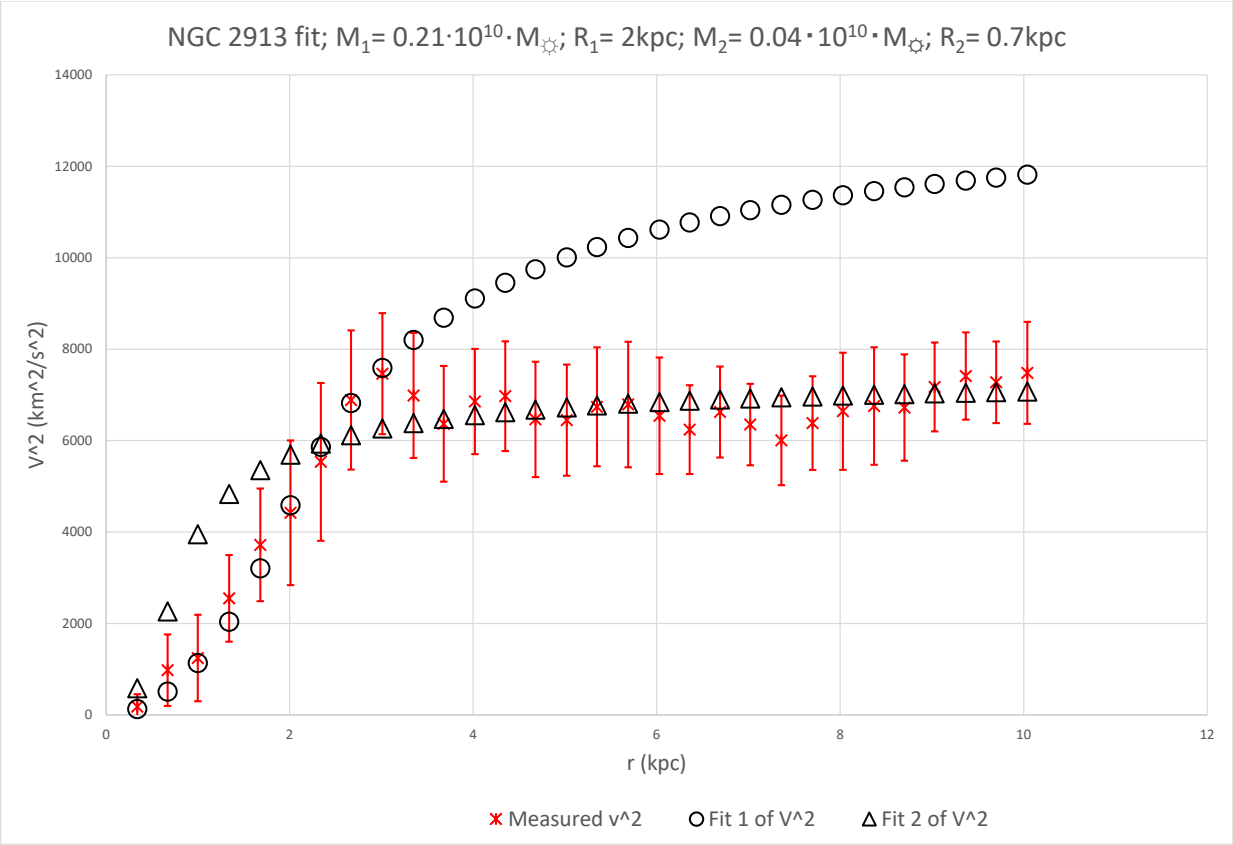

NGC 2366 fit; M_1= 0.057·10^{10}·$M_\odot$; R_1= 1.8kpc;
M_2= 0.0595·10^{10}·$M_\odot$; R_2= 2.3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

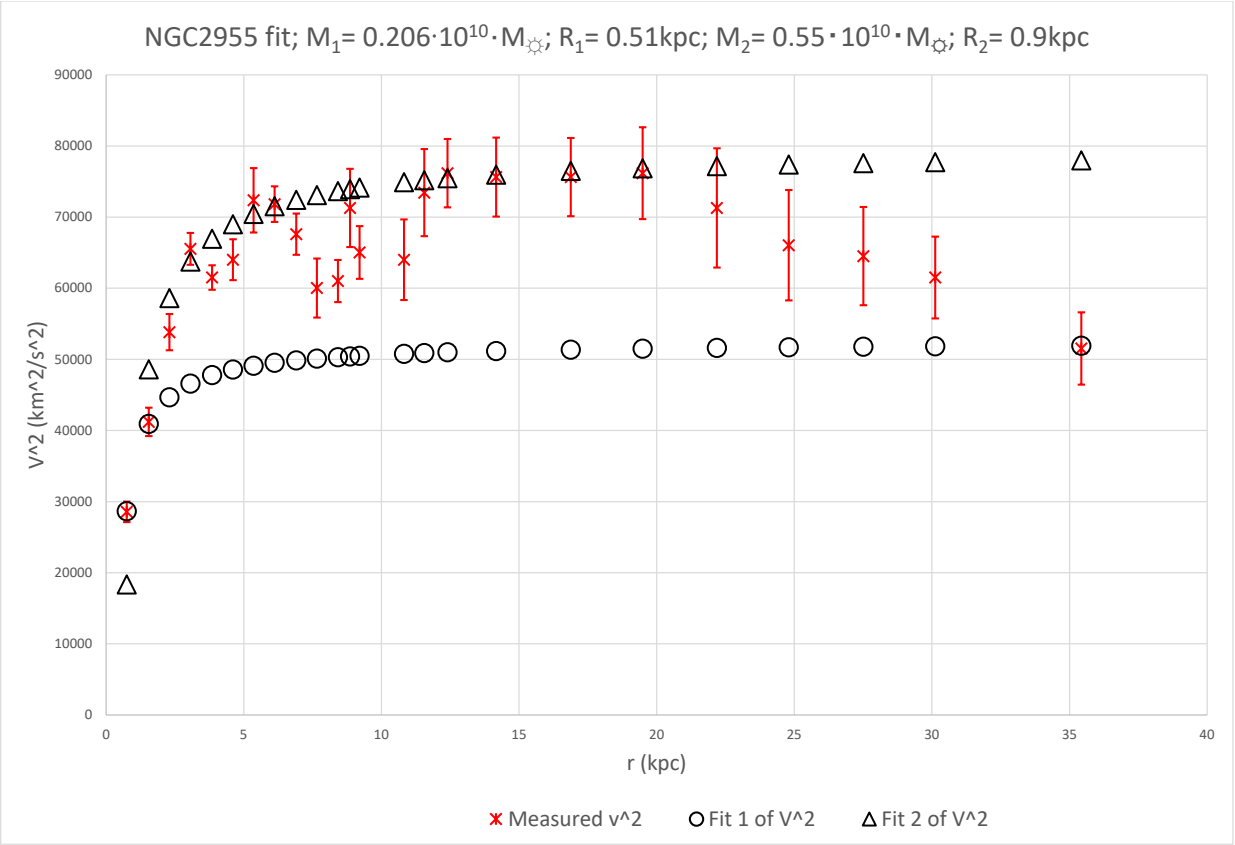

NGC 2403 fit; M1= 0.077·10^10·M☼; R1= 0.8 kpc; M2= 0.235·10^10·M☼; R2= 1.6kpc; M3= 0.85·1010·M☼; R3= 3.4kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

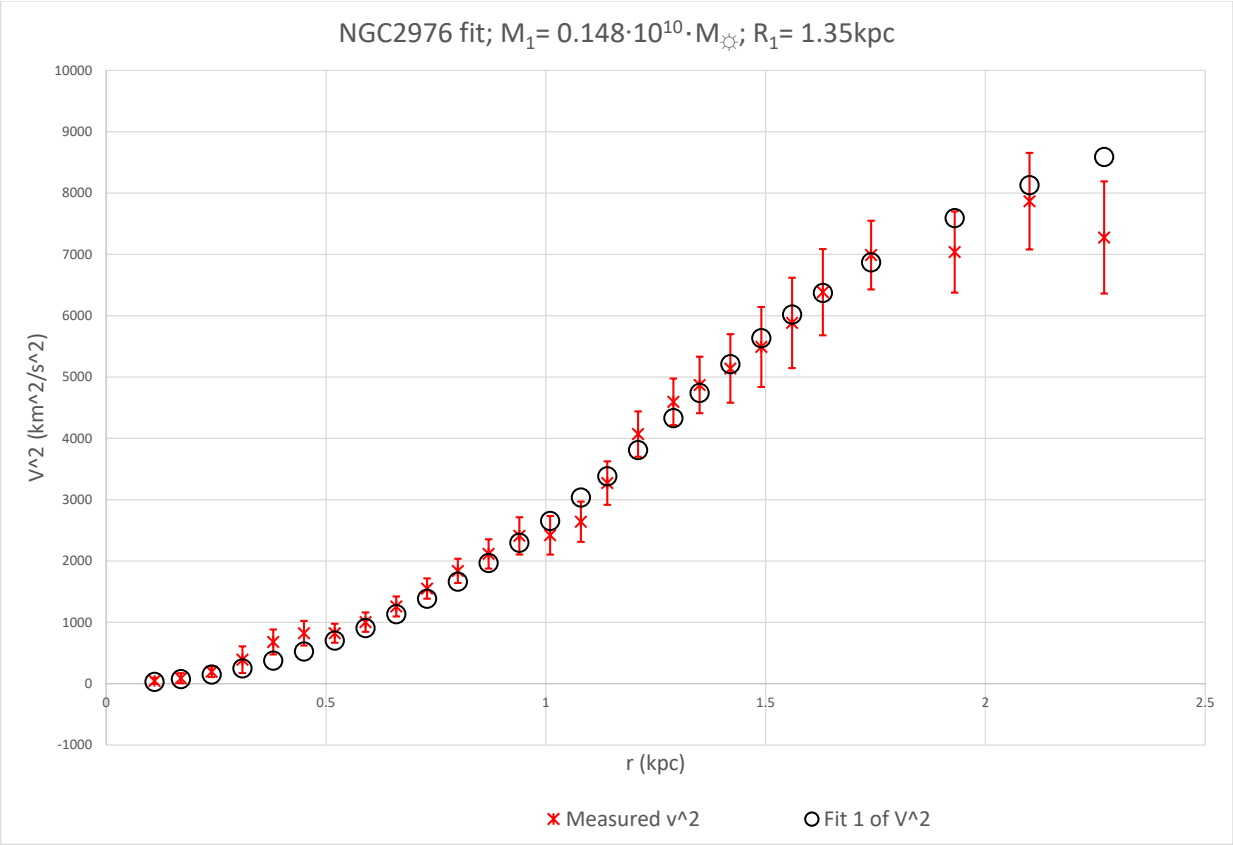

NGC2683 fit; M_1= 0.3·10^10·$M_\odot$; R_1= 1.6kpc; M_2= 0.24·10^10·$M_\odot$; R_2= 0.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

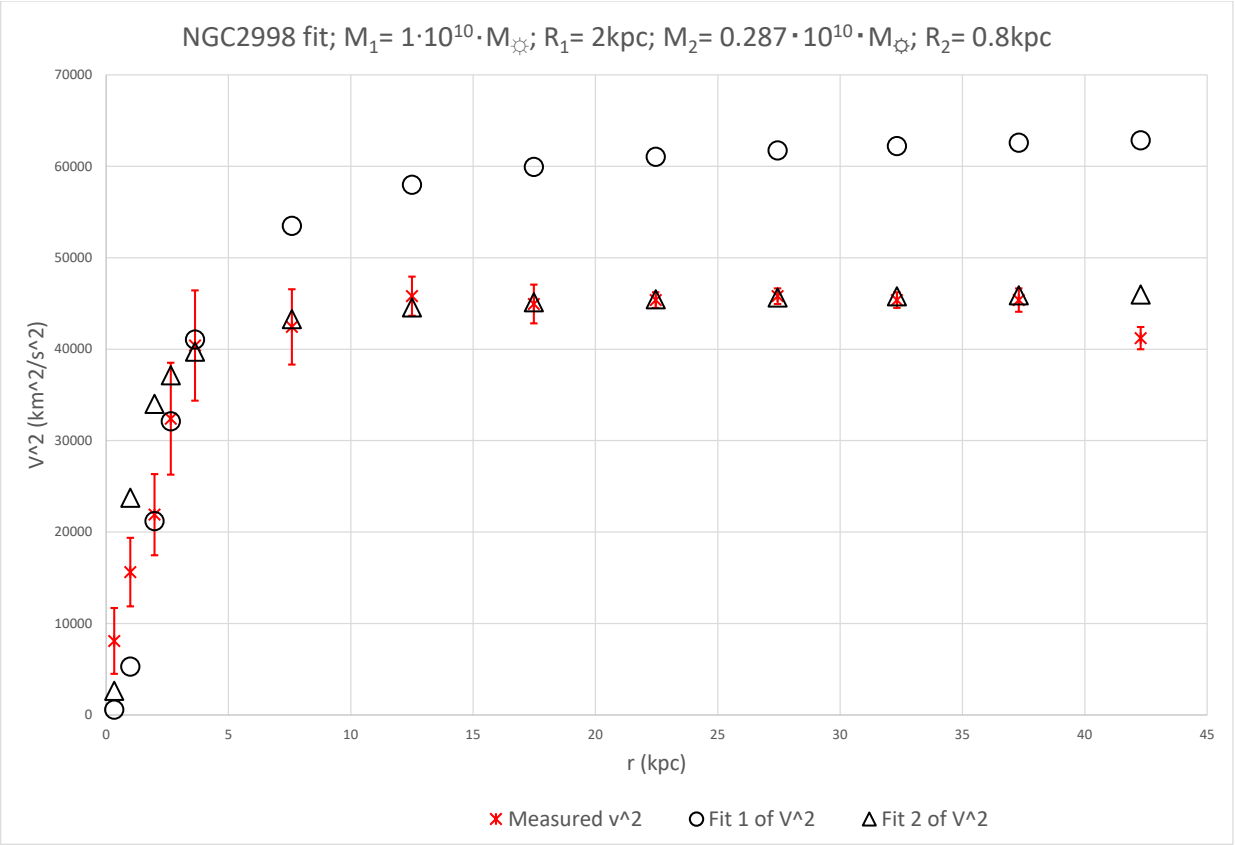

NGC2841 fit; M1= 1.14·10^10·M☼; R1= 1.3kpc; M2= 9.6·10^10·M☼; R2= 13kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

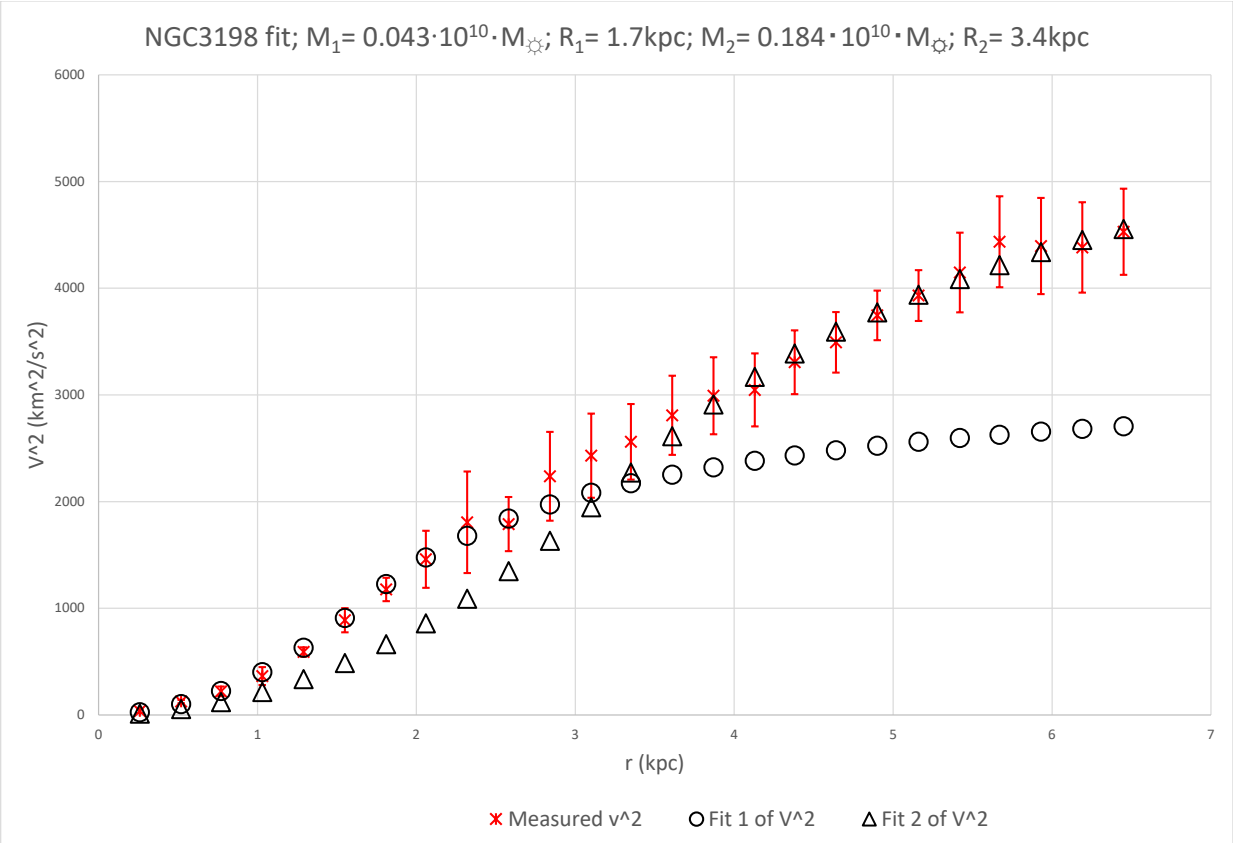

NGC 2903 fit; M1= 0.175·10^10·M☼; R1= 0.7kpc; M2= 0.56·10^10·M☼; R2= 1.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

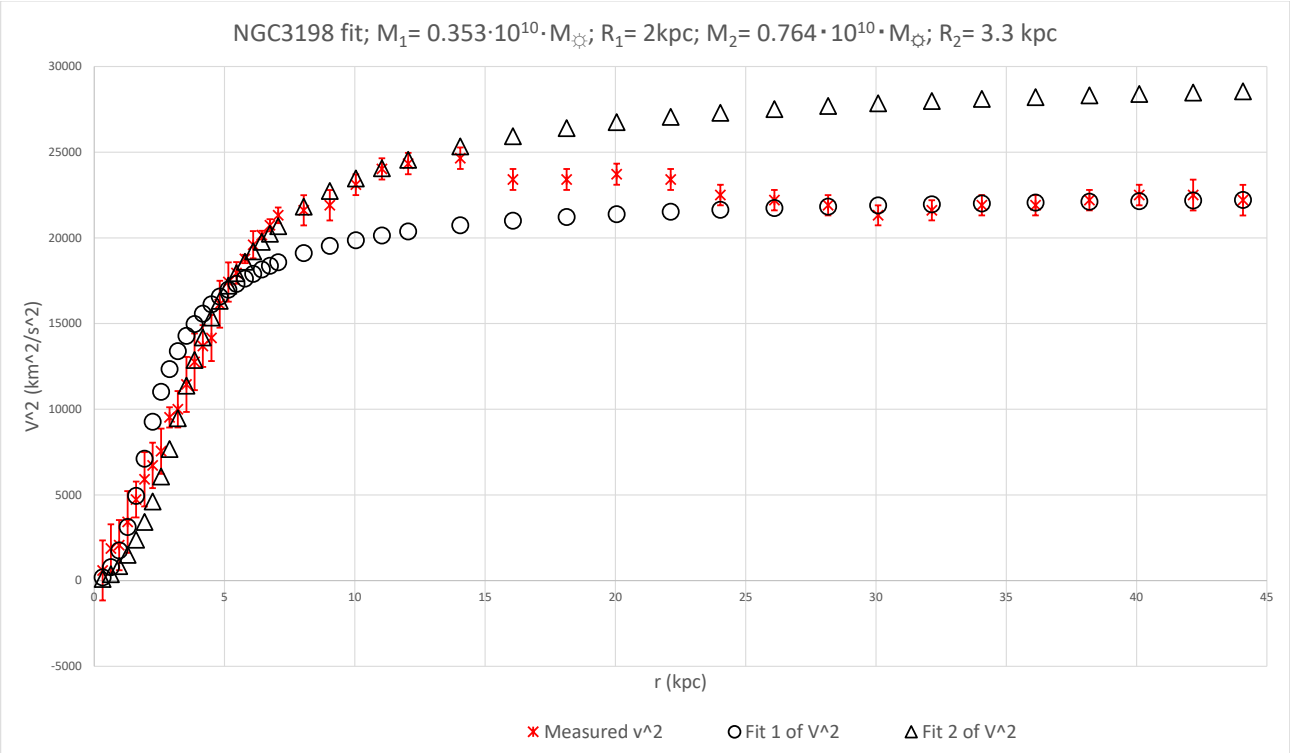

NGC 2913 fit; M_1= 0.21·10^10·M☼; R_1= 2kpc; M_2= 0.04·10^10·M☼; R_2= 0.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

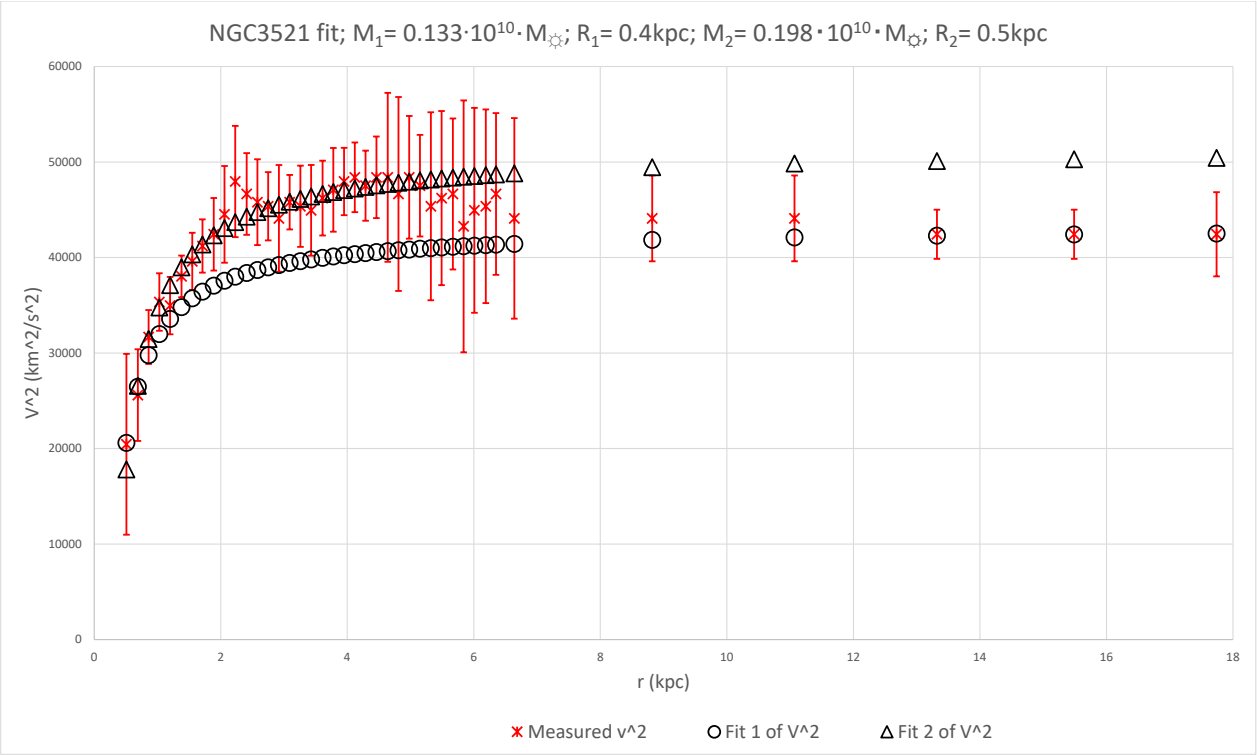

NGC2955 fit; M_1= 0.206·10^10·$M_\odot$; R_1= 0.51kpc; M_2= 0.55·10^10·$M_\odot$; R_2= 0.9kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

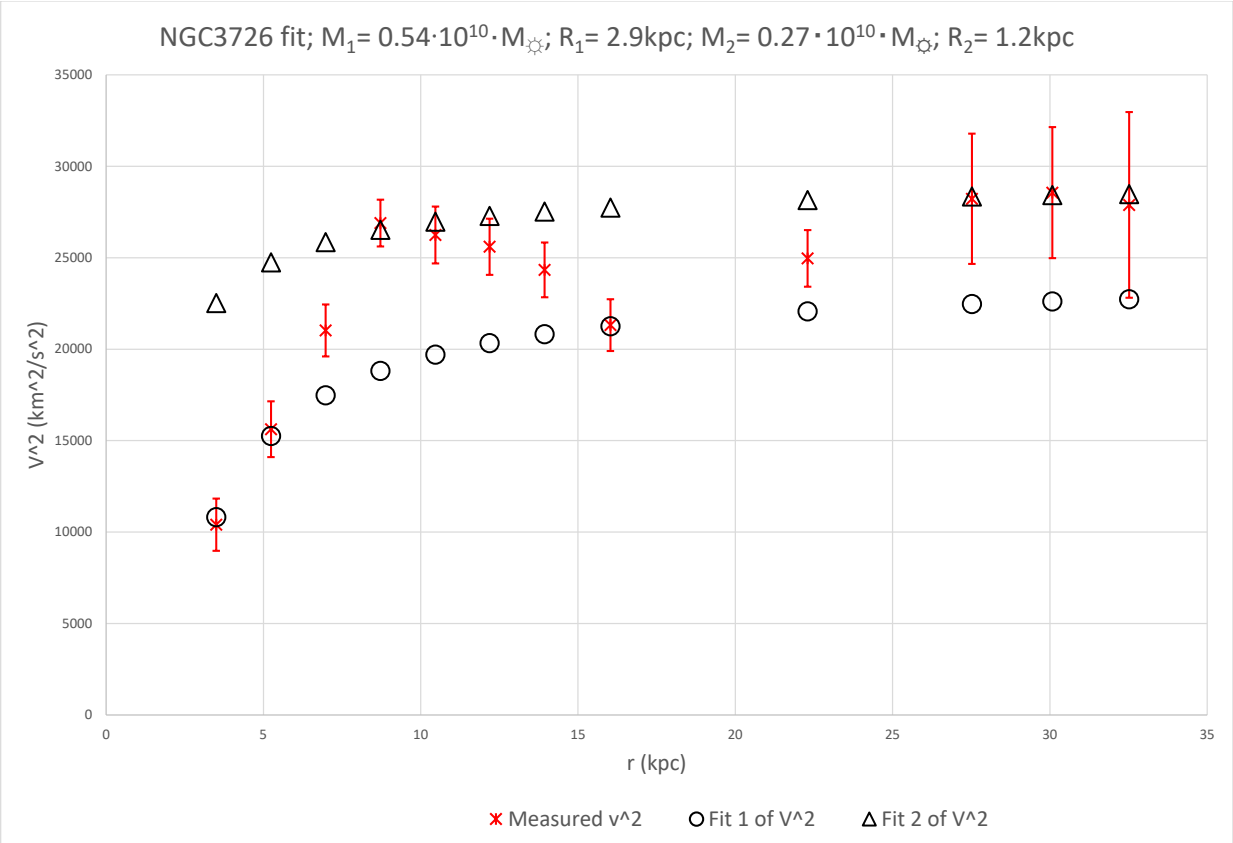

NGC2976 fit; M_1= 0.148·10^{10}·$M_\odot$; R_1= 1.35kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

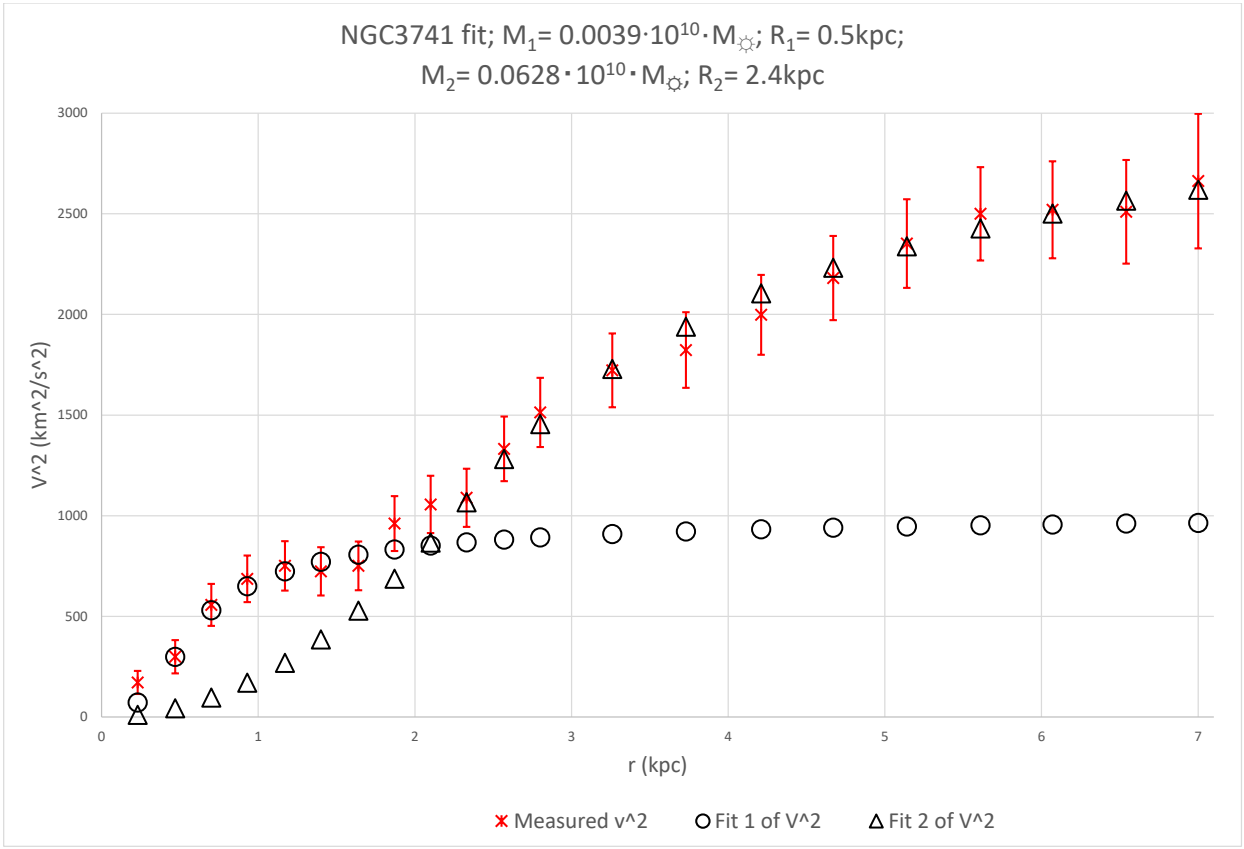

NGC2998 fit; M_1= 1·10^10·$M_\odot$; R_1= 2kpc; M_2= 0.287·10^10·$M_\odot$; R_2= 0.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

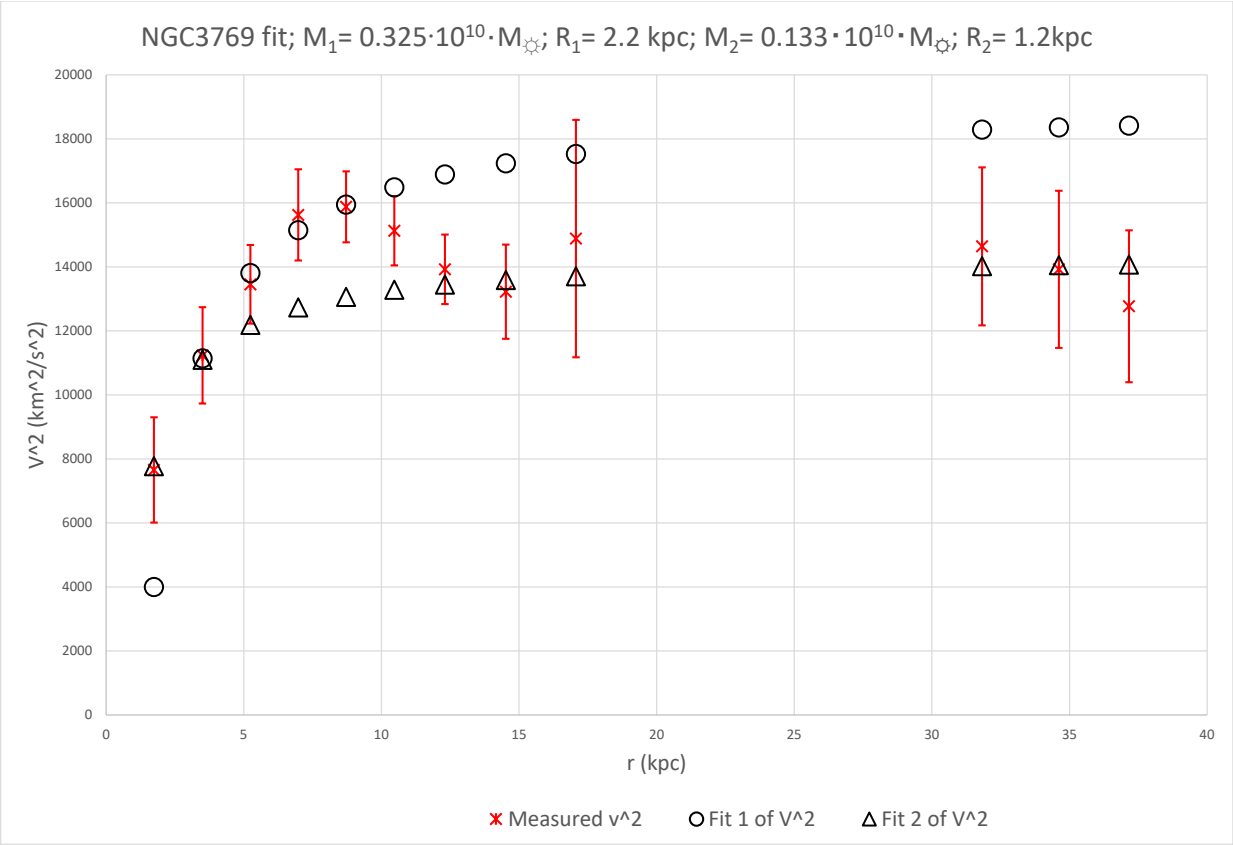

NGC3198 fit; M_1= 0.043·10^10·$M_\odot$; R_1= 1.7kpc; M_2= 0.184·10^10·$M_\odot$; R_2= 3.4kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

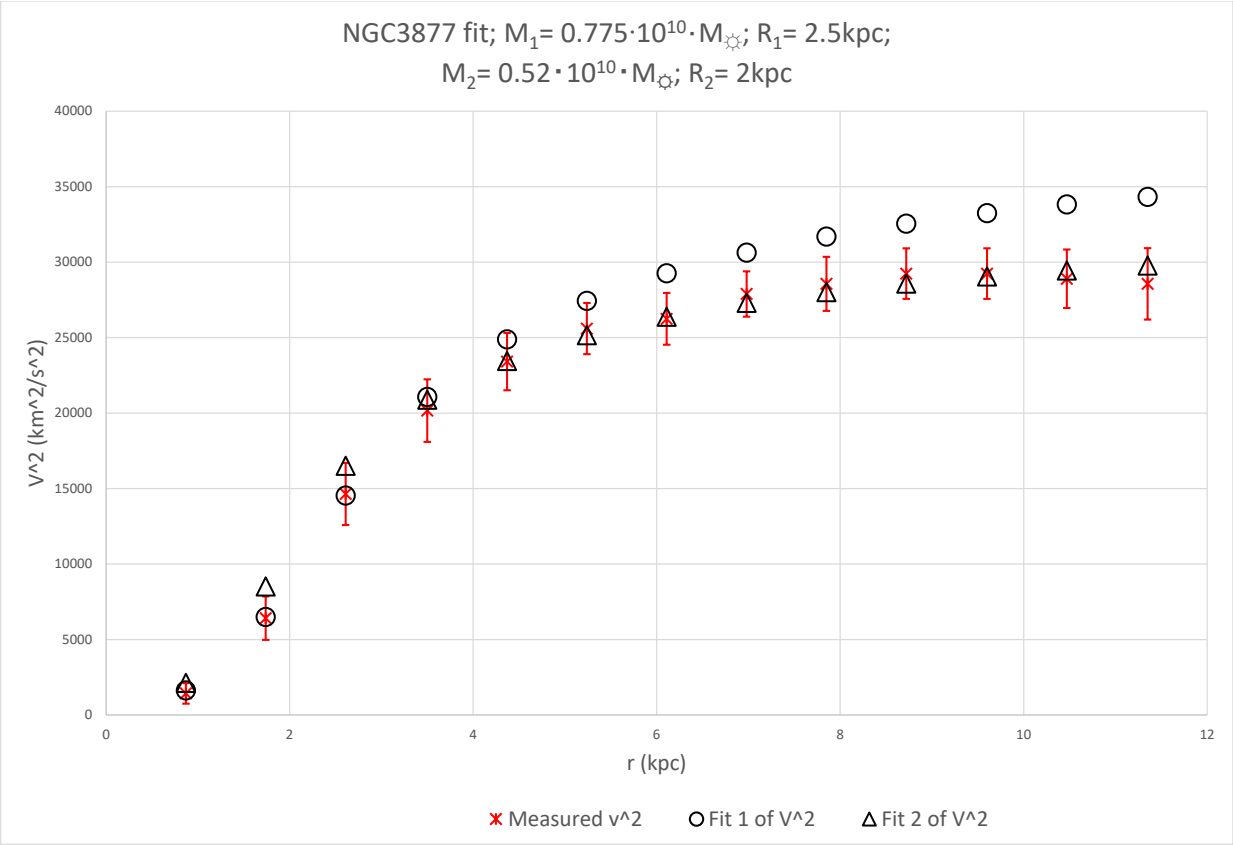

NGC3198 fit; M1= 0.353·10^10·M☼; R1= 2kpc; M2= 0.764·10^10·M☼; R2= 3.3 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

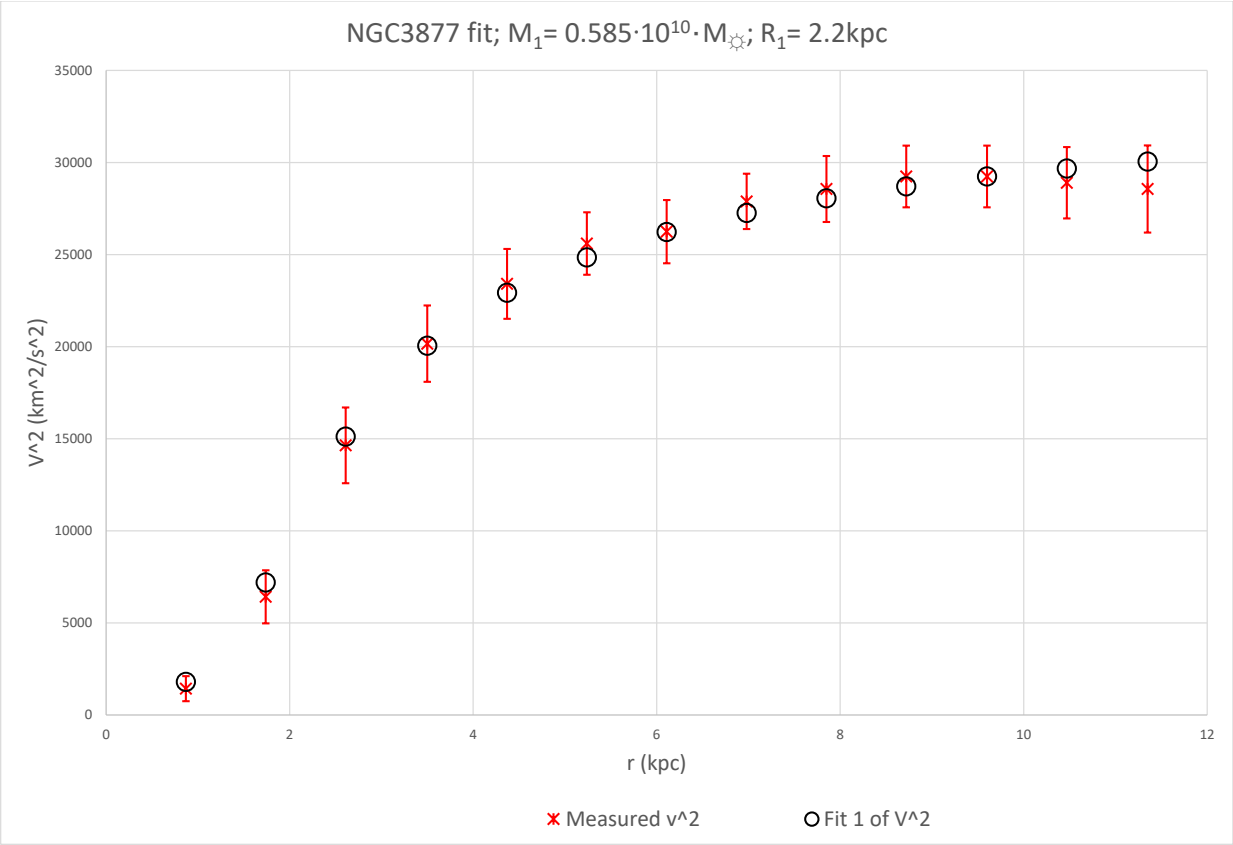

NGC3521 fit; M_1= 0.133·10^10·$M_\odot$; R_1= 0.4kpc; M_2= 0.198·10^10·$M_\odot$; R_2= 0.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

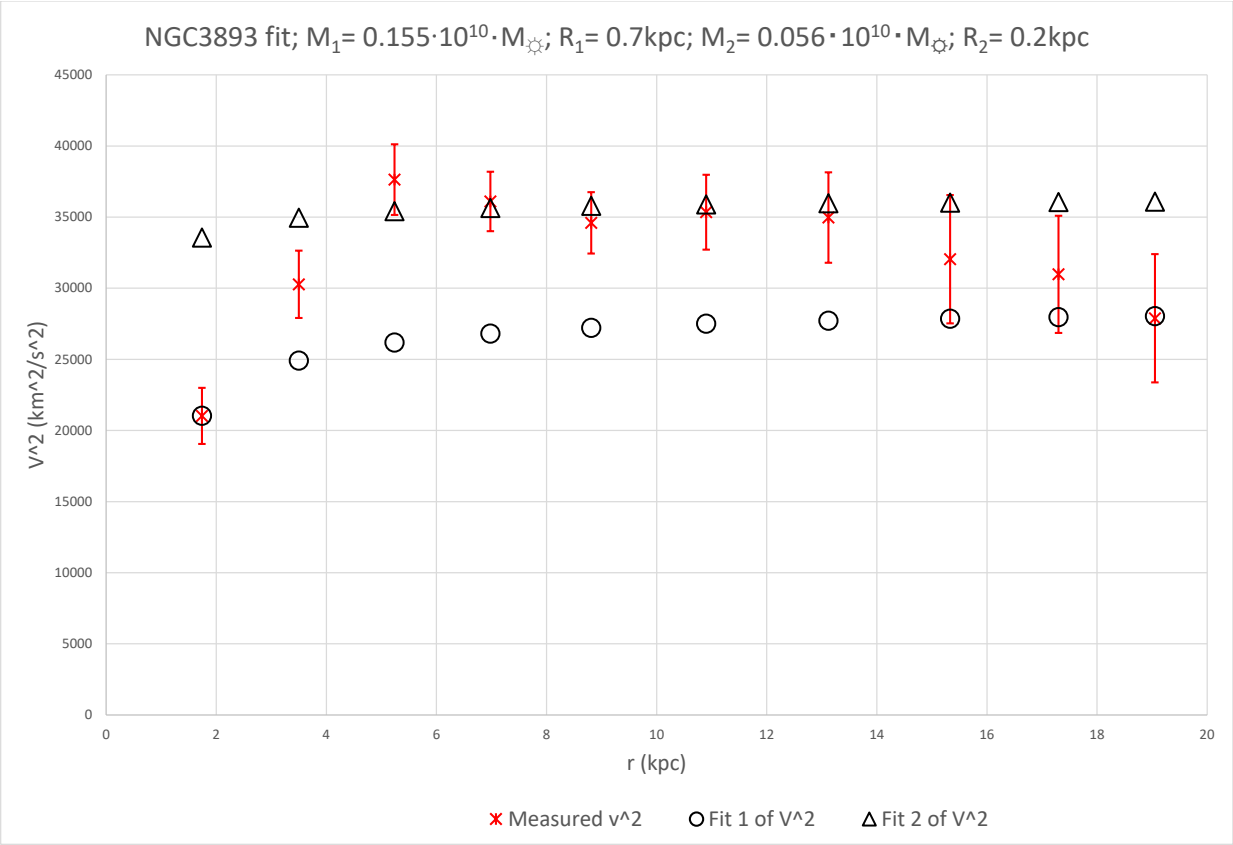

NGC3726 fit; M_1= 0.54·10^10·$M_\odot$; R_1= 2.9kpc; M_2= 0.27·10^10·$M_\odot$; R_2= 1.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

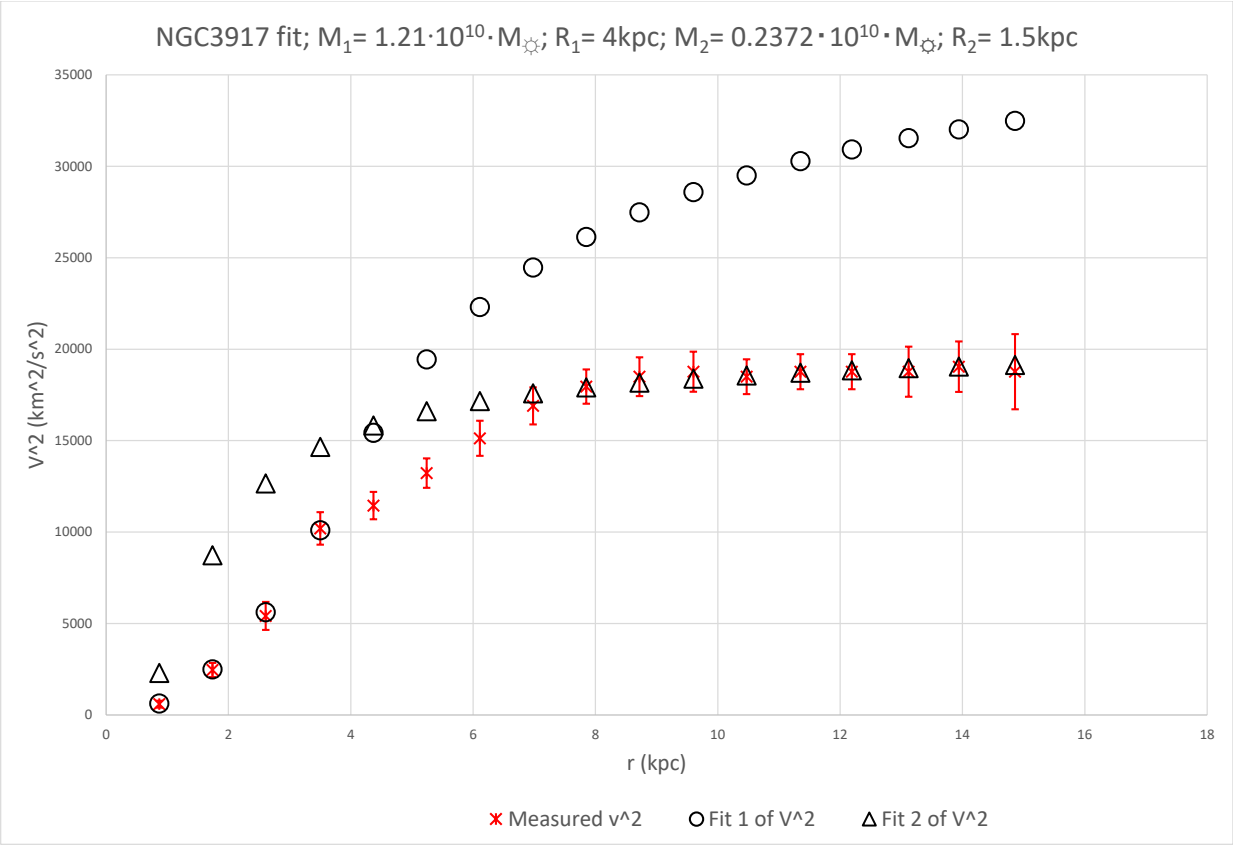

NGC3741 fit; M1= 0.0039·10^10·M☼; R1= 0.5kpc;
M2= 0.0628·10^10·M☼; R2= 2.4kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

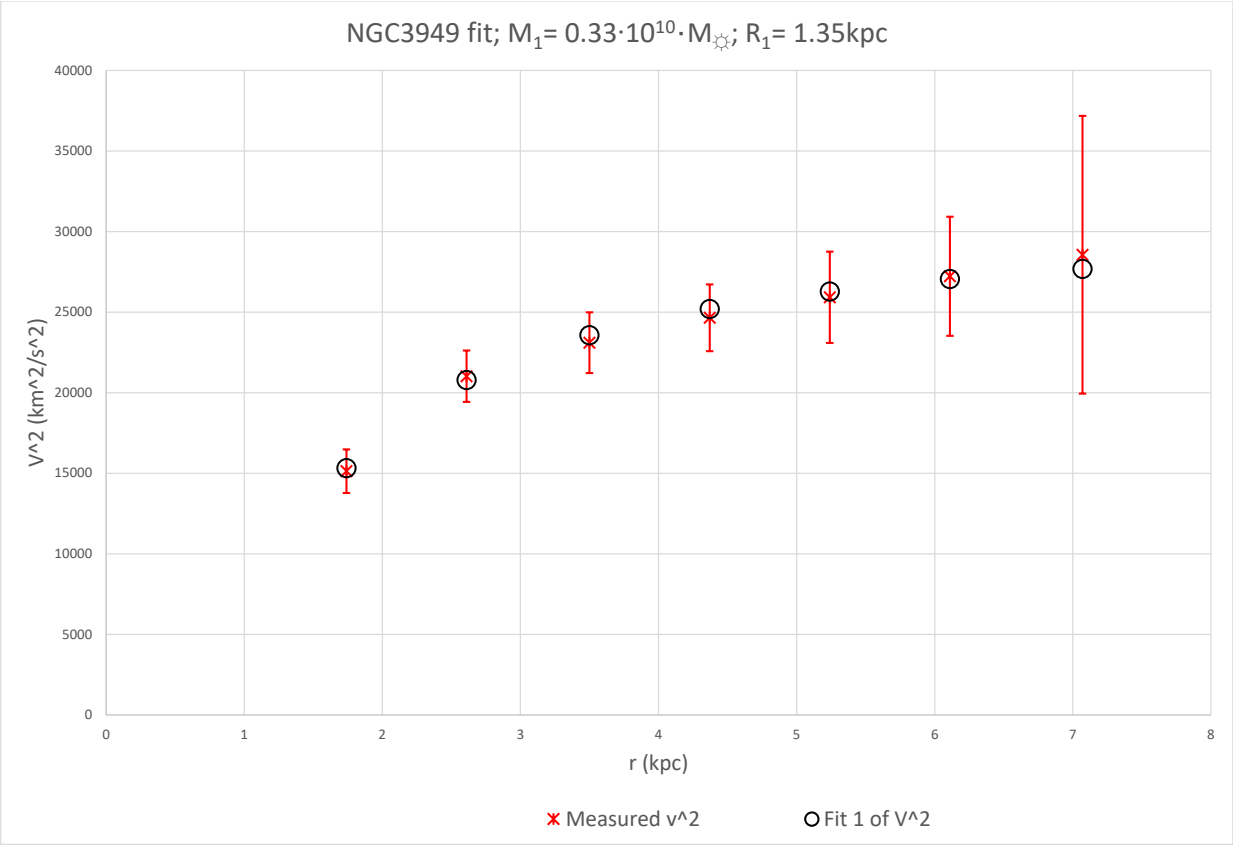

NGC3769 fit; M1= 0.325·10^10·M☼; R1= 2.2 kpc; M2= 0.133·10^10·M☼; R2= 1.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

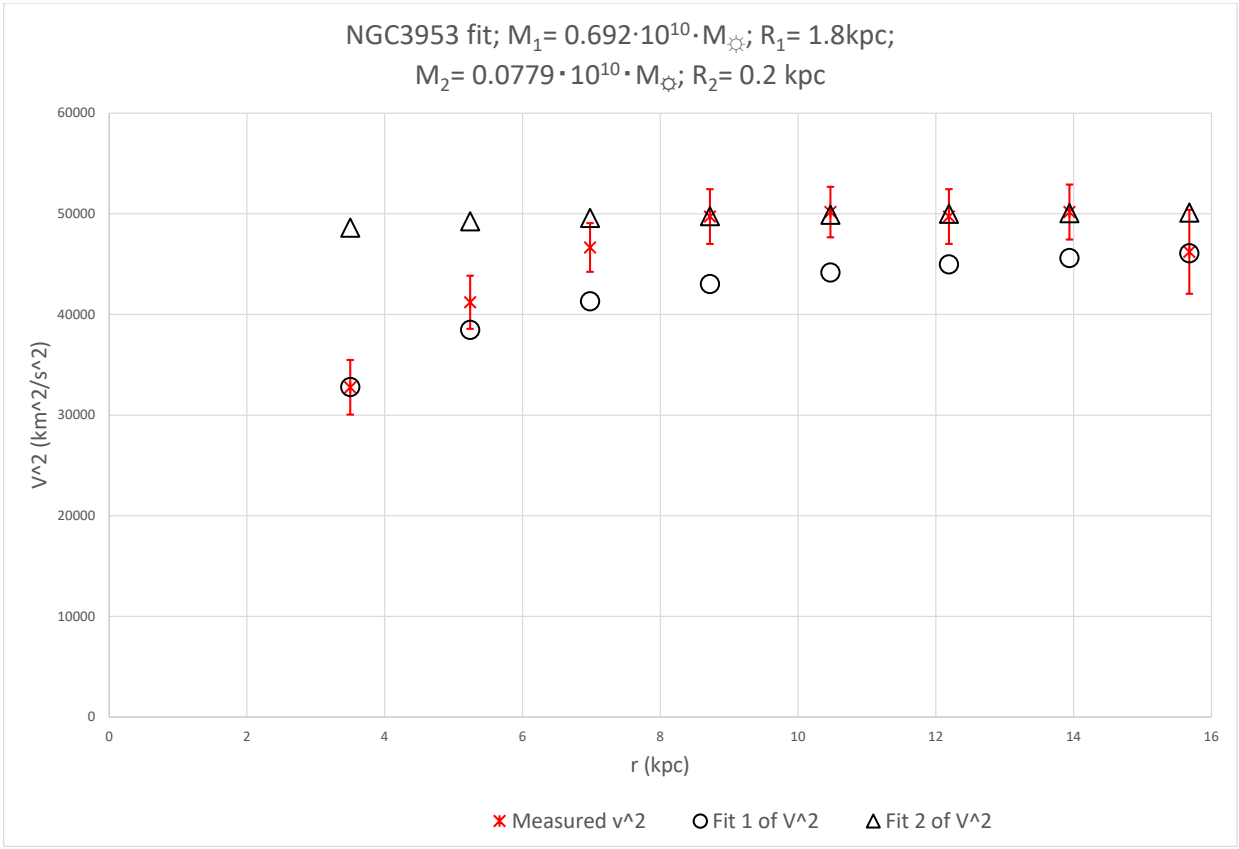

NGC3877 fit; M_1= 0.775·10^{10}·$M_\odot$; R_1= 2.5kpc;
M_2= 0.52·10^{10}·$M_\odot$; R_2= 2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

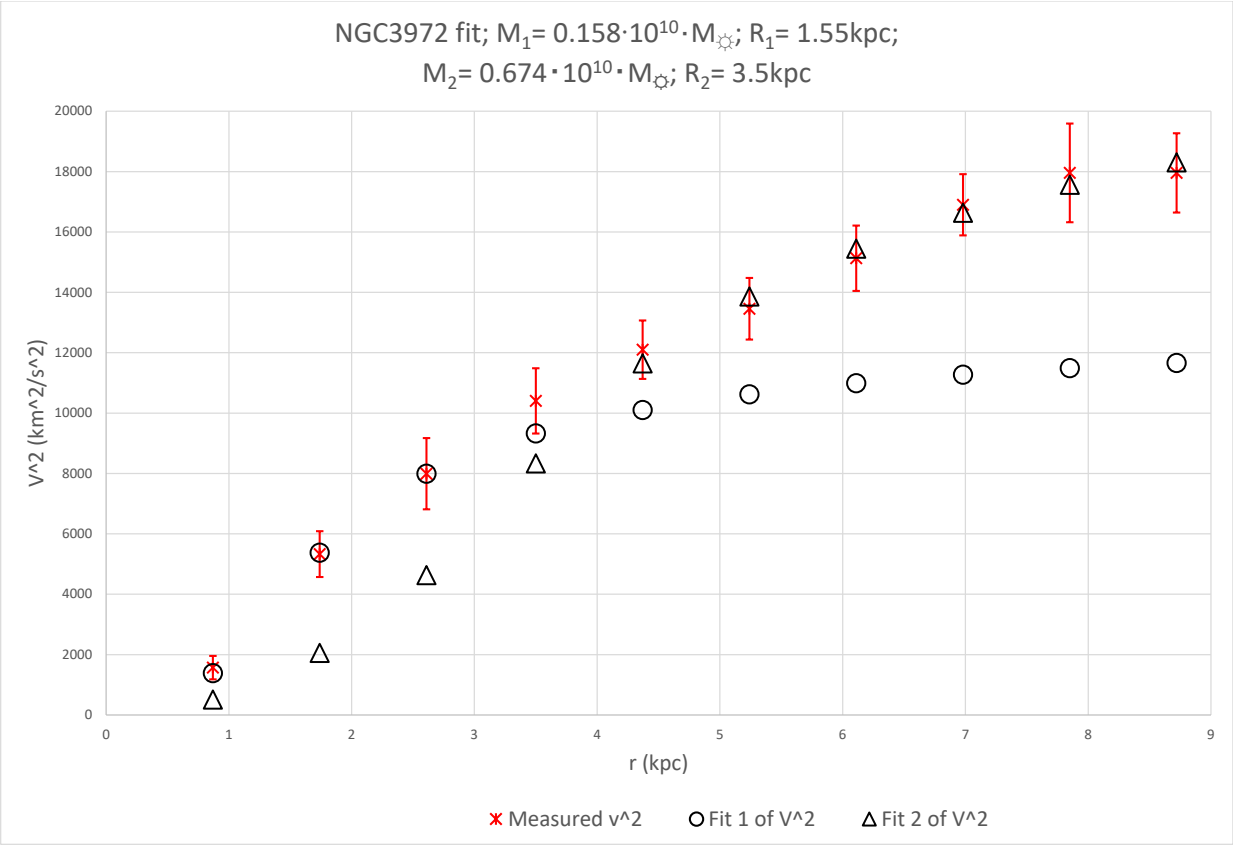

NGC3877 fit; M_1= 0.585·10^{10}·$M_\odot$; R_1= 2.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

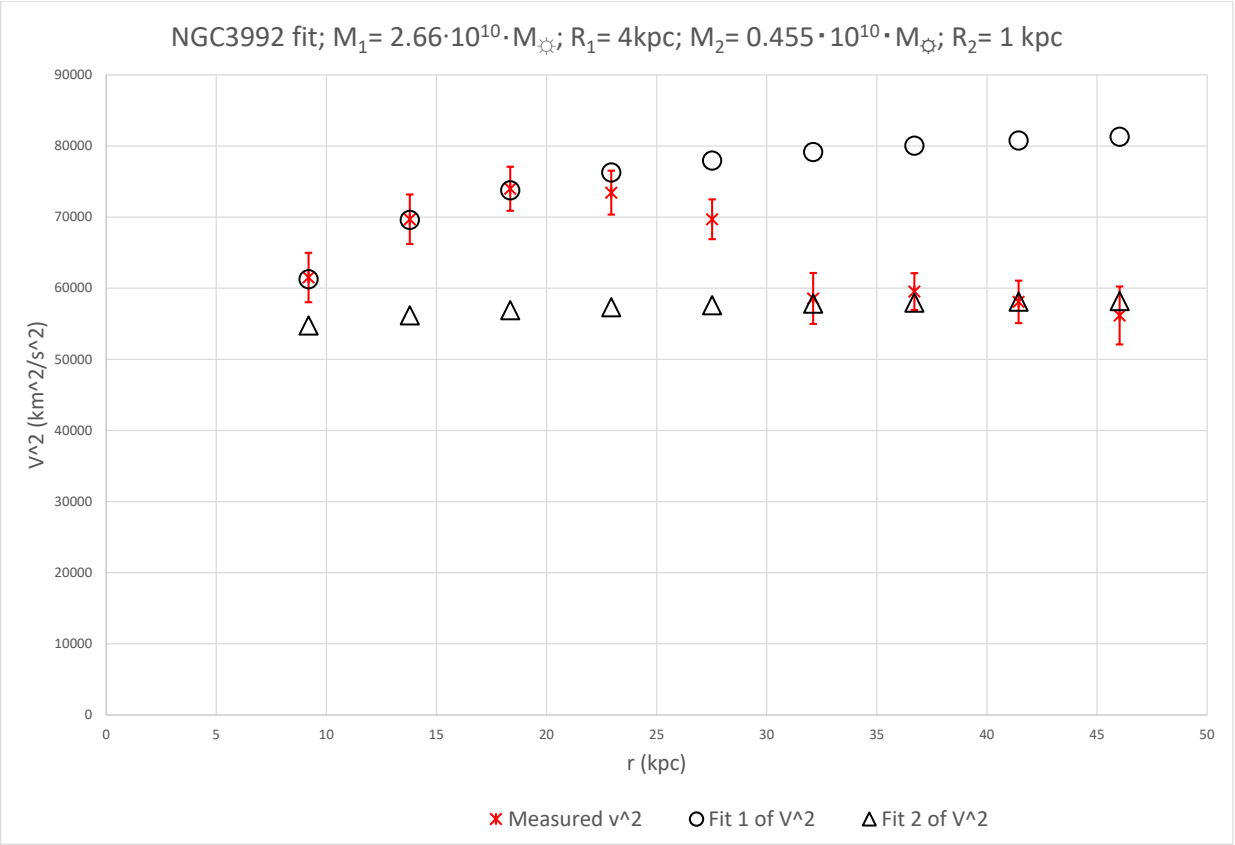

NGC3893 fit; M_1= 0.155·10^{10}·$M_\odot$; R_1= 0.7kpc; M_2= 0.056·10^{10}·$M_\odot$; R_2= 0.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

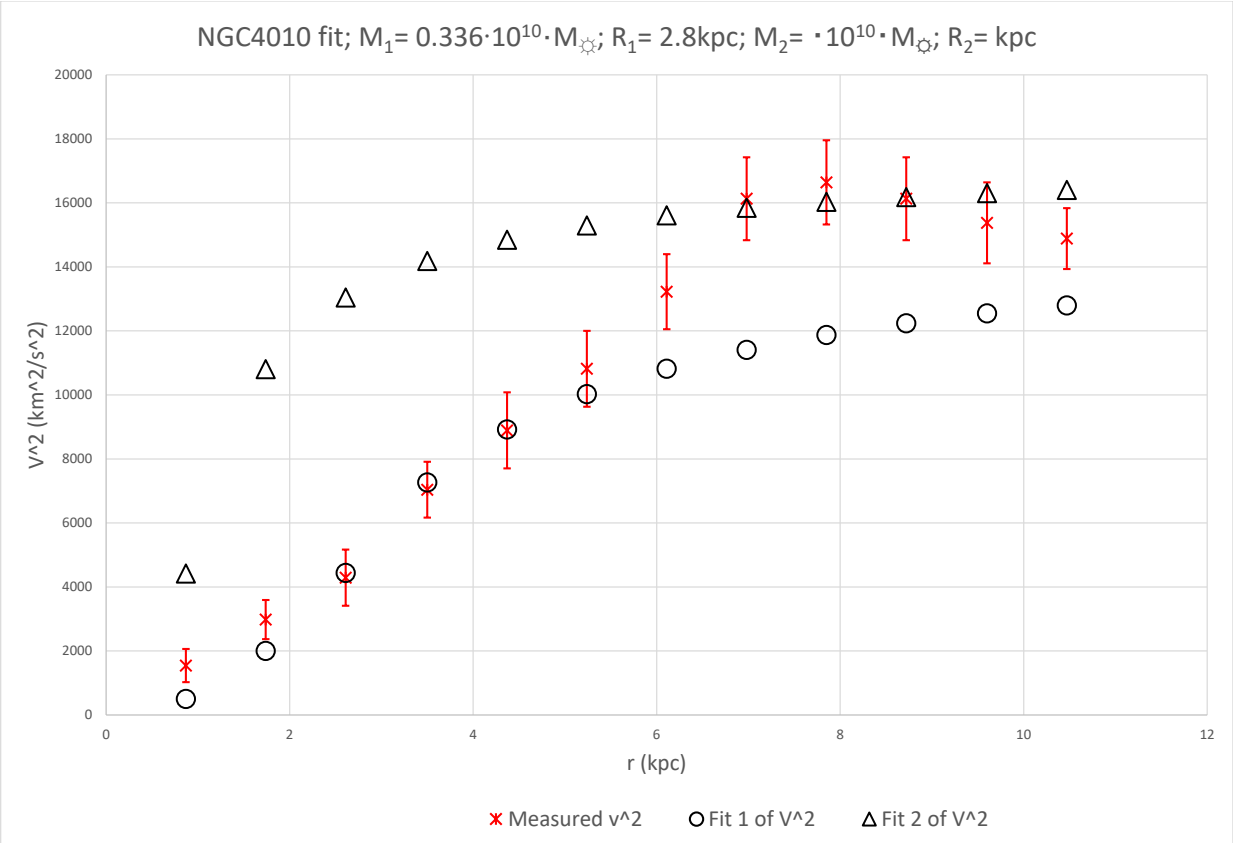

NGC3917 fit; M_1= 1.21·10^10·$M_\odot$; R_1= 4kpc; M_2= 0.2372·10^10·$M_\odot$; R_2= 1.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

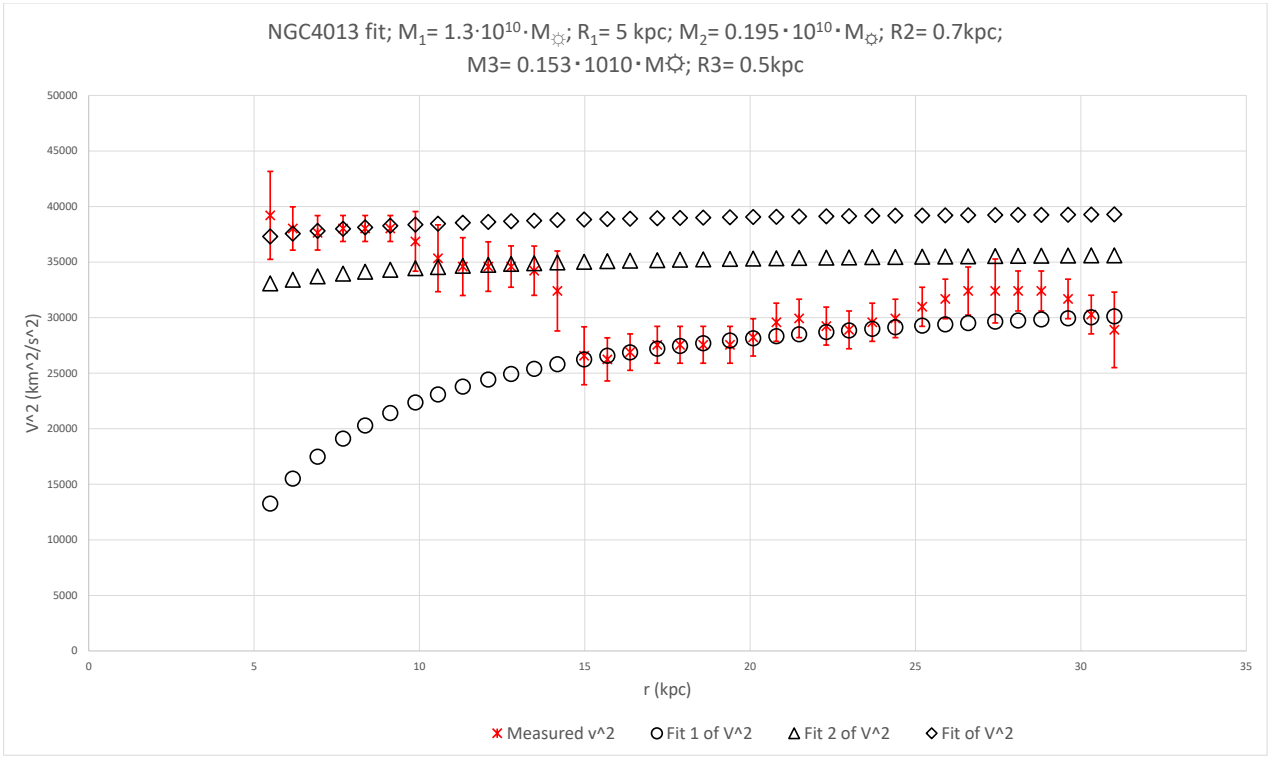

NGC3949 fit; M_1= 0.33·10^{10}·$M_\odot$; R_1= 1.35kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

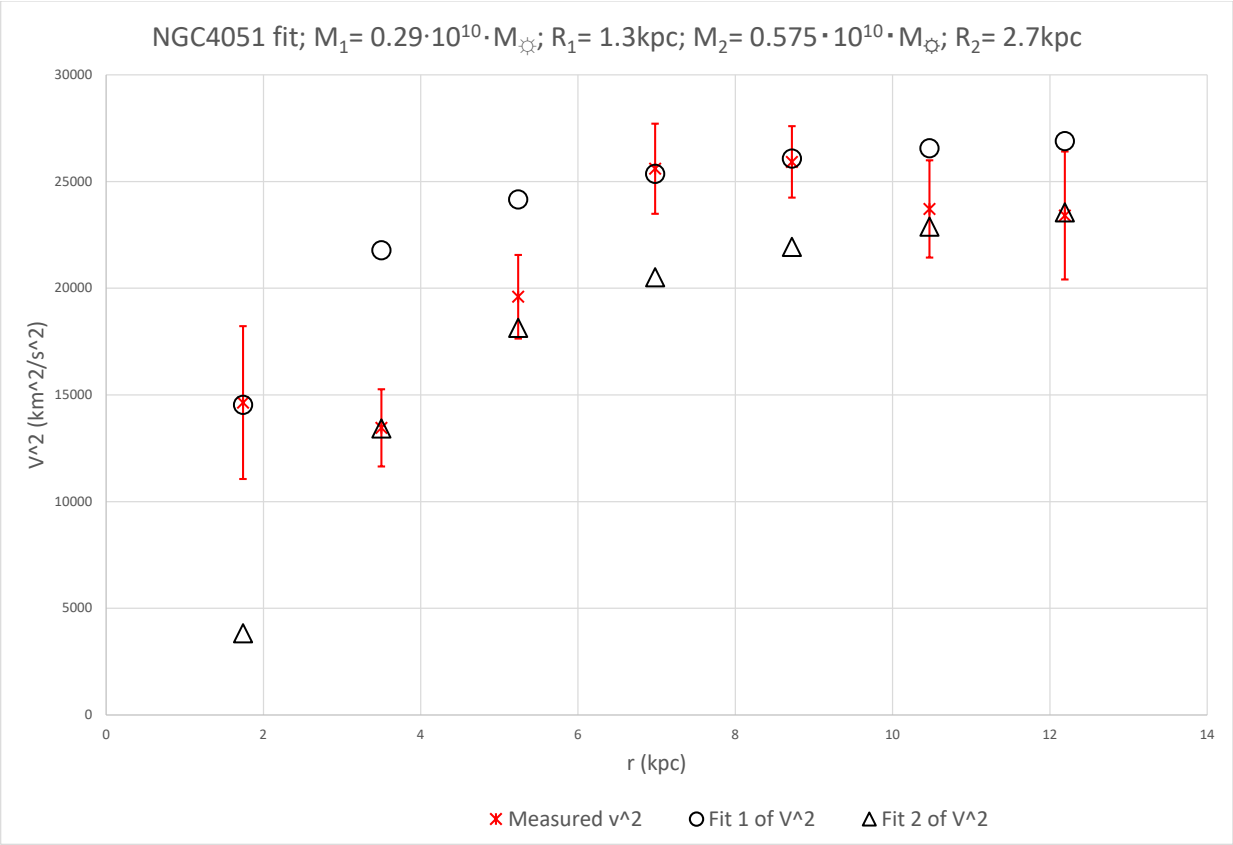

NGC3953 fit; M_1= 0.692·10^10·$M_\odot$; R_1= 1.8kpc;
M_2= 0.0779·10^10·$M_\odot$; R_2= 0.2 kpc
V^2 (km^2/s^2)
60000
50000
40000
30000
20000
10000
0
0
2
4
6
8
10
12
14
16
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

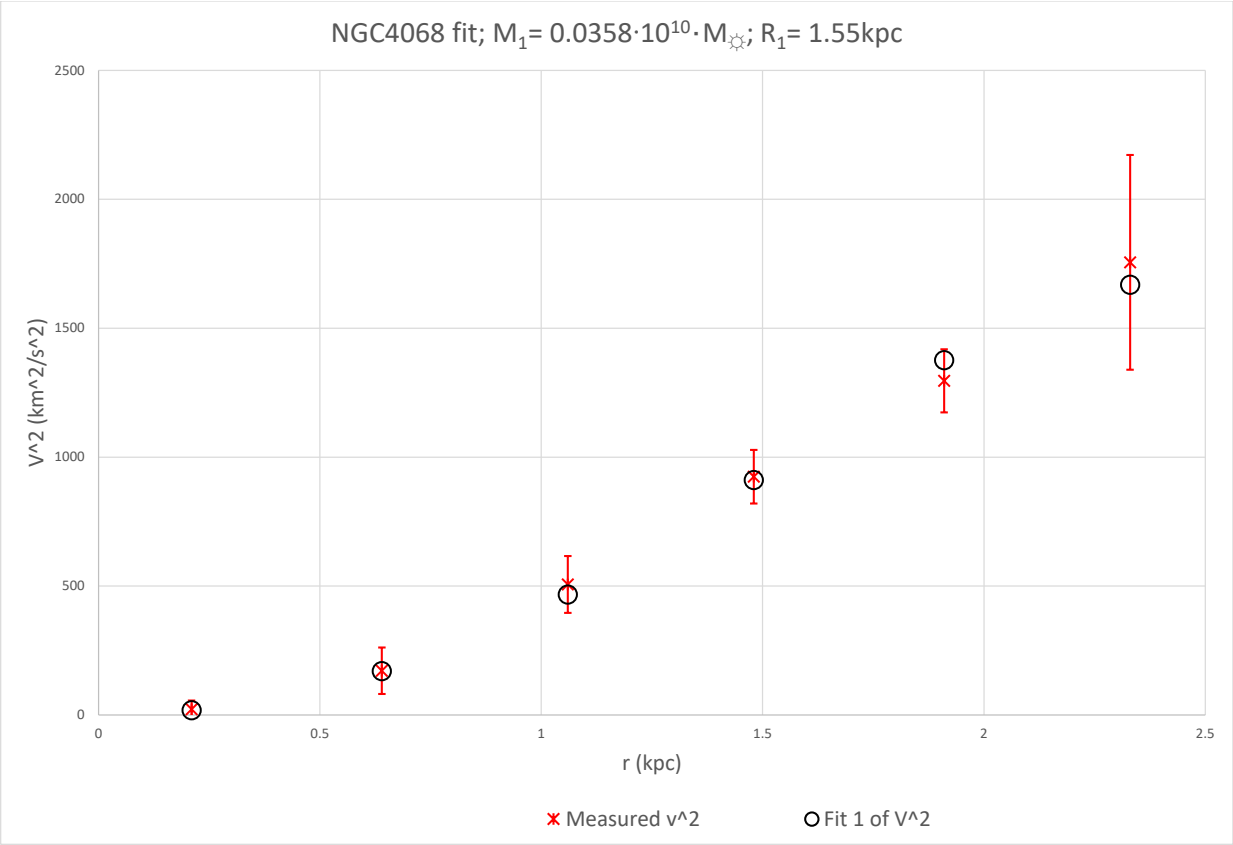

NGC3972 fit; M_1= 0.158·10^{10}·$M_\odot$; R_1= 1.55kpc;
M_2= 0.674·10^{10}·$M_\odot$; R_2= 3.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

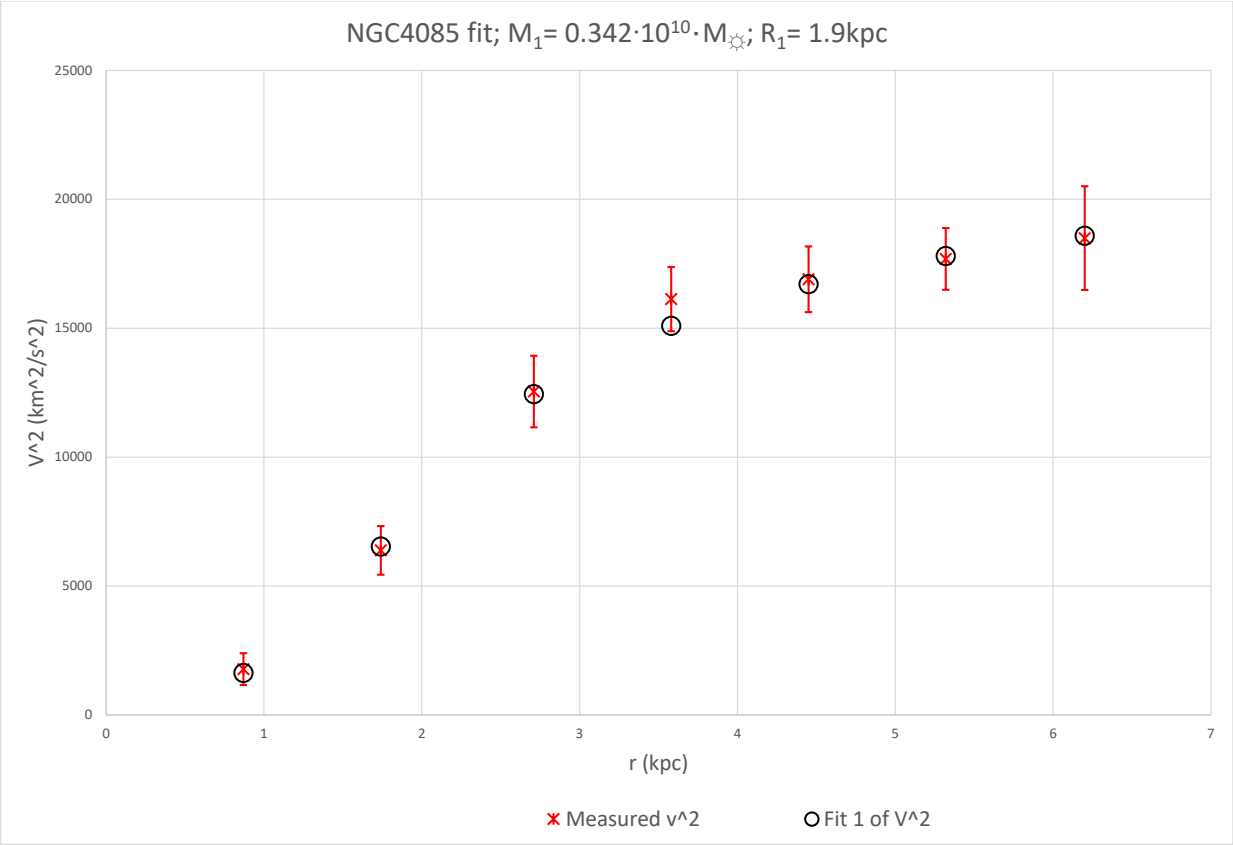

NGC3992 fit; M_1= 2.66·10^10·$M_\odot$; R_1= 4kpc; M_2= 0.455·10^10·$M_\odot$; R_2= 1 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

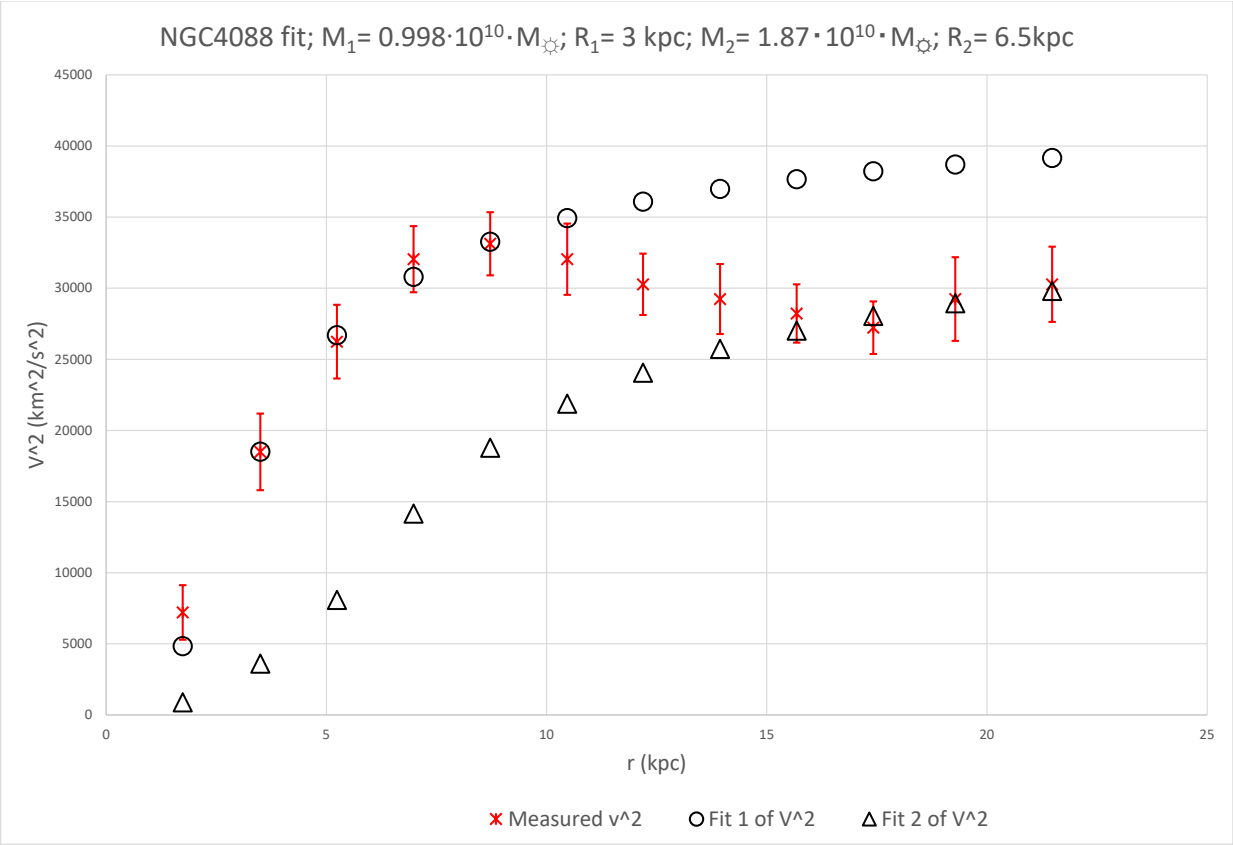

NGC4010 fit; M1= 0.336·10^10·M☼; R1= 2.8kpc; M2= ·10^10·M☼; R2= kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

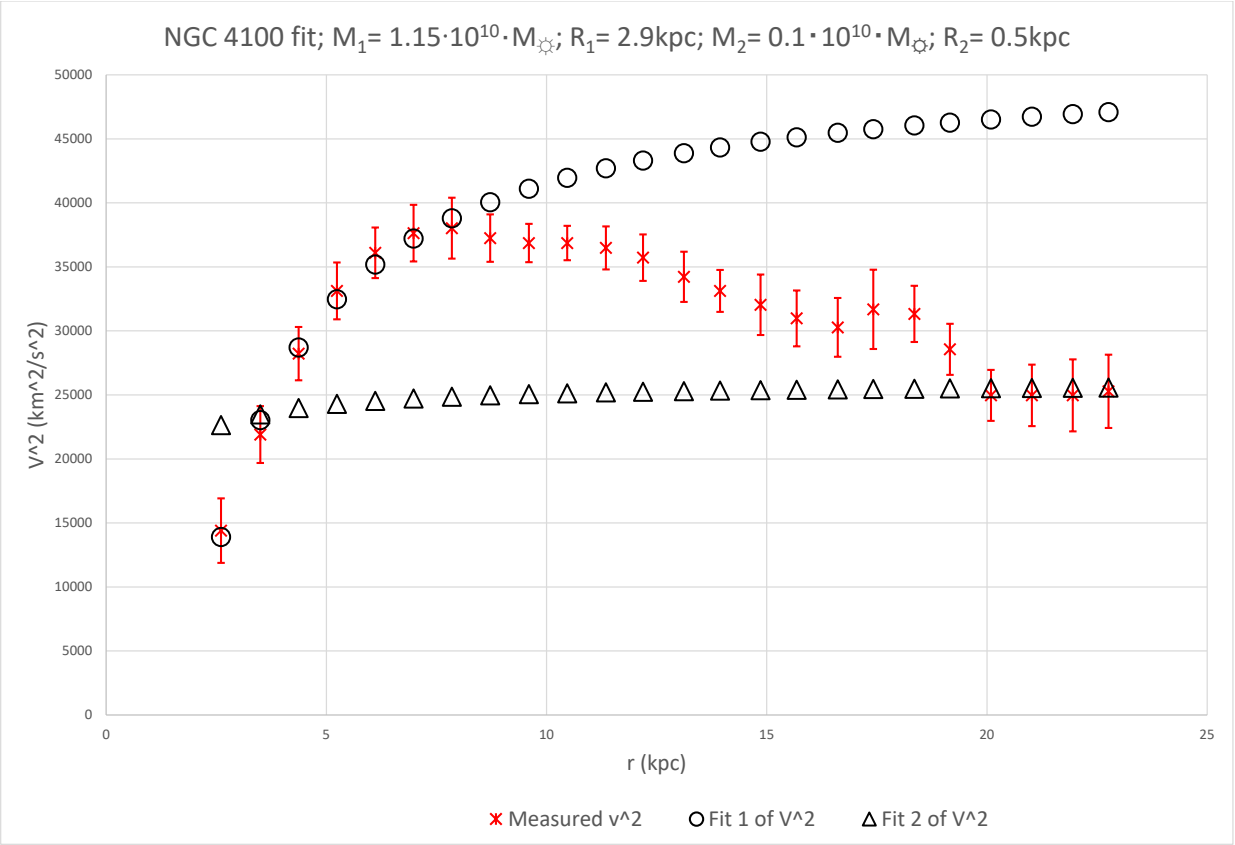

NGC4013 fit; M1= 1.3·10^10·M☼; R1= 5 kpc; M2= 0.195·10^10·M☼; R2= 0.7kpc;
M3= 0.153·1010·M☼; R3= 0.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit of V^2

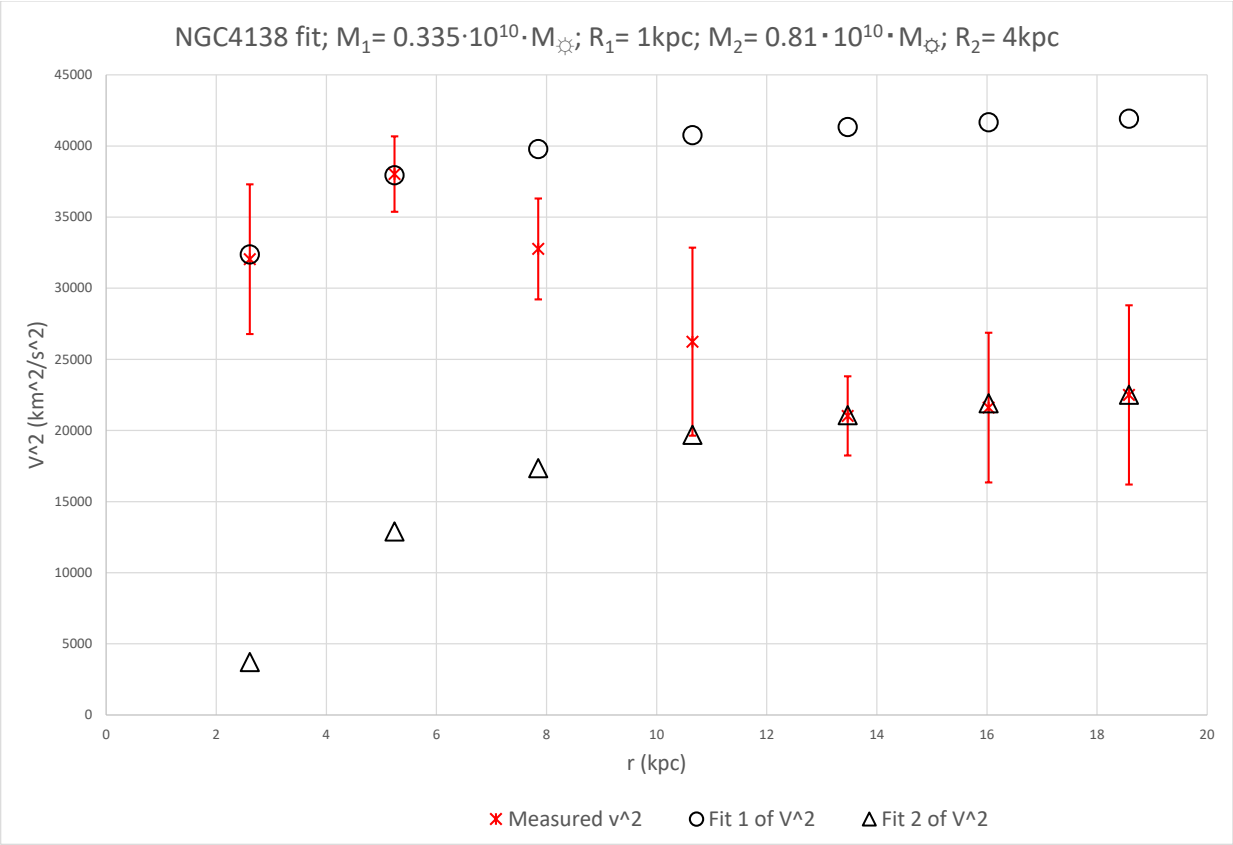

NGC4051 fit; M_1= 0.29·10^{10}·$M_\odot$; R_1= 1.3kpc; M_2= 0.575·10^{10}·$M_\odot$; R_2= 2.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

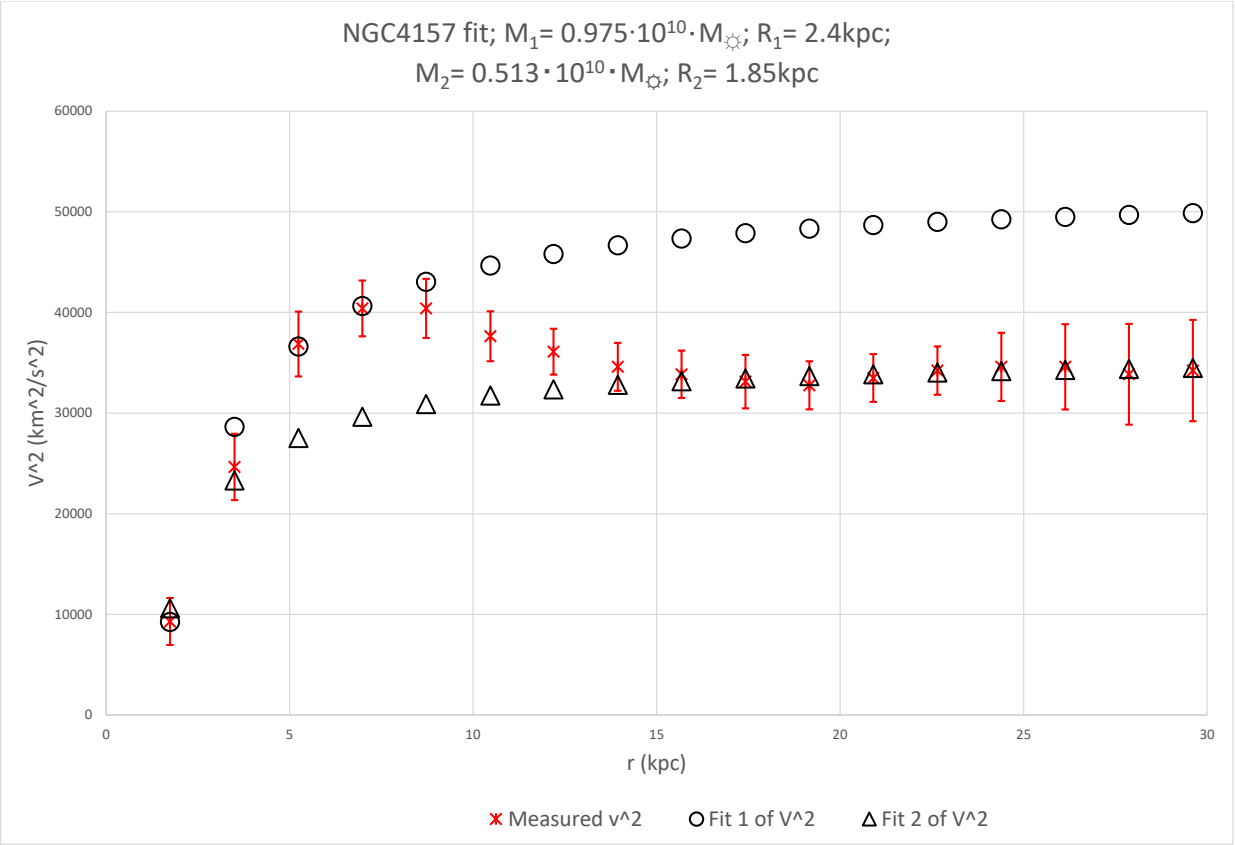

NGC4068 fit; M_1= 0.0358·10^{10}·$M_\odot$; R_1= 1.55kpc
V^2 (km^2/s^2)
2500
2000
1500
1000
500
0
0
0.5
1
1.5
2
2.5
r (kpc)
Measured v^2
Fit 1 of V^2

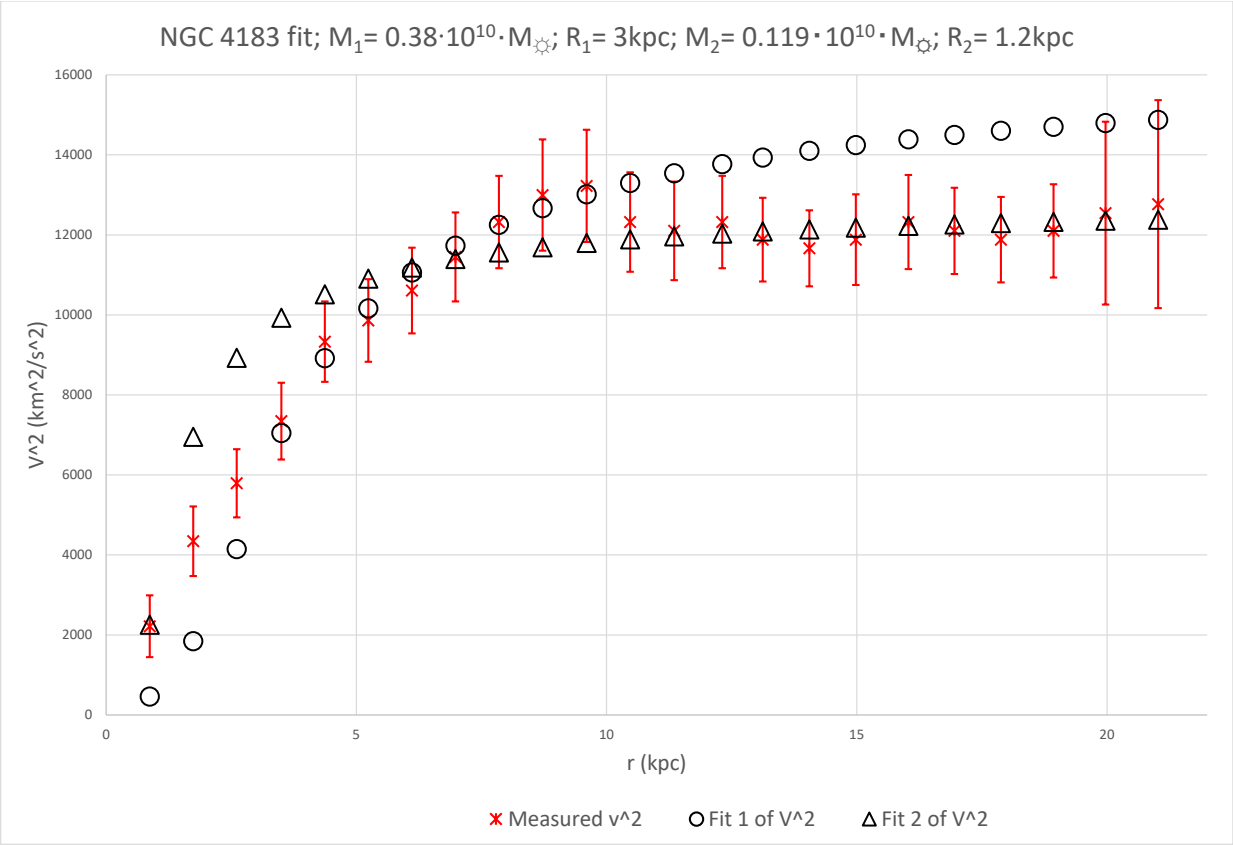

NGC4085 fit; M_1= 0.342·10^10·$M_\odot$; R_1= 1.9kpc
V^2 (km^2/s^2)
25000
20000
15000
10000
5000
0
0
1
2
3
4
5
6
7
r (kpc)
Measured v^2
Fit 1 of V^2

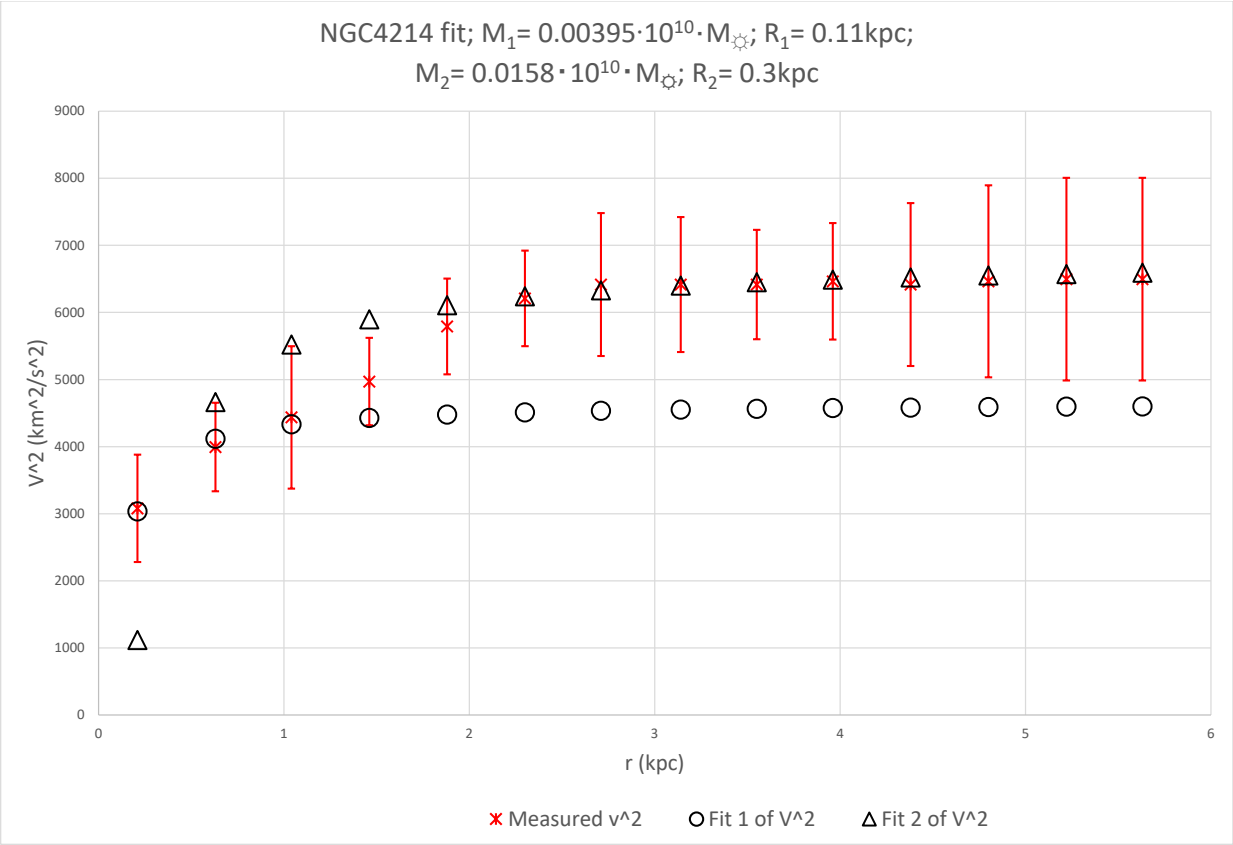

NGC4088 fit; M1= 0.998·10^10·M☼; R1= 3 kpc; M2= 1.87·10^10·M☼; R2= 6.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

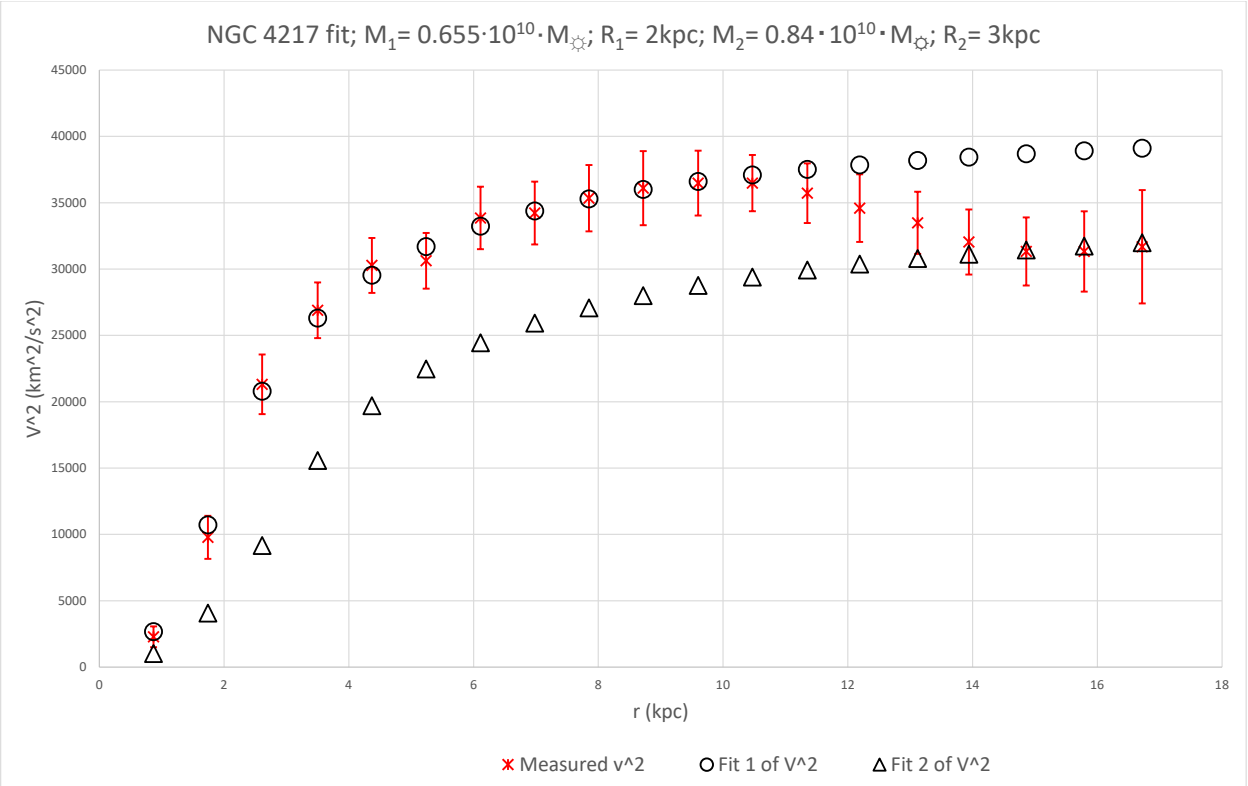

NGC 4100 fit; M1= 1.15·10^10·M☼; R1= 2.9kpc; M2= 0.1·10^10·M☼; R2= 0.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

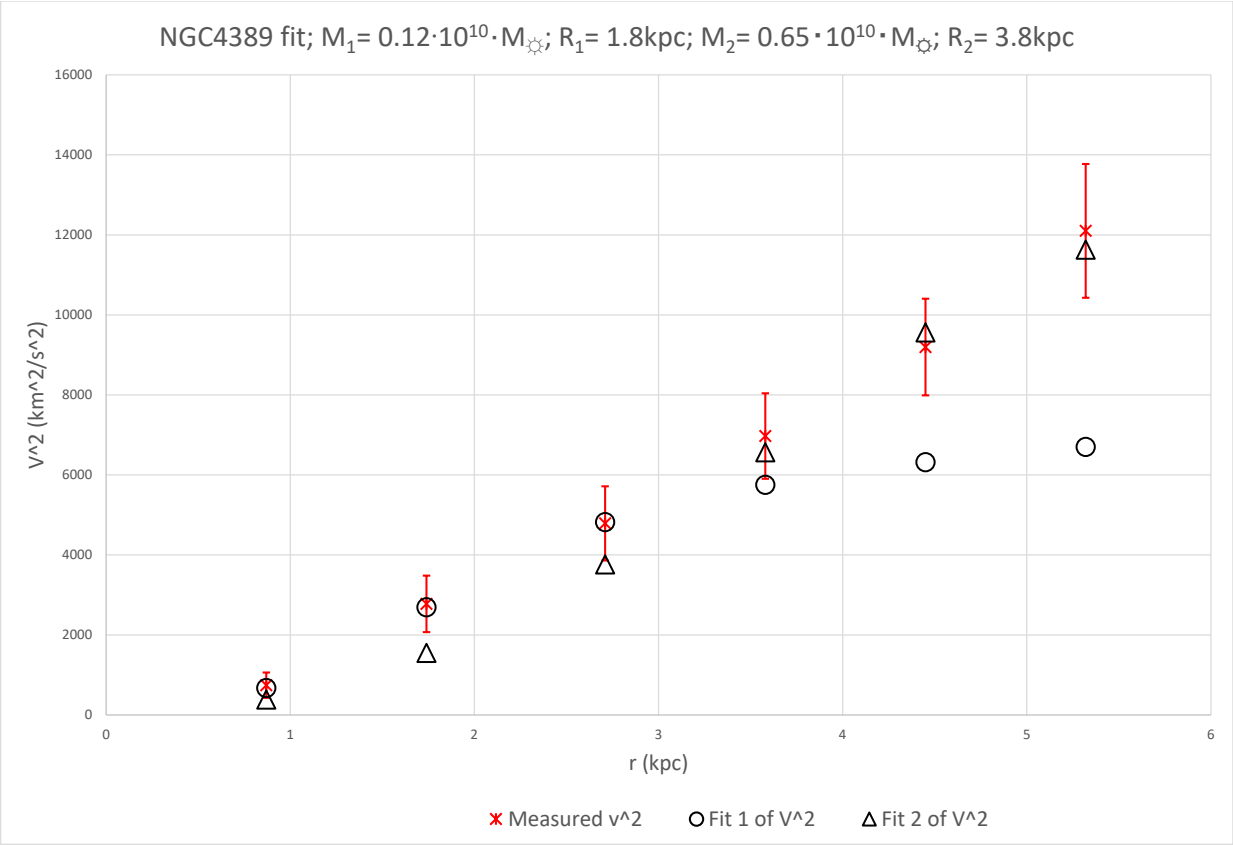

NGC4138 fit; M_1= 0.335·10^10·$M_\odot$; R_1= 1kpc; M_2= 0.81·10^10·$M_\odot$; R_2= 4kpc
V^2 (km^2/s^2)
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
0
2
4
6
8
10
12
14
16
18
20
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

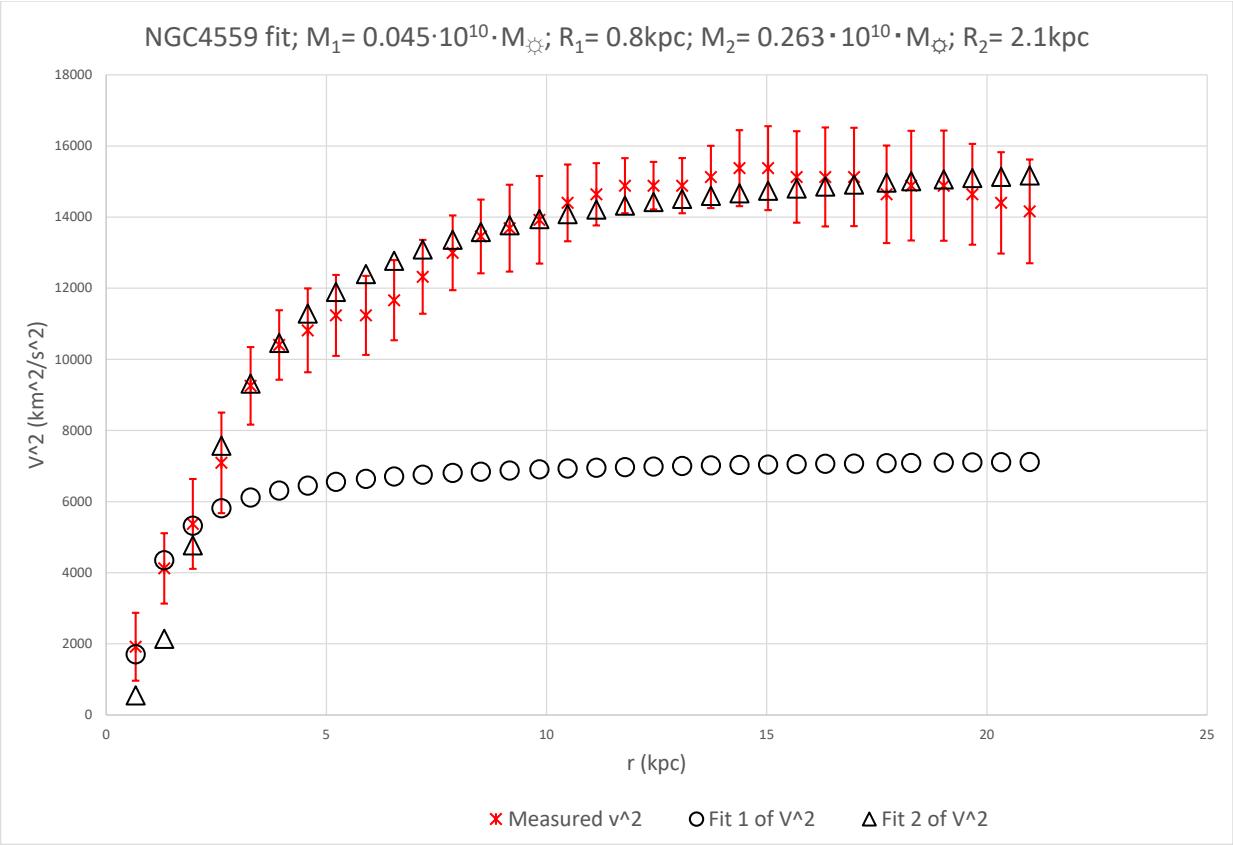

NGC4157 fit; M1= 0.975·10^10·M☼; R1= 2.4kpc;
M2= 0.513·10^10·M☼; R2= 1.85kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

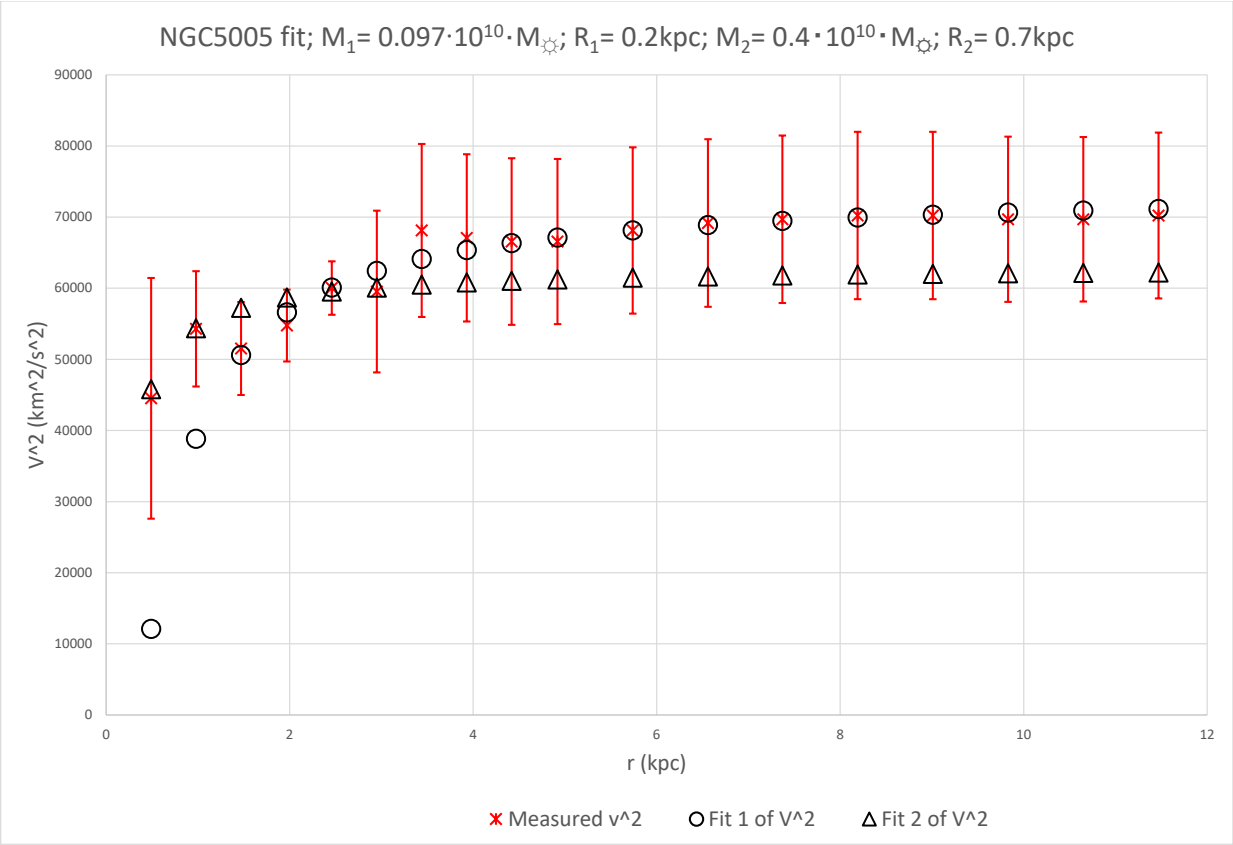

NGC 4183 fit; M_1= 0.38·10^10·$M_\odot$; R_1= 3kpc; M_2= 0.119·10^10·$M_\odot$; R_2= 1.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

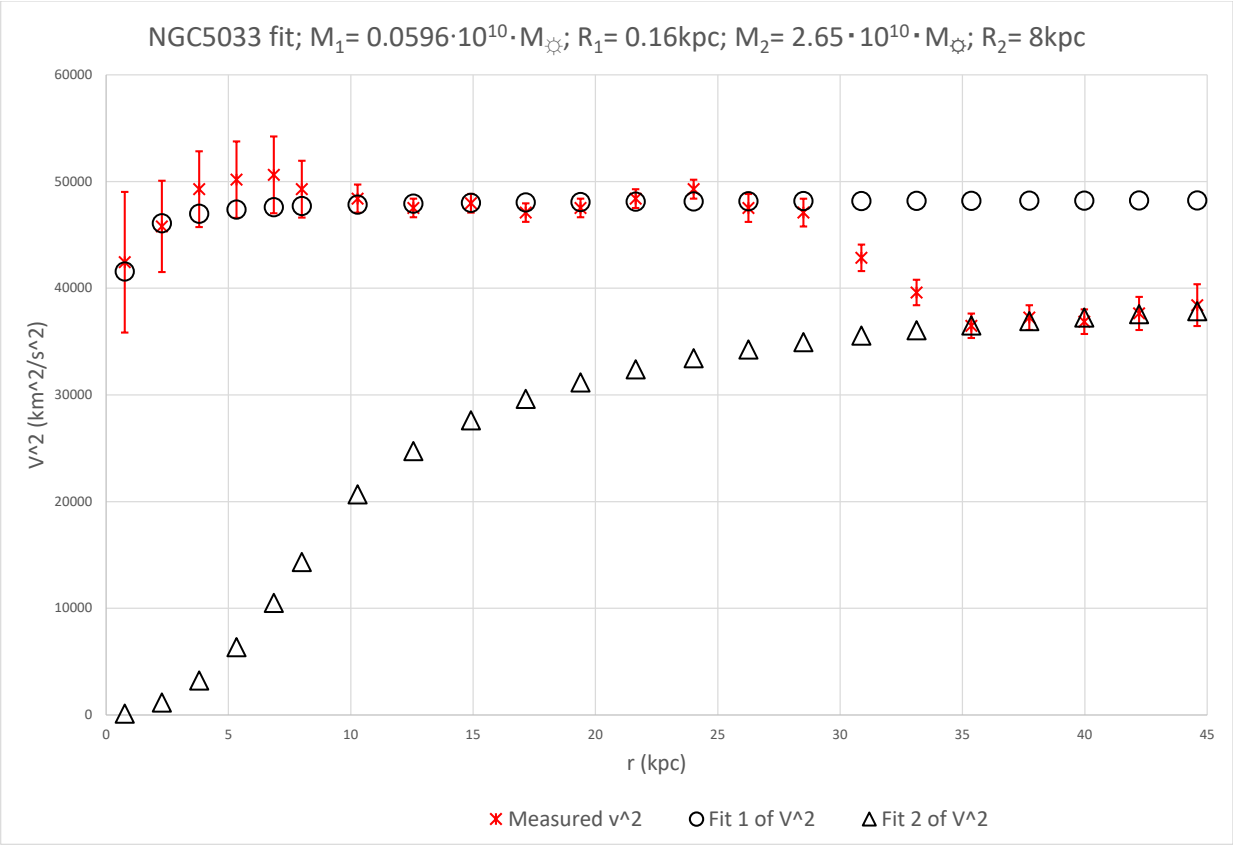

NGC4214 fit; M1= 0.00395·10^10·M☼; R1= 0.11kpc;
M2= 0.0158·10^10·M☼; R2= 0.3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

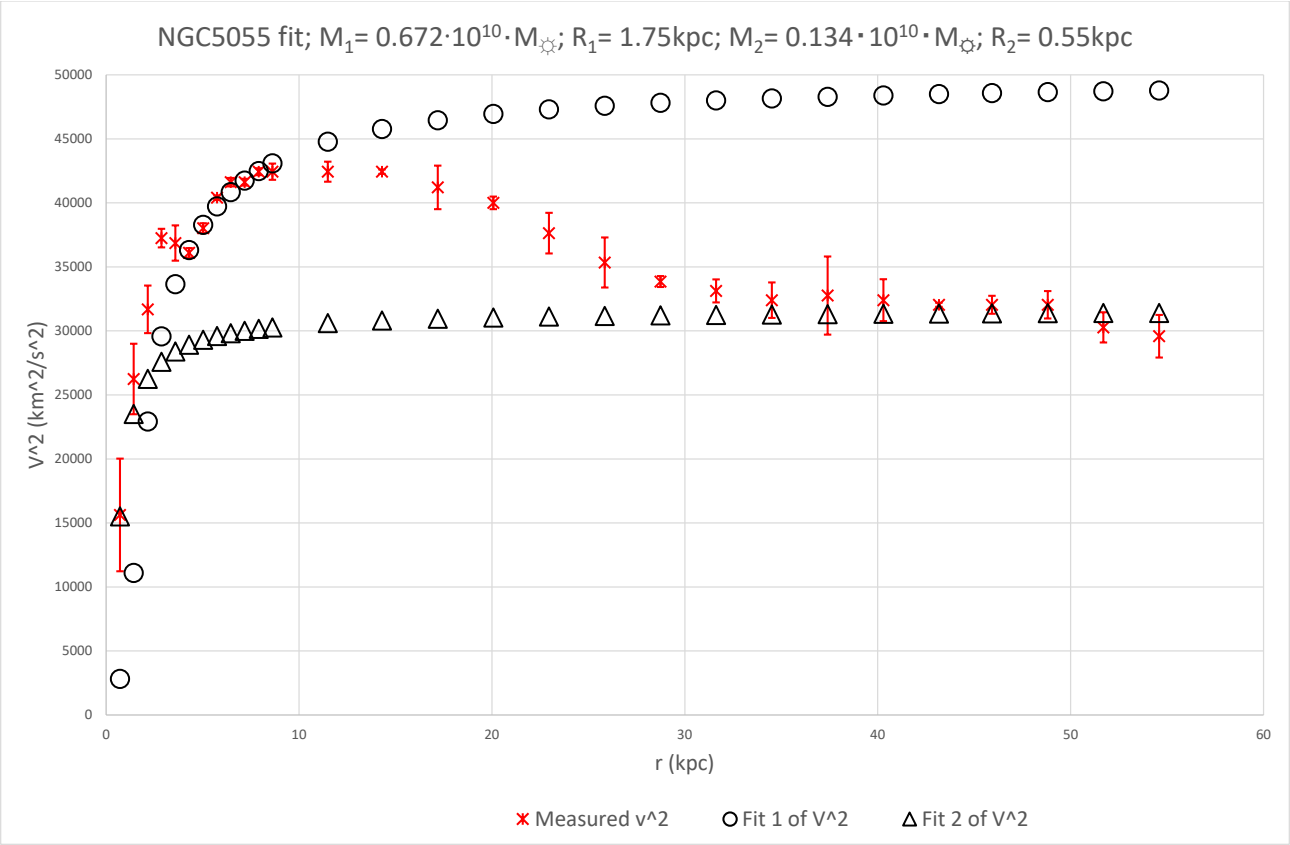

NGC 4217 fit; M_1= 0.655·10^{10}·$M_\odot$; R_1= 2kpc; M_2= 0.84·10^{10}·$M_\odot$; R_2= 3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

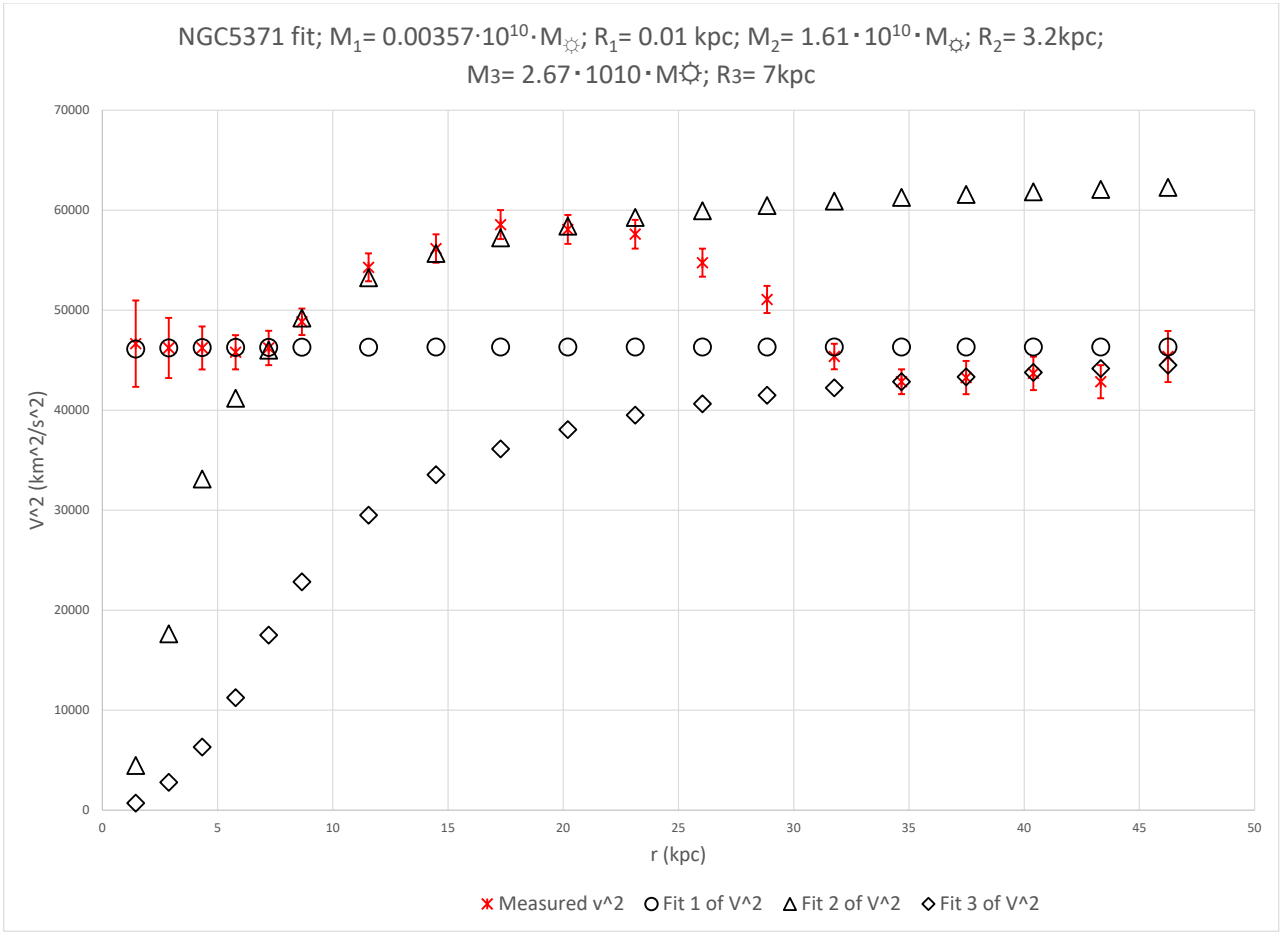

NGC4389 fit; M1= 0.12·10^10·M☼; R1= 1.8kpc; M2= 0.65·10^10·M☼; R2= 3.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

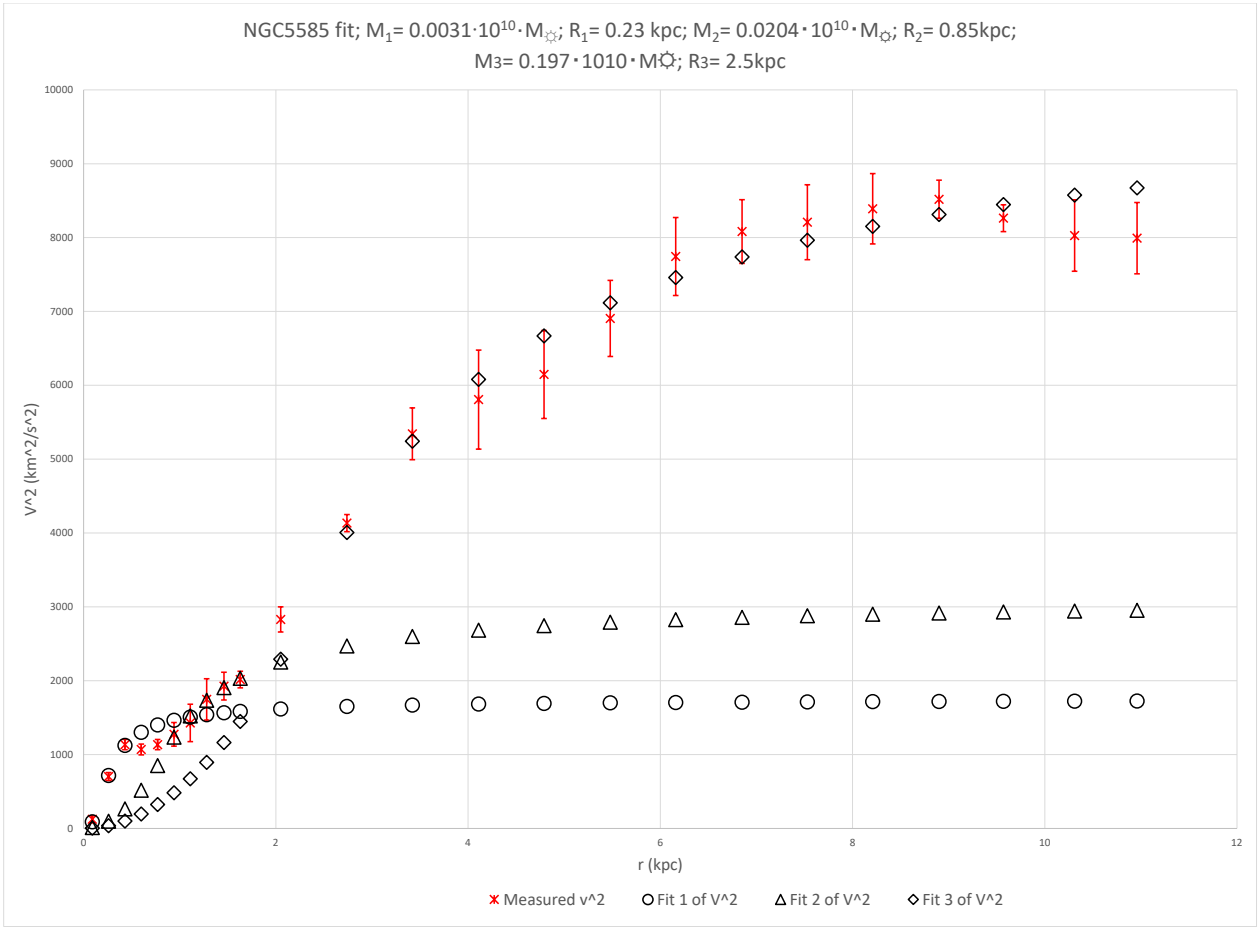

NGC4559 fit; M_1= 0.045·10^10·$M_\odot$; R_1= 0.8kpc; M_2= 0.263·10^10·$M_\odot$; R_2= 2.1kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

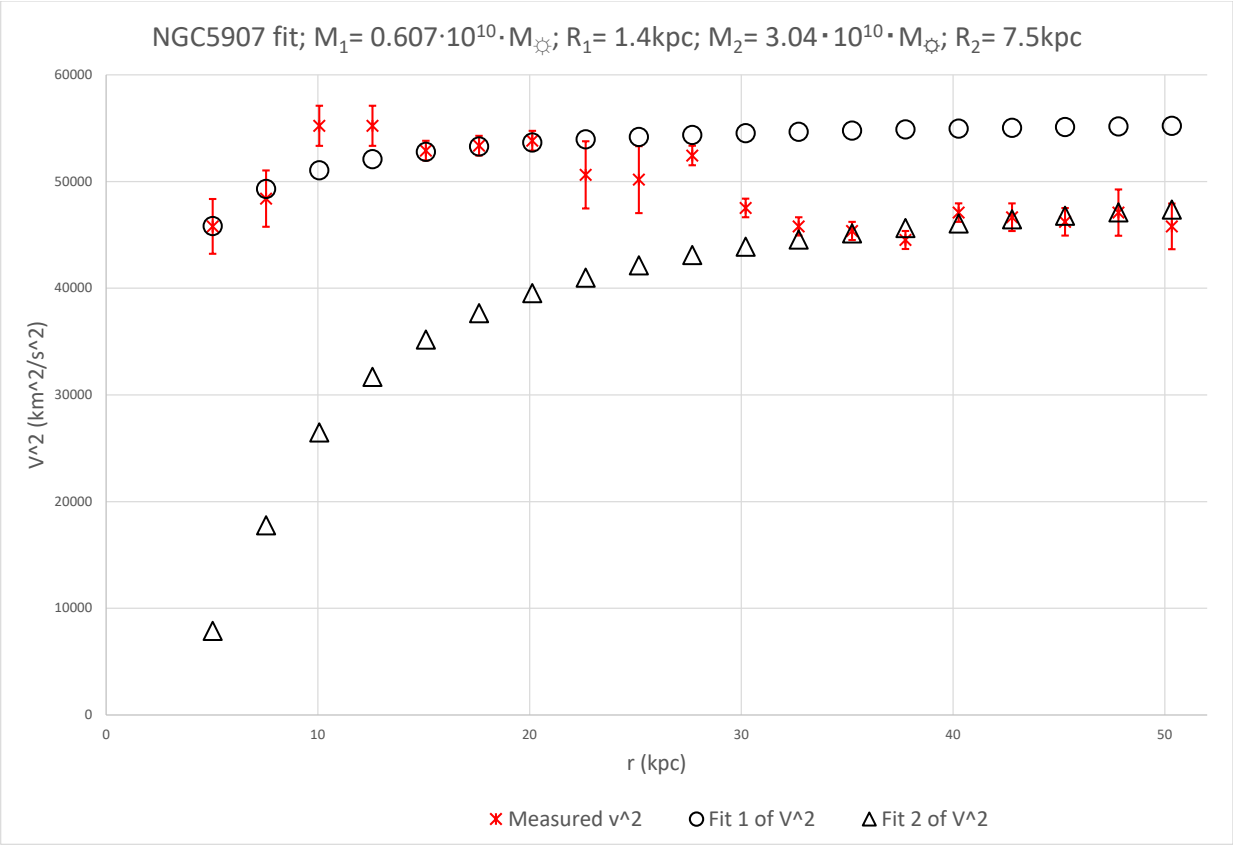

NGC5005 fit; M_1= 0.097·10^10·$M_\odot$; R_1= 0.2kpc; M_2= 0.4·10^10·$M_\odot$; R_2= 0.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

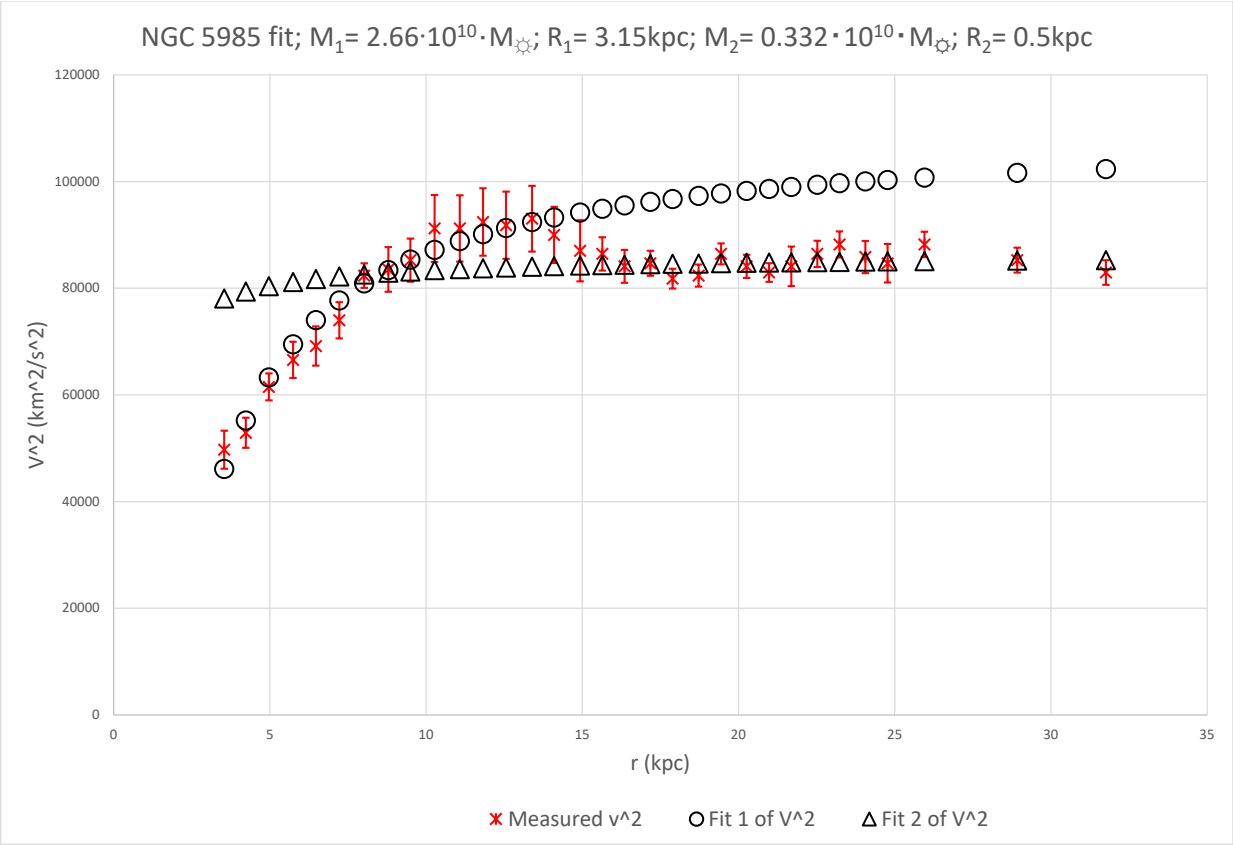

NGC5033 fit; M1= 0.0596·10^10·M☼; R1= 0.16kpc; M2= 2.65·10^10·M☼; R2= 8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

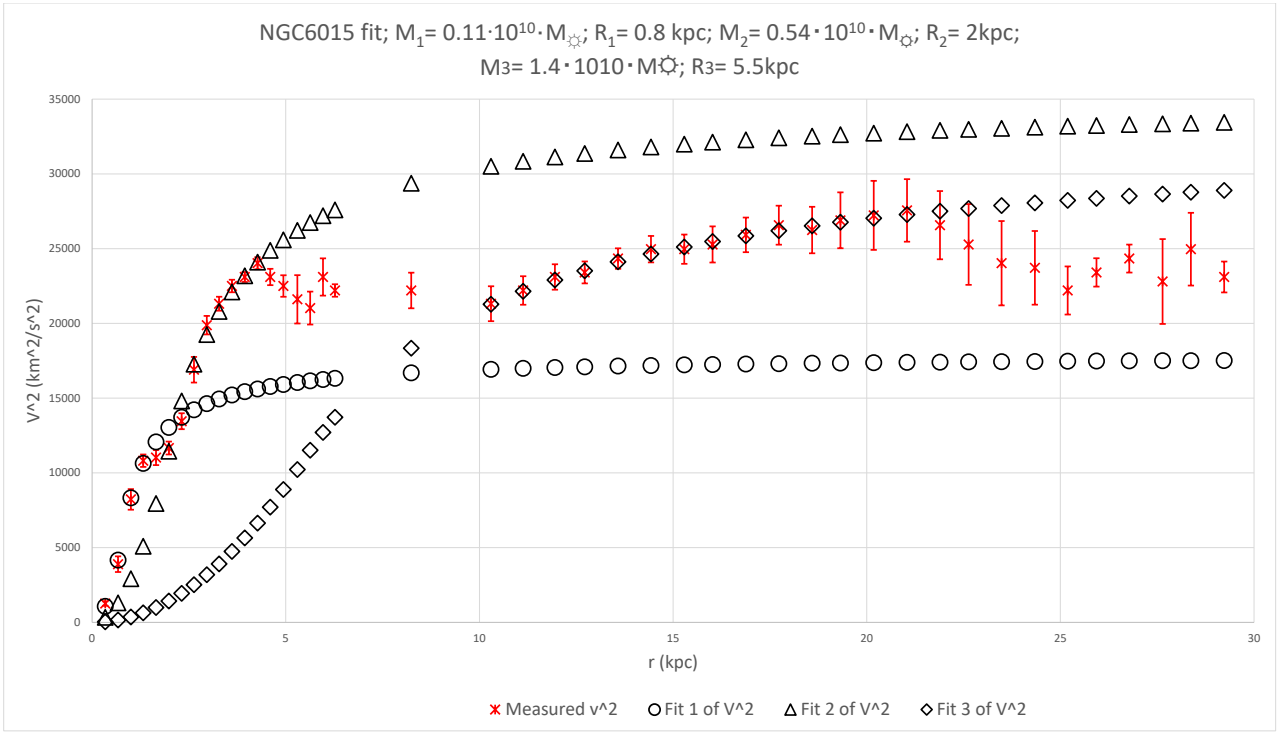

NGC5055 fit; M1= 0.672·10^10·M☼; R1= 1.75kpc; M2= 0.134·10^10·M☼; R2= 0.55kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

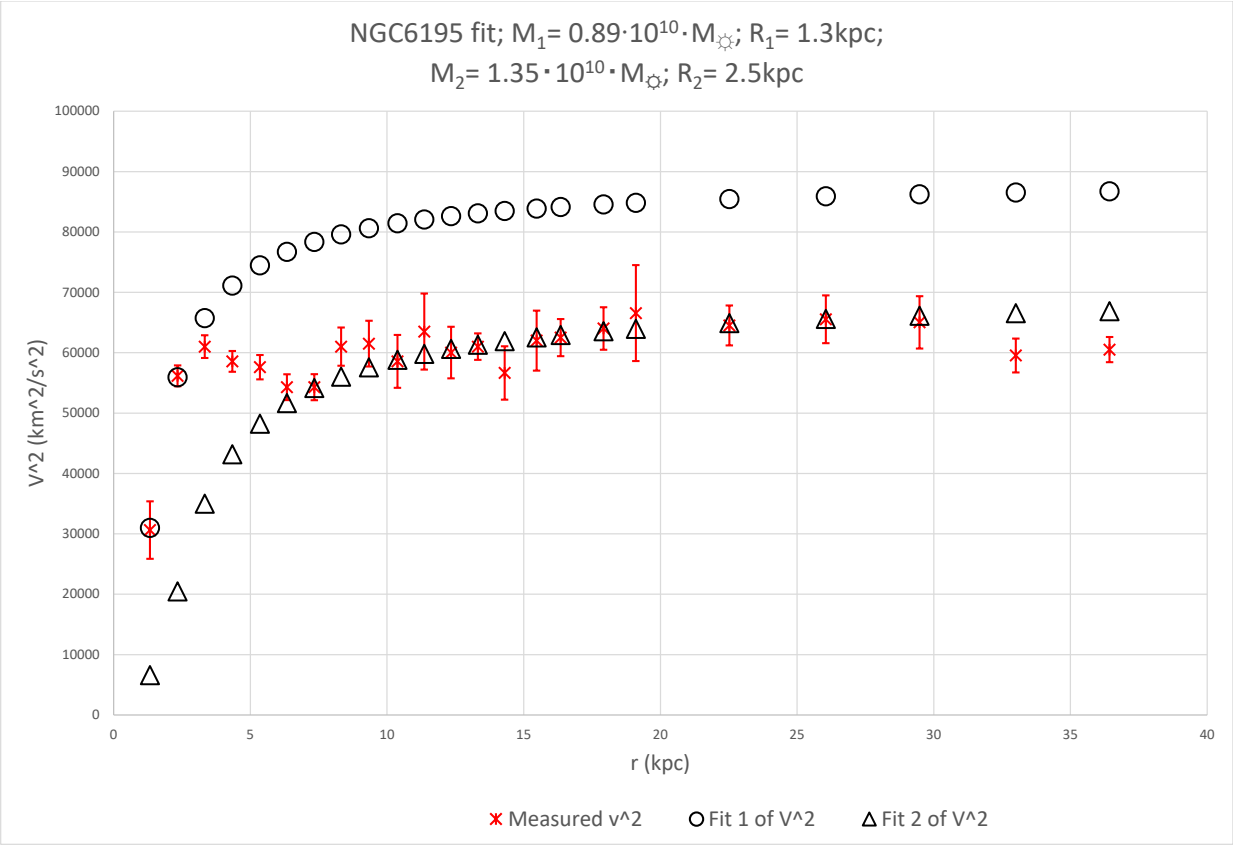

NGC5371 fit; M1= 0.00357·10^10·M☼; R1= 0.01 kpc; M2= 1.61·10^10·M☼; R2= 3.2kpc;
M3= 2.67·1010·M☼; R3= 7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

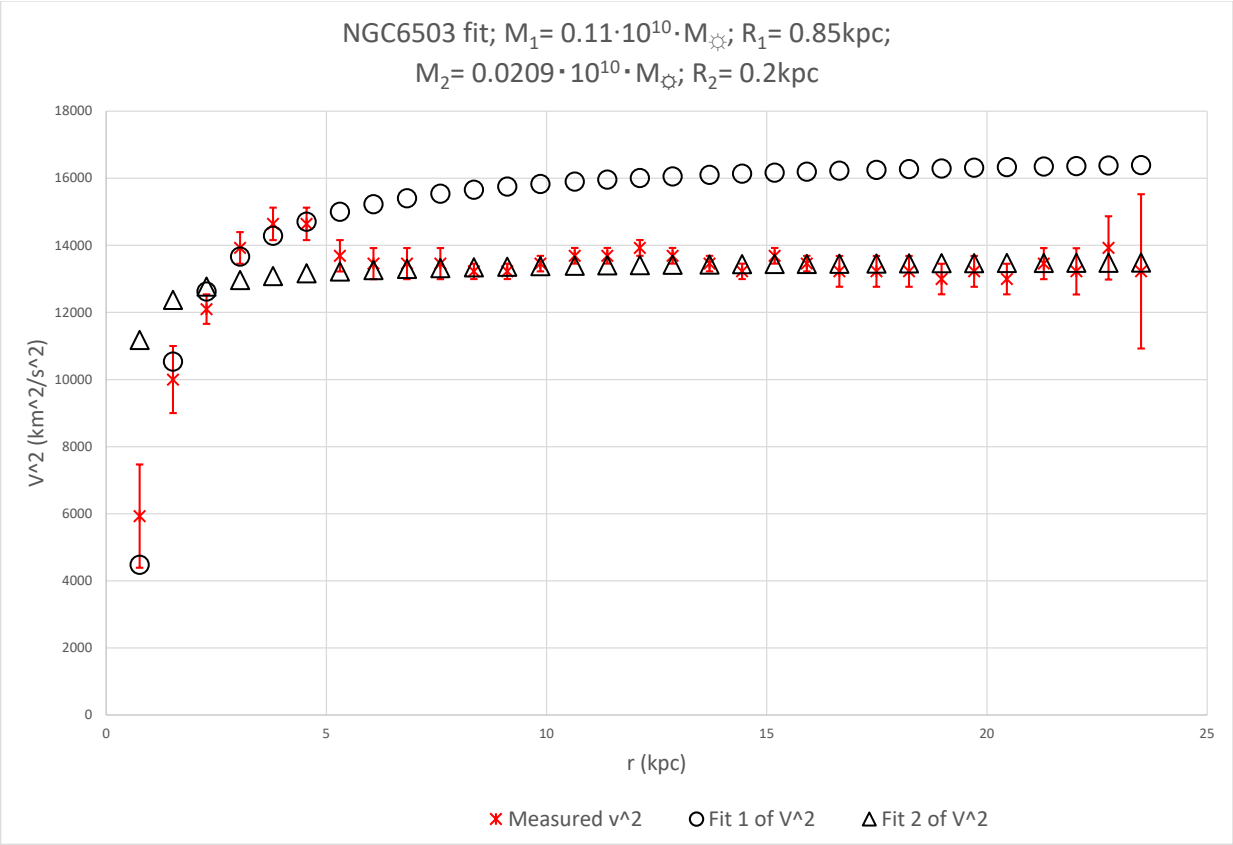

NGC5585 fit; M1= 0.0031·10^10·M☼; R1= 0.23 kpc; M2= 0.0204·10^10·M☼; R2= 0.85kpc;
M3= 0.197·1010·M☼; R3= 2.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

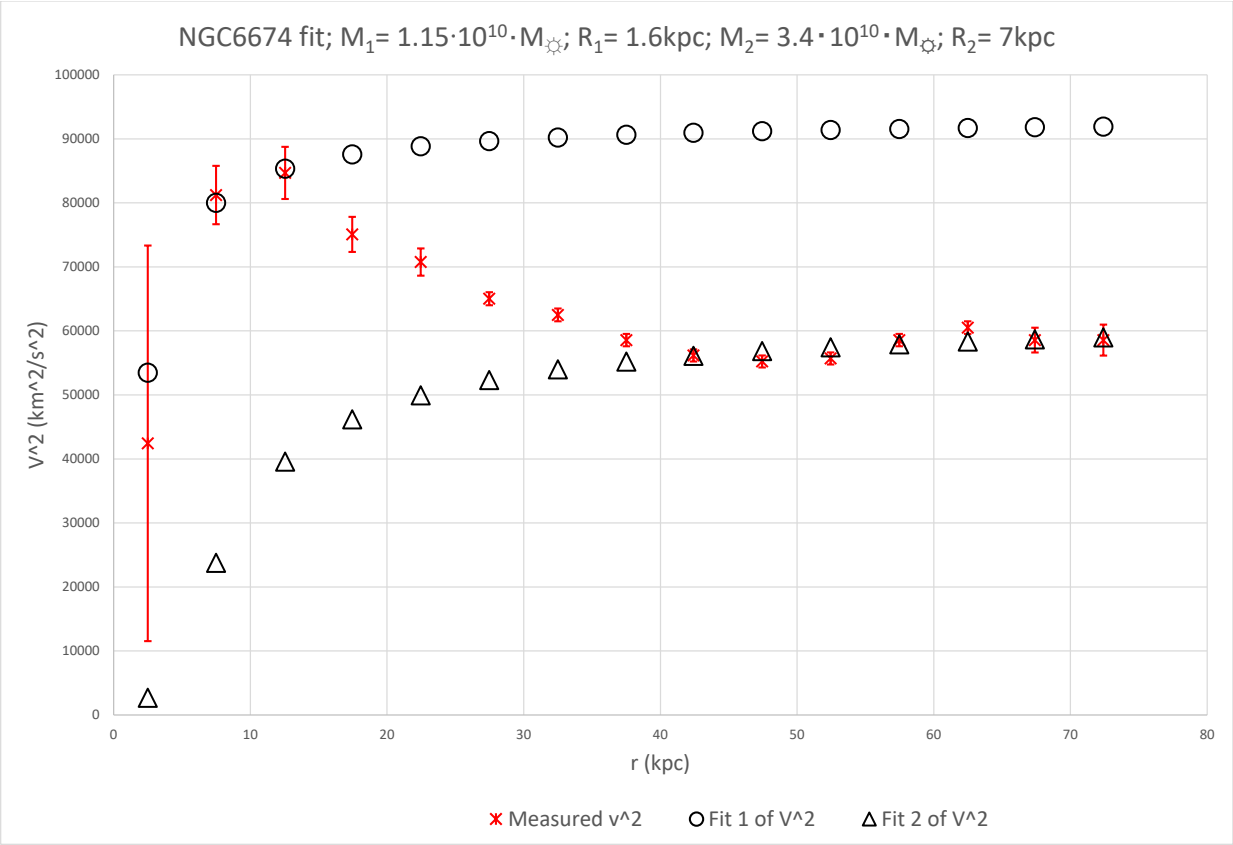

NGC5907 fit; M1= 0.607·10^10·M☼; R1= 1.4kpc; M2= 3.04·10^10·M☼; R2= 7.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

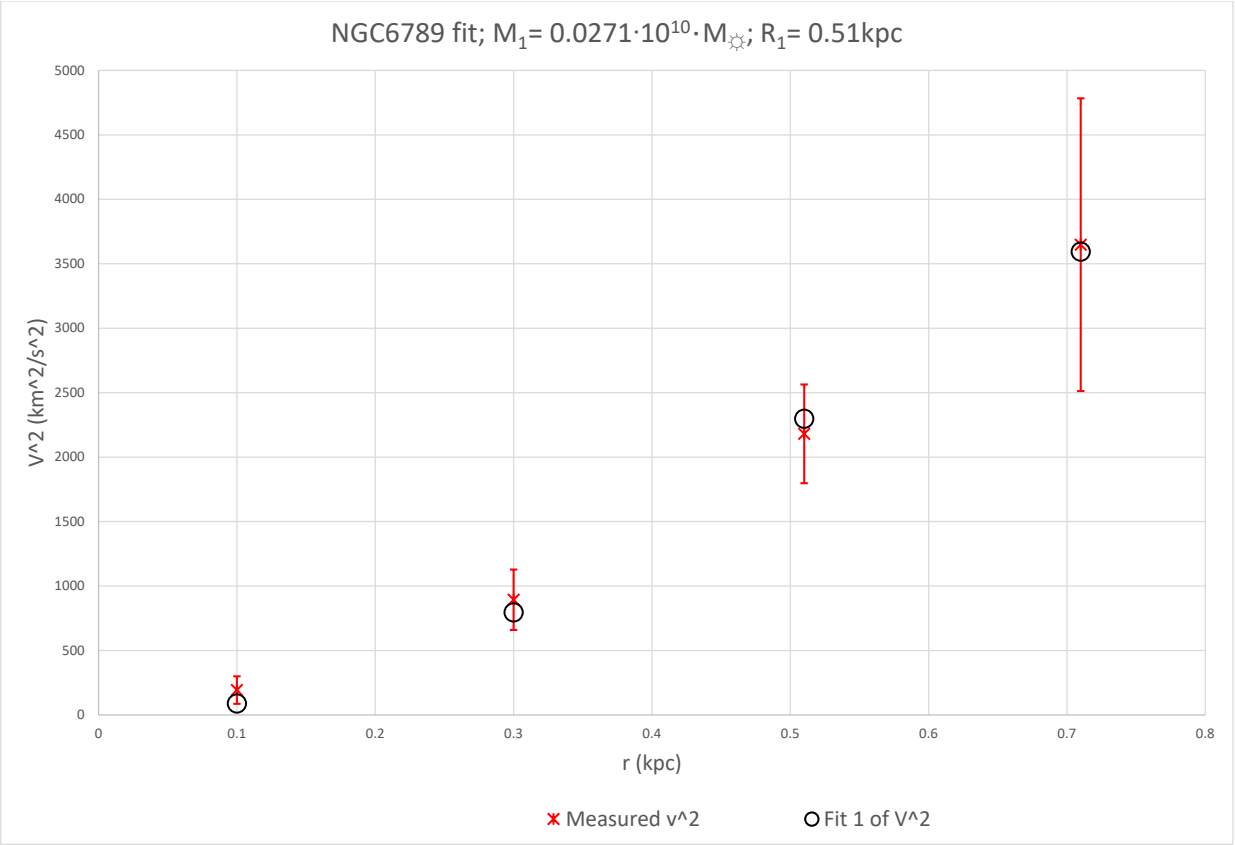

NGC 5985 fit; M1= 2.66·10^10·M☼; R1= 3.15kpc; M2= 0.332·10^10·M☼; R2= 0.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

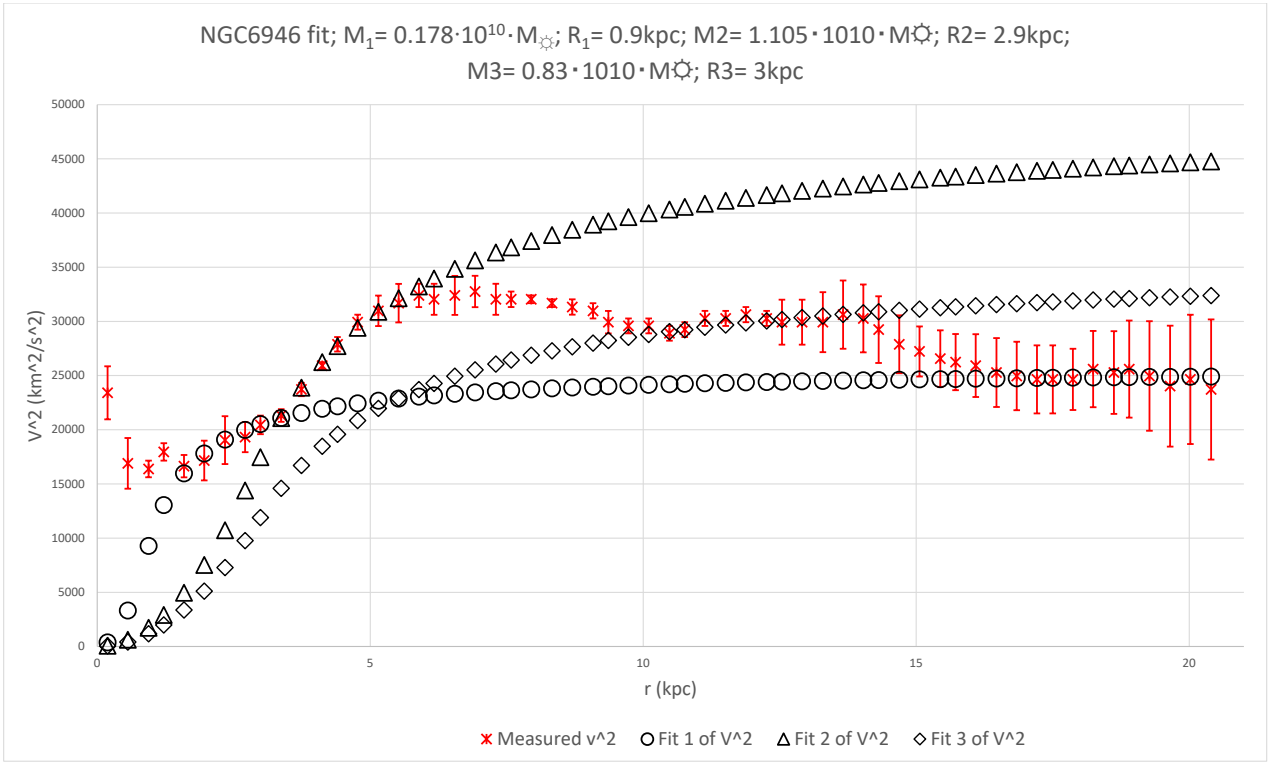

NGC6015 fit; M1= 0.11·10^10·M☼; R1= 0.8 kpc; M2= 0.54·10^10·M☼; R2= 2kpc;
M3= 1.4·1010·M☼; R3= 5.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

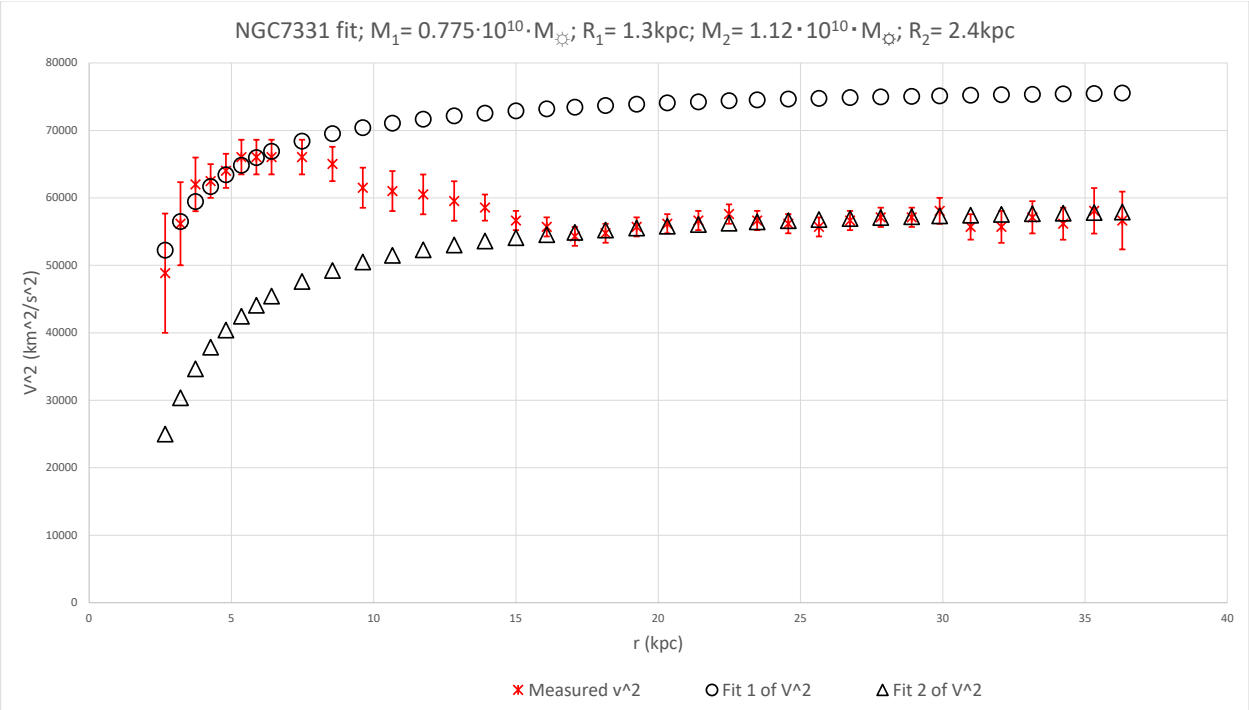

NGC6195 fit; M1= 0.89·10^10·M☼; R1= 1.3kpc;
M2= 1.35·10^10·M☼; R2= 2.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

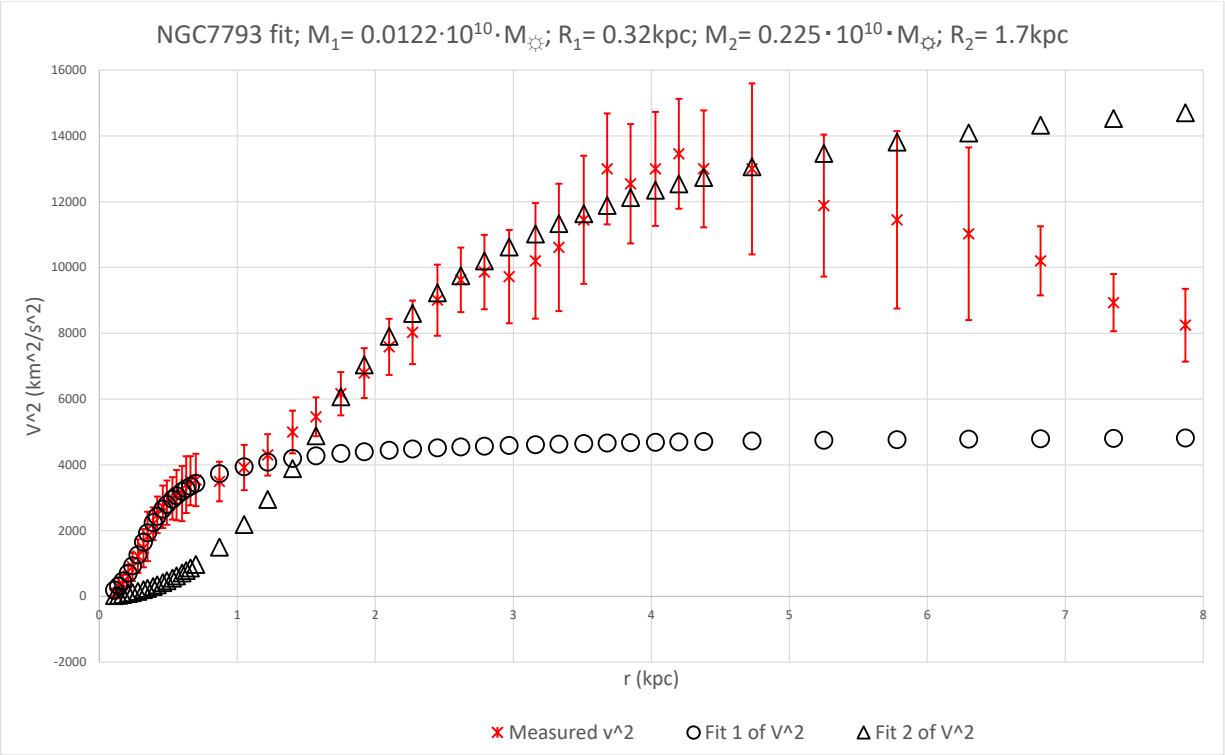

NGC6503 fit; M1= 0.11·10^10·M☼; R1= 0.85kpc;
M2= 0.0209·10^10·M☼; R2= 0.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

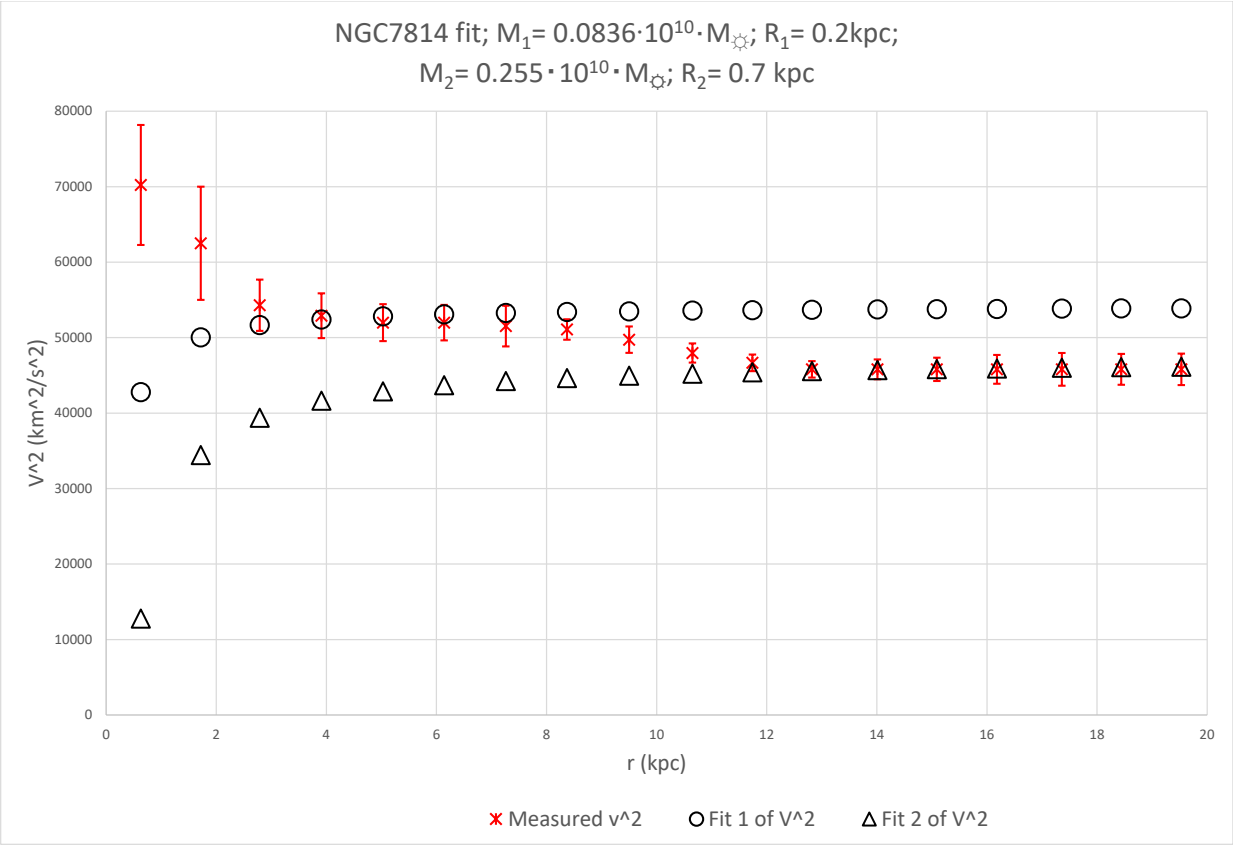

NGC6674 fit; M_1= 1.15·10^10·$M_\odot$; R_1= 1.6kpc; M_2= 3.4·10^10·$M_\odot$; R_2= 7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

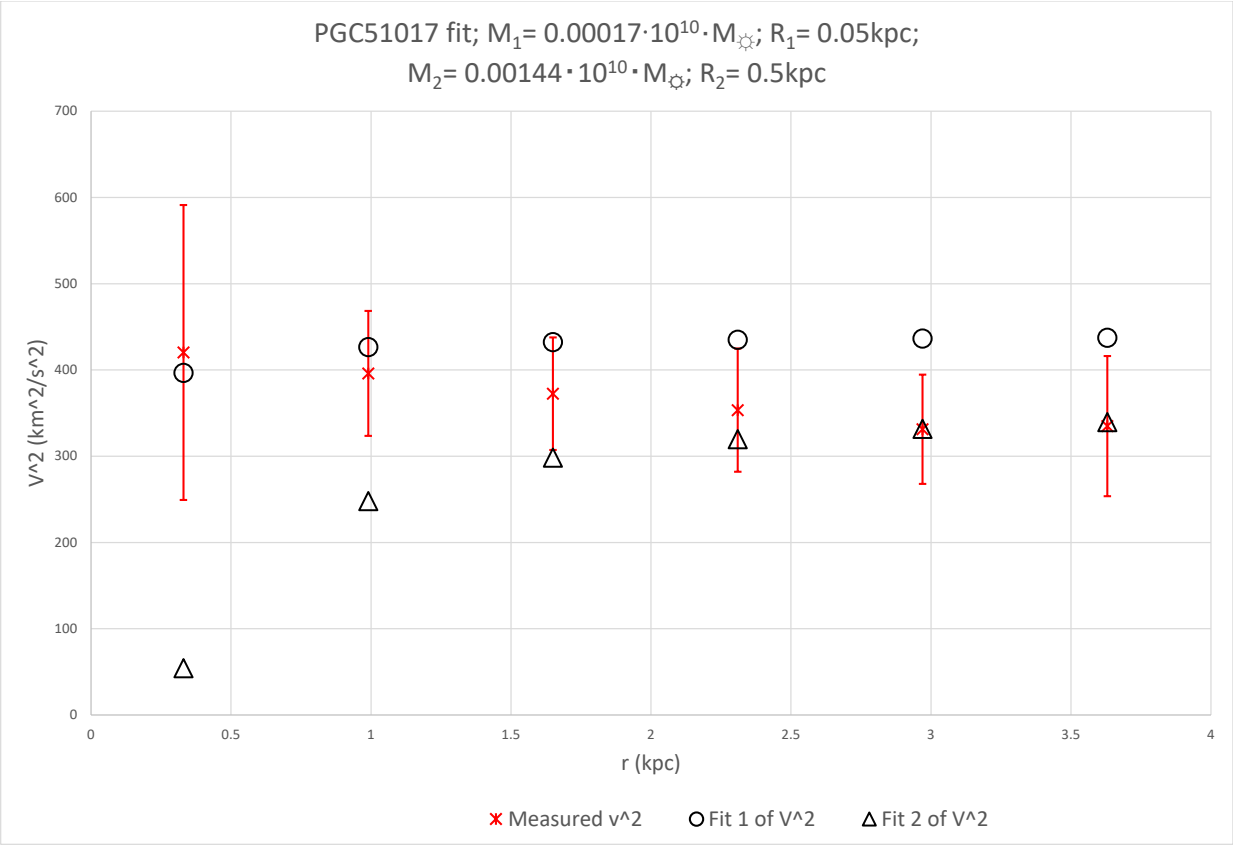

NGC6789 fit; M_1= 0.0271·10^{10}·$M_\odot$; R_1= 0.51kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

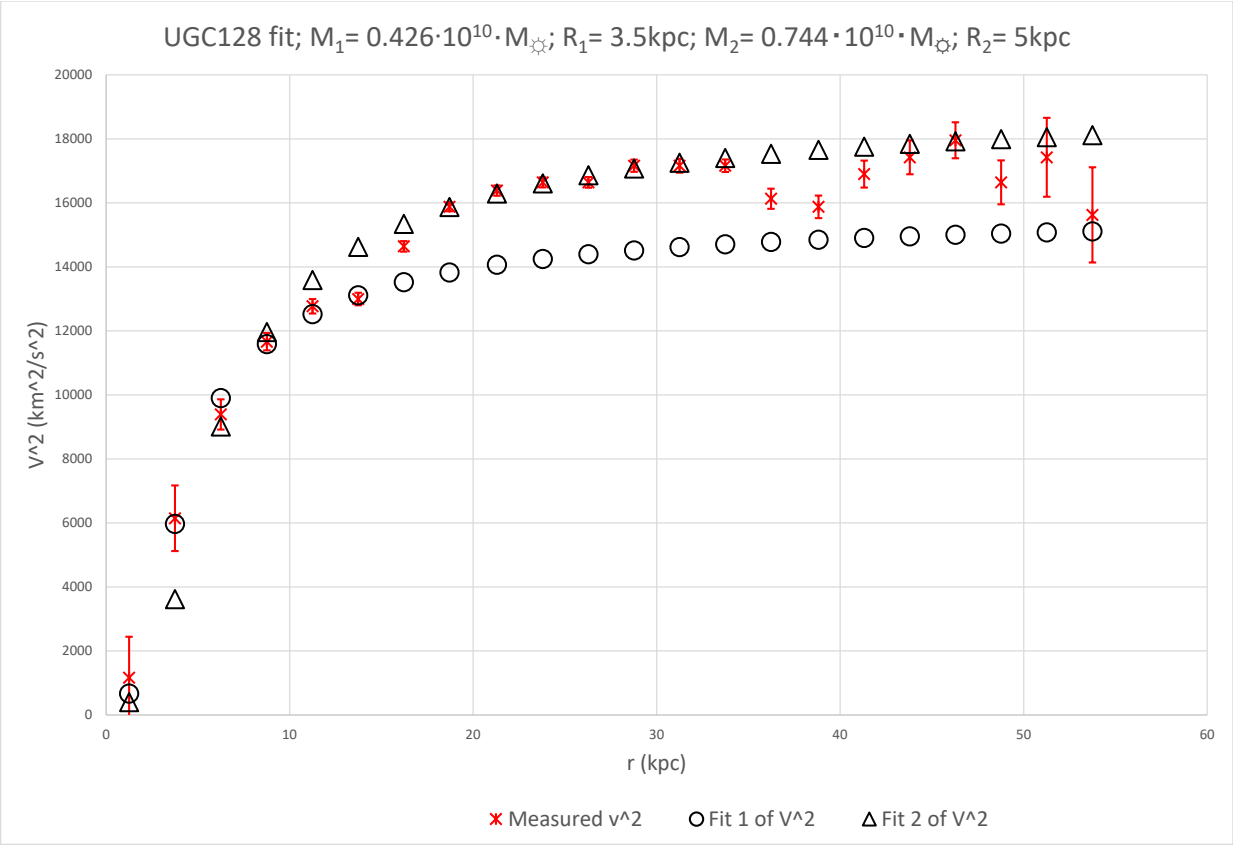

NGC6946 fit; M1= 0.178·10^10·M☼; R1= 0.9kpc; M2= 1.105·1010·M☼; R2= 2.9kpc;
M3= 0.83·1010·M☼; R3= 3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

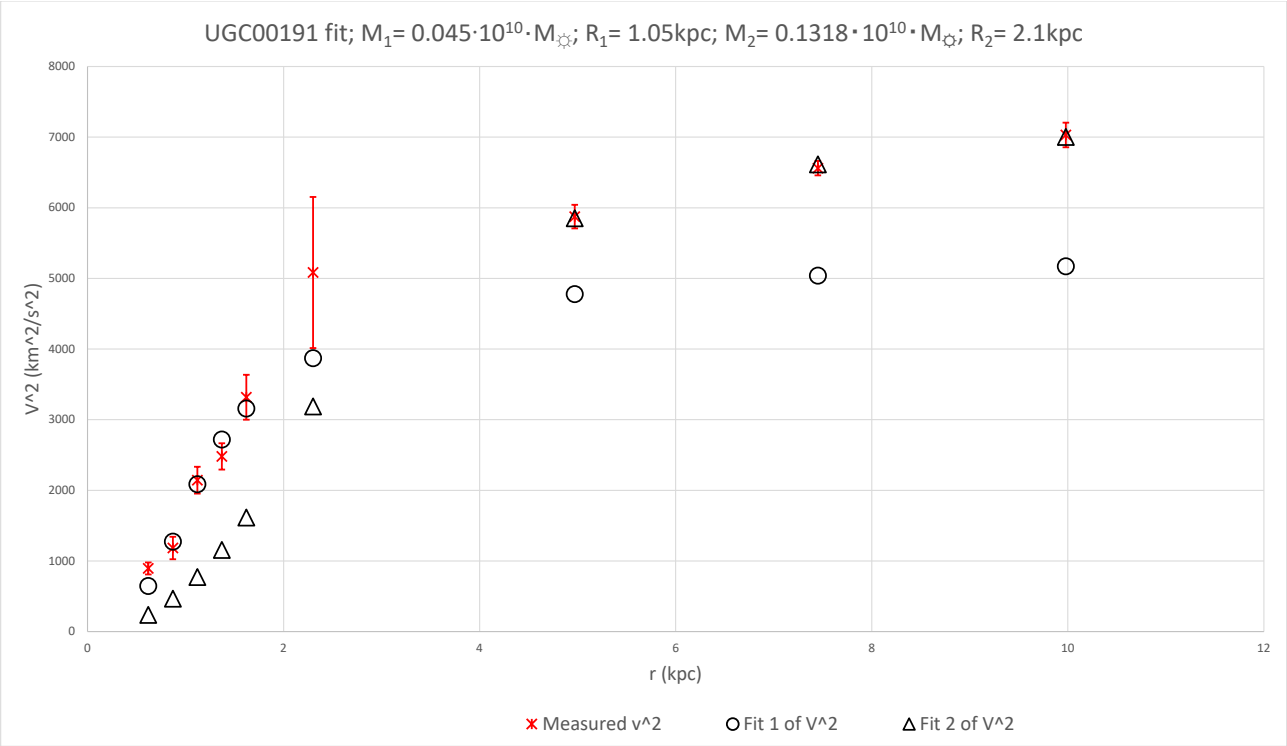

NGC7331 fit; M_1= 0.775·10^10·$M_\odot$; R_1= 1.3kpc; M_2= 1.12·10^10·$M_\odot$; R_2= 2.4kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

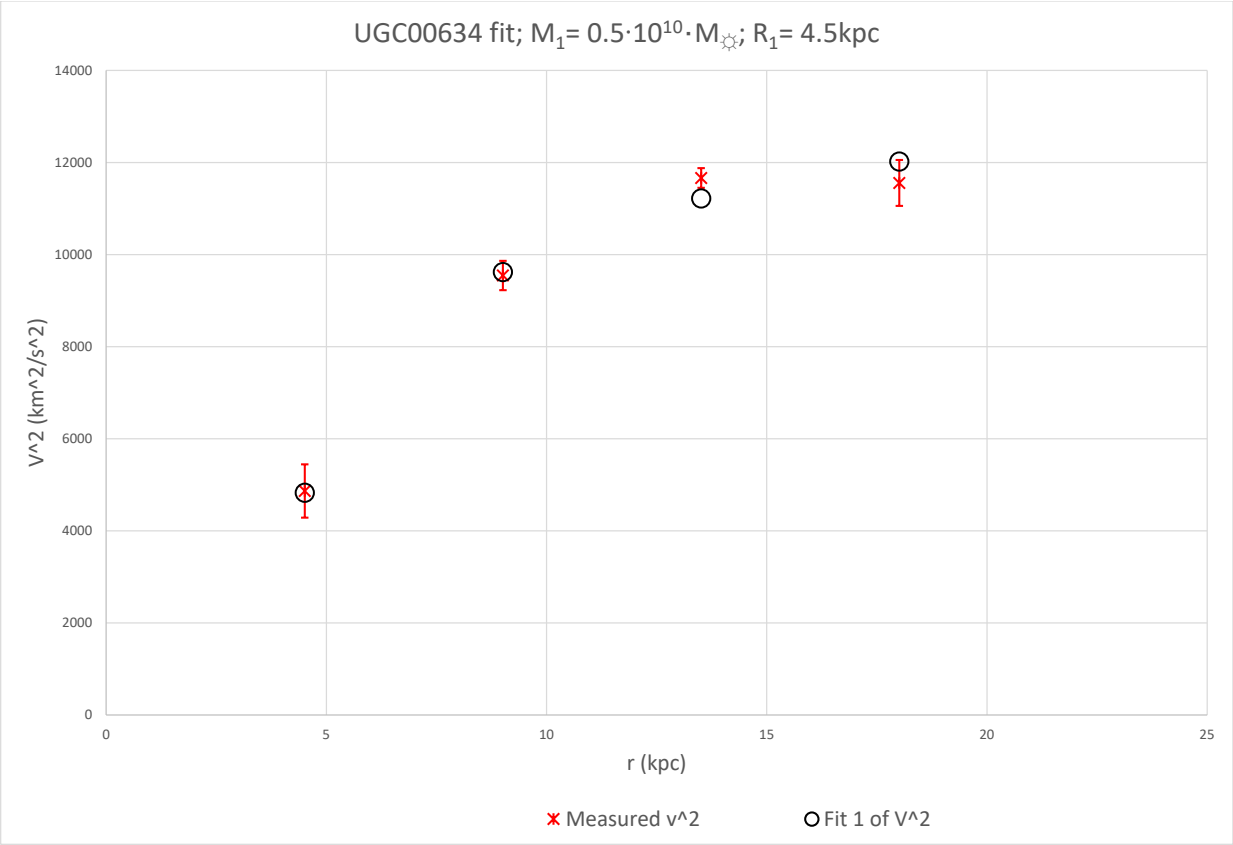

NGC7793 fit; M1= 0.0122·10^10·M☼; R1= 0.32kpc; M2= 0.225·10^10·M☼; R2= 1.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

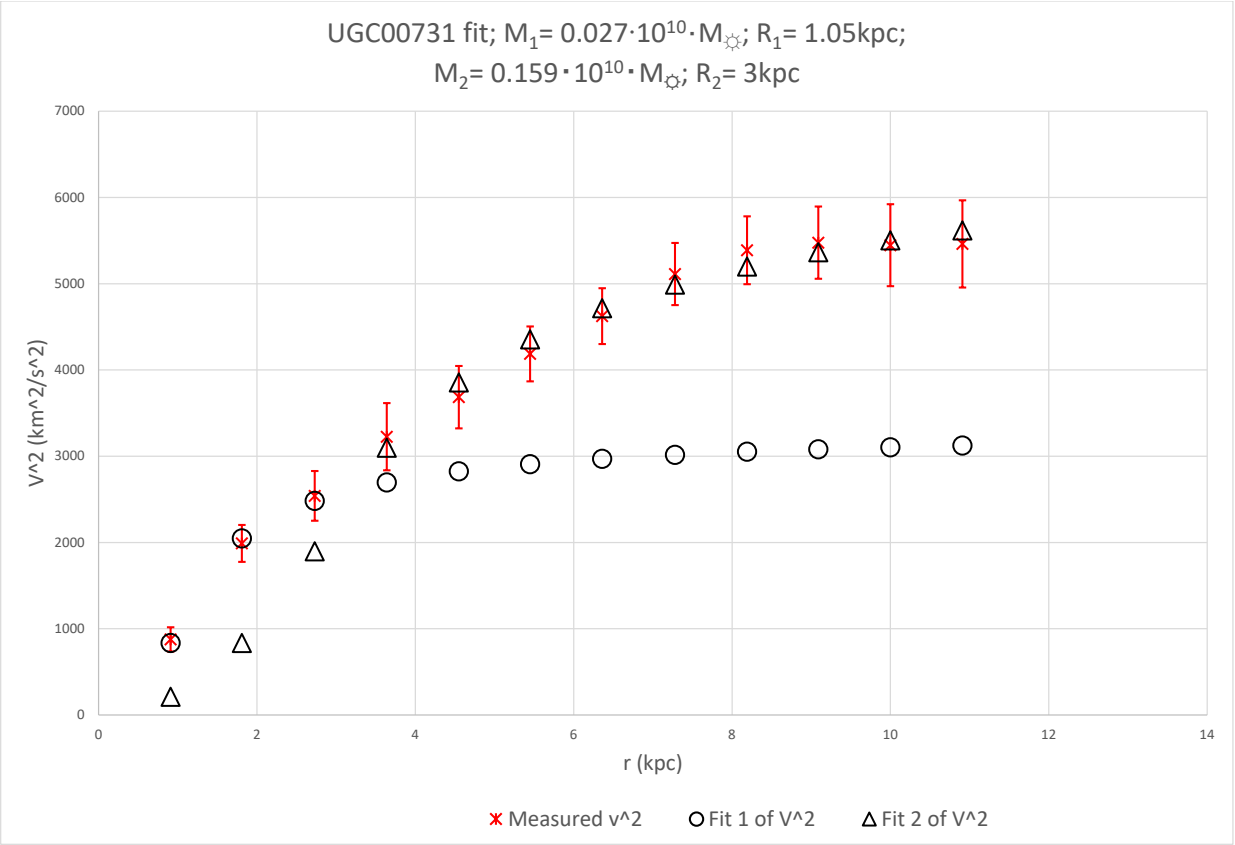

NGC7814 fit; M1= 0.0836·10^10·M☼; R1= 0.2kpc;
M2= 0.255·10^10·M☼; R2= 0.7 kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

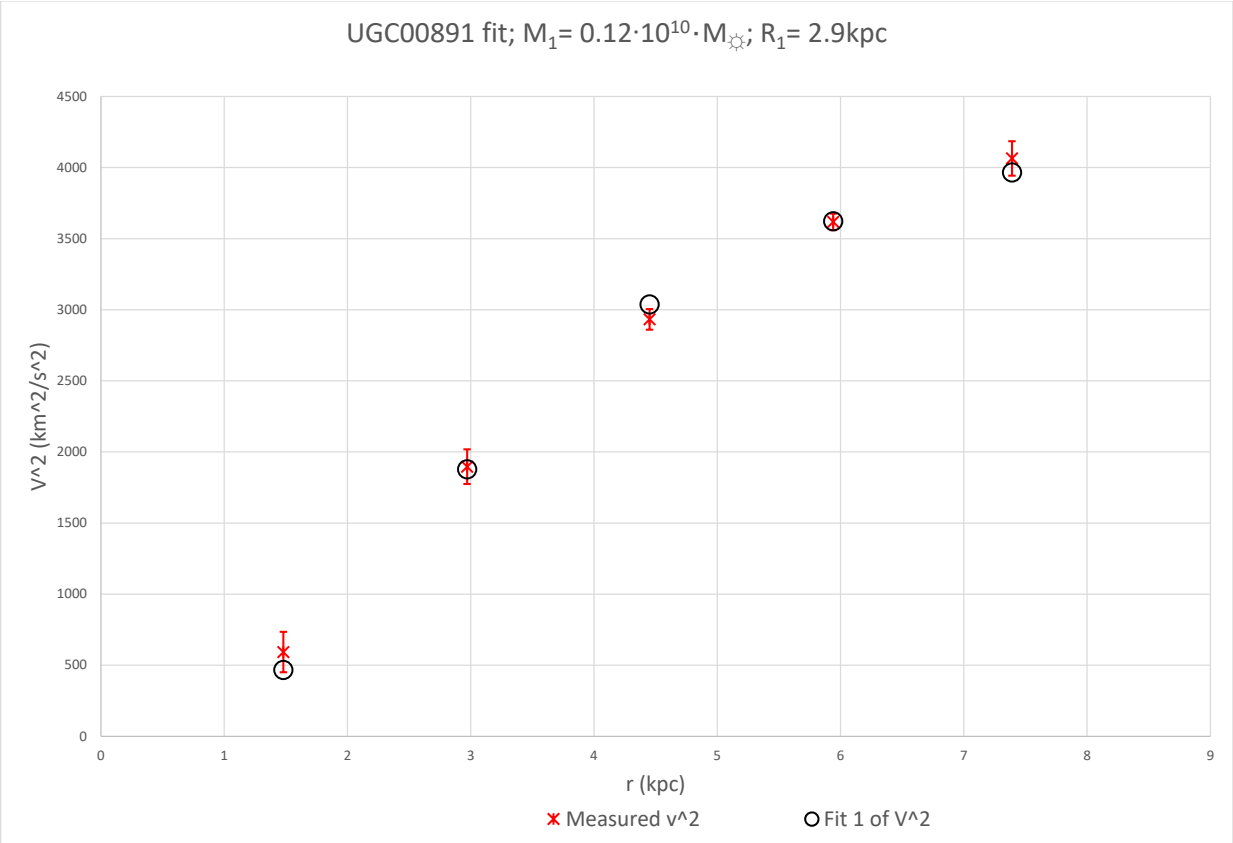

PGC51017 fit; M1= 0.00017·10^10·M☼; R1= 0.05kpc;
M2= 0.00144·10^10·M☼; R2= 0.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

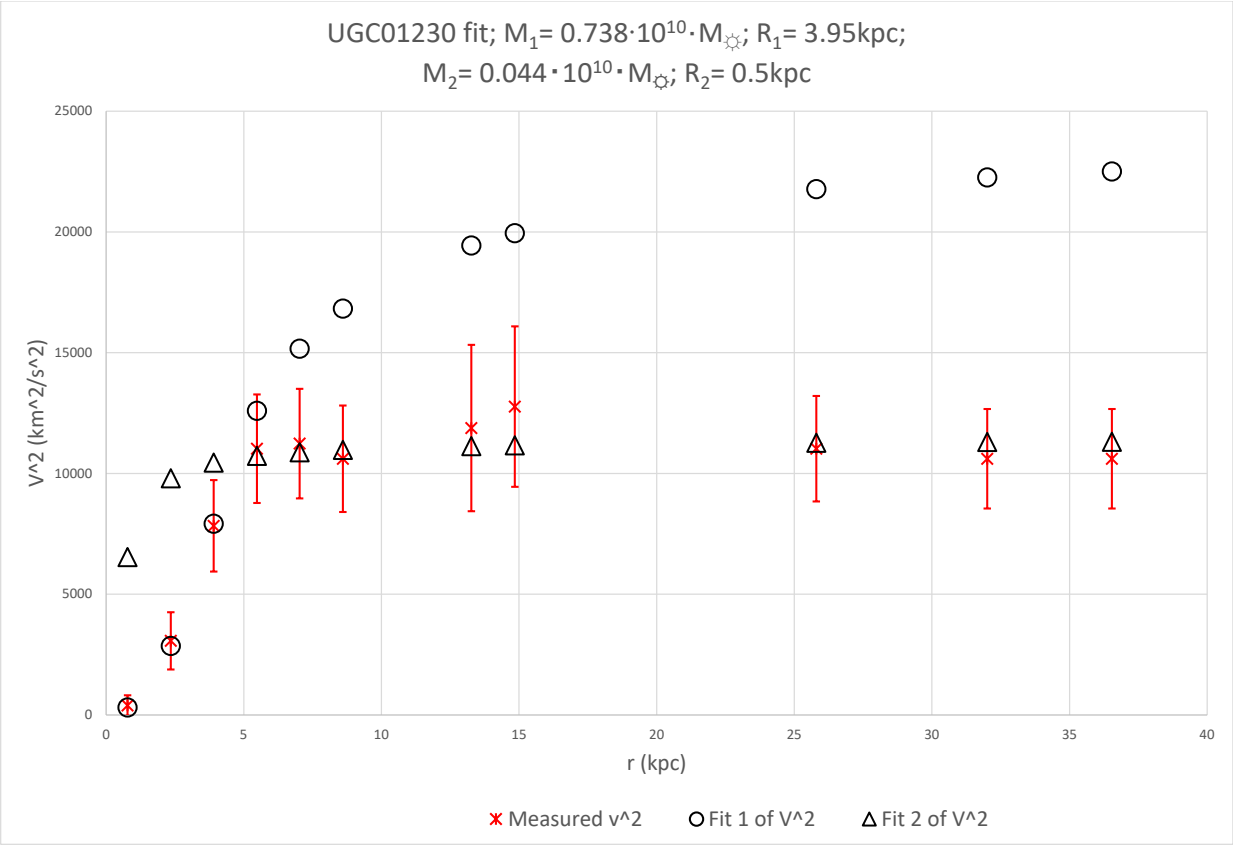

UGC128 fit; M_1= 0.426·10^10·$M_\odot$; R_1= 3.5kpc; M_2= 0.744·10^10·$M_\odot$; R_2= 5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

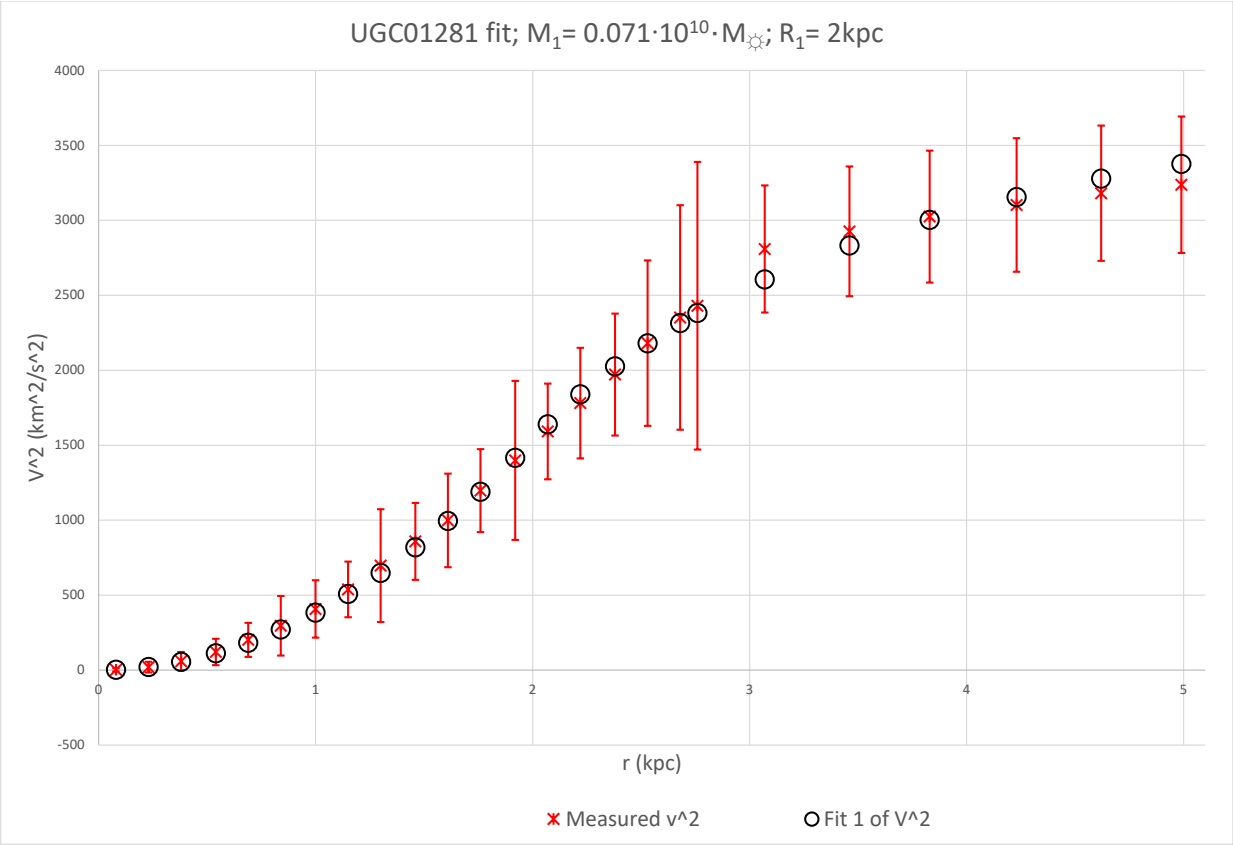

UGC00191 fit; M_1= 0.045·10^10·$M_\odot$; R_1= 1.05kpc; M_2= 0.1318·10^10·$M_\odot$; R_2= 2.1kpc
V^2 (km^2/s^2)
r (kpc)
0
1000
2000
3000
4000
5000
6000
7000
8000
0
2
4
6
8
10
12
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

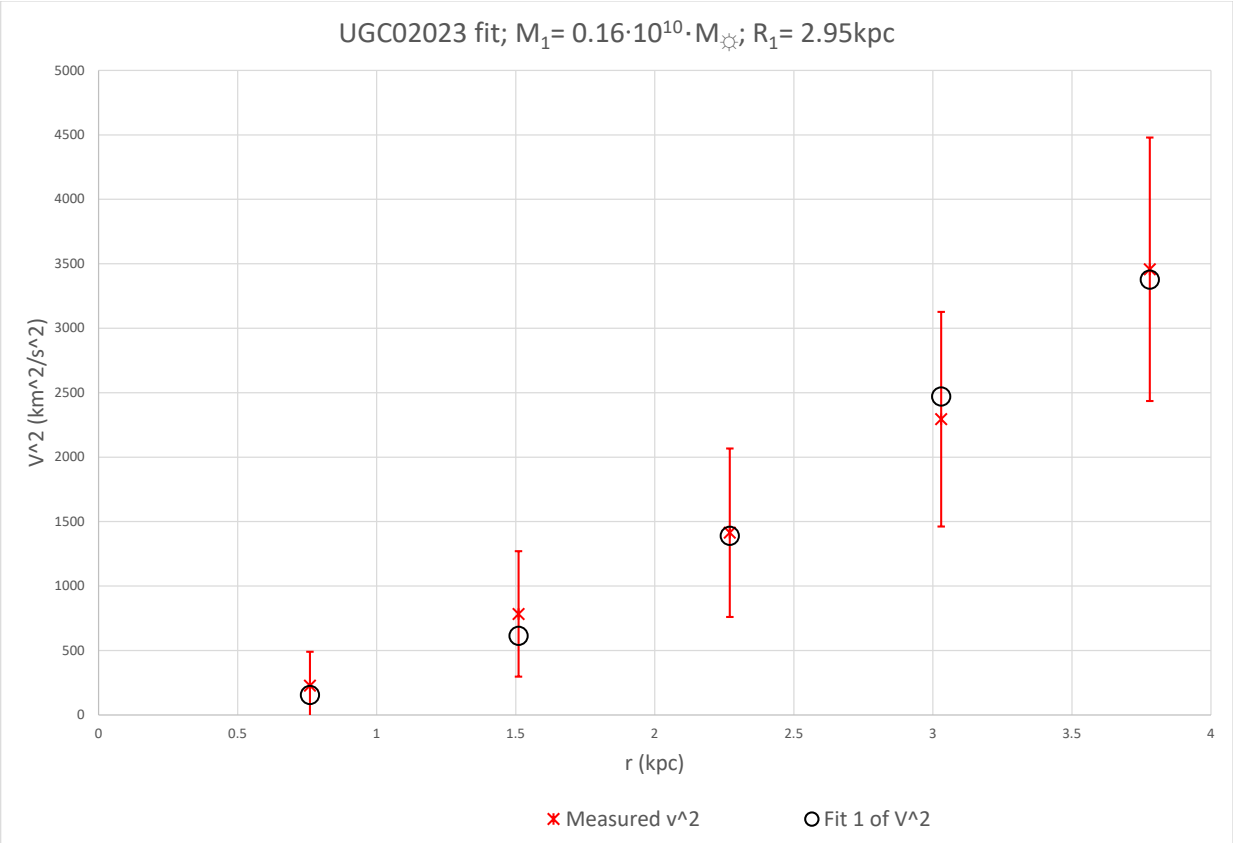

UGC00634 fit; M_1= 0.5·10^{10}·$M_\odot$; R_1= 4.5kpc
V^2 (km^2/s^2)
r (kpc)
0
2000
4000
6000
8000
10000
12000
14000
0
5
10
15
20
25
Measured v^2
Fit 1 of V^2

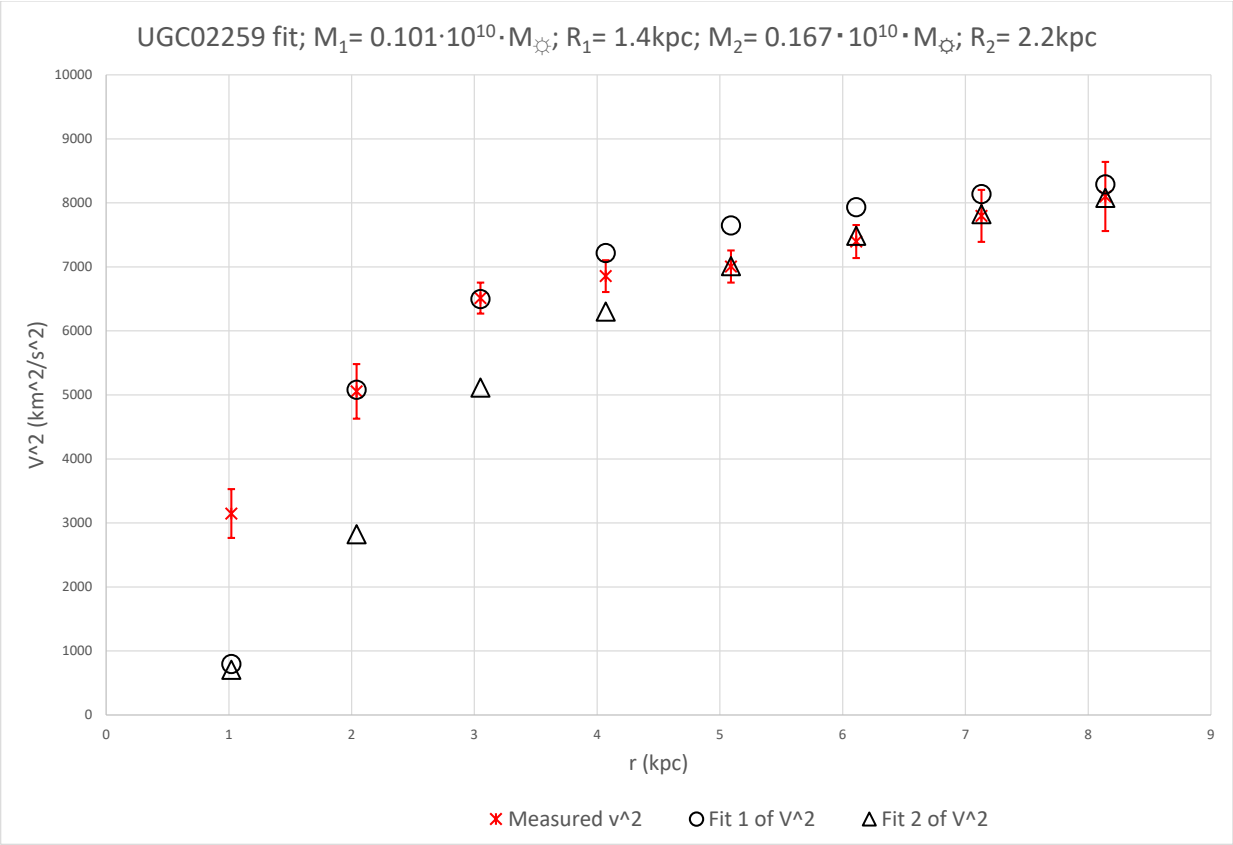

UGC00731 fit; M_1= 0.027·10^10·$M_\odot$; R_1= 1.05kpc;
M_2= 0.159·10^10·$M_\odot$; R_2= 3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

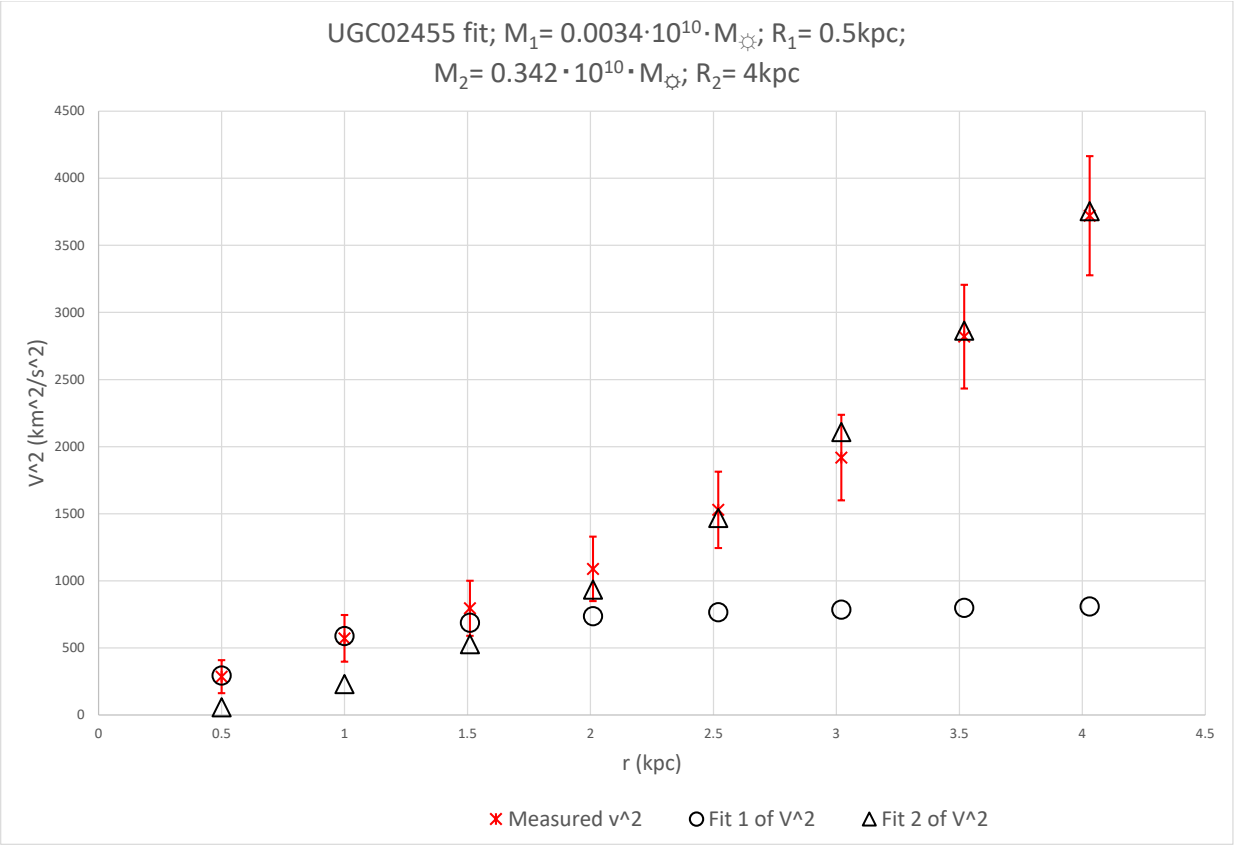

UGC00891 fit; M_1= 0.12·10^10·$M_\odot$; R_1= 2.9kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

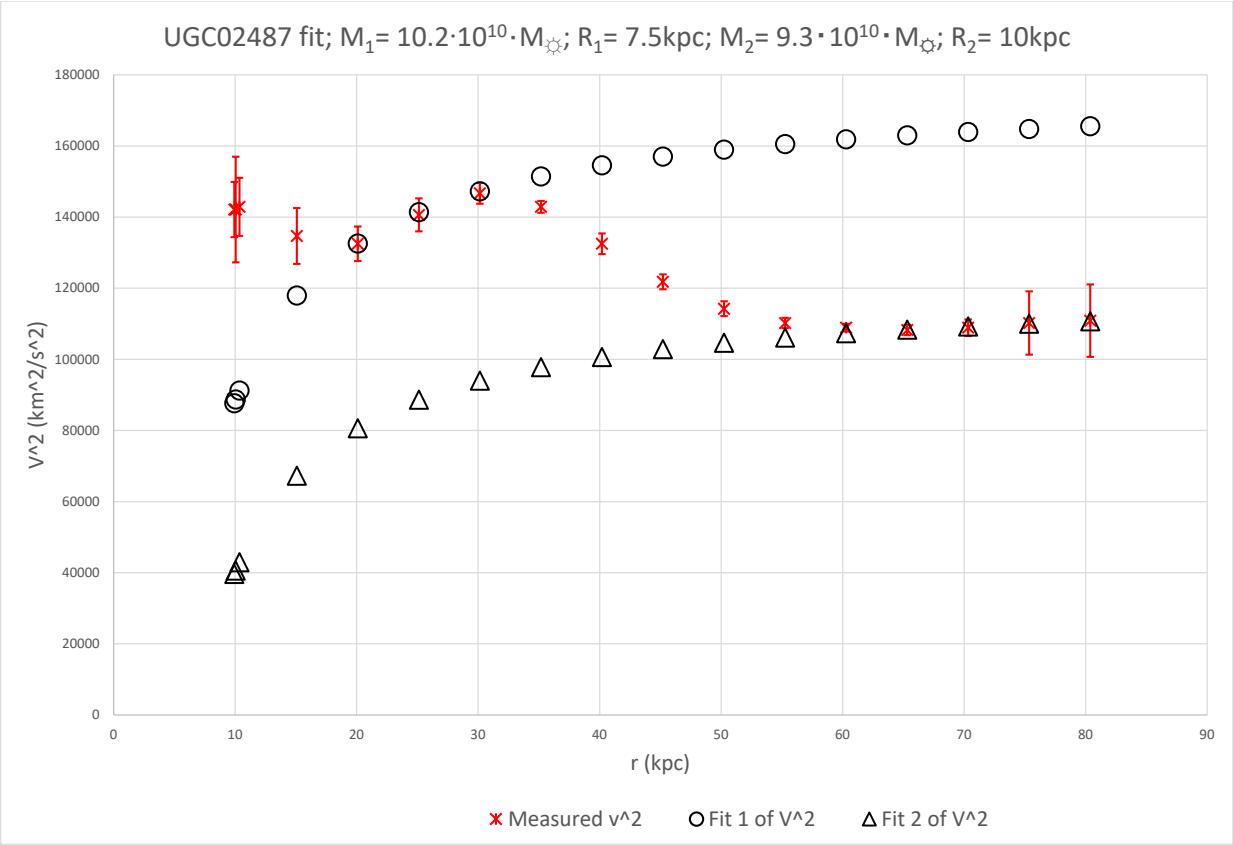

UGC01230 fit; M_1= 0.738·10^10·$M_\odot$; R_1= 3.95kpc;
M_2= 0.044·10^10·$M_\odot$; R_2= 0.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

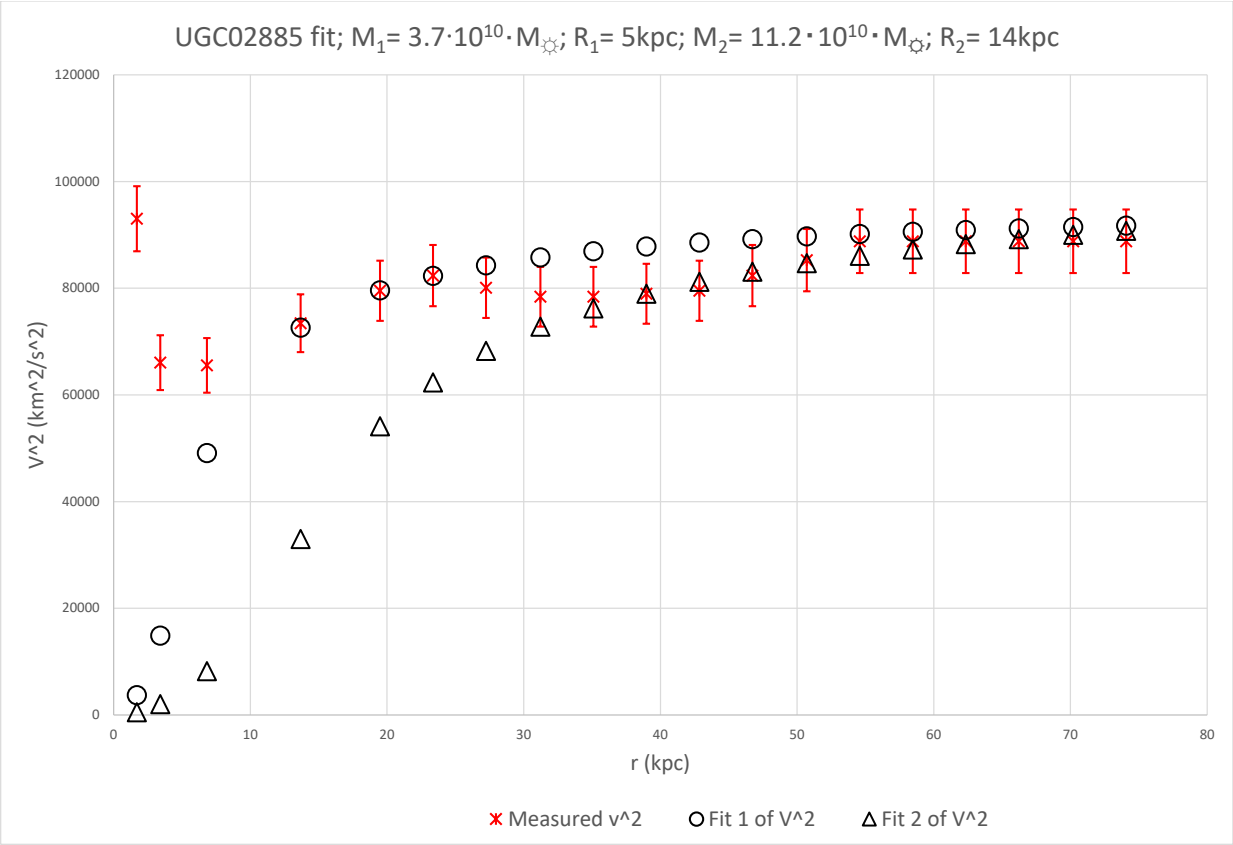

UGC01281 fit; M1= 0.071·10^10·M☼; R1= 2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

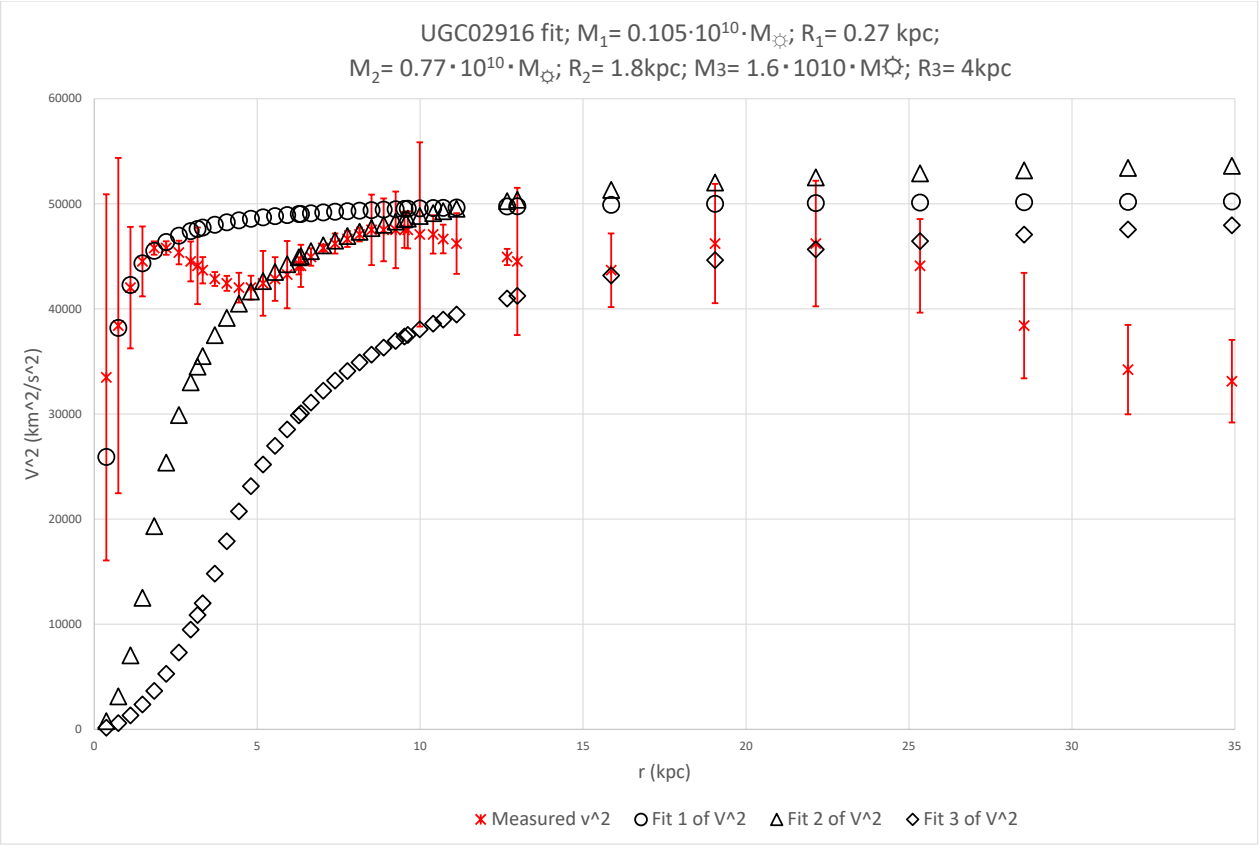

UGC02023 fit; M_1= 0.16·10^{10}·$M_\odot$; R_1= 2.95kpc
V^2 (km^2/s^2)
r (kpc)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
0.5
1
1.5
2
2.5
3
3.5
4
Measured v^2
Fit 1 of V^2

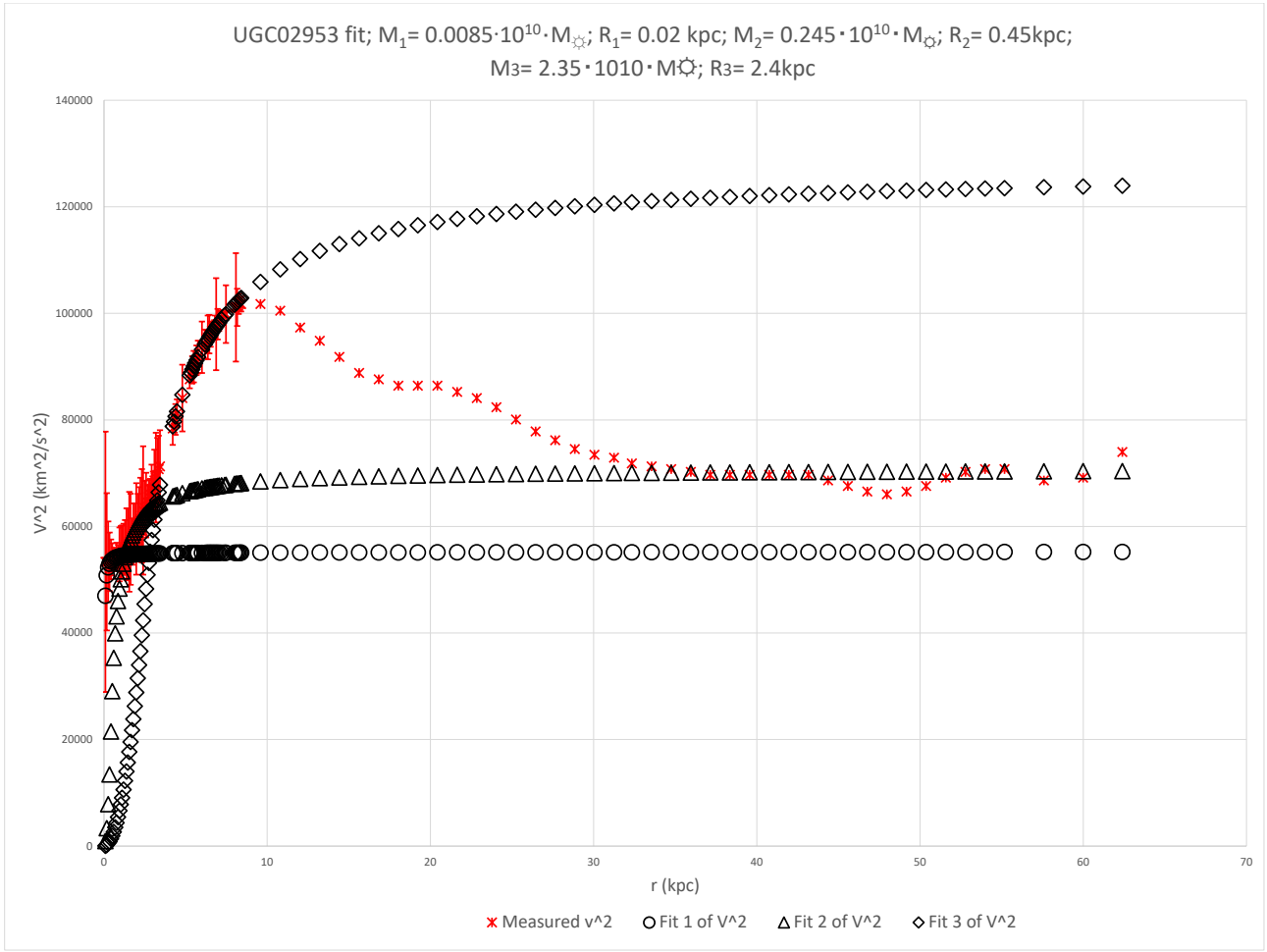

UGC02259 fit; M_1= 0.101·10^10·$M_\odot$; R_1= 1.4kpc; M_2= 0.167·10^10·$M_\odot$; R_2= 2.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

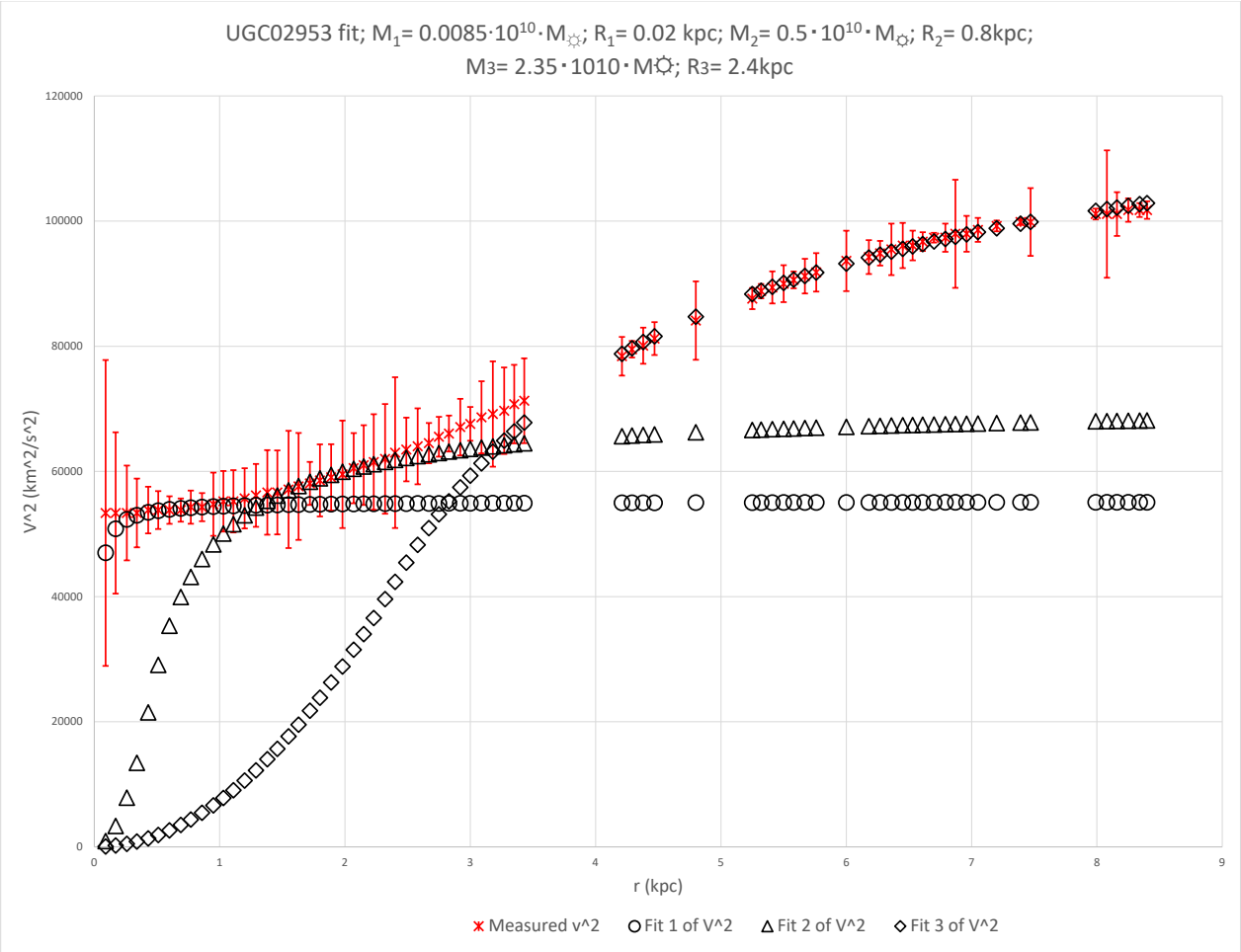

UGC02455 fit; M_1= 0.0034·10^{10}·$M_\odot$; R_1= 0.5kpc;
M_2= 0.342·10^{10}·$M_\odot$; R_2= 4kpc
V^2 (km^2/s^2)
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

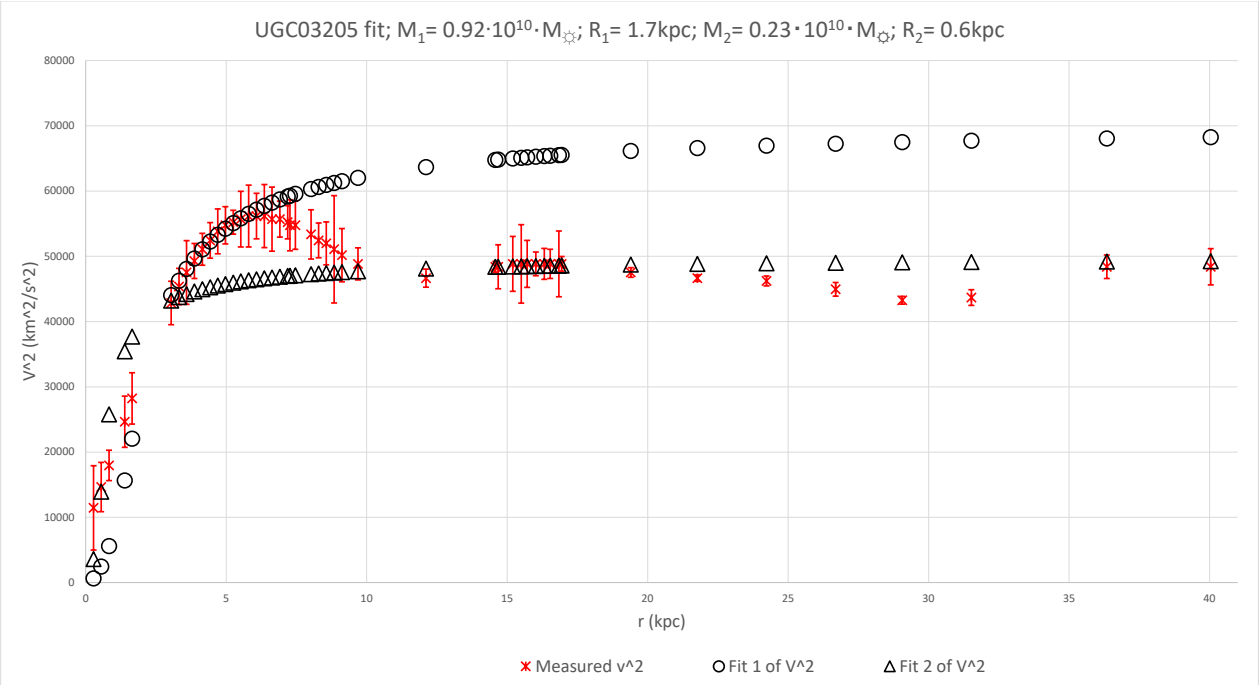

UGC02487 fit; M1= 10.2·10^10·M☼; R1= 7.5kpc; M2= 9.3·10^10·M☼; R2= 10kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

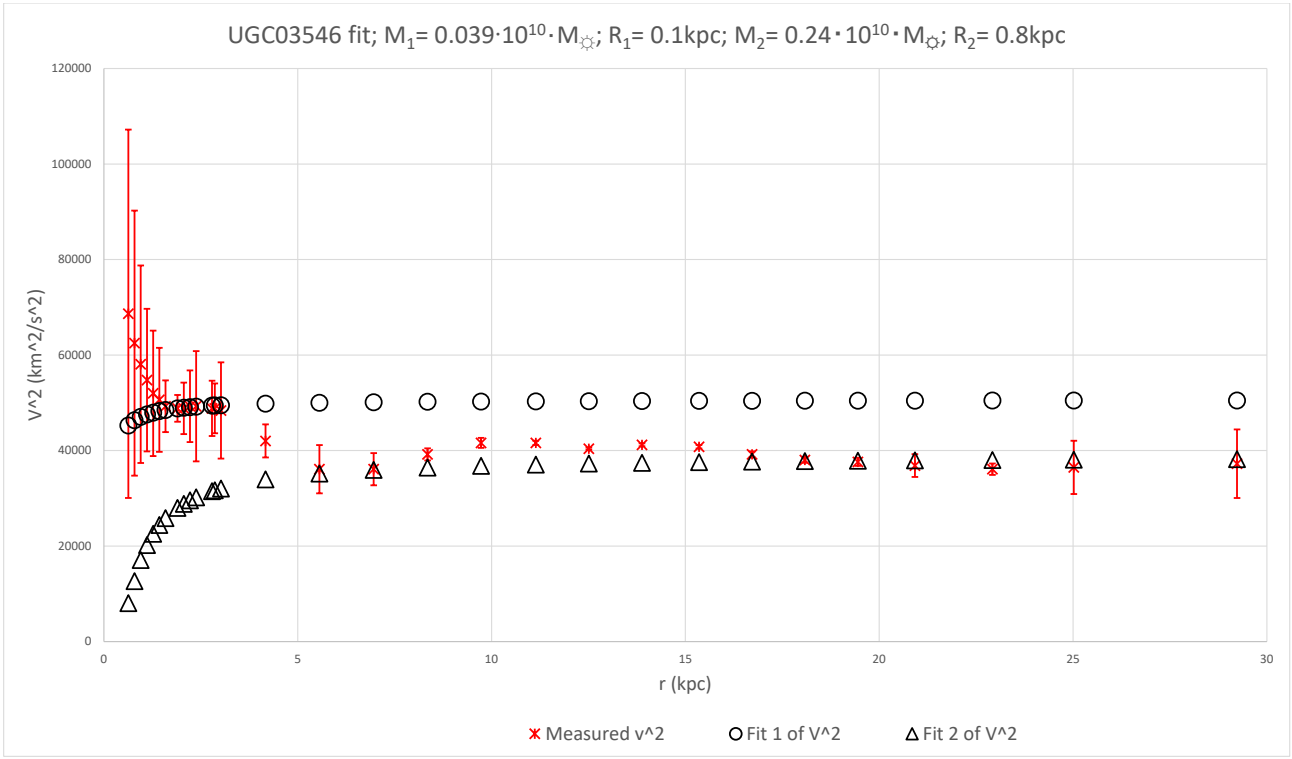

UGC02885 fit; M1= 3.7·10^10·M☼; R1= 5kpc; M2= 11.2·10^10·M☼; R2= 14kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

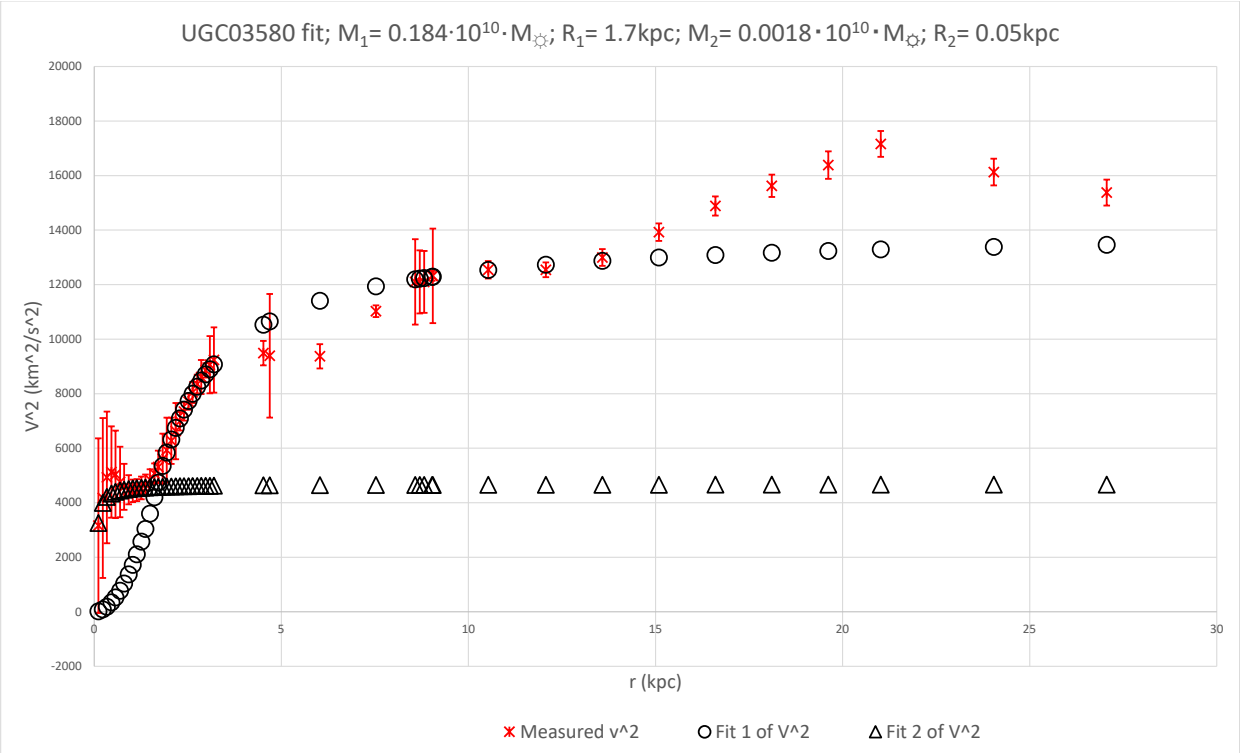

UGC02916 fit; M1= 0.105·10^10·M☼; R1= 0.27 kpc;
M2= 0.77·10^10·M☼; R2= 1.8kpc; M3= 1.6·1010·M☼; R3= 4kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

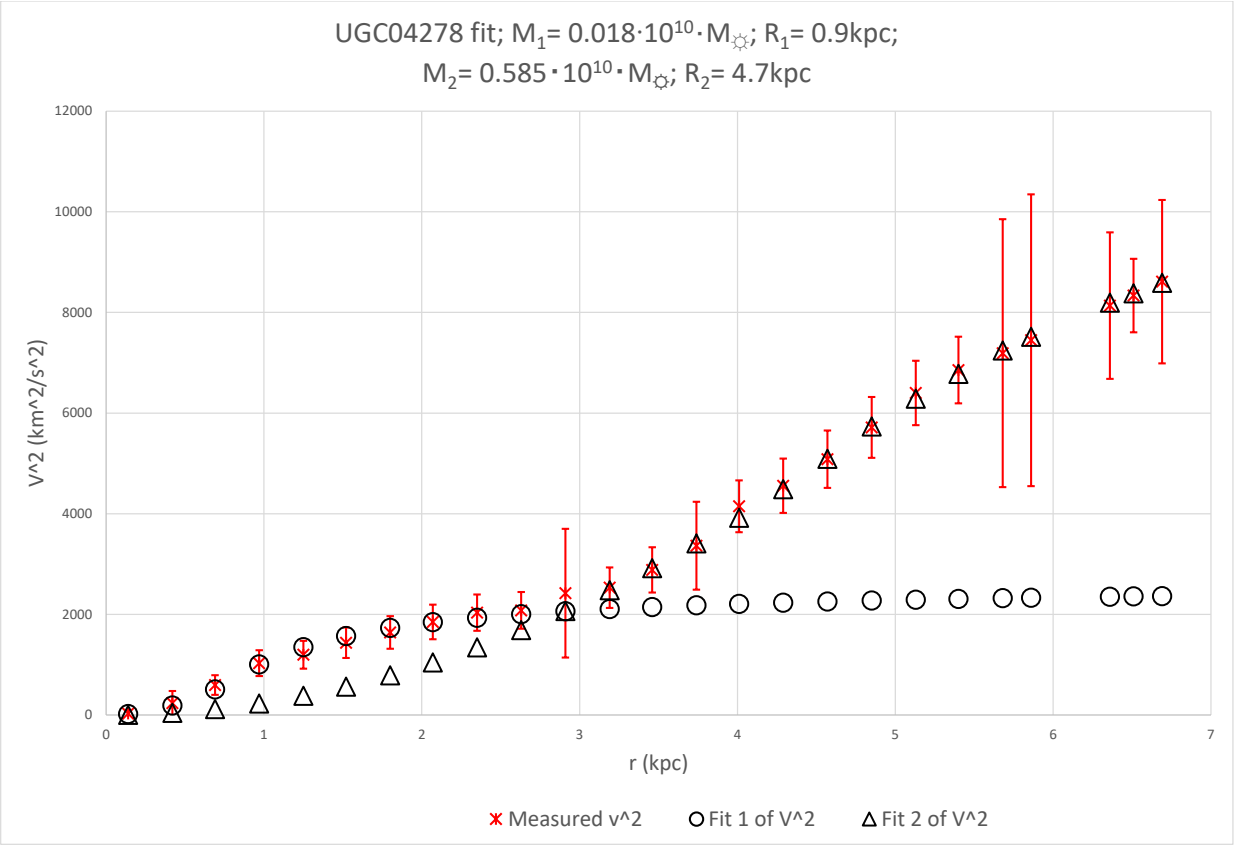

UGC02953 fit; M1= 0.0085·10^10·M☼; R1= 0.02 kpc; M2= 0.245·10^10·M☼; R2= 0.45kpc;
M3= 2.35·1010·M☼; R3= 2.4kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

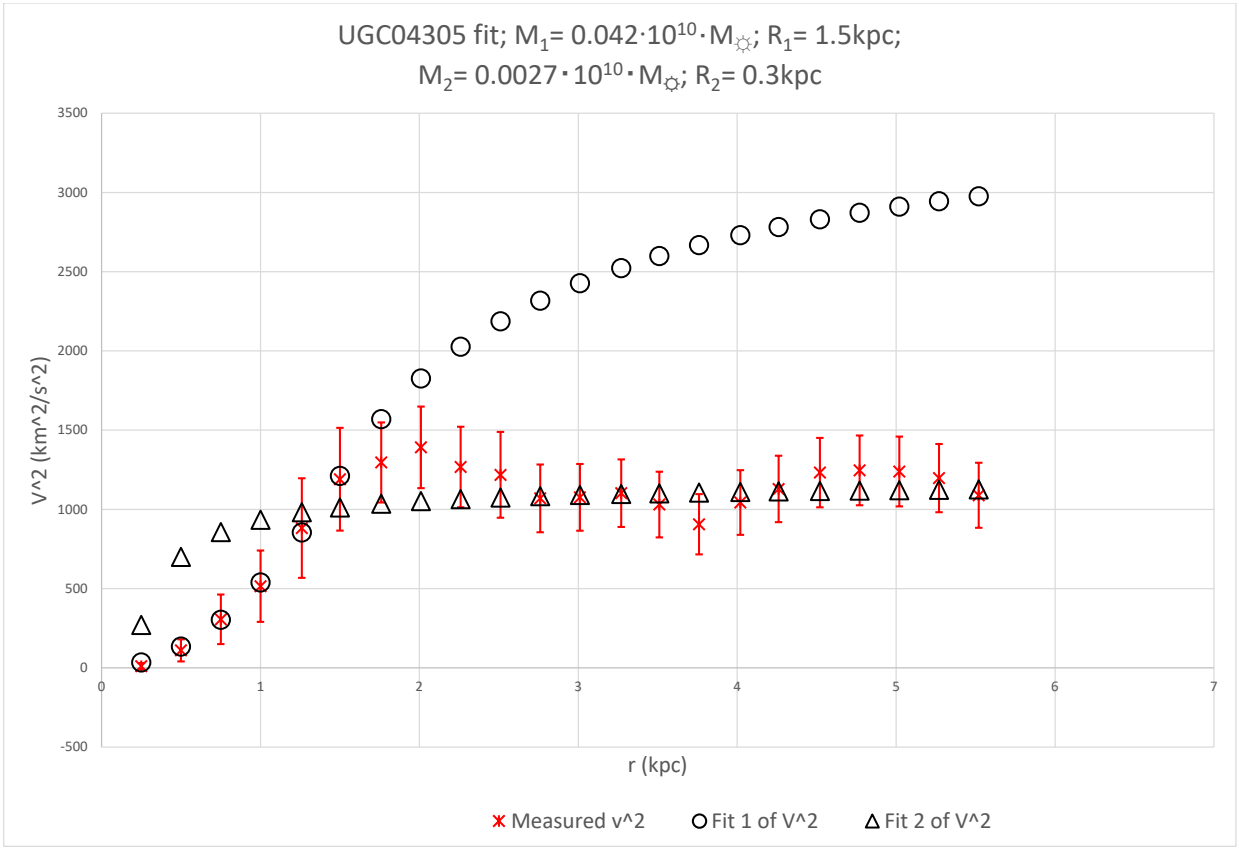

UGC02953 fit; M1= 0.0085·10^10·M☼; R1= 0.02 kpc; M2= 0.5·10^10·M☼; R2= 0.8kpc;
M3= 2.35·1010·M☼; R3= 2.4kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

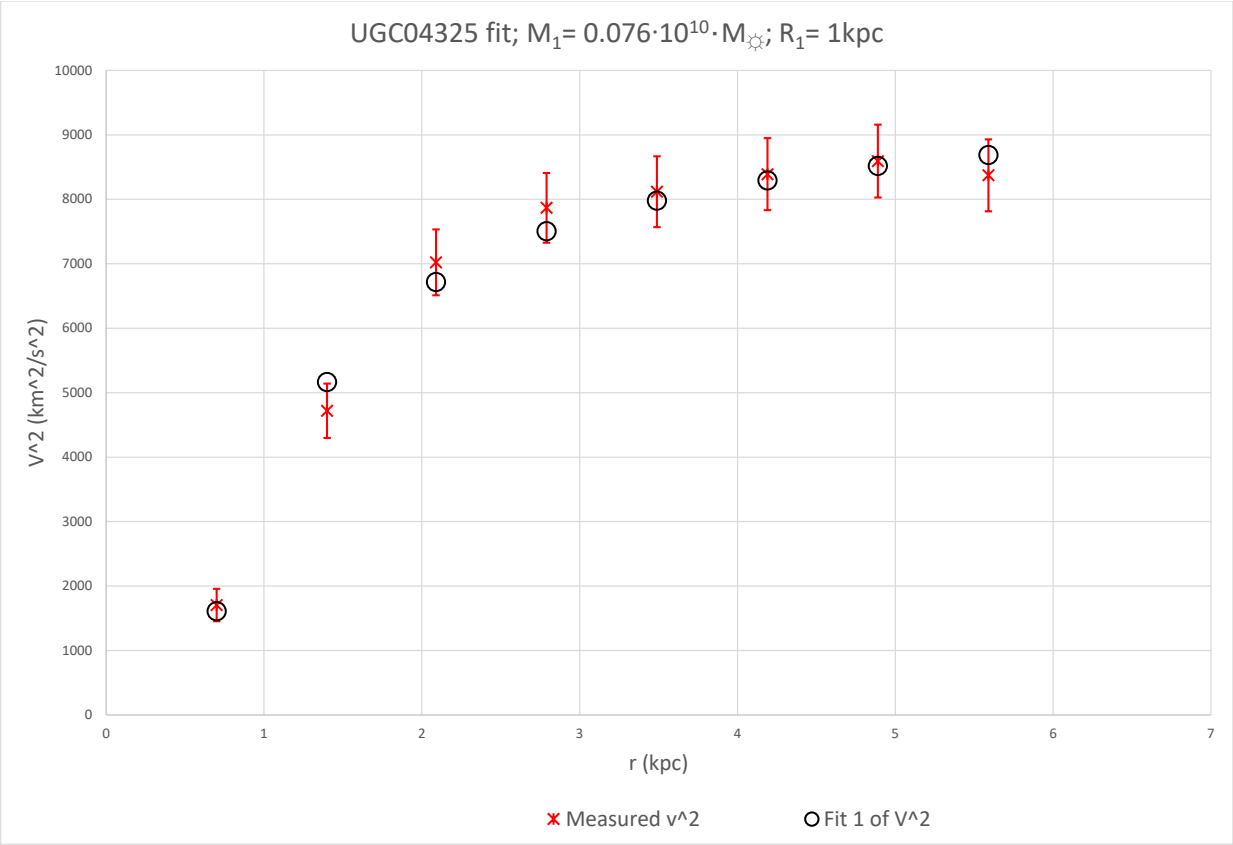

UGC03205 fit; M1= 0.92·10^10·M☼; R1= 1.7kpc; M2= 0.23·10^10·M☼; R2= 0.6kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

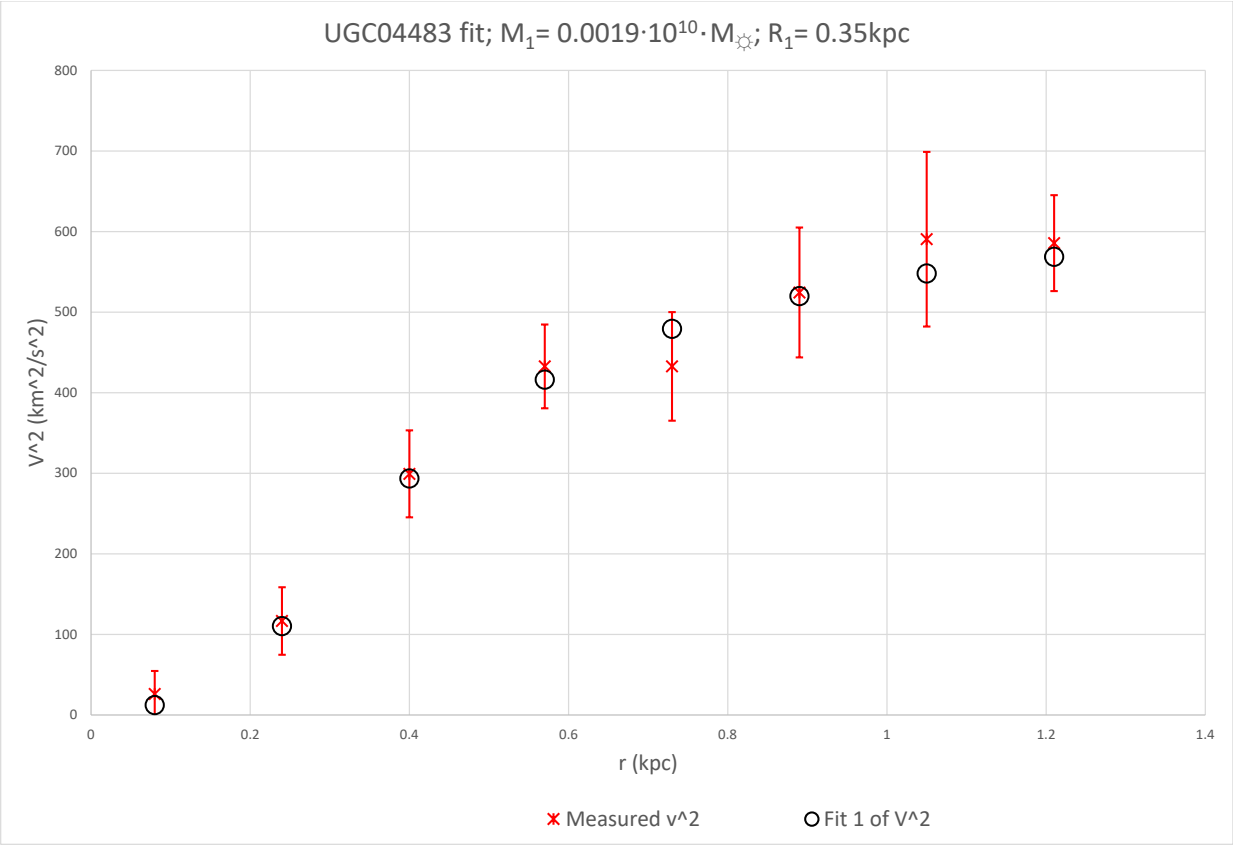

UGC03546 fit; M1= 0.039·10^10·M☼; R1= 0.1kpc; M2= 0.24·10^10·M☼; R2= 0.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

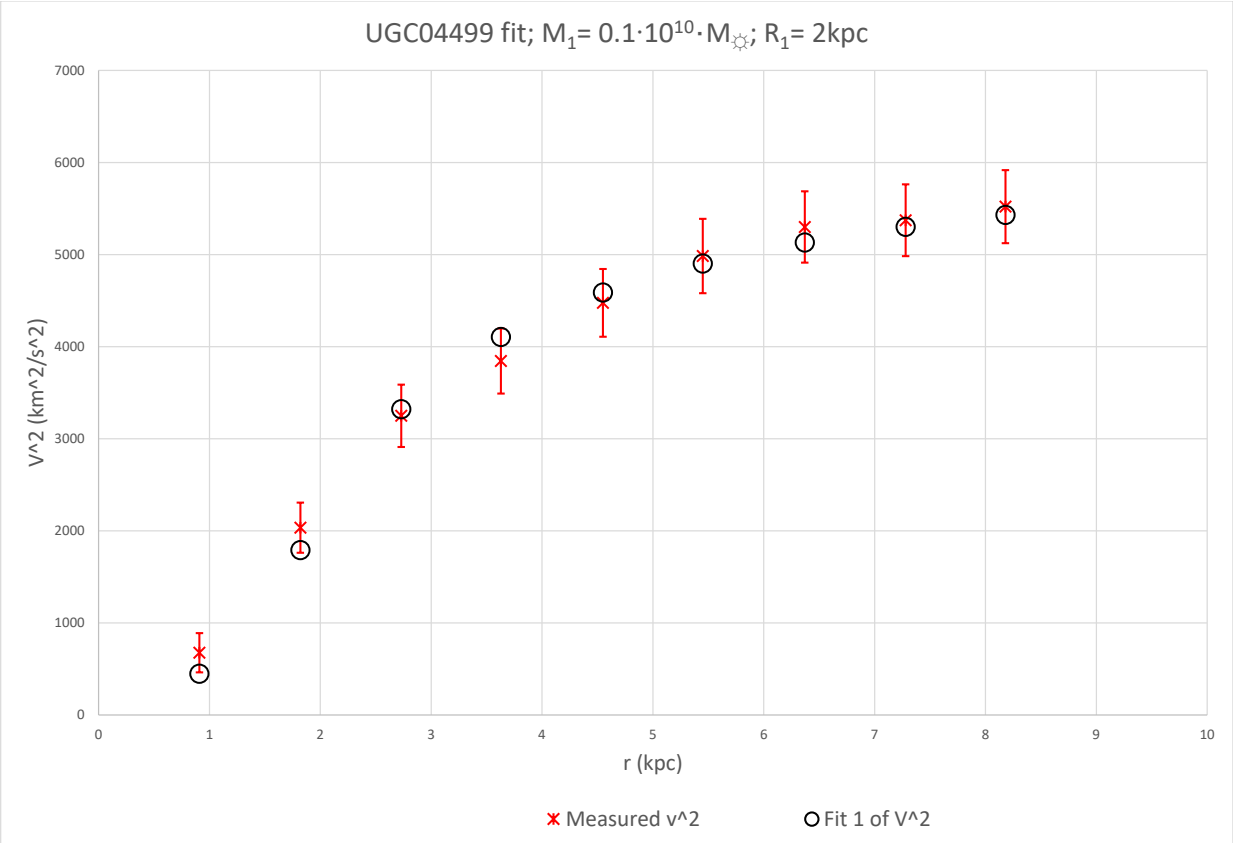

UGC03580 fit; M1= 0.184·10^10·M☼; R1= 1.7kpc; M2= 0.0018·10^10·M☼; R2= 0.05kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

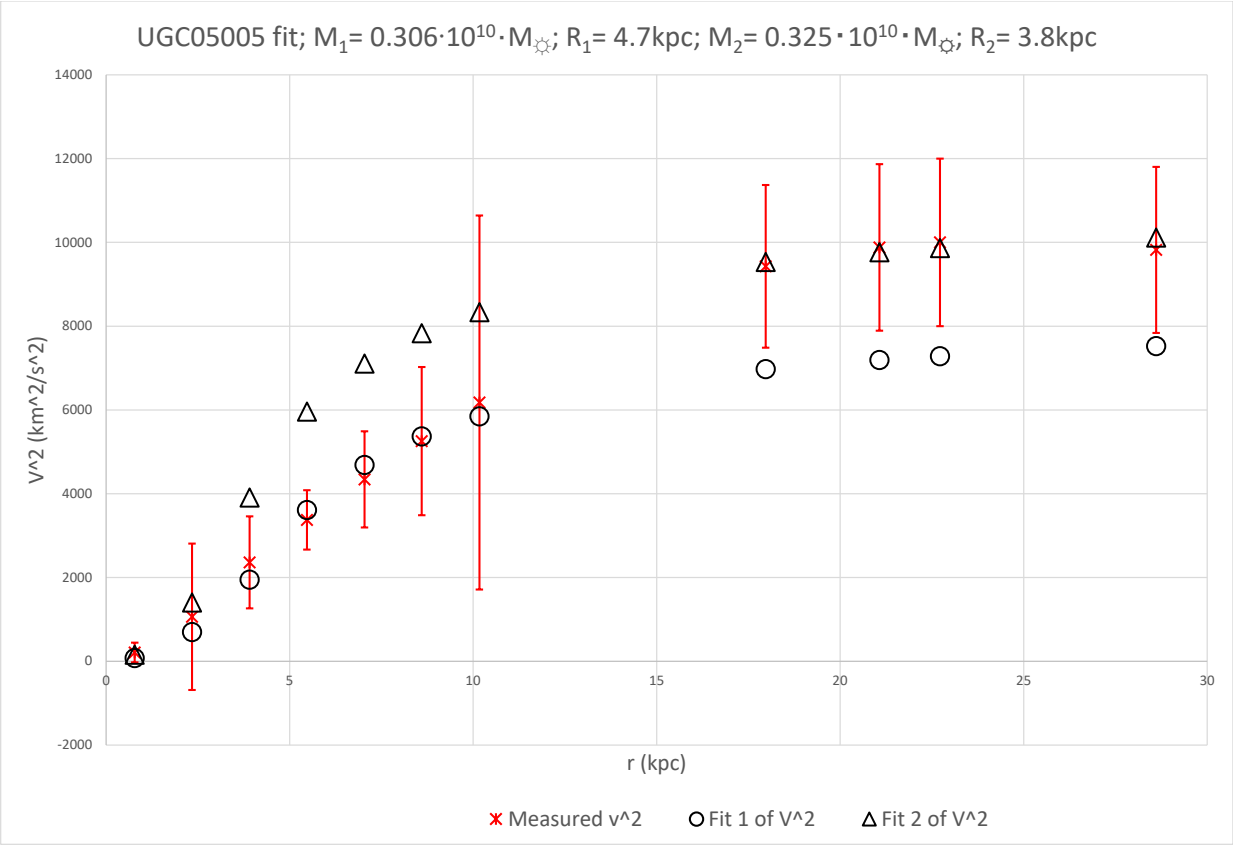

UGC04278 fit; M_1= 0.018·10^10·$M_\odot$; R_1= 0.9kpc;
M_2= 0.585·10^10·$M_\odot$; R_2= 4.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

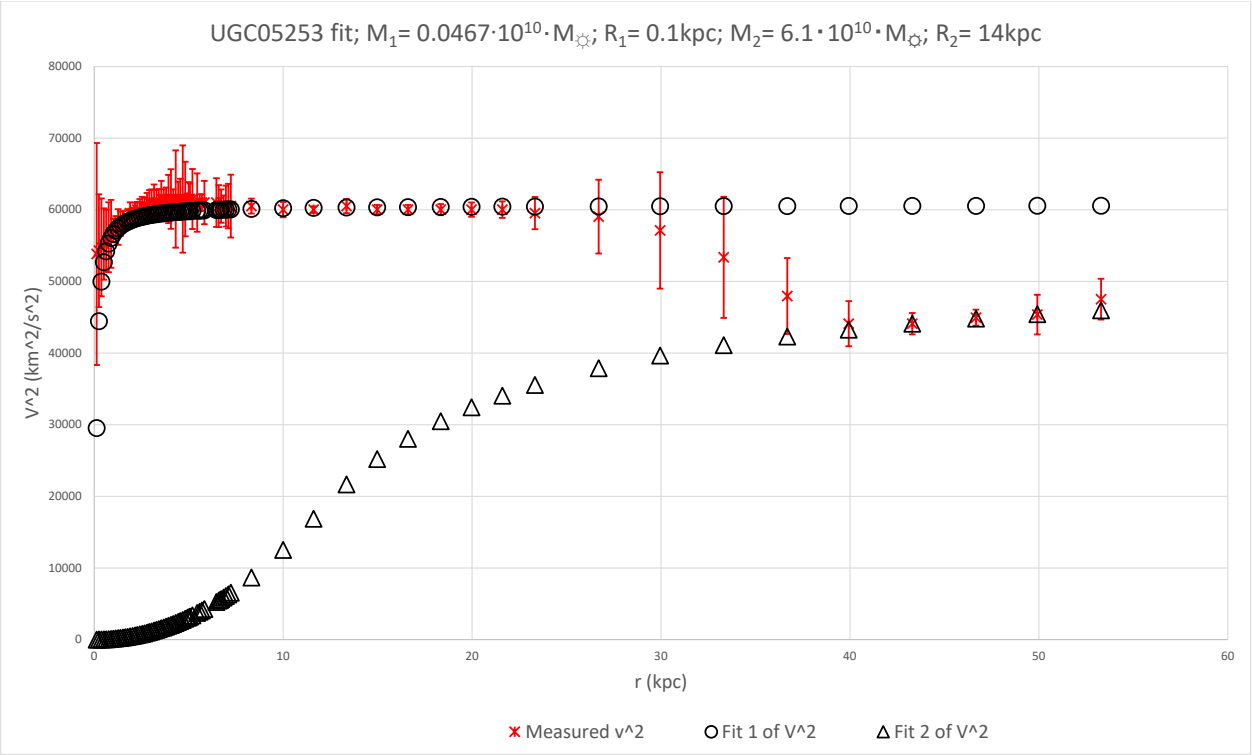

UGC04305 fit; M_1= 0.042·10^10·$M_\odot$; R_1= 1.5kpc;
M_2= 0.0027·10^10·$M_\odot$; R_2= 0.3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

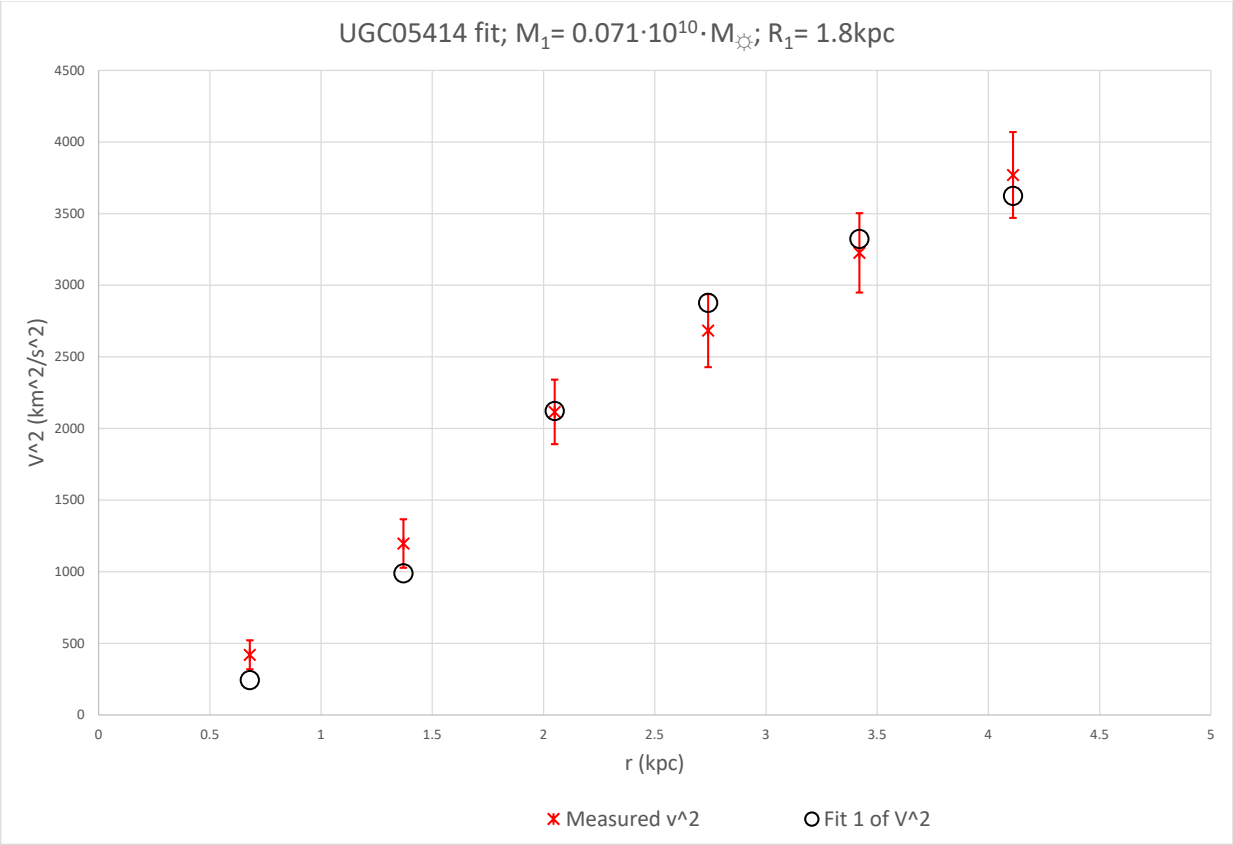

UGC04325 fit; M1= 0.076·10^10·M☼; R1= 1kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

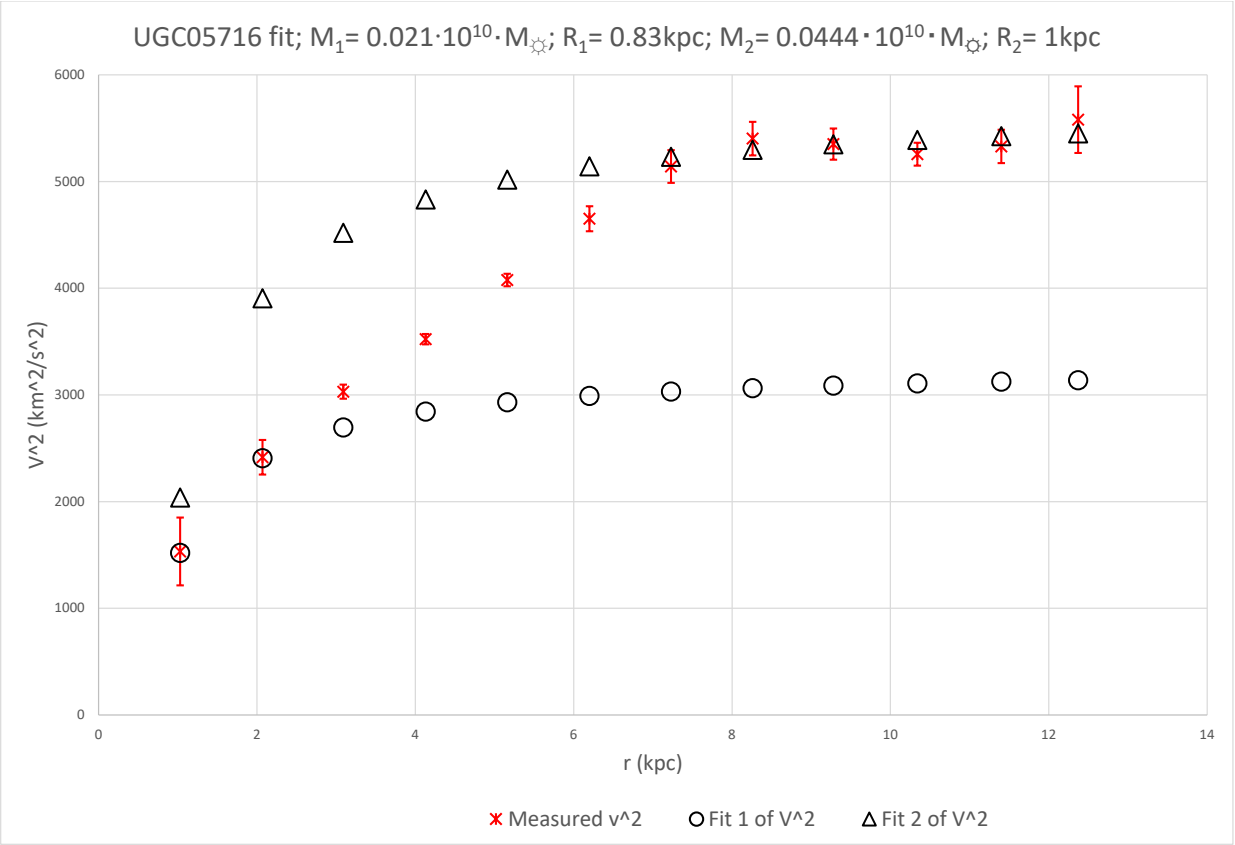

UGC04483 fit; M1= 0.0019·10^10·M☼; R1= 0.35kpc
V^2 (km^2/s^2)
r (kpc)
0
100
200
300
400
500
600
700
800
0
0.2
0.4
0.6
0.8
1
1.2
1.4
Measured v^2
Fit 1 of V^2

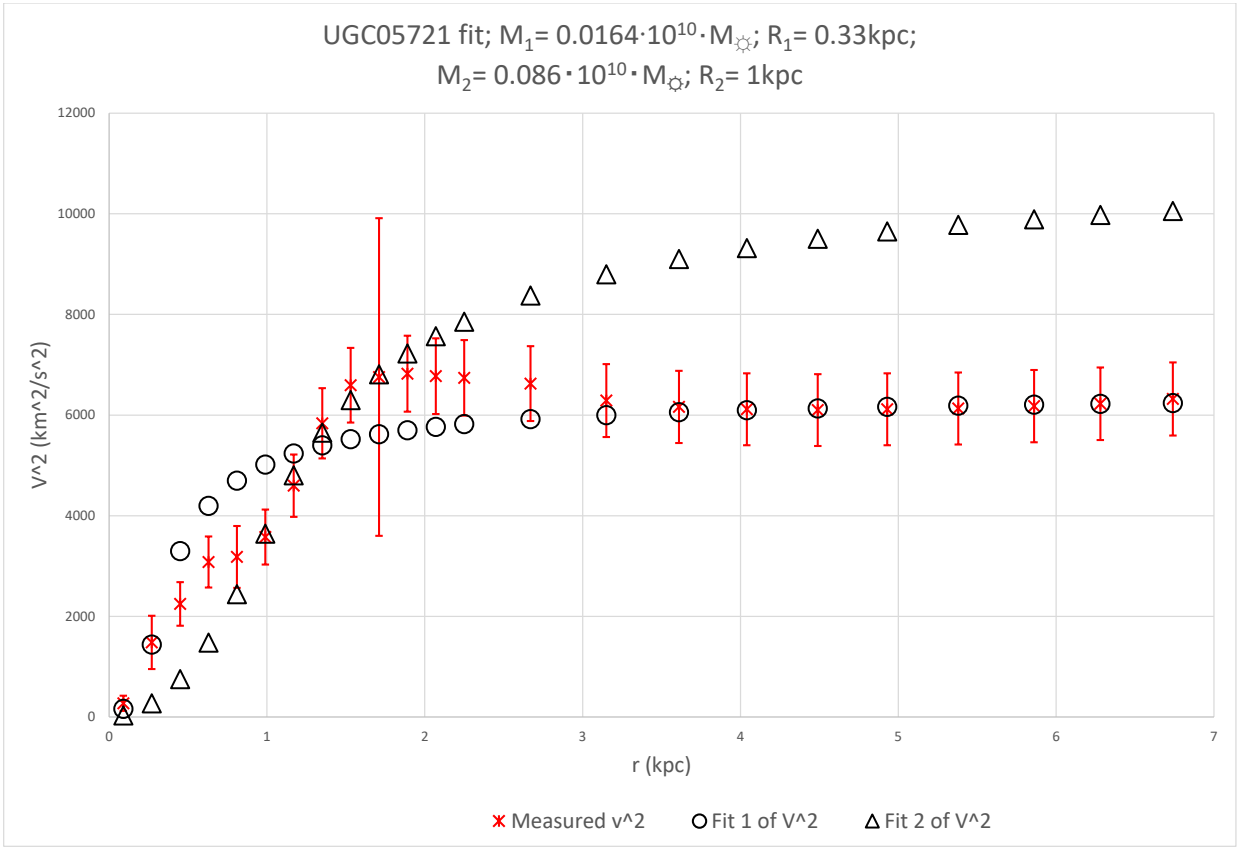

UGC04499 fit; M1= 0.1·10^10·M☼; R1= 2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

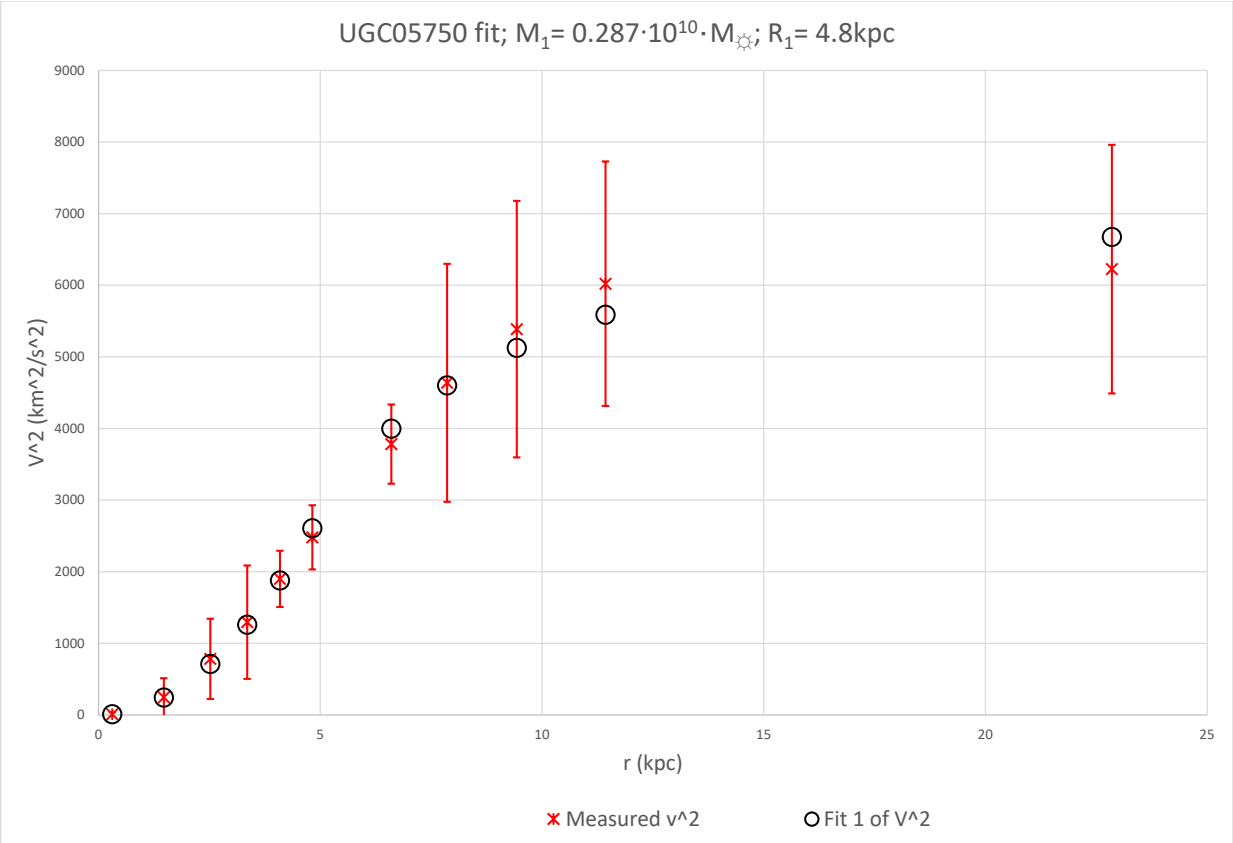

UGC05005 fit; M1= 0.306·10^10·M☼; R1= 4.7kpc; M2= 0.325·10^10·M☼; R2= 3.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

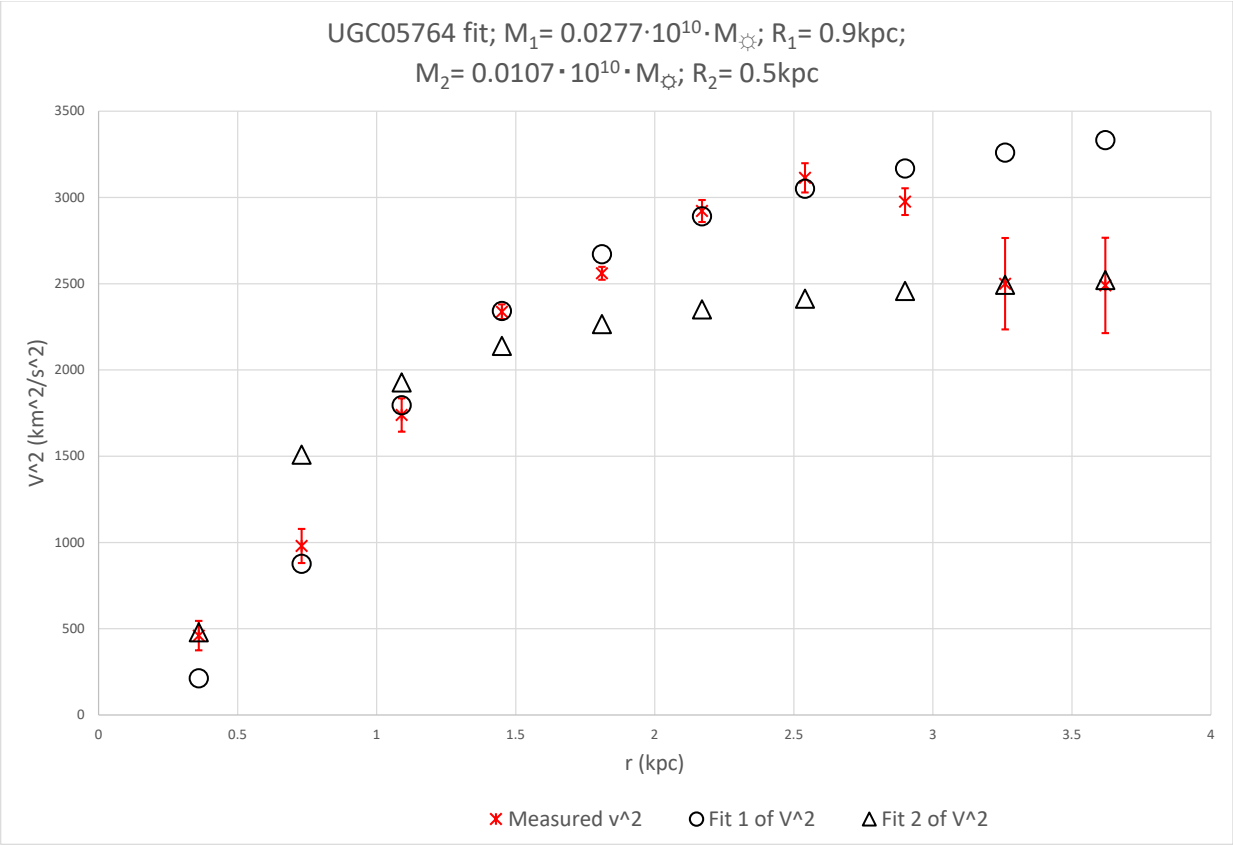

UGC05253 fit; M1= 0.0467·10^10·M☼; R1= 0.1kpc; M2= 6.1·10^10·M☼; R2= 14kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

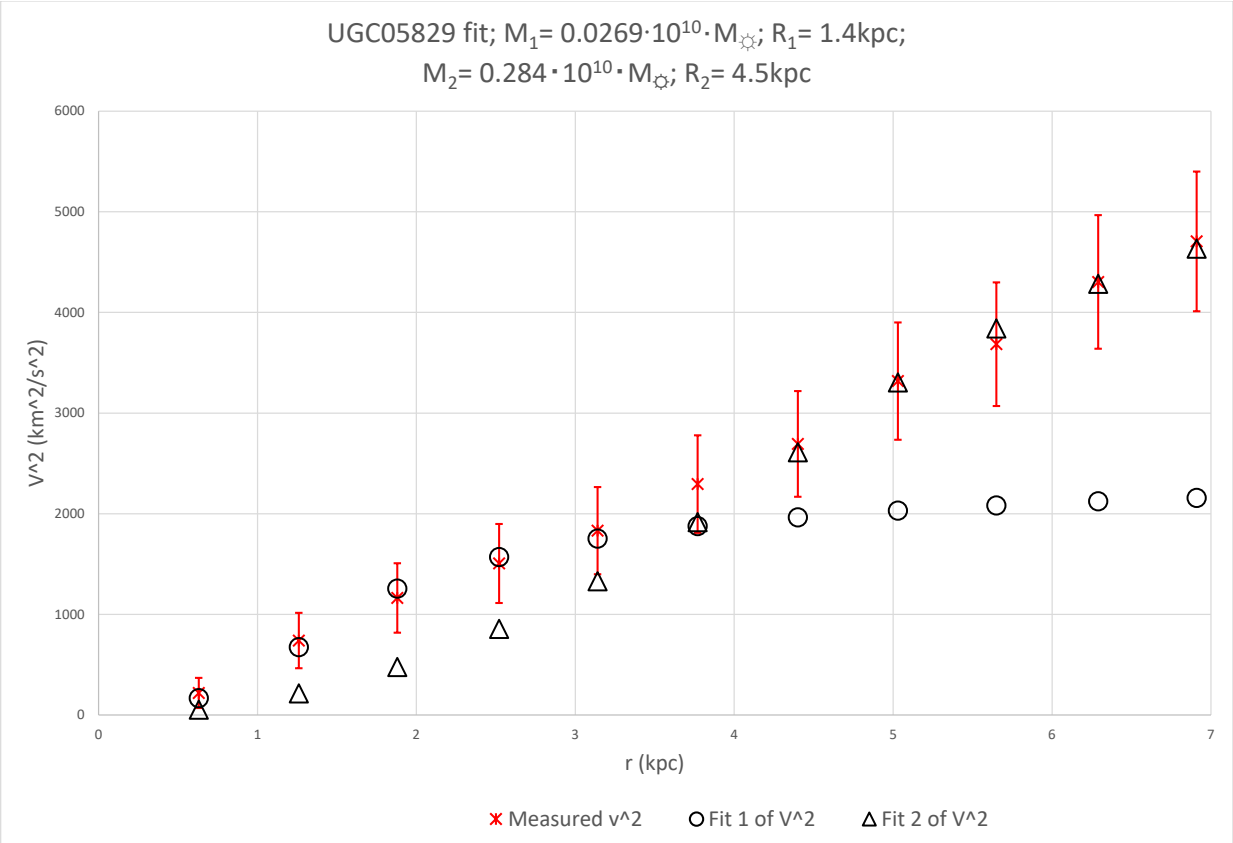

UGC05414 fit; M1= 0.071·10^10·M☼; R1= 1.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

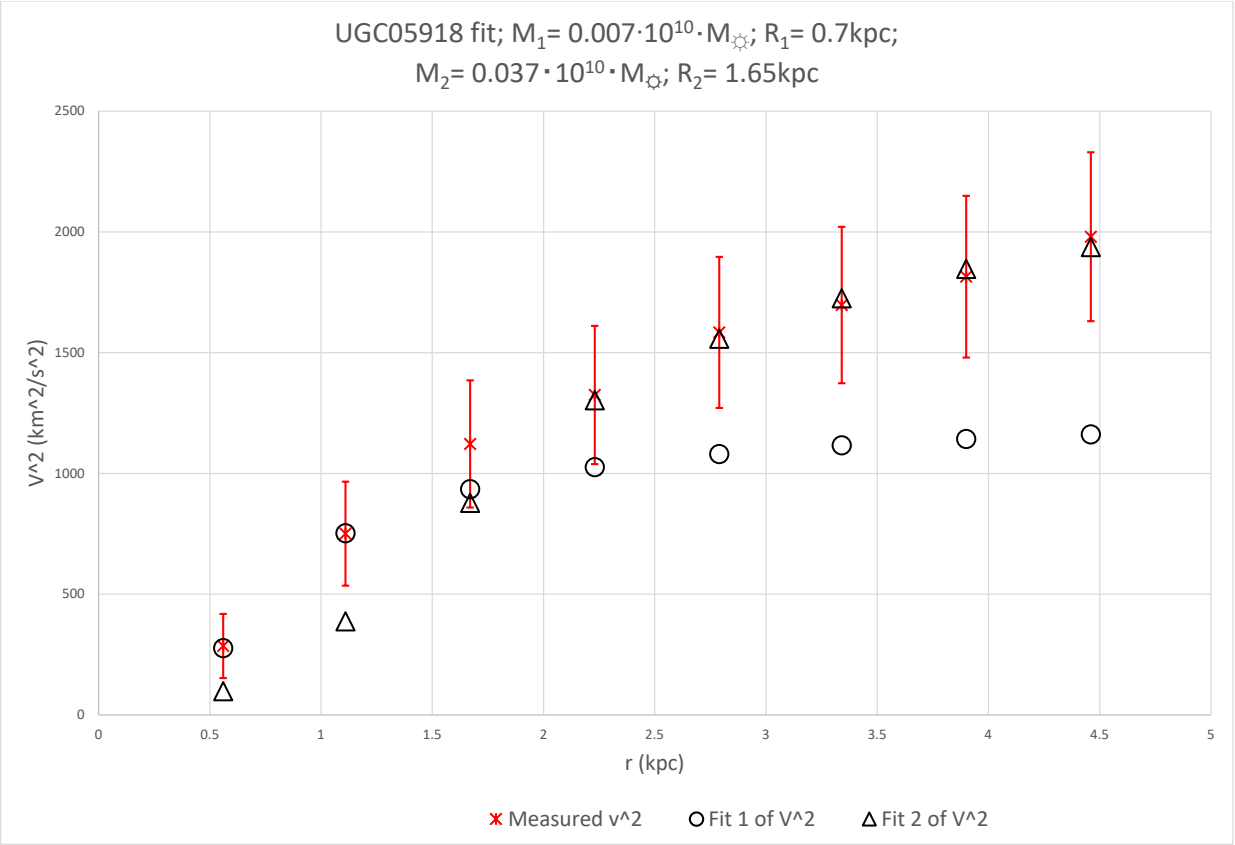

UGC05716 fit; M1= 0.021·10^10·M☼; R1= 0.83kpc; M2= 0.0444·10^10·M☼; R2= 1kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

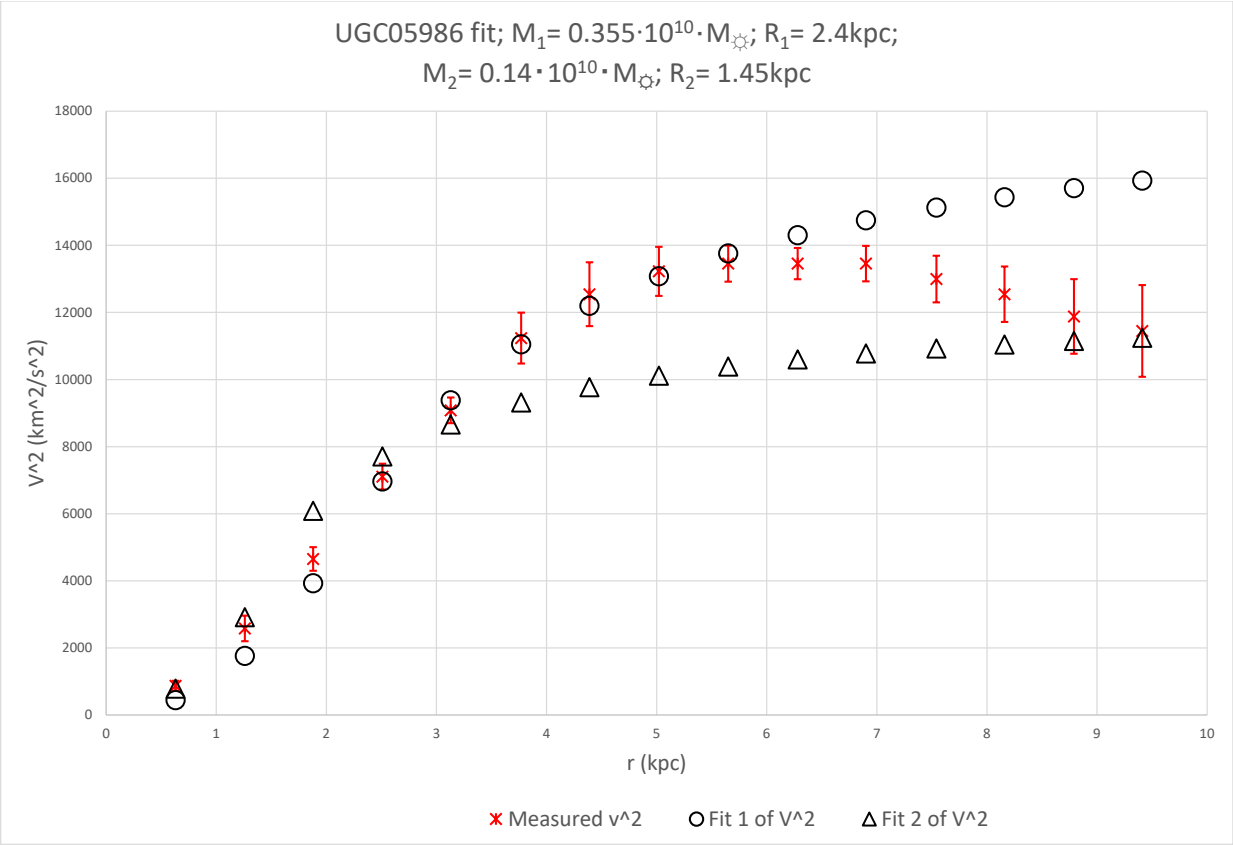

UGC05721 fit; M1= 0.0164·10^10·M☼; R1= 0.33kpc;
M2= 0.086·10^10·M☼; R2= 1kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

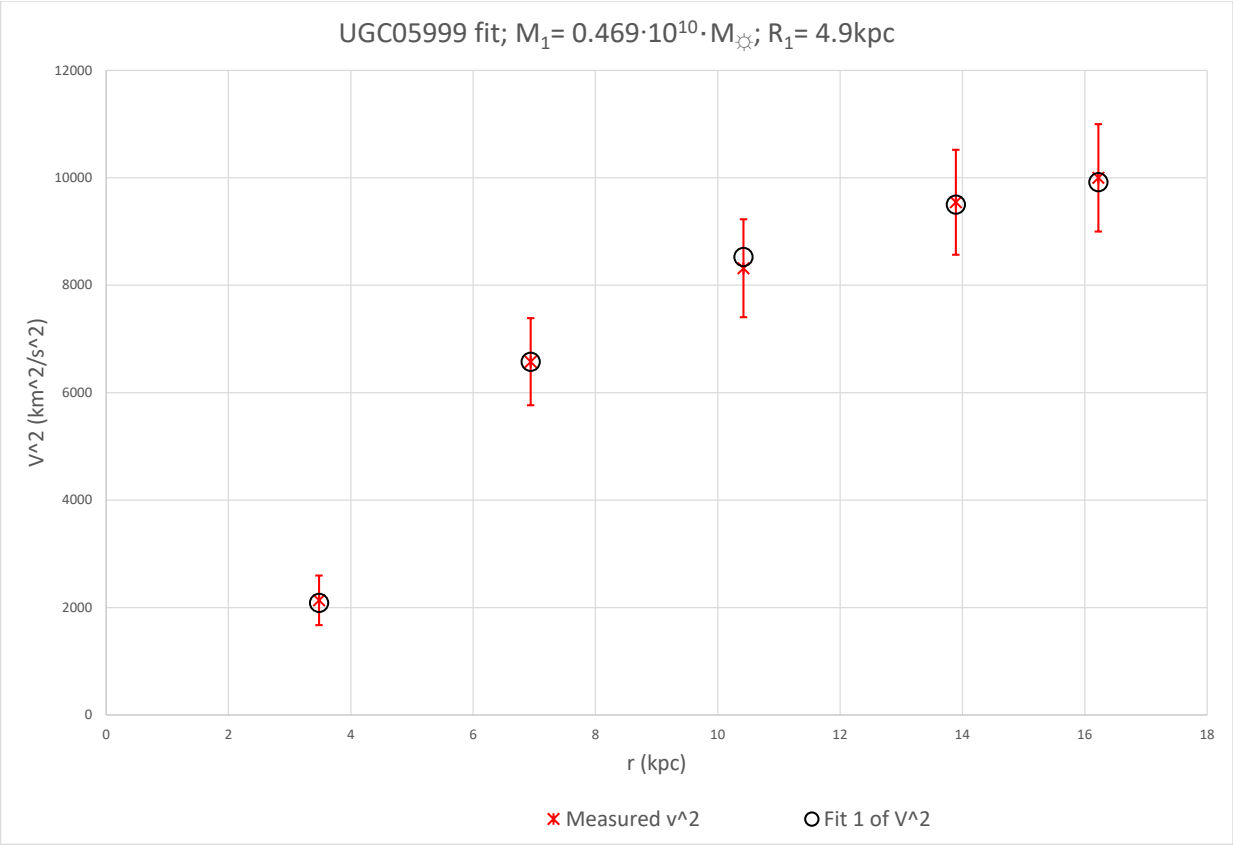

UGC05750 fit; M1= 0.287·10^10·M☼; R1= 4.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

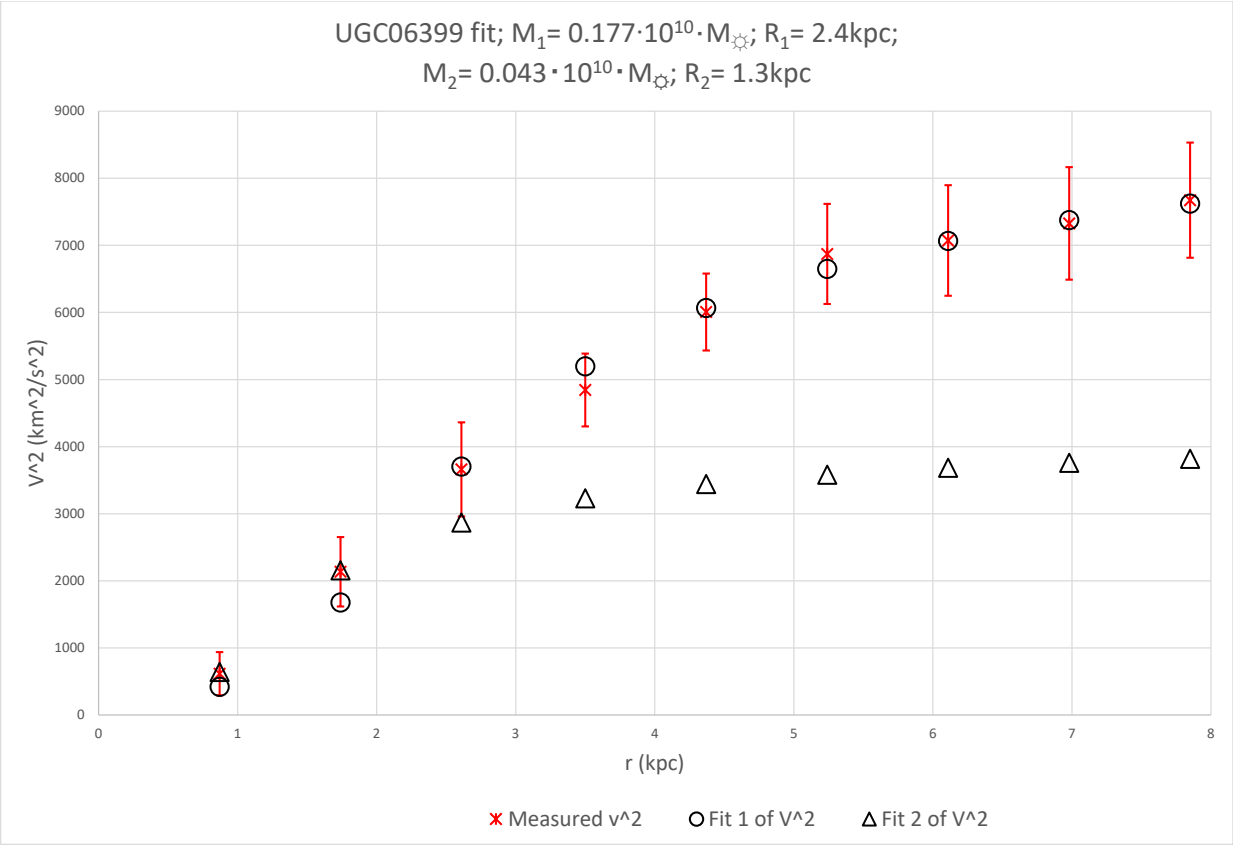

UGC05764 fit; M_1= 0.0277·10^{10}·$M_\odot$; R_1= 0.9kpc;
M_2= 0.0107·10^{10}·$M_\odot$; R_2= 0.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

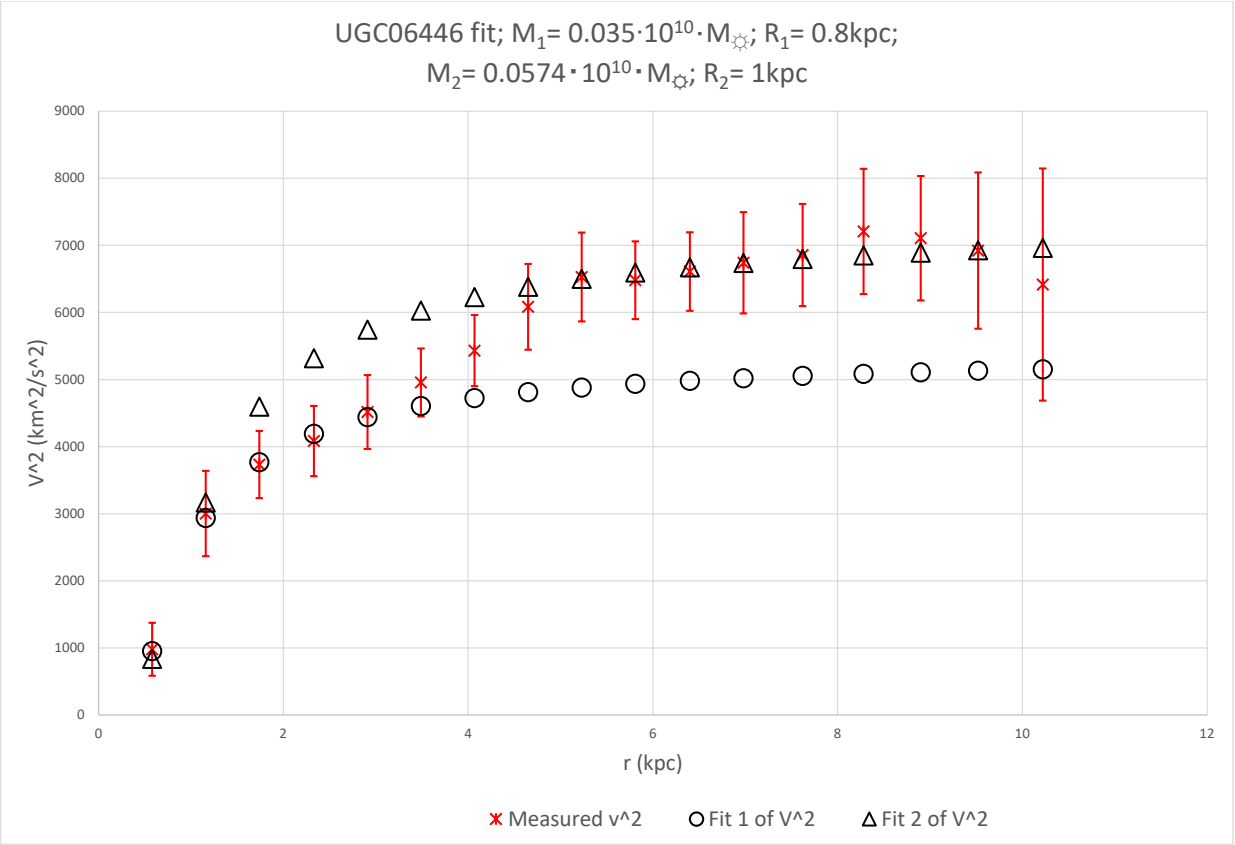

UGC05829 fit; M_1= 0.0269·10^{10}·$M_\odot$; R_1= 1.4kpc;
M_2= 0.284·10^{10}·$M_\odot$; R_2= 4.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

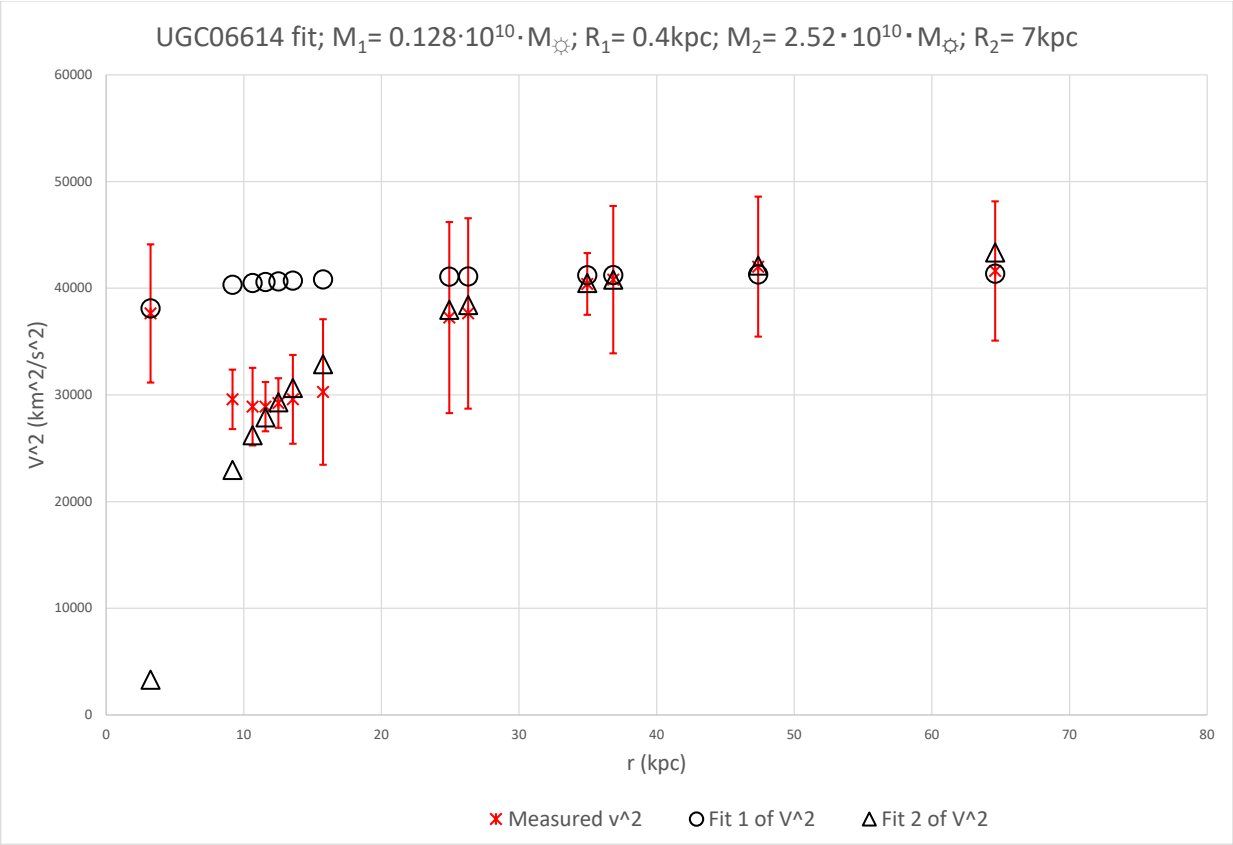

UGC05918 fit; M_1= 0.007·10^{10}·$M_\odot$; R_1= 0.7kpc;
M_2= 0.037·10^{10}·$M_\odot$; R_2= 1.65kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

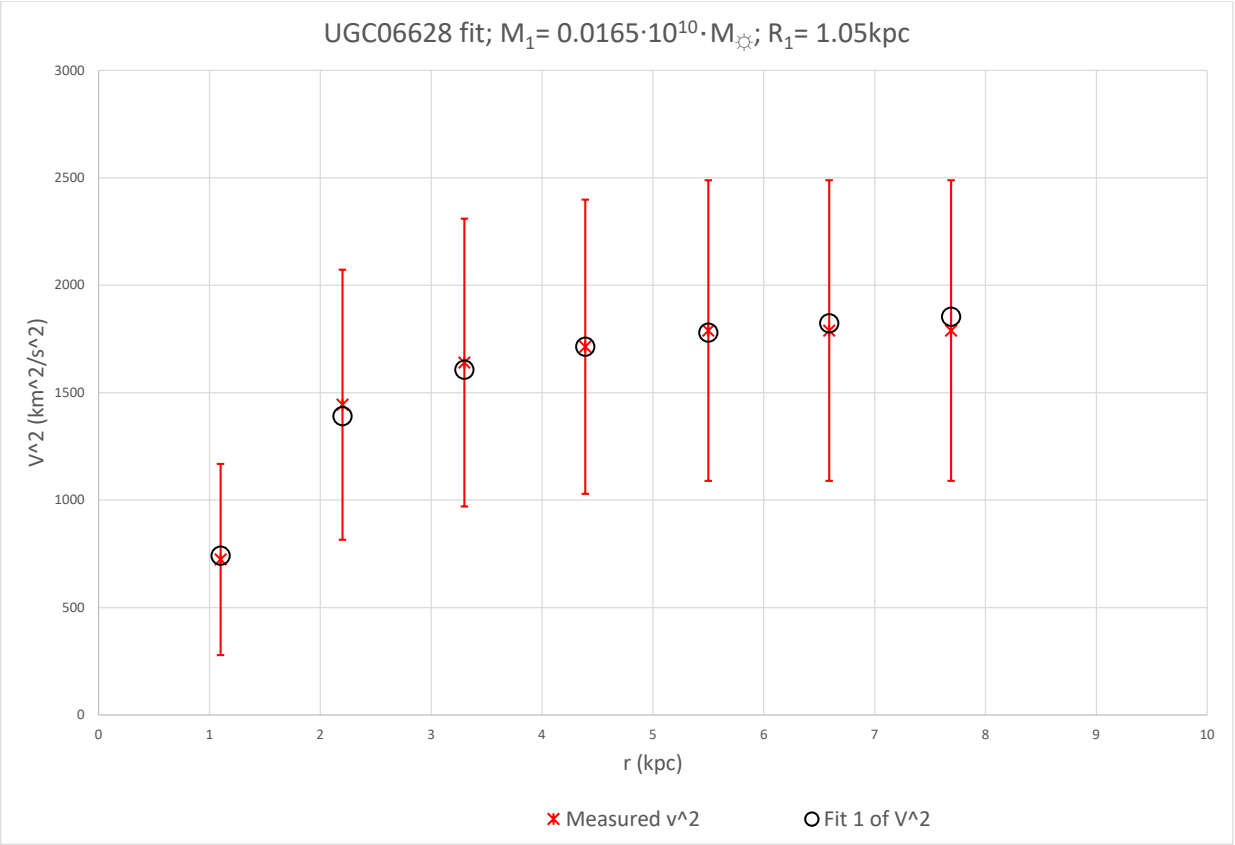

UGC05986 fit; M_1= 0.355·10^10·$M_\odot$; R_1= 2.4kpc;
M_2= 0.14·10^10·$M_\odot$; R_2= 1.45kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

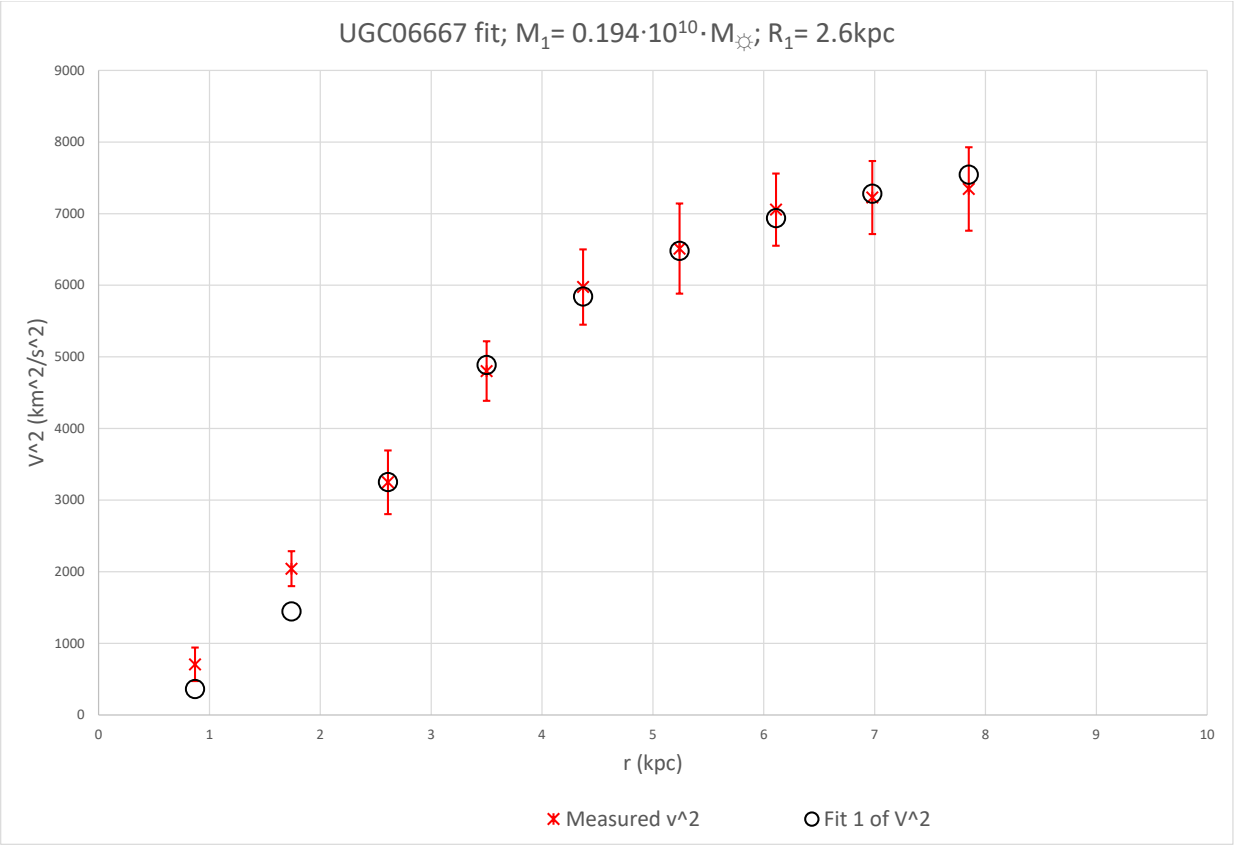

UGC05999 fit; M_1= 0.469·10^10·$M_\odot$; R_1= 4.9kpc
12000
10000
8000
6000
4000
2000
0
V^2 (km^2/s^2)
0
2
4
6
8
10
12
14
16
18
r (kpc)
Measured v^2
Fit 1 of V^2

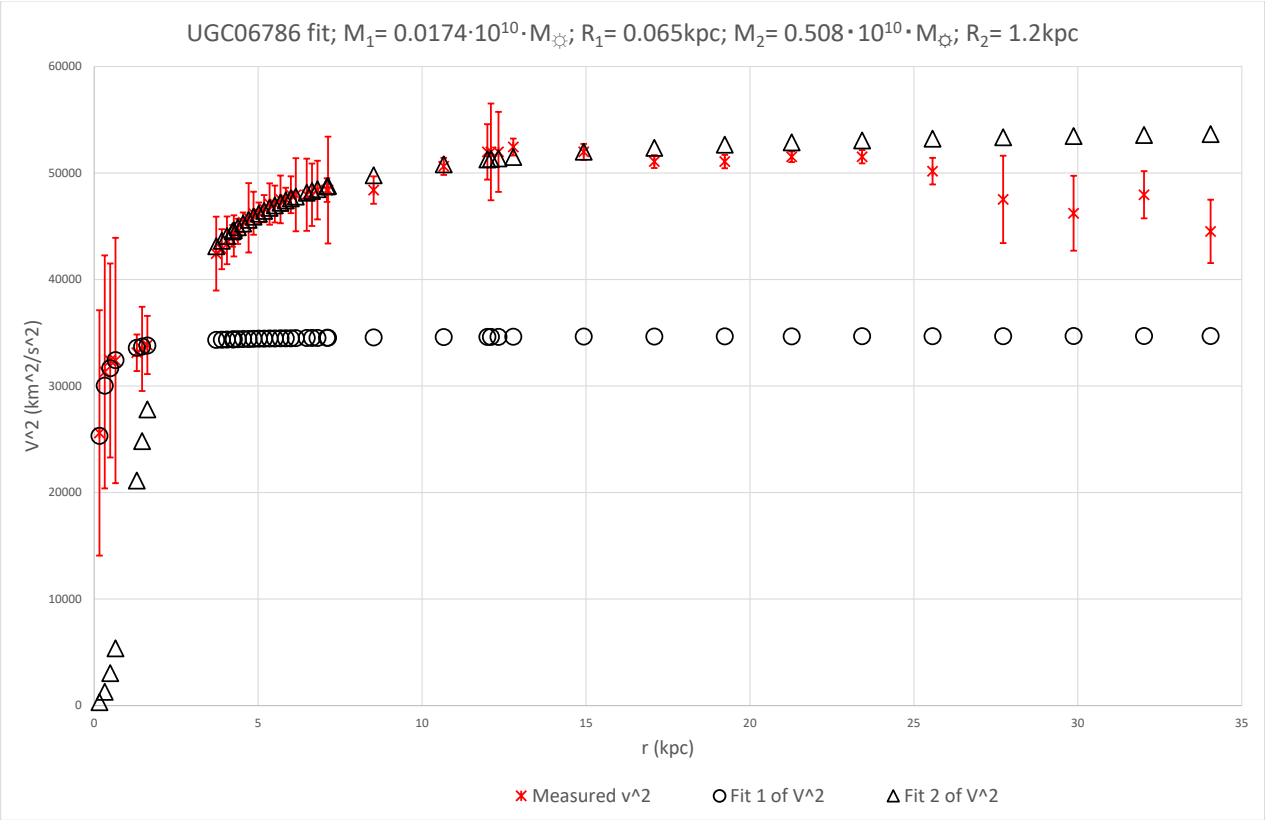

UGC06399 fit; M_1= 0.177·10^10·$M_\odot$; R_1= 2.4kpc;
M_2= 0.043·10^10·$M_\odot$; R_2= 1.3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

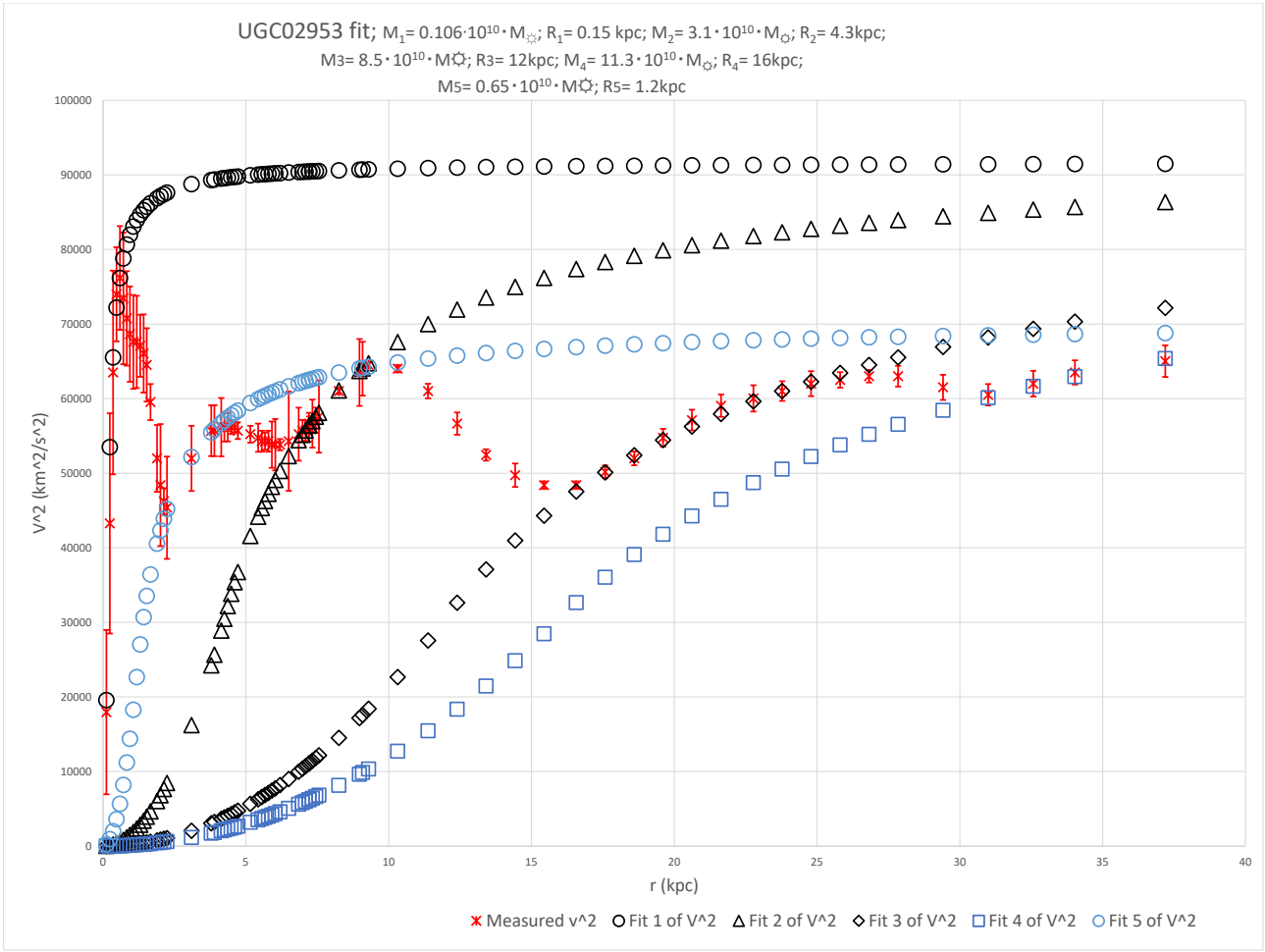

UGC06446 fit; M_1= 0.035·10^{10}·$M_\odot$; R_1= 0.8kpc;
M_2= 0.0574·10^{10}·$M_\odot$; R_2= 1kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

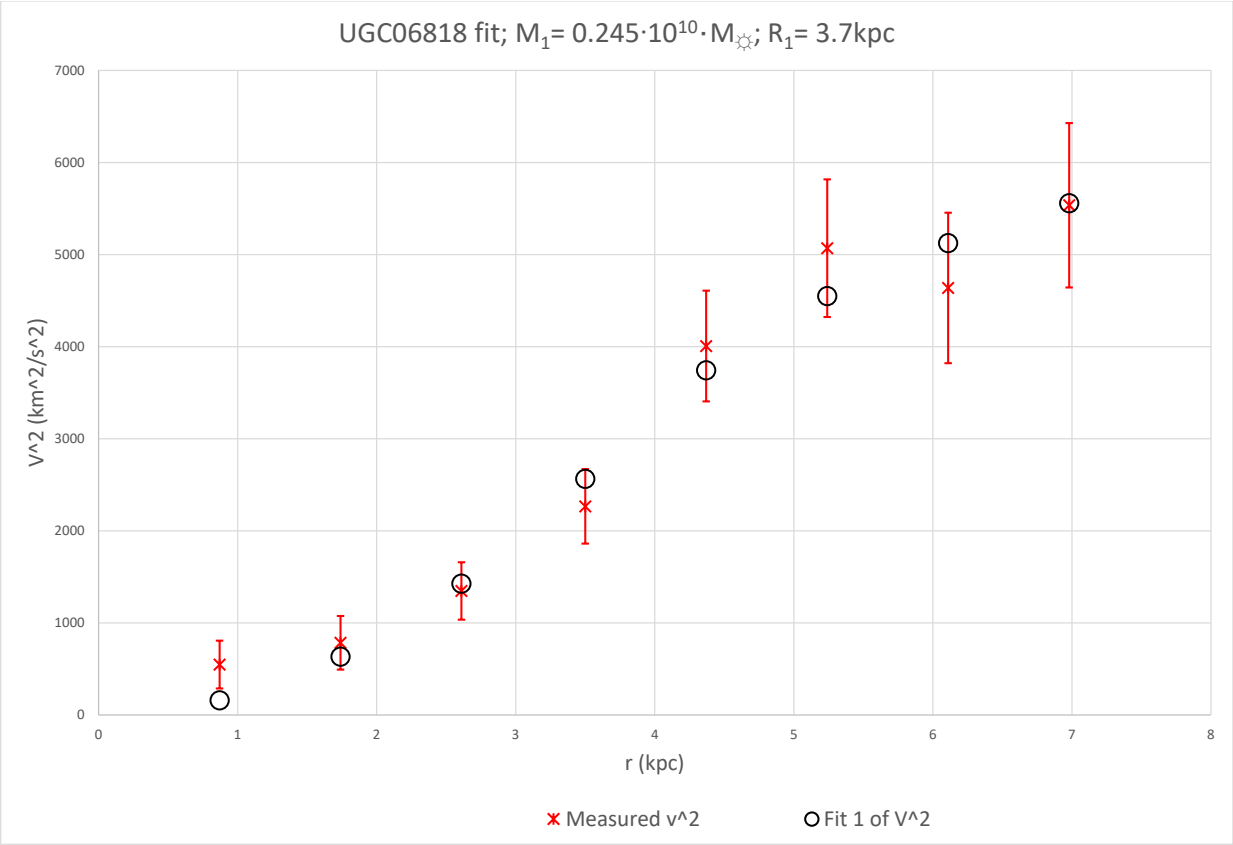

UGC06614 fit; M_1= 0.128·10^10·$M_\odot$; R_1= 0.4kpc; M_2= 2.52·10^10·$M_\odot$; R_2= 7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

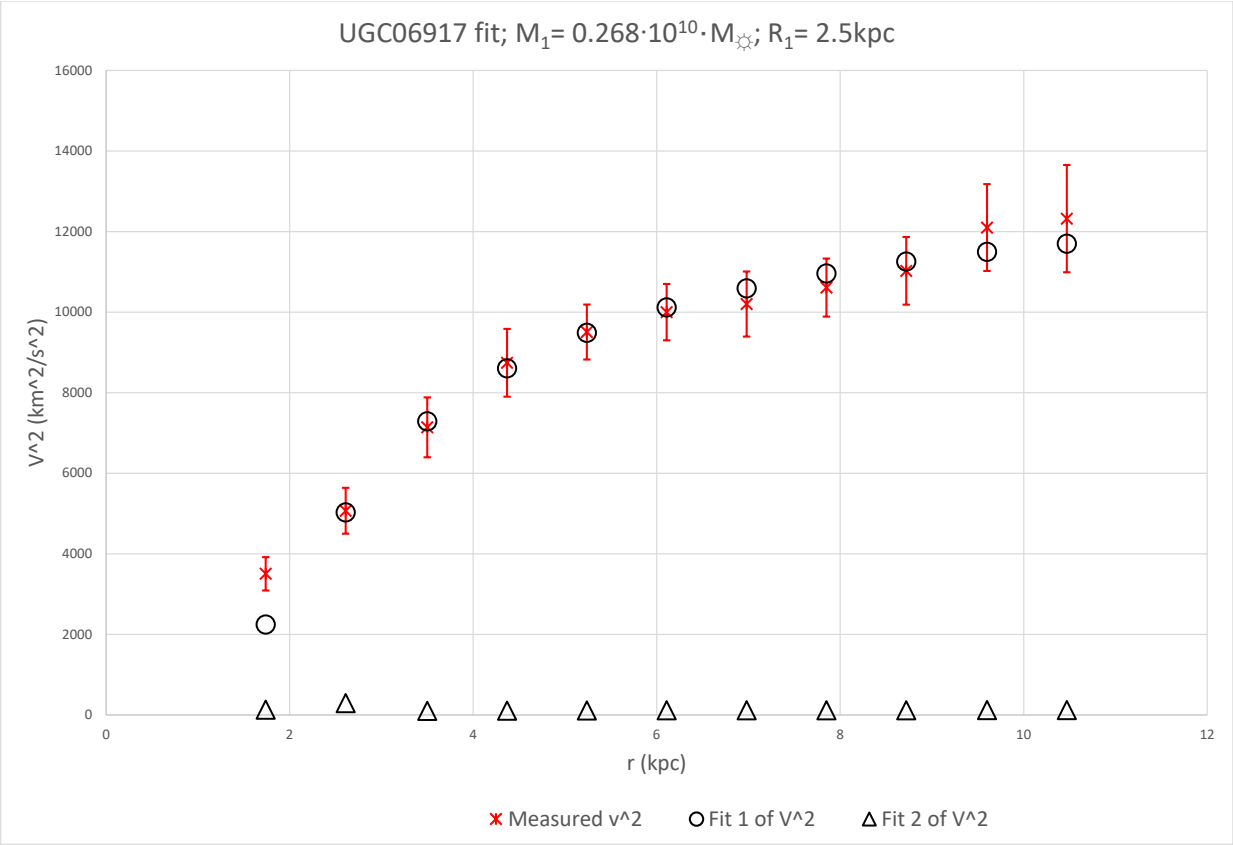

UGC06628 fit; M_1= 0.0165·10^{10}·$M_\odot$; R_1= 1.05kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

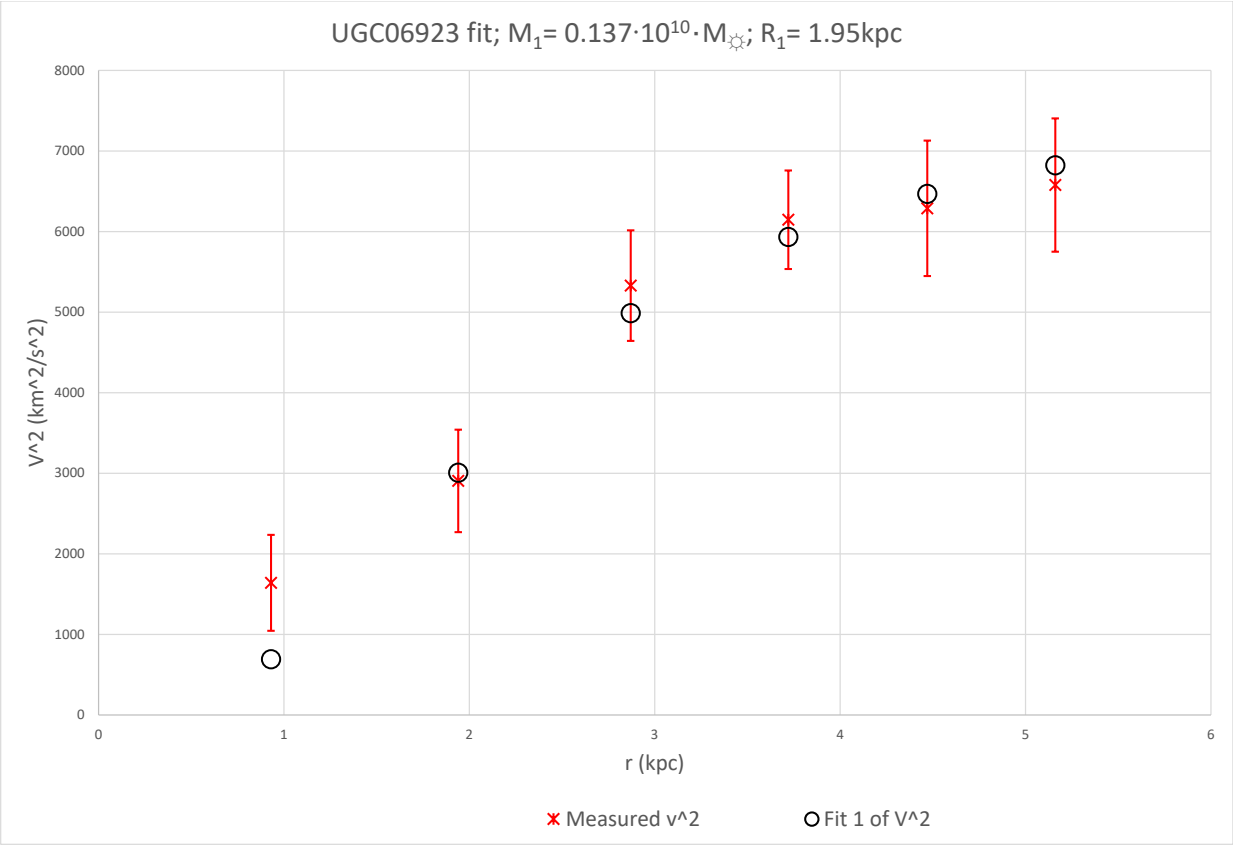

UGC06667 fit; M1= 0.194·10^10·M☼; R1= 2.6kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

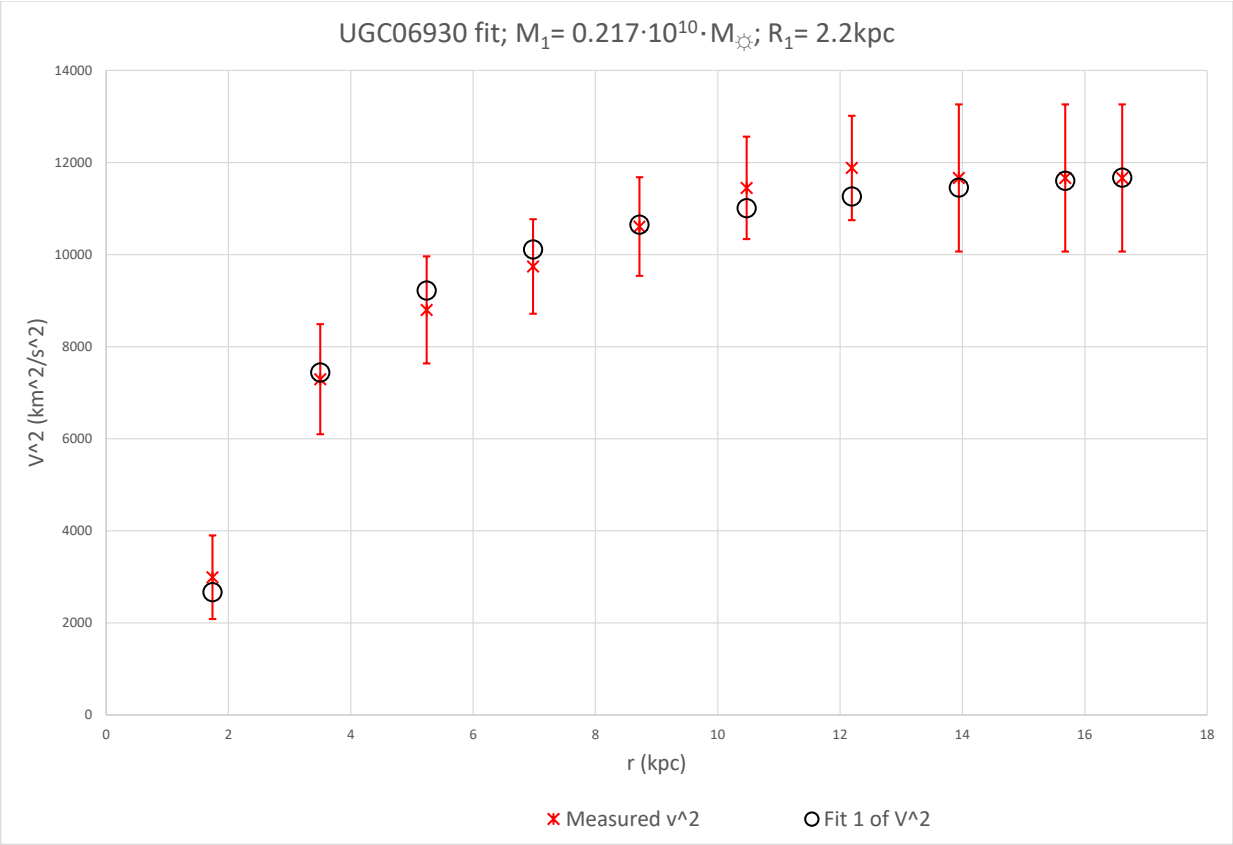

UGC06786 fit; M_1= 0.0174·10^10·$M_\odot$; R_1= 0.065kpc; M_2= 0.508·10^10·$M_\odot$; R_2= 1.2kpc
V^2 (km^2/s^2)
r (kpc)
0
10000
20000
30000
40000
50000
60000
0
5
10
15
20
25
30
35
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

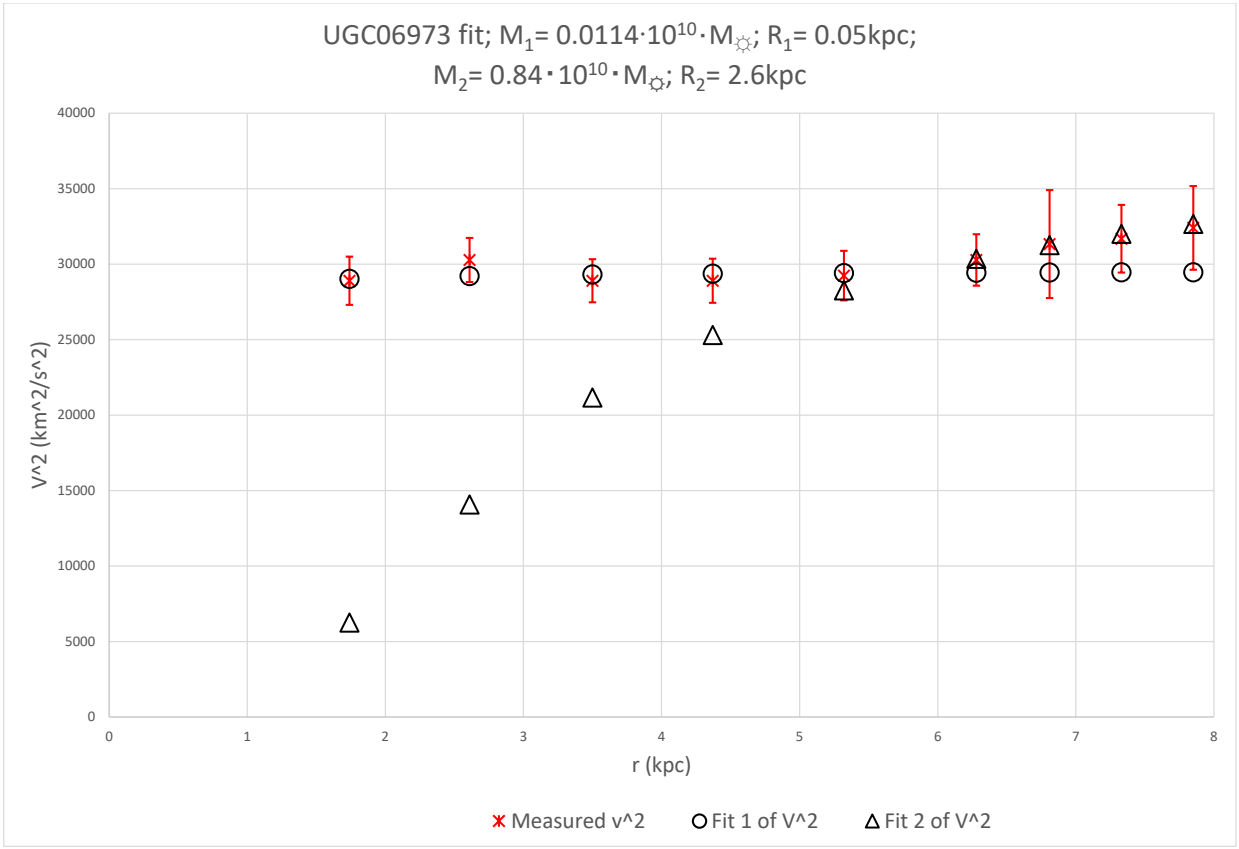

UGC02953 fit; M1= 0.106·10^10·M☼; R1= 0.15 kpc; M2= 3.1·10^10·M☼; R2= 4.3kpc;
M3= 8.5·10^10·M☼; R3= 12kpc; M4= 11.3·10^10·M☼; R4= 16kpc;
M5= 0.65·10^10·M☼; R5= 1.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2
Fit 4 of V^2
Fit 5 of V^2

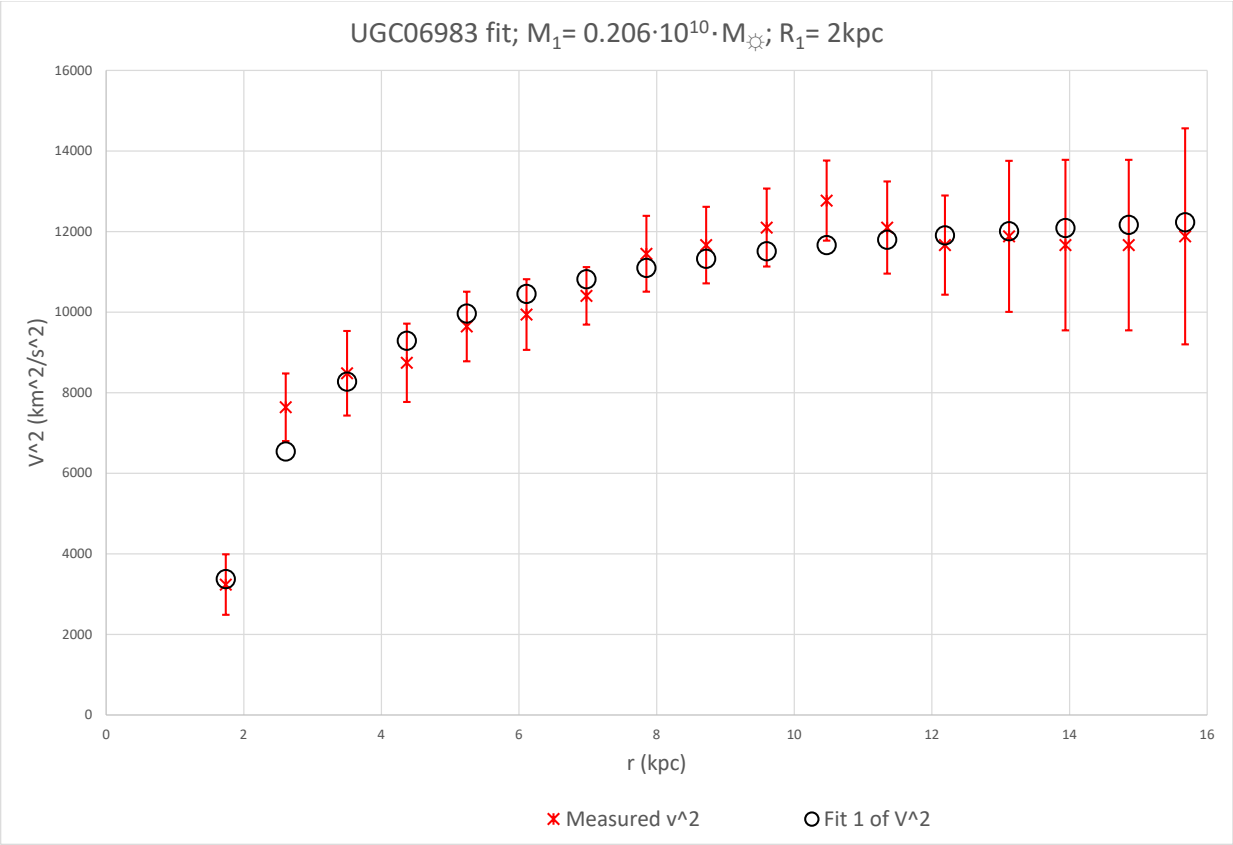

UGC06818 fit; M1= 0.245·10^10·M☼; R1= 3.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

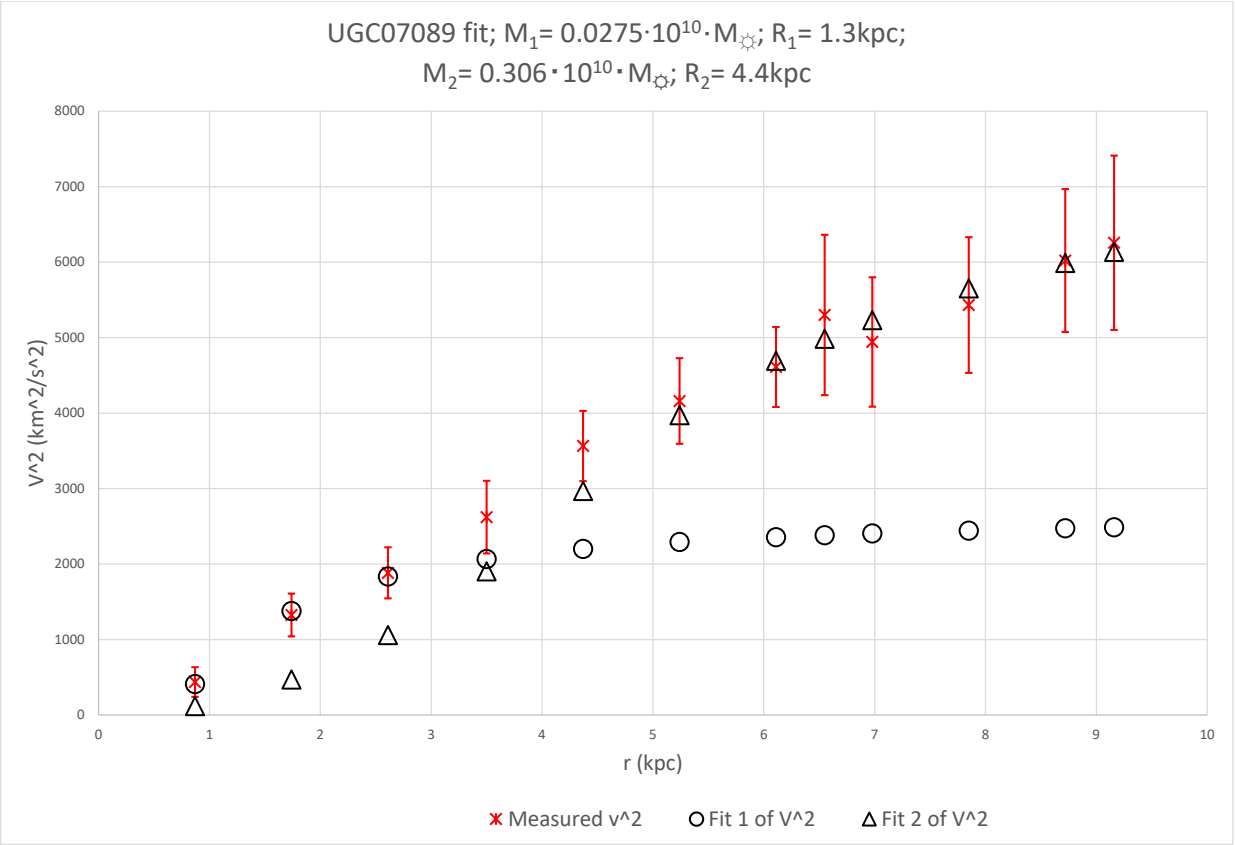

UGC06917 fit; M1= 0.268·10^10·M☼; R1= 2.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

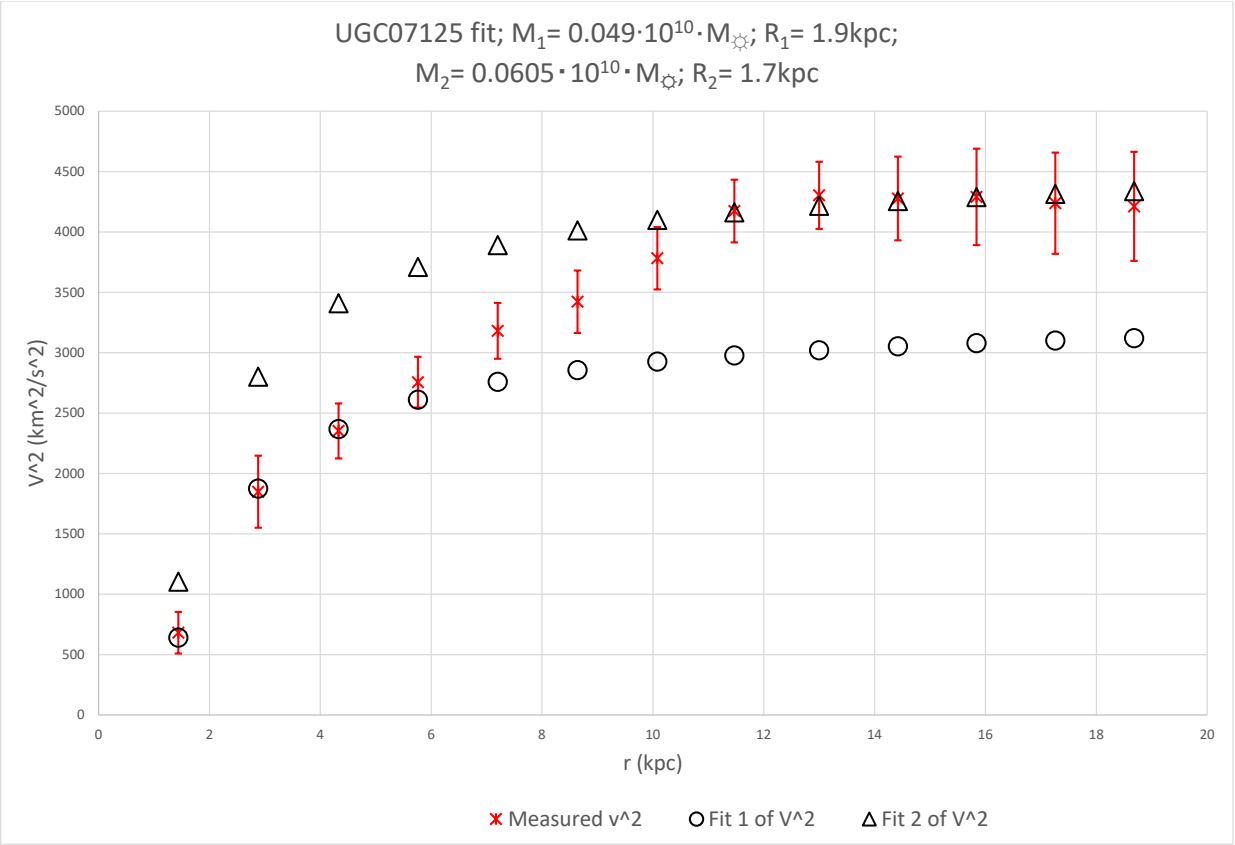

UGC06923 fit; M_1= 0.137·10^{10}·$M_\odot$; R_1= 1.95kpc
V^2 (km^2/s^2)
r (kpc)
0
1000
2000
3000
4000
5000
6000
7000
8000
0
1
2
3
4
5
6
Measured v^2
Fit 1 of V^2

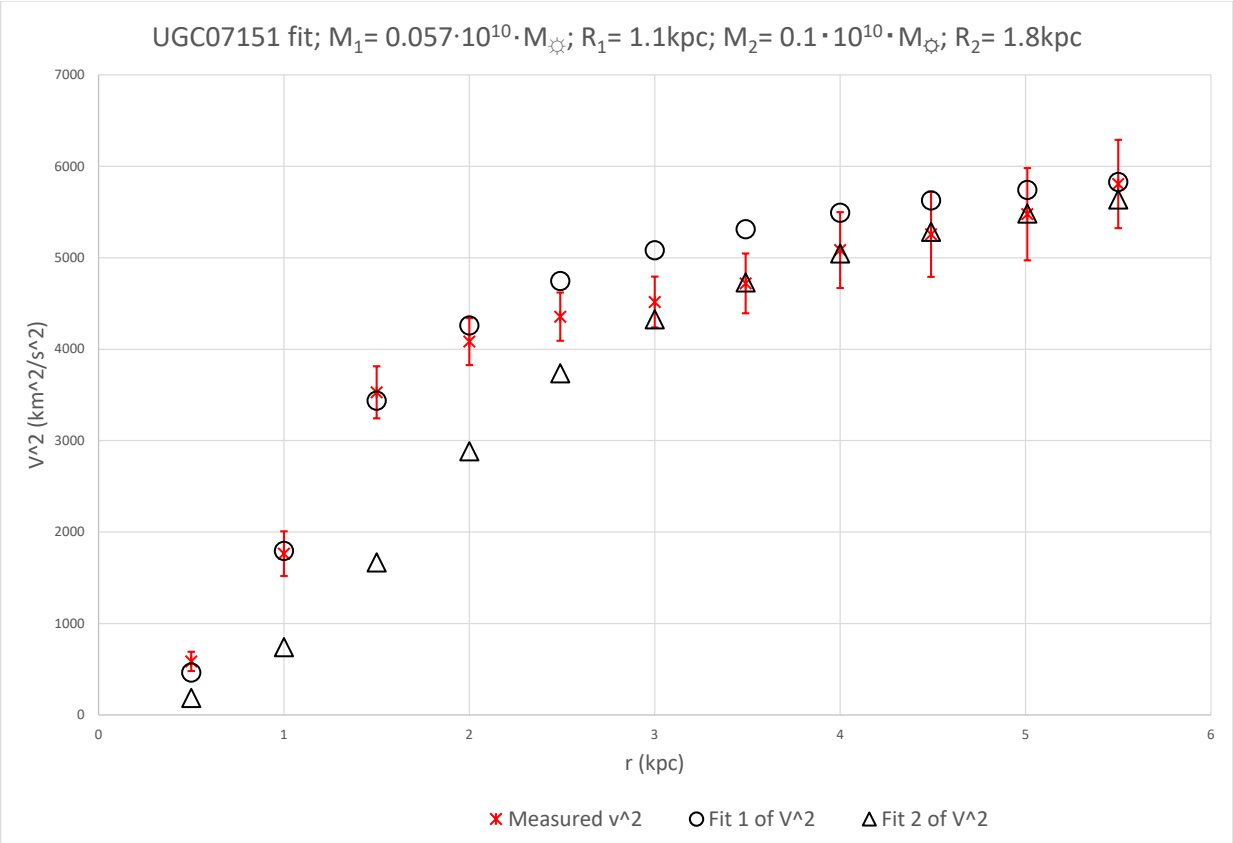

UGC06930 fit; M1= 0.217·10^10·M☼; R1= 2.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

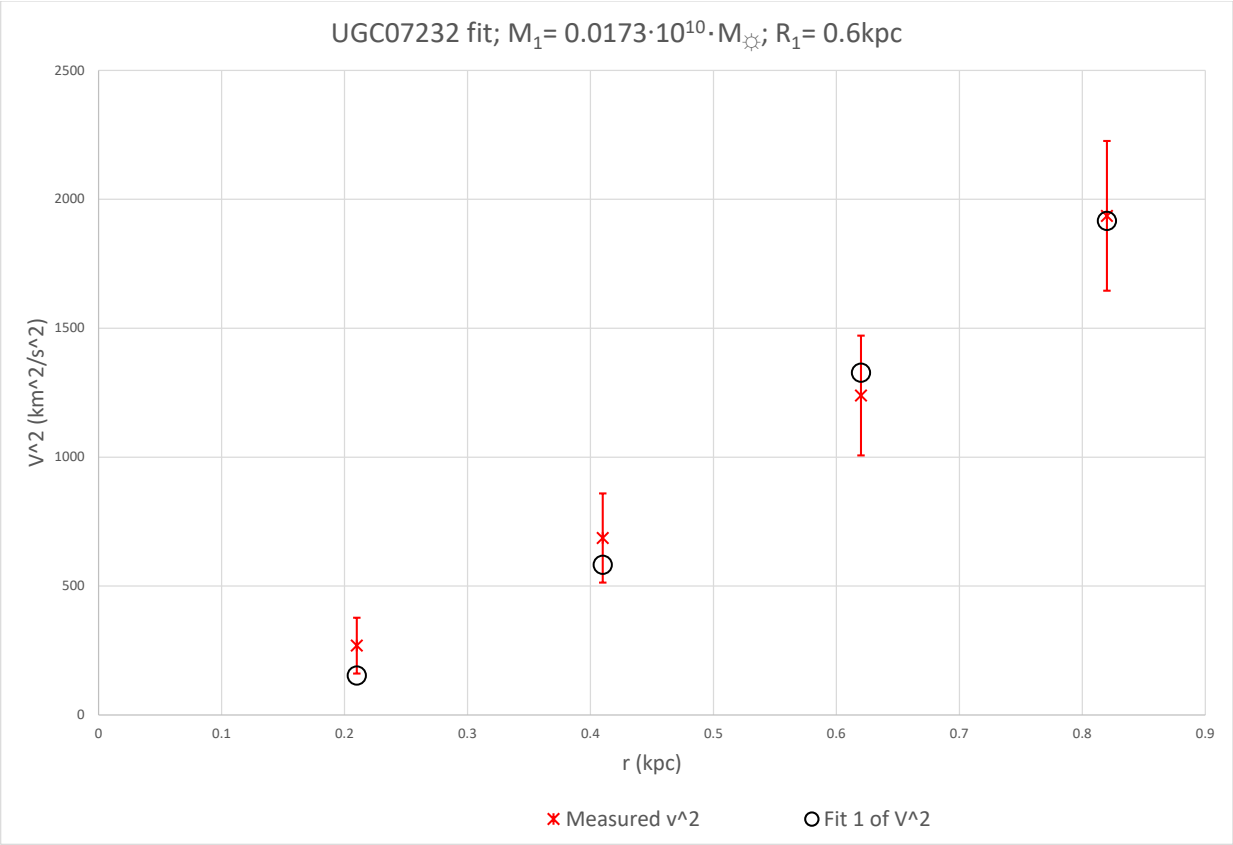

UGC06973 fit; M_1= 0.0114·10^{10}·$M_\odot$; R_1= 0.05kpc;
M_2= 0.84·10^{10}·$M_\odot$; R_2= 2.6kpc
V^2 (km^2/s^2)
40000
35000
30000
25000
20000
15000
10000
5000
0
0
1
2
3
4
5
6
7
8
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

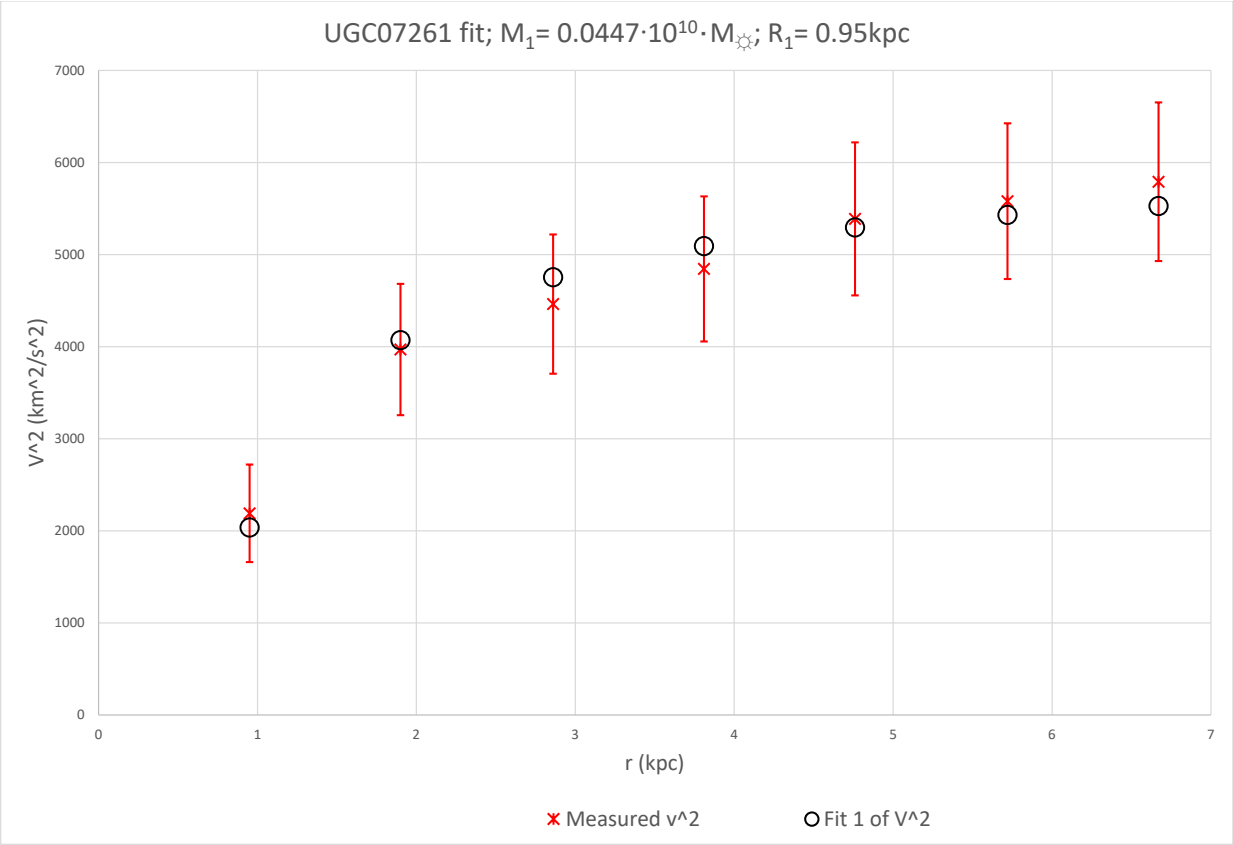

UGC06983 fit; M1= 0.206·10^10·M☼; R1= 2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

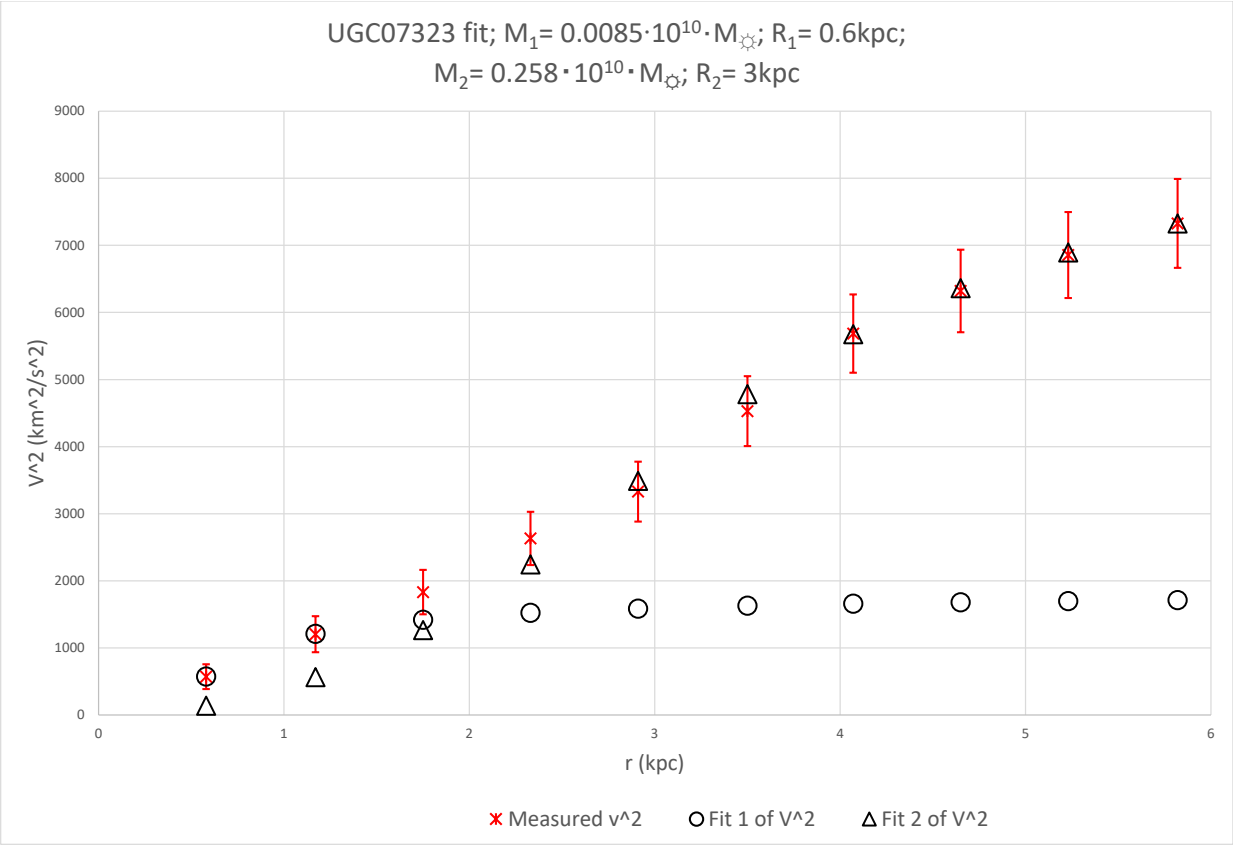

UGC07089 fit; M_1= 0.0275·10^{10}·$M_\odot$; R_1= 1.3kpc;
M_2= 0.306·10^{10}·$M_\odot$; R_2= 4.4kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

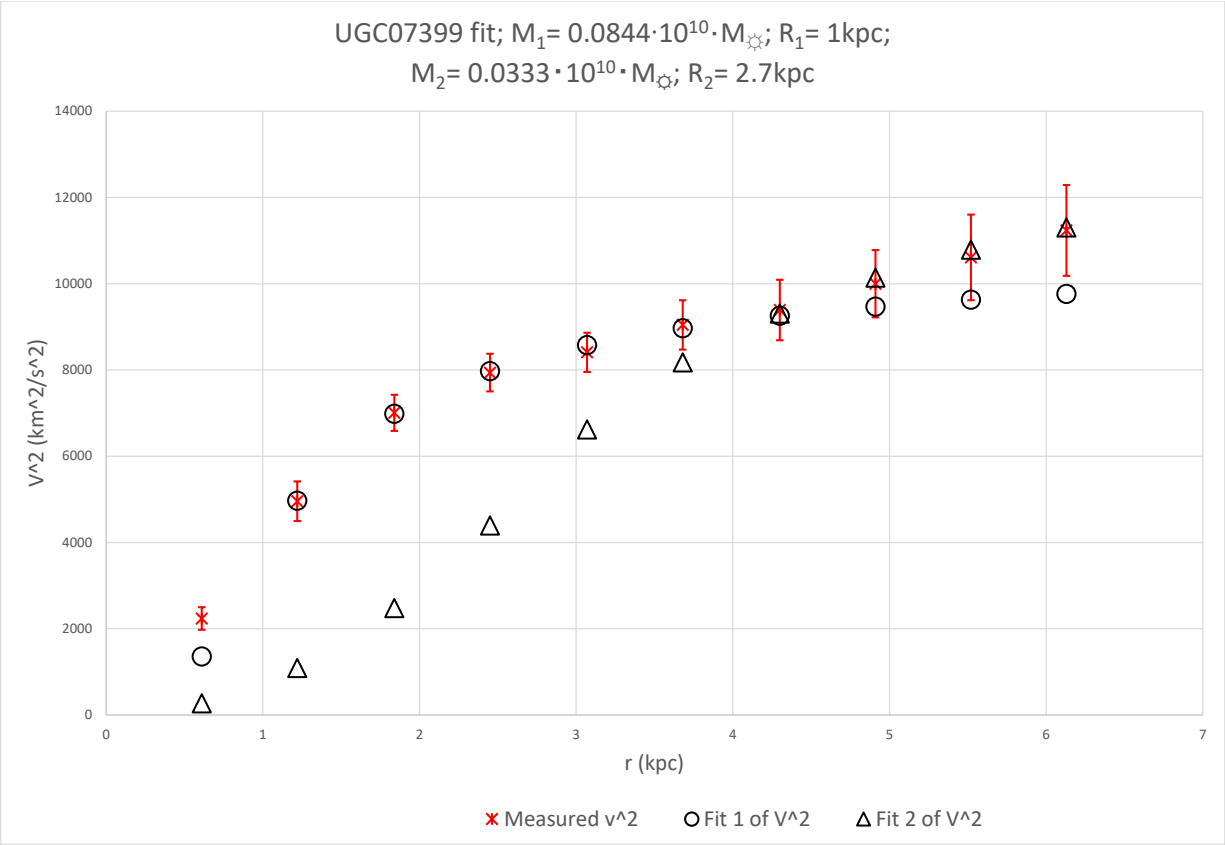

UGC07125 fit; M_1= 0.049·10^10·$M_\odot$; R_1= 1.9kpc;
M_2= 0.0605·10^10·$M_\odot$; R_2= 1.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

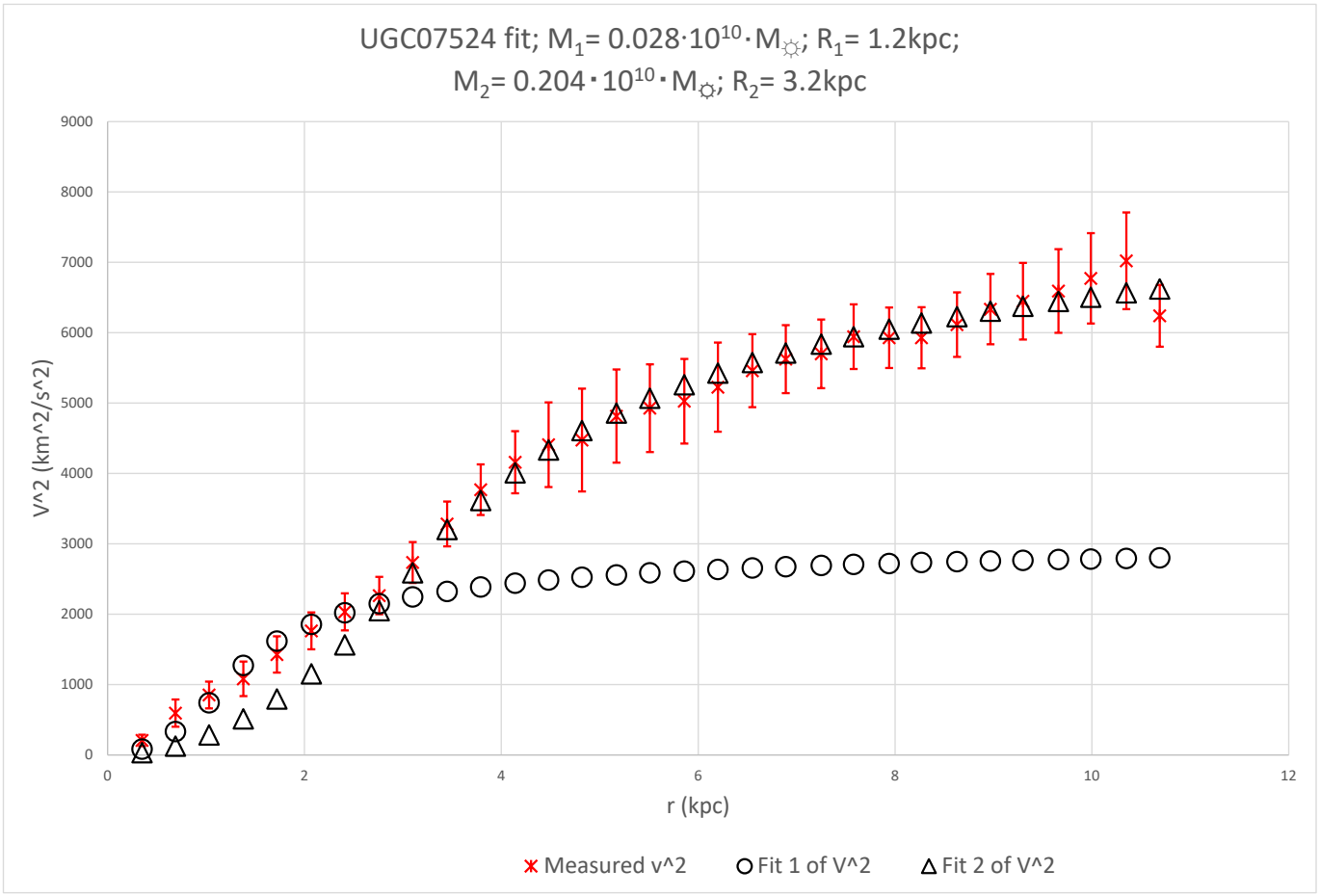

UGC07151 fit; M1= 0.057·10^10·M☼; R1= 1.1kpc; M2= 0.1·10^10·M☼; R2= 1.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

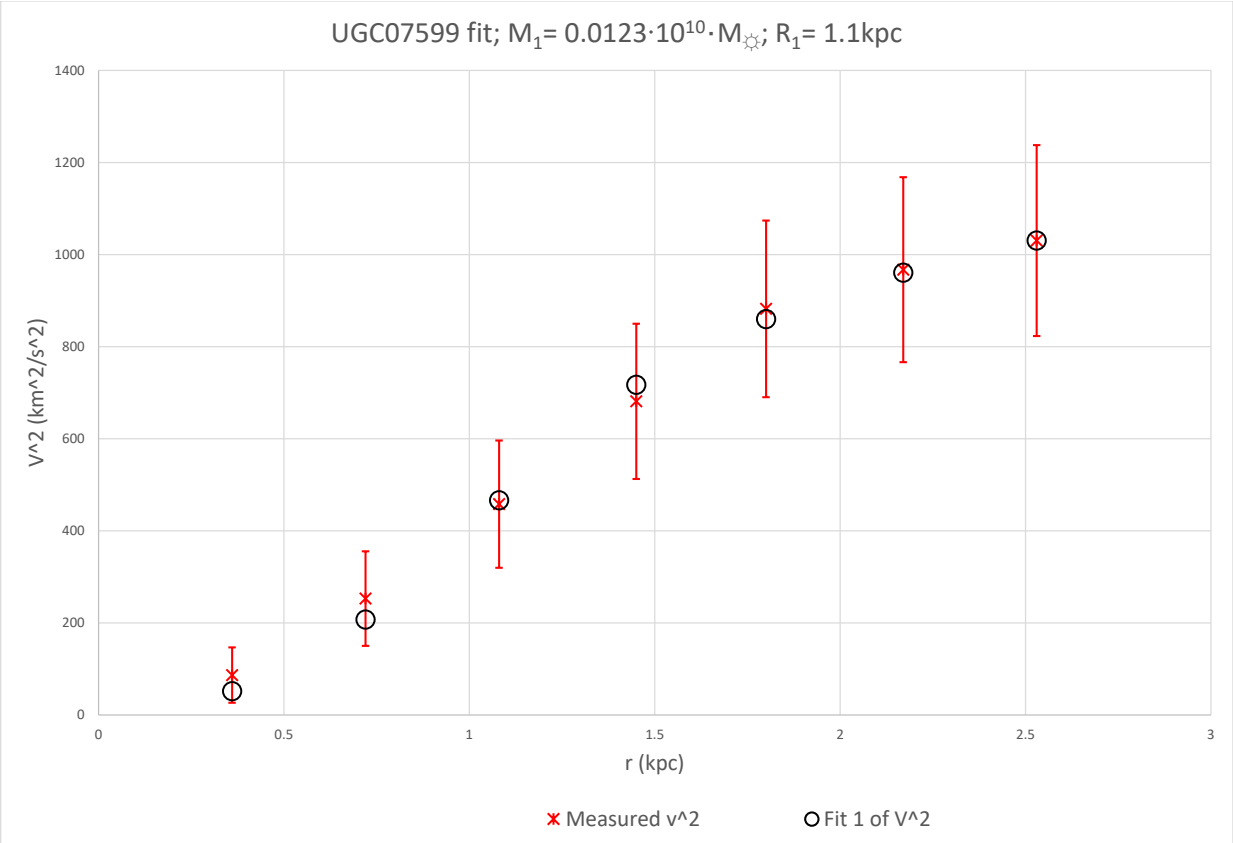

UGC07232 fit; M_1= 0.0173·10^{10}·$M_\odot$; R_1= 0.6kpc
V^2 (km^2/s^2)
r (kpc)
0
500
1000
1500
2000
2500
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
Measured v^2
Fit 1 of V^2

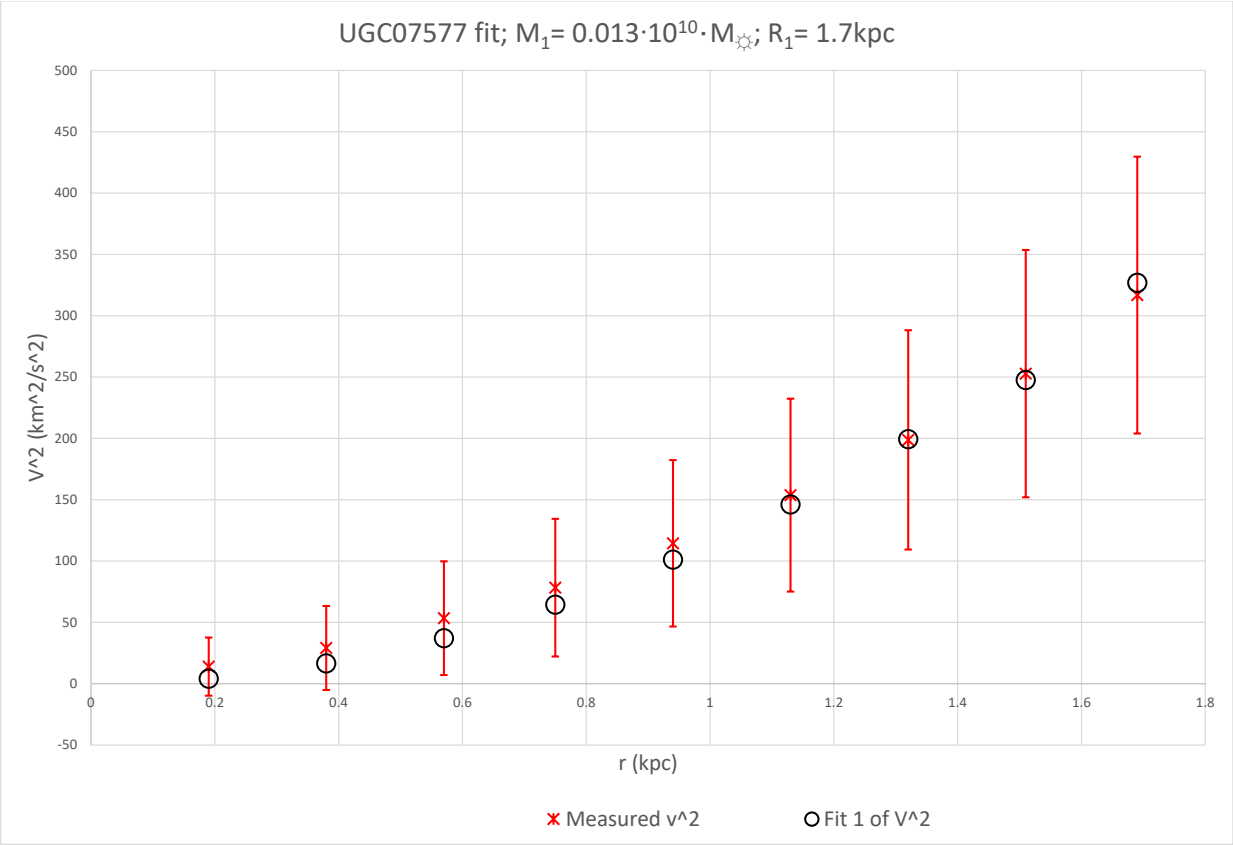

UGC07261 fit; M_1= 0.0447·10^{10}·$M_\odot$; R_1= 0.95kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

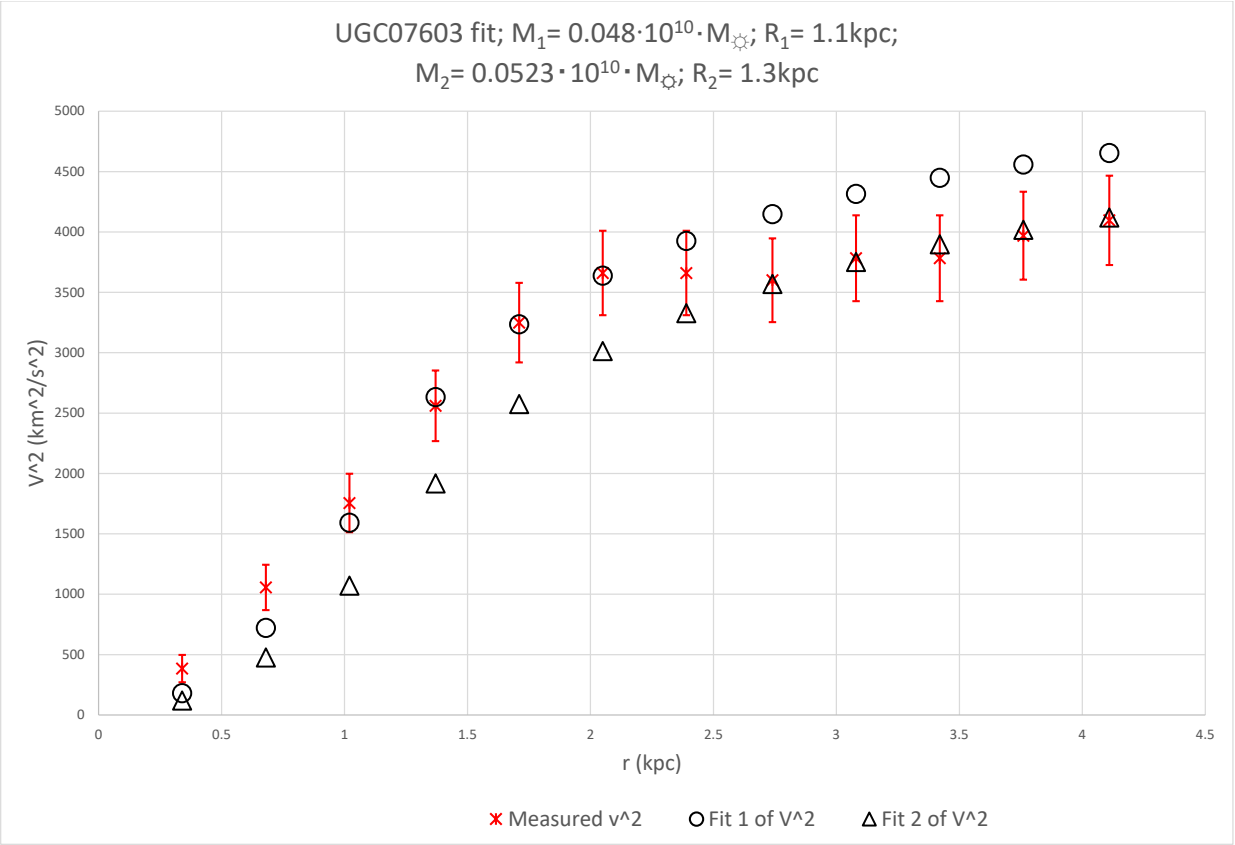

UGC07323 fit; M_1= 0.0085·10^{10}·$M_\odot$; R_1= 0.6kpc;
M_2= 0.258·10^{10}·$M_\odot$; R_2= 3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

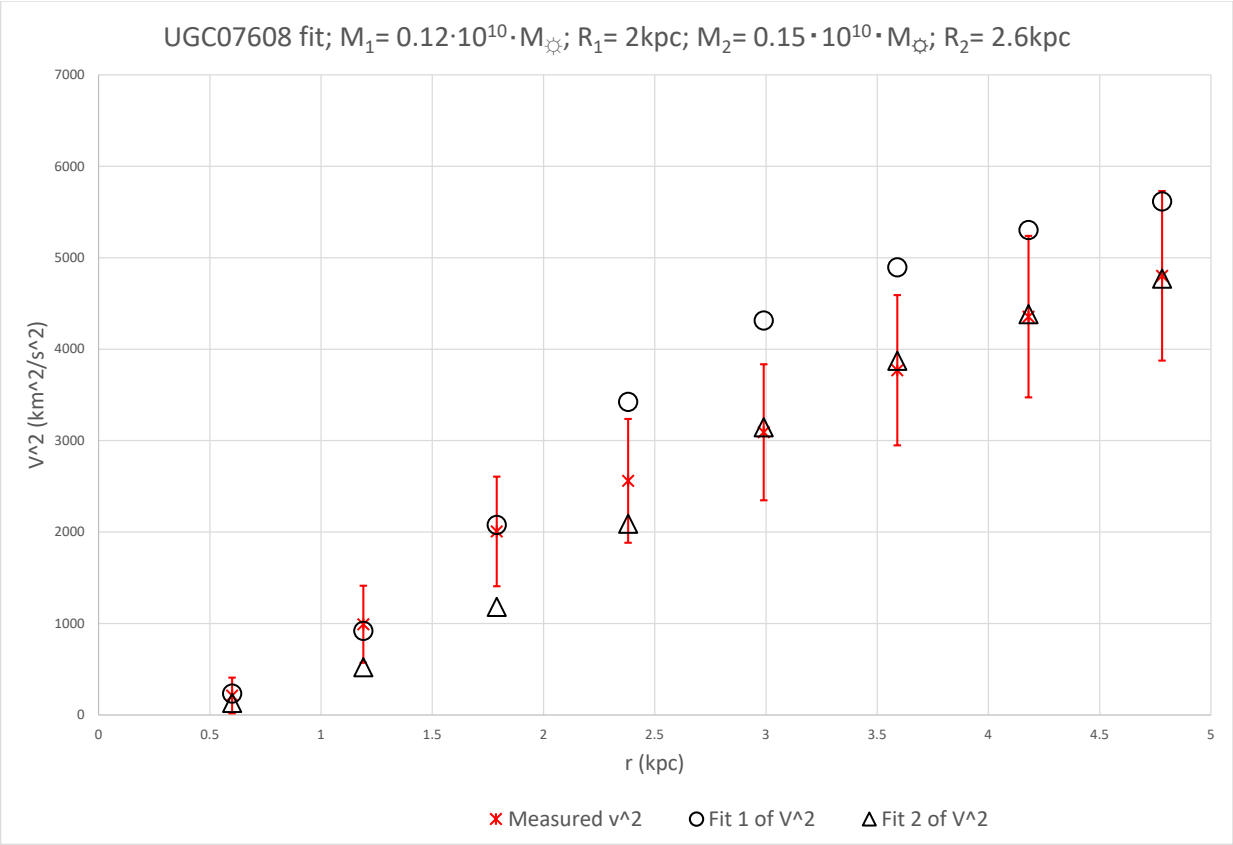

UGC07399 fit; M1= 0.0844·10^10·M☼; R1= 1kpc;
M2= 0.0333·10^10·M☼; R2= 2.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

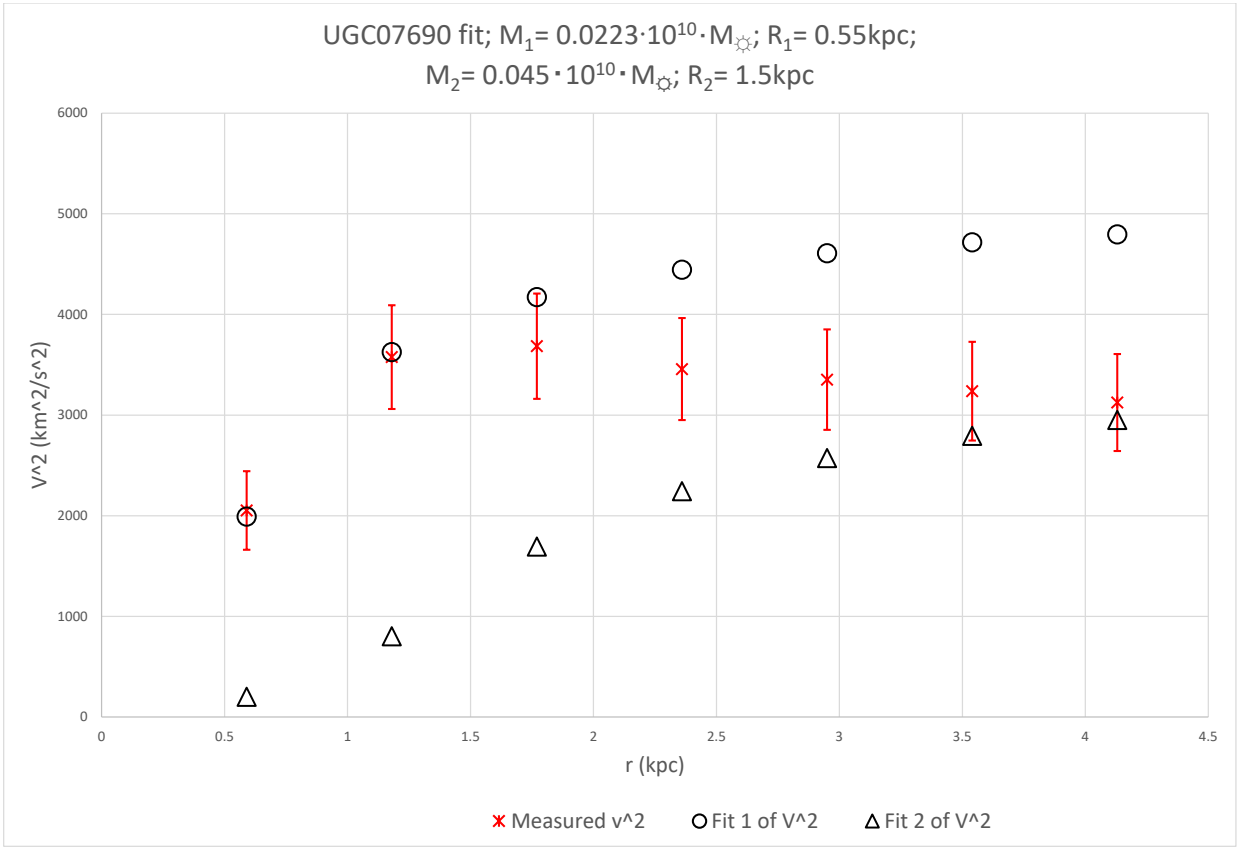

UGC07524 fit; M1= 0.028·10^10·M☼; R1= 1.2kpc;
M2= 0.204·10^10·M☼; R2= 3.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

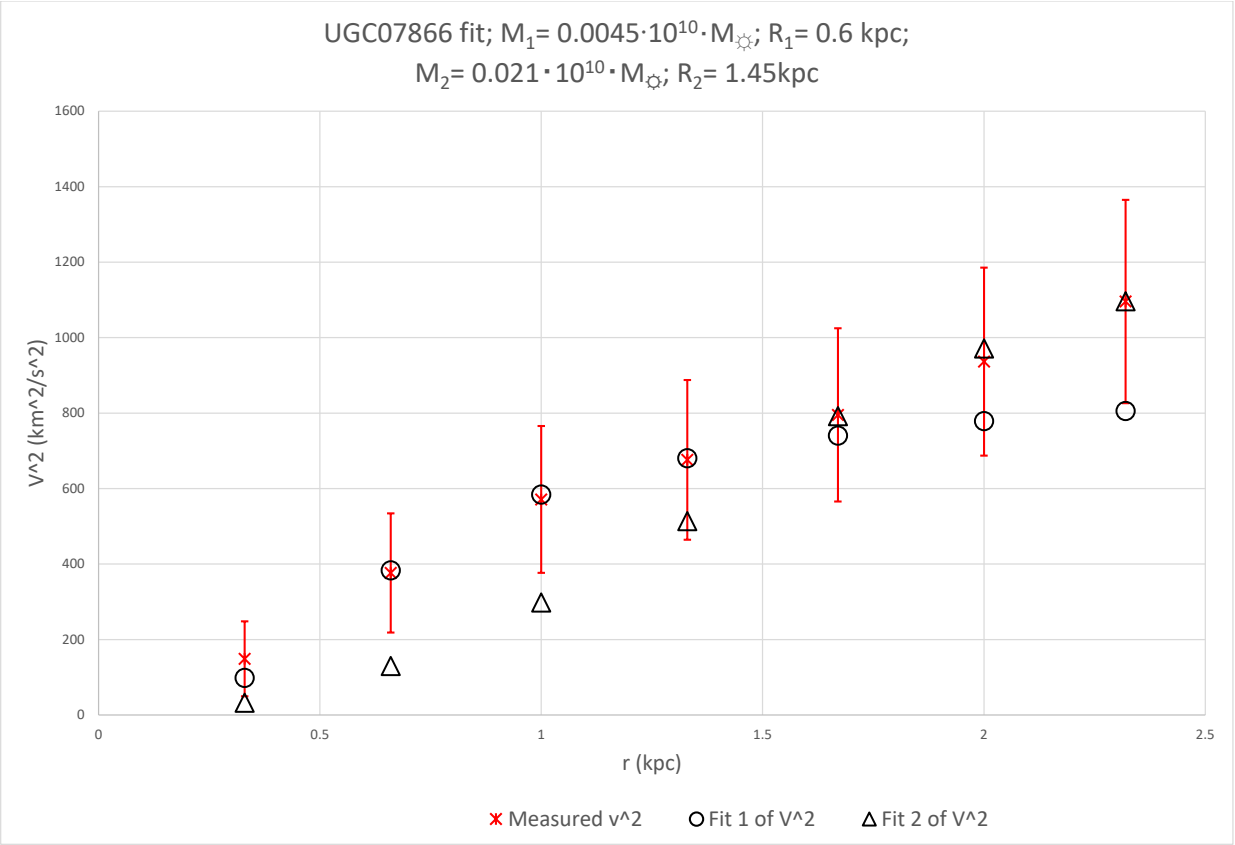

UGC07599 fit; M_1= 0.0123·10^{10}·$M_\odot$; R_1= 1.1kpc
V^2 (km^2/s^2)
r (kpc)
0
200
400
600
800
1000
1200
1400
0
0.5
1
1.5
2
2.5
3
Measured v^2
Fit 1 of V^2

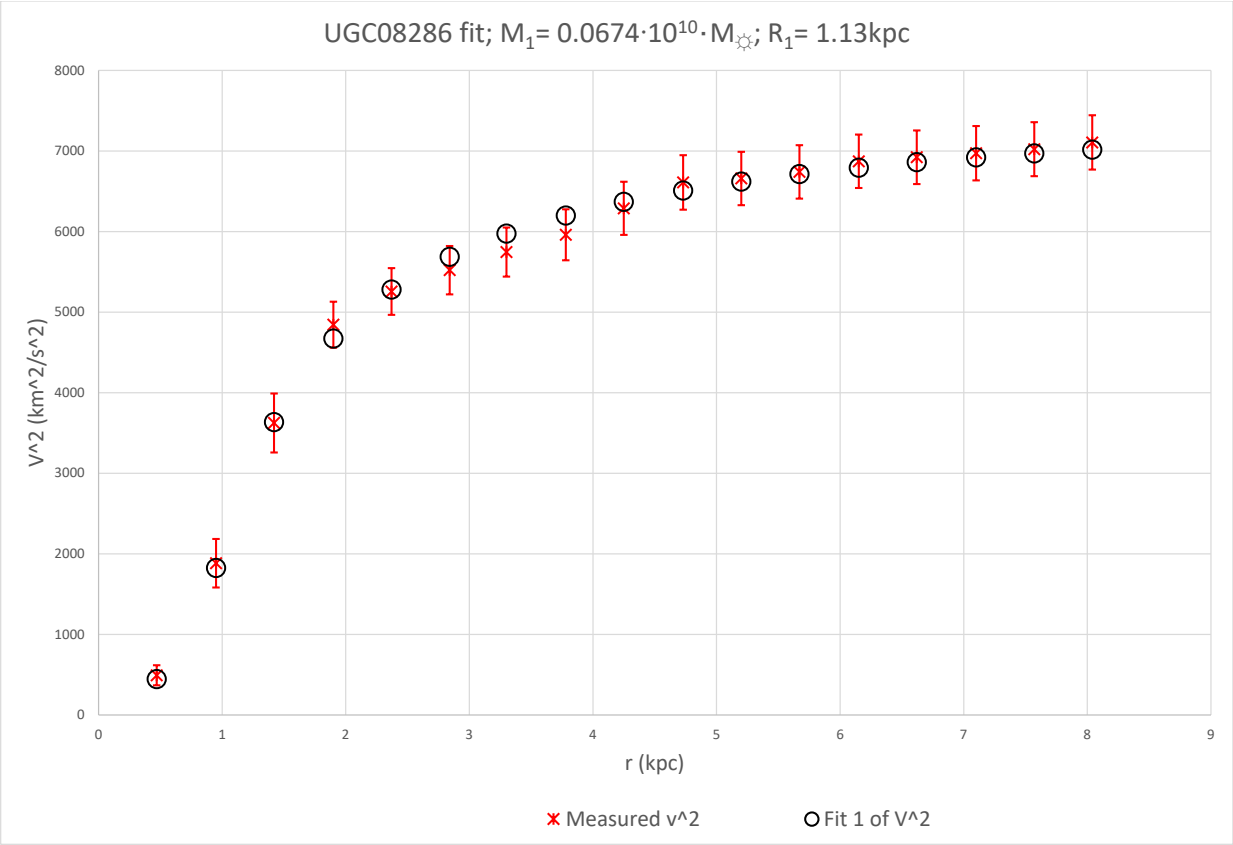

UGC07577 fit; M1= 0.013·10^10·M☼; R1= 1.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

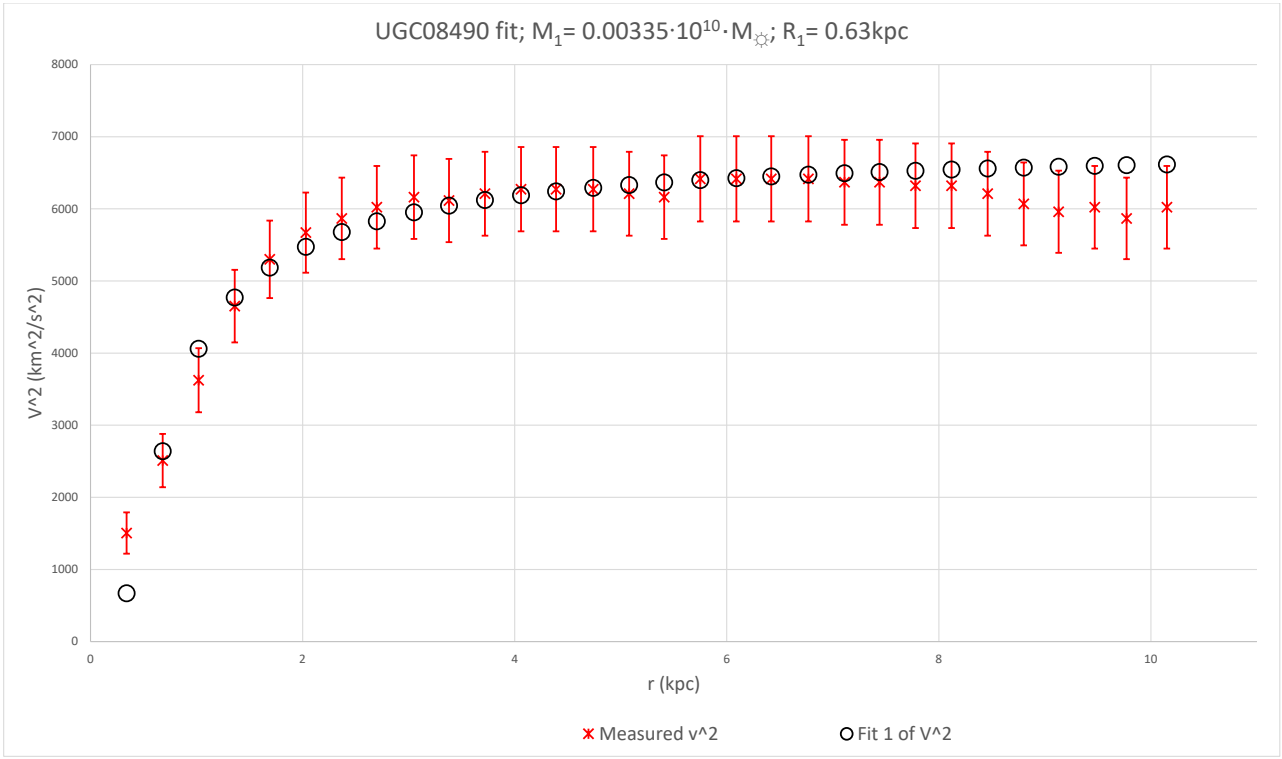

UGC07603 fit; M_1= 0.048·10^10·$M_\odot$; R_1= 1.1kpc;
M_2= 0.0523·10^10·$M_\odot$; R_2= 1.3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

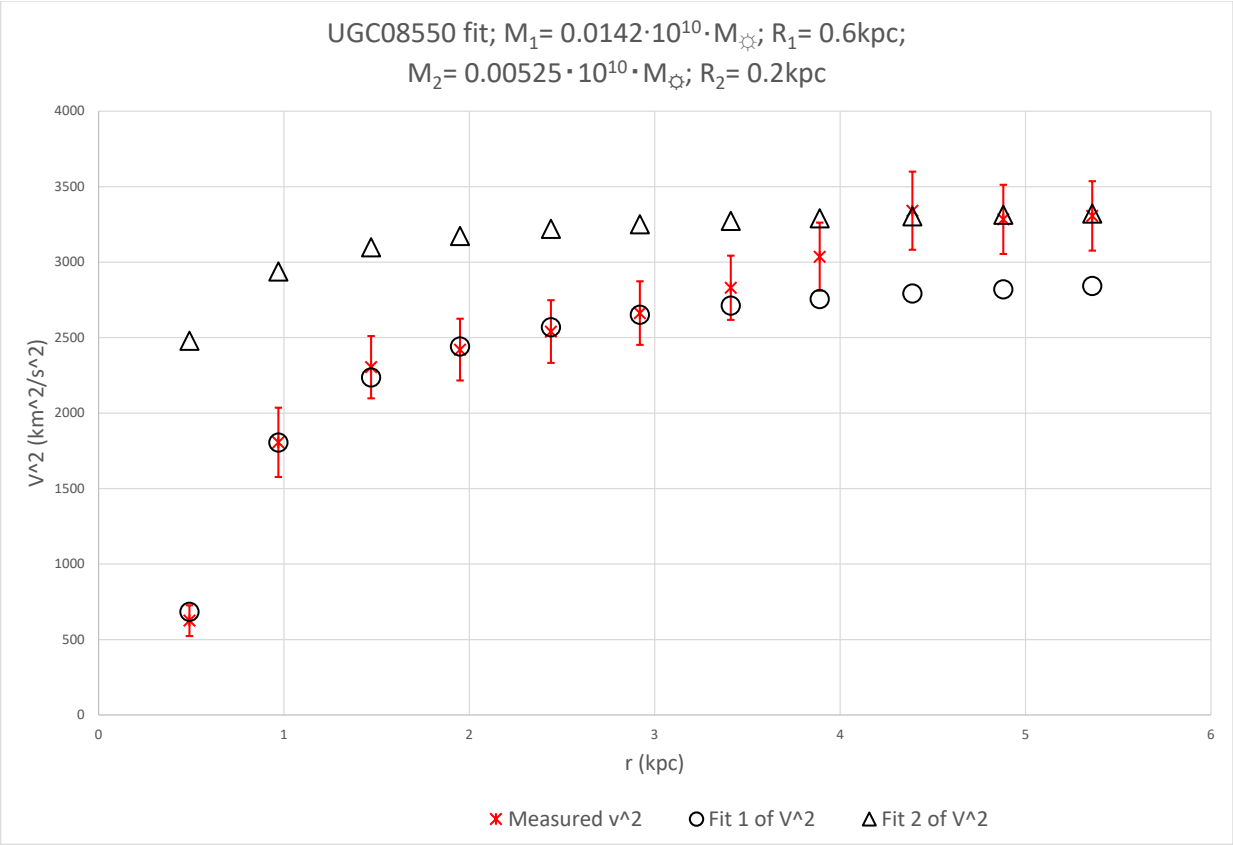

UGC07608 fit; M1= 0.12·10^10·M☼; R1= 2kpc; M2= 0.15·10^10·M☼; R2= 2.6kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

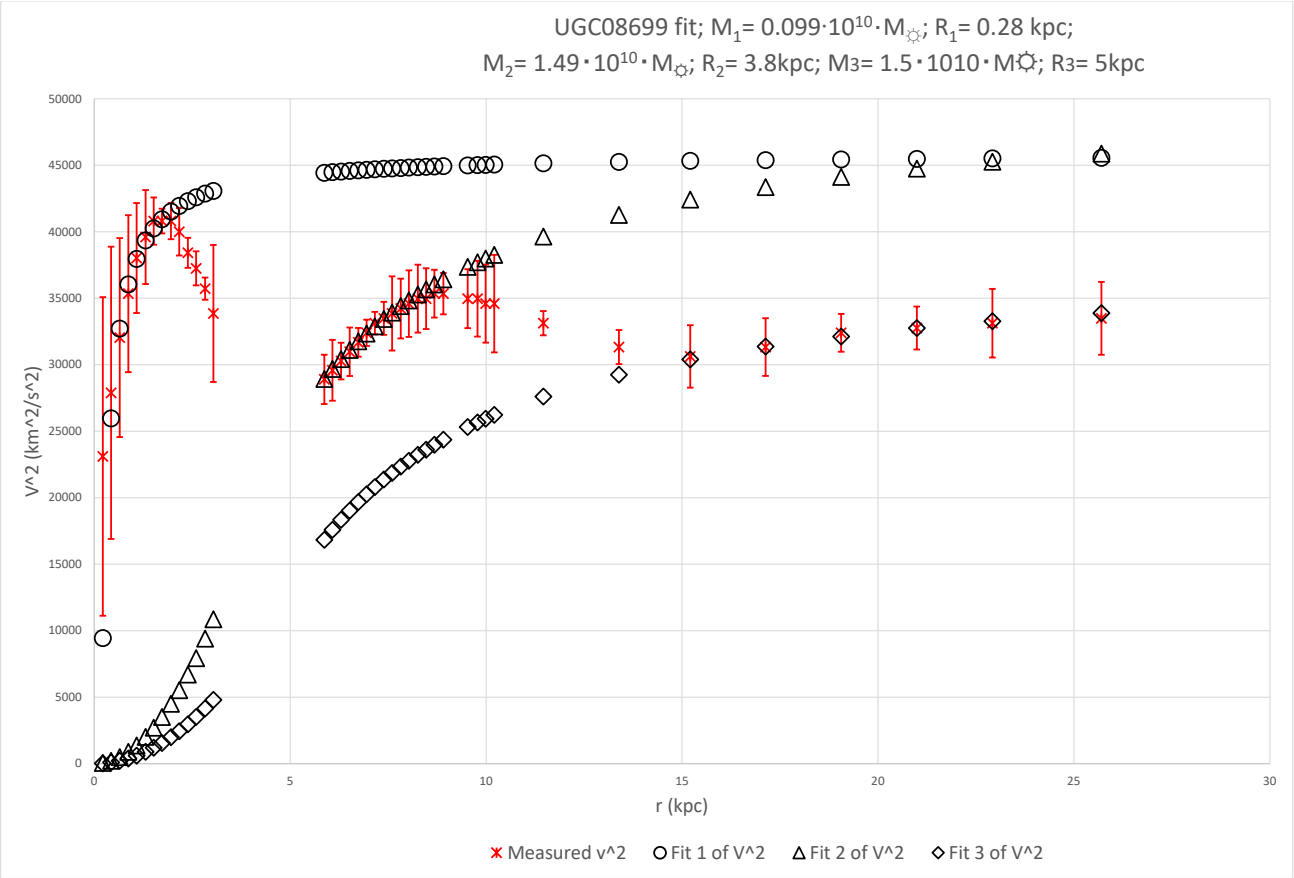

UGC07690 fit; M1= 0.0223·10^10·M☼; R1= 0.55kpc;
M2= 0.045·10^10·M☼; R2= 1.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

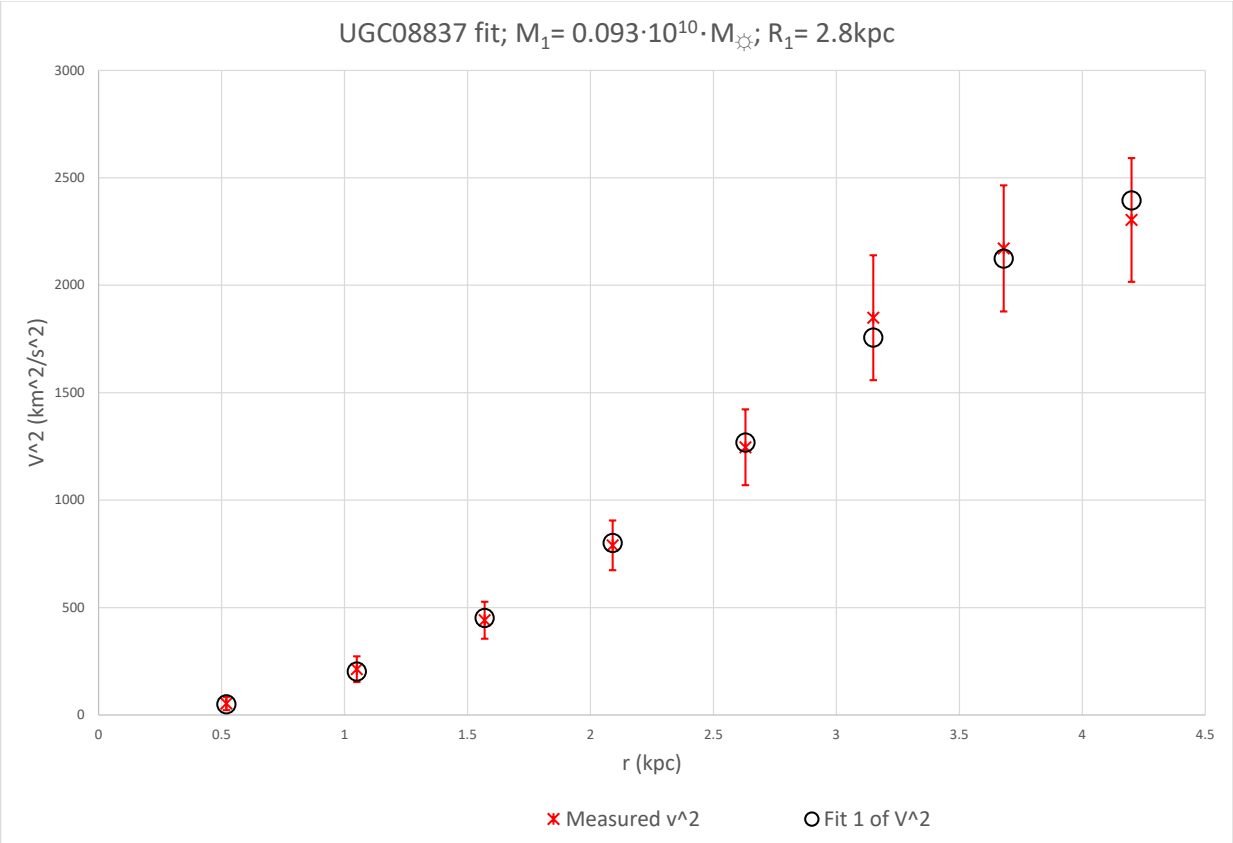

UGC07866 fit; M1= 0.0045·10^10·M☼; R1= 0.6 kpc;
M2= 0.021·10^10·M☼; R2= 1.45kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

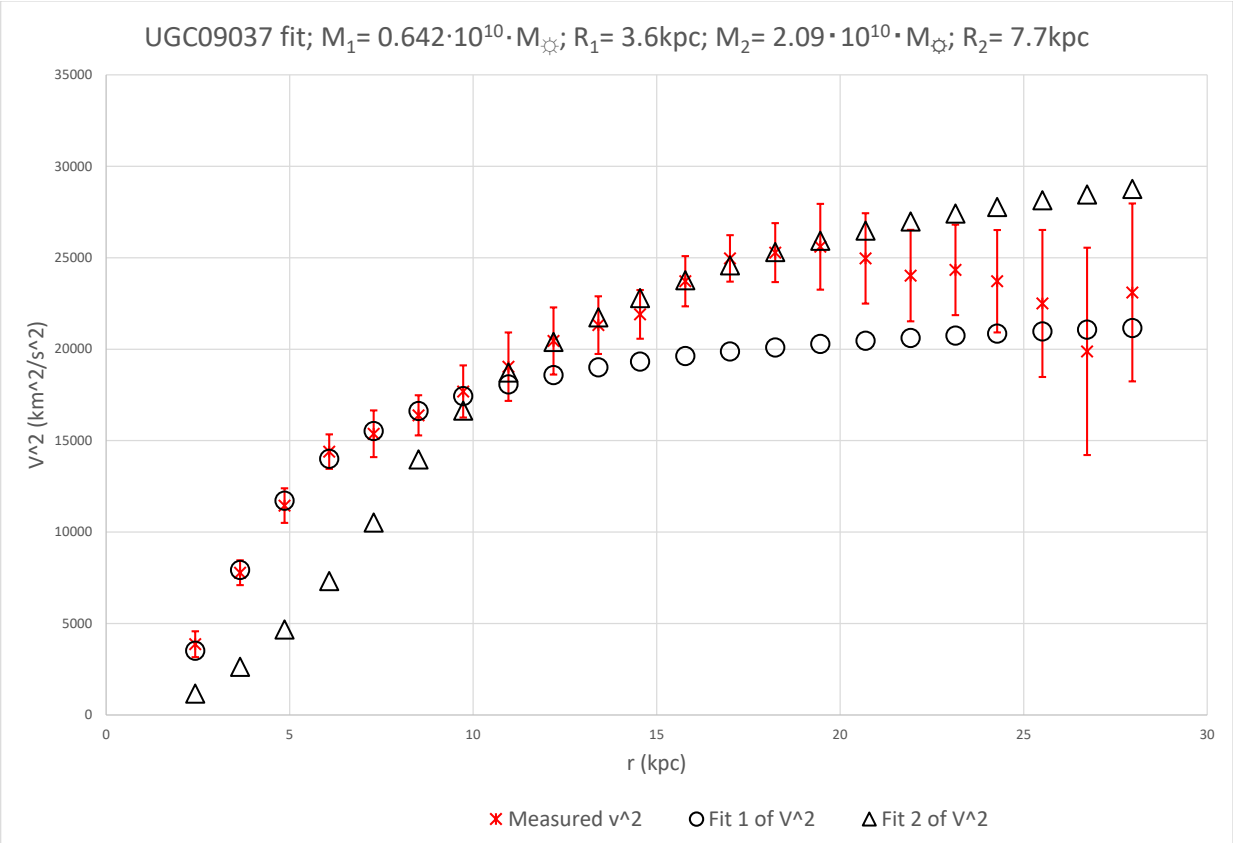

UGC08286 fit; M_1= 0.0674·10^{10}·$M_\odot$; R_1= 1.13kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

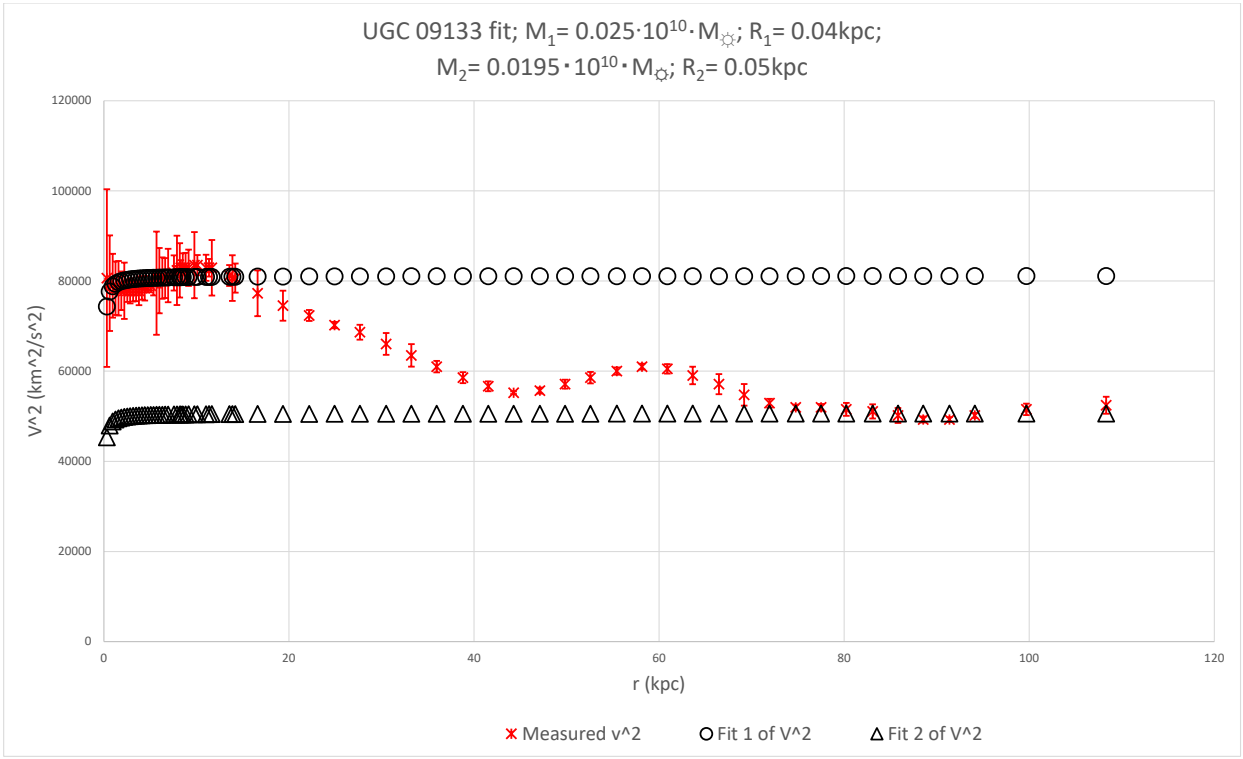

UGC08490 fit; M_1= 0.00335·10^{10}·$M_\odot$; R_1= 0.63kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

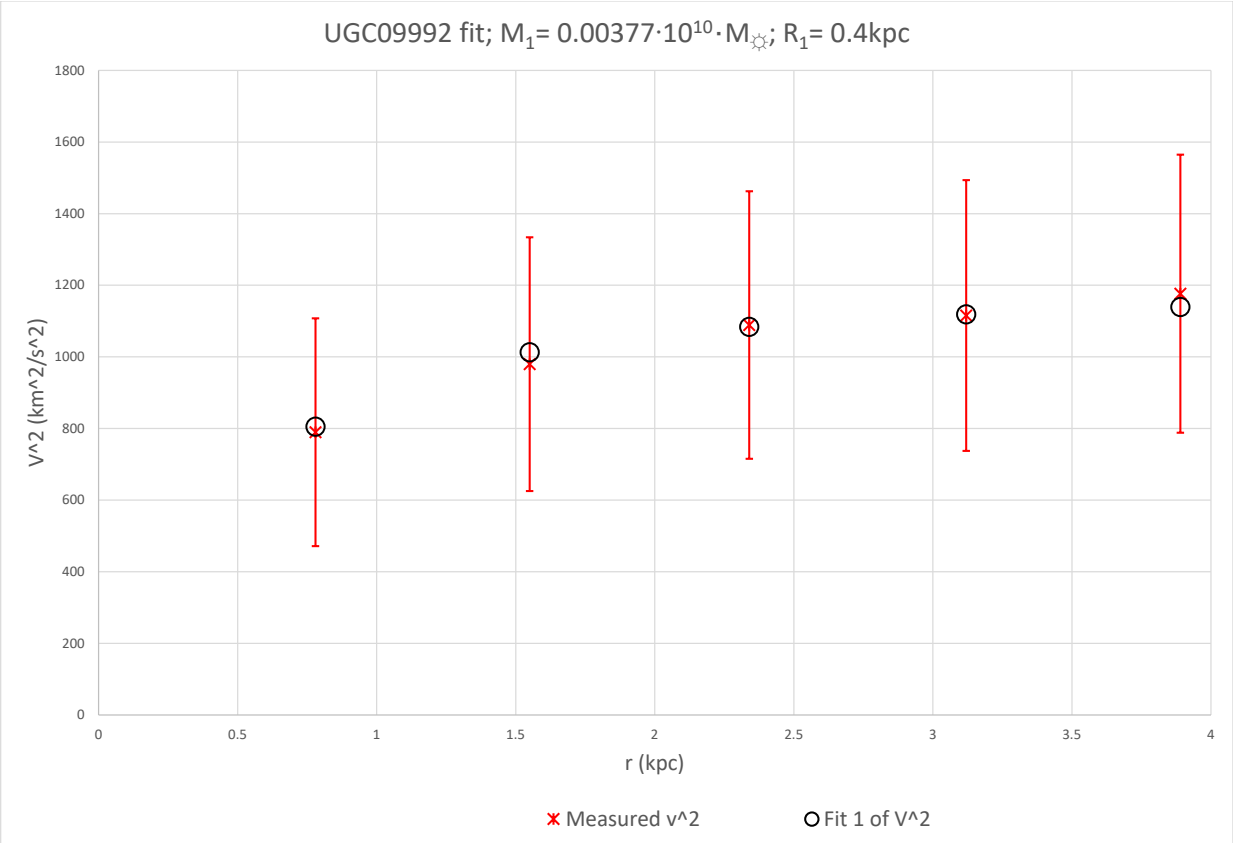

UGC08550 fit; M_1= 0.0142·10^{10}·$M_\odot$; R_1= 0.6kpc;
M_2= 0.00525·10^{10}·$M_\odot$; R_2= 0.2kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

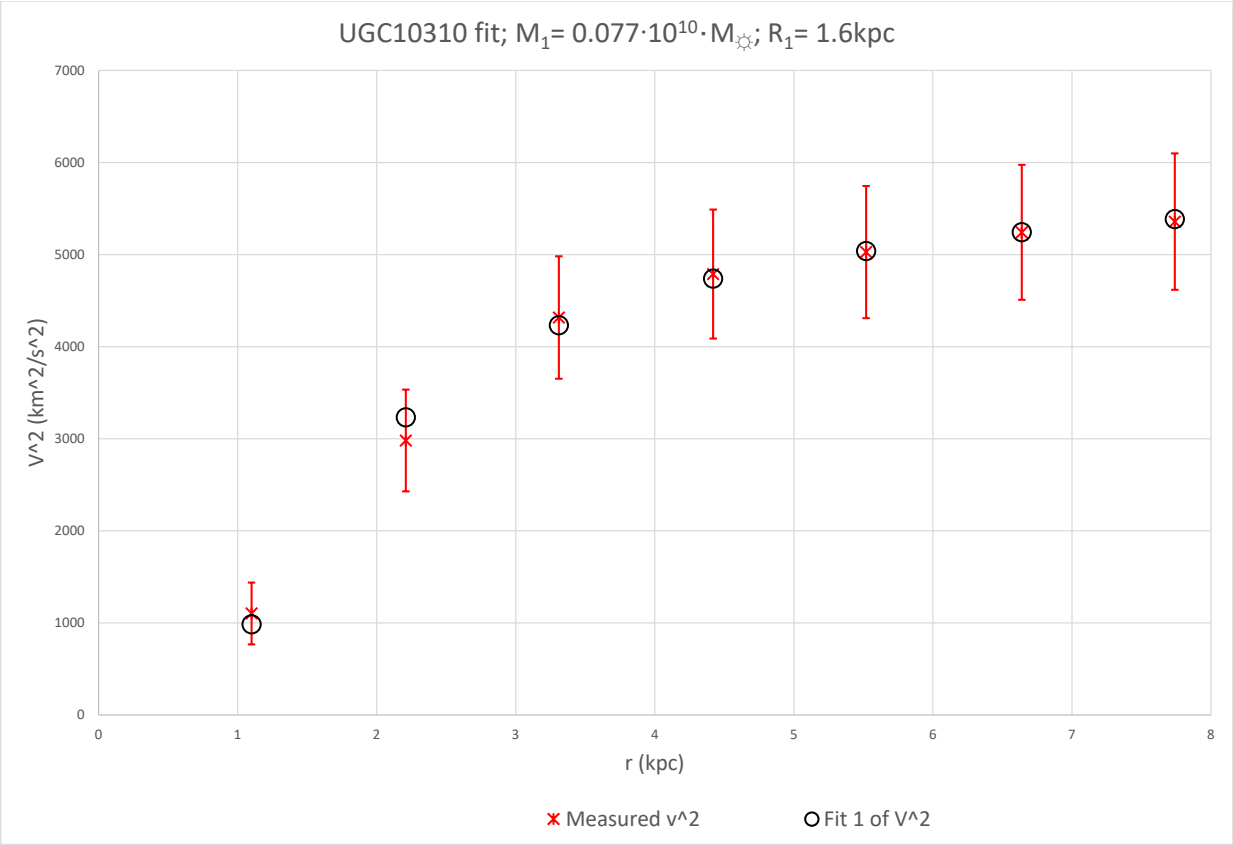

UGC08699 fit; M1= 0.099·10^10·M☼; R1= 0.28 kpc;
M2= 1.49·10^10·M☼; R2= 3.8kpc; M3= 1.5·1010·M☼; R3= 5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

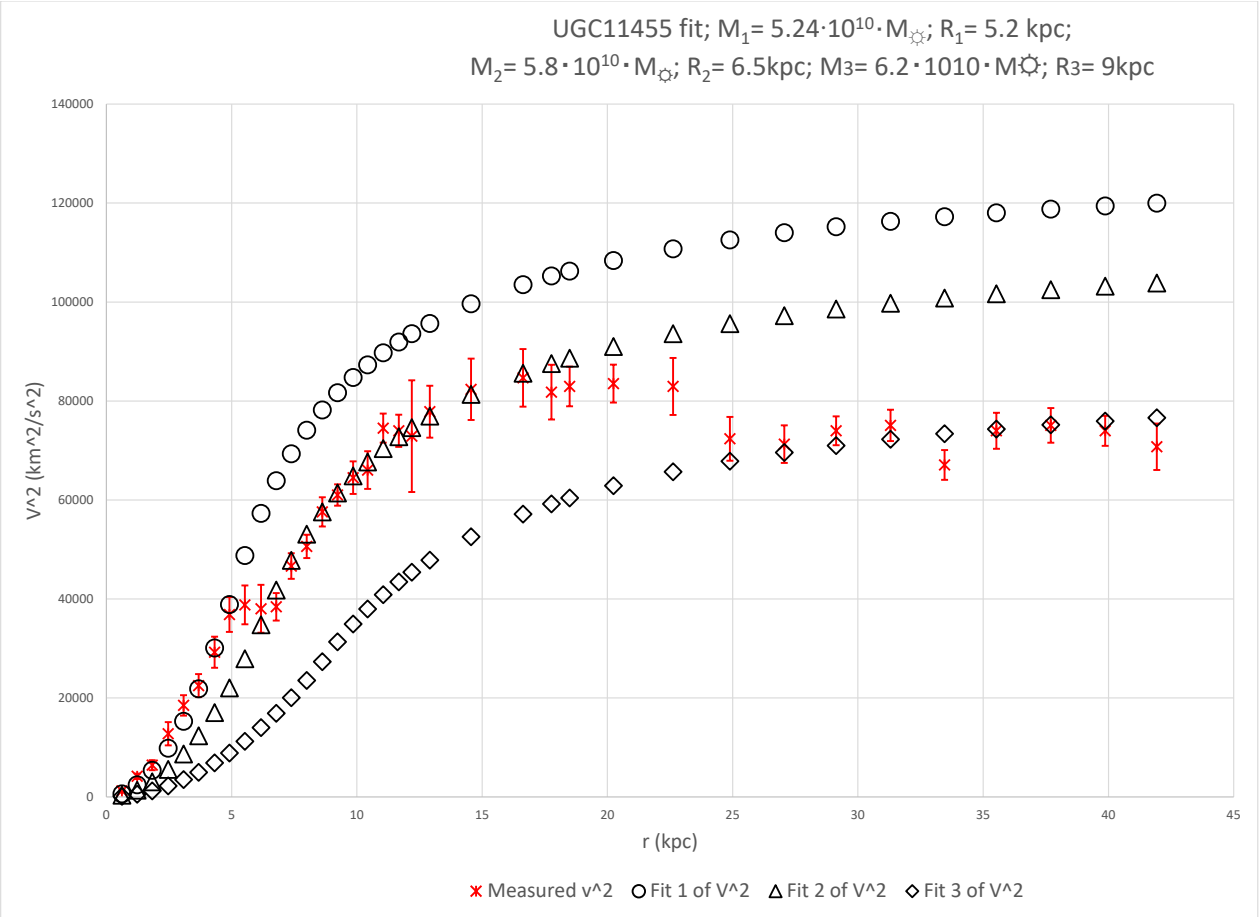

UGC08837 fit; M_1= 0.093·10^{10}·$M_\odot$; R_1= 2.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

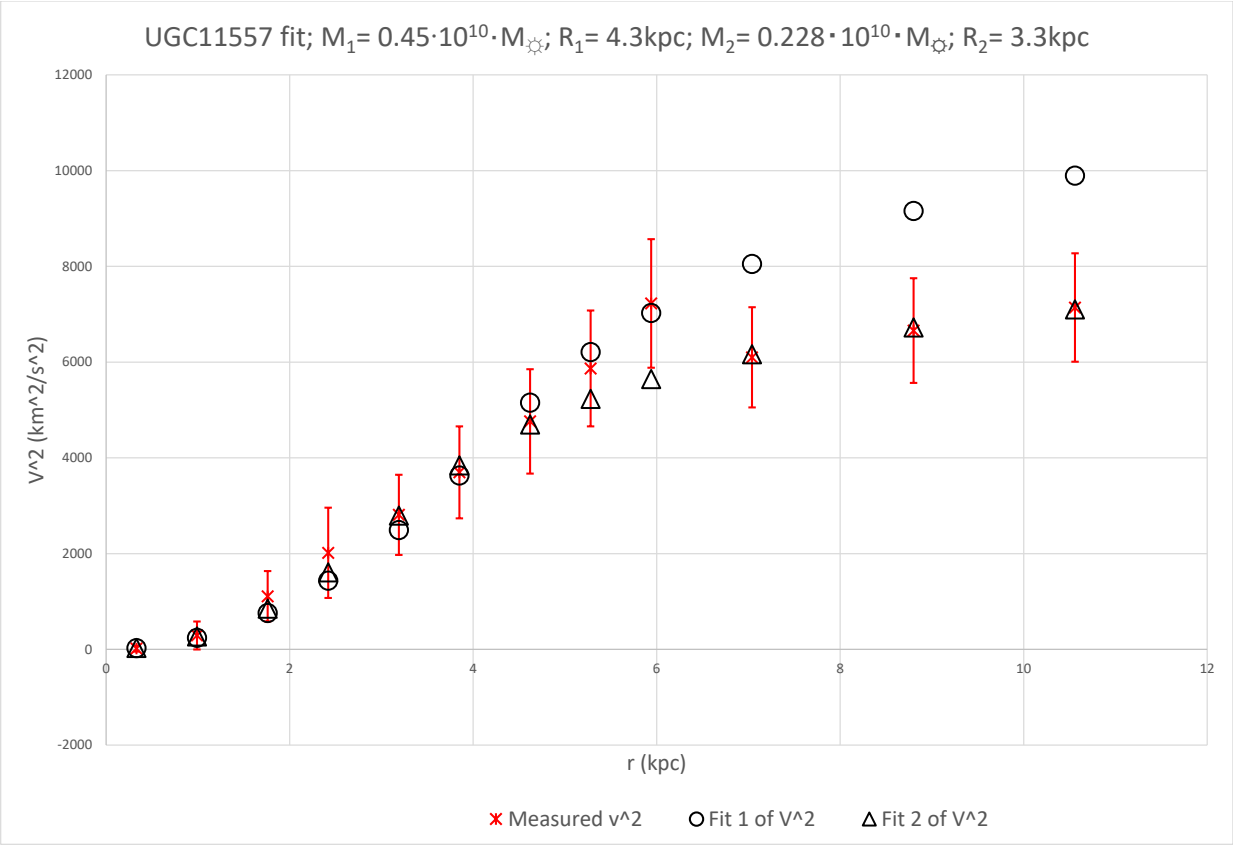

UGC09037 fit; M1= 0.642·10^10·M☼; R1= 3.6kpc; M2= 2.09·10^10·M☼; R2= 7.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

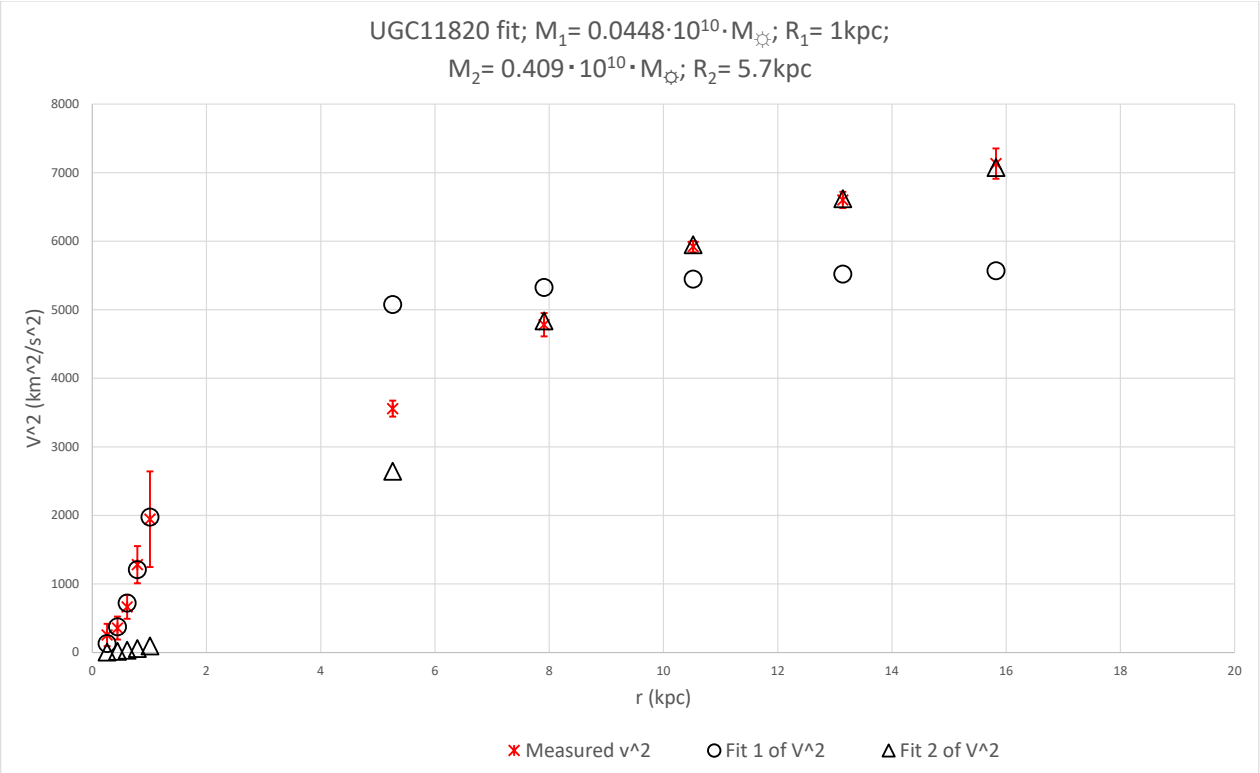

UGC 09133 fit; M1= 0.025·10^10·M☼; R1= 0.04kpc;
M2= 0.0195·10^10·M☼; R2= 0.05kpc
V^2 (km^2/s^2)
r (kpc)
0
20000
40000
60000
80000
100000
120000
0
20
40
60
80
100
120
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

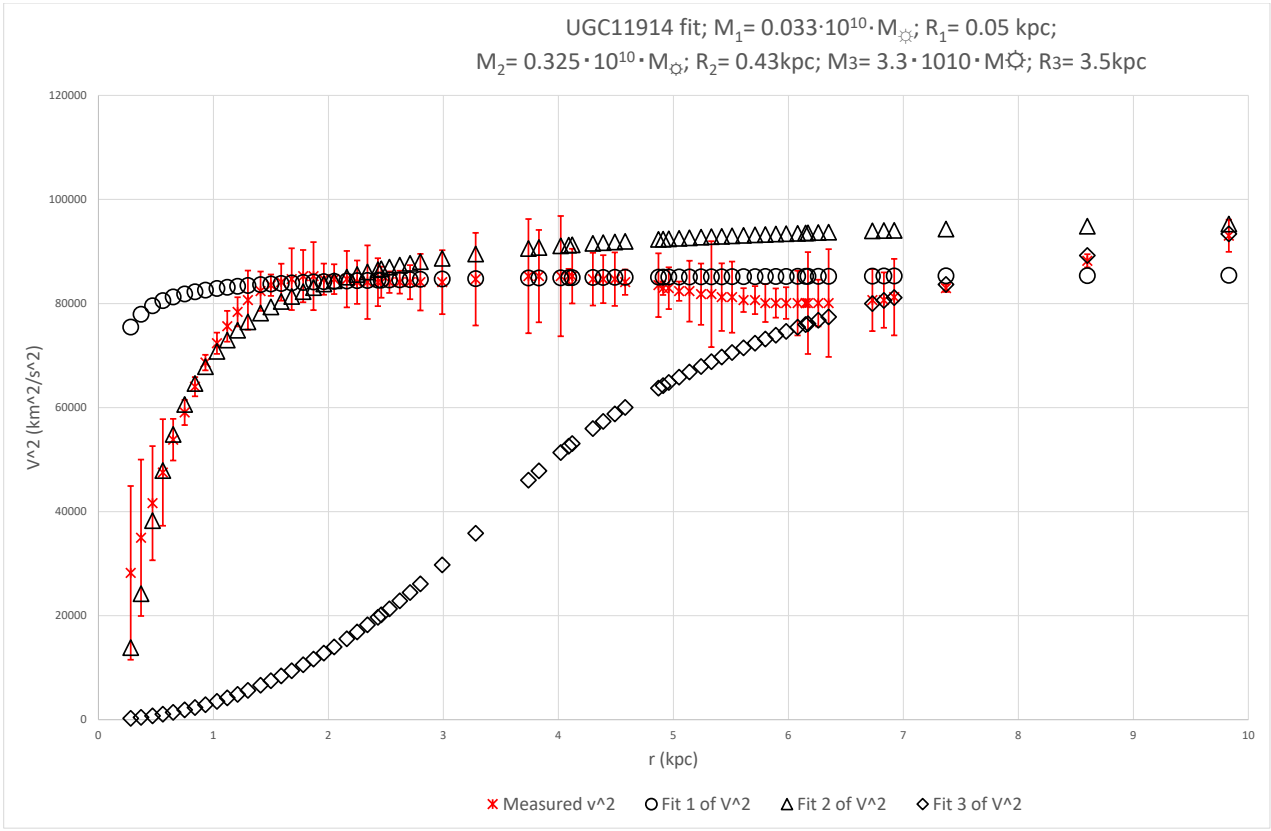

UGC09992 fit; M_1= 0.00377·10^{10}·$M_\odot$; R_1= 0.4kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

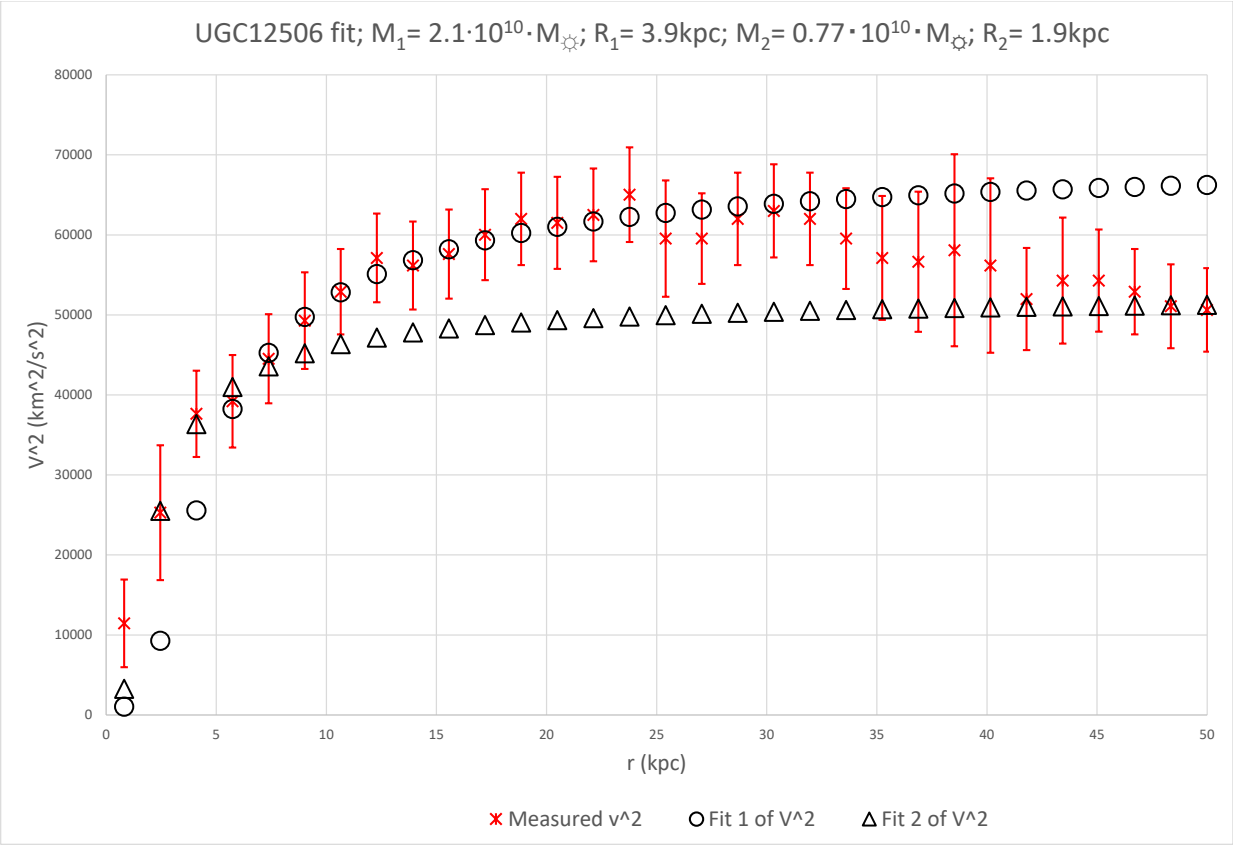

UGC10310 fit; M1= 0.077·10^10·M☼; R1= 1.6kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2

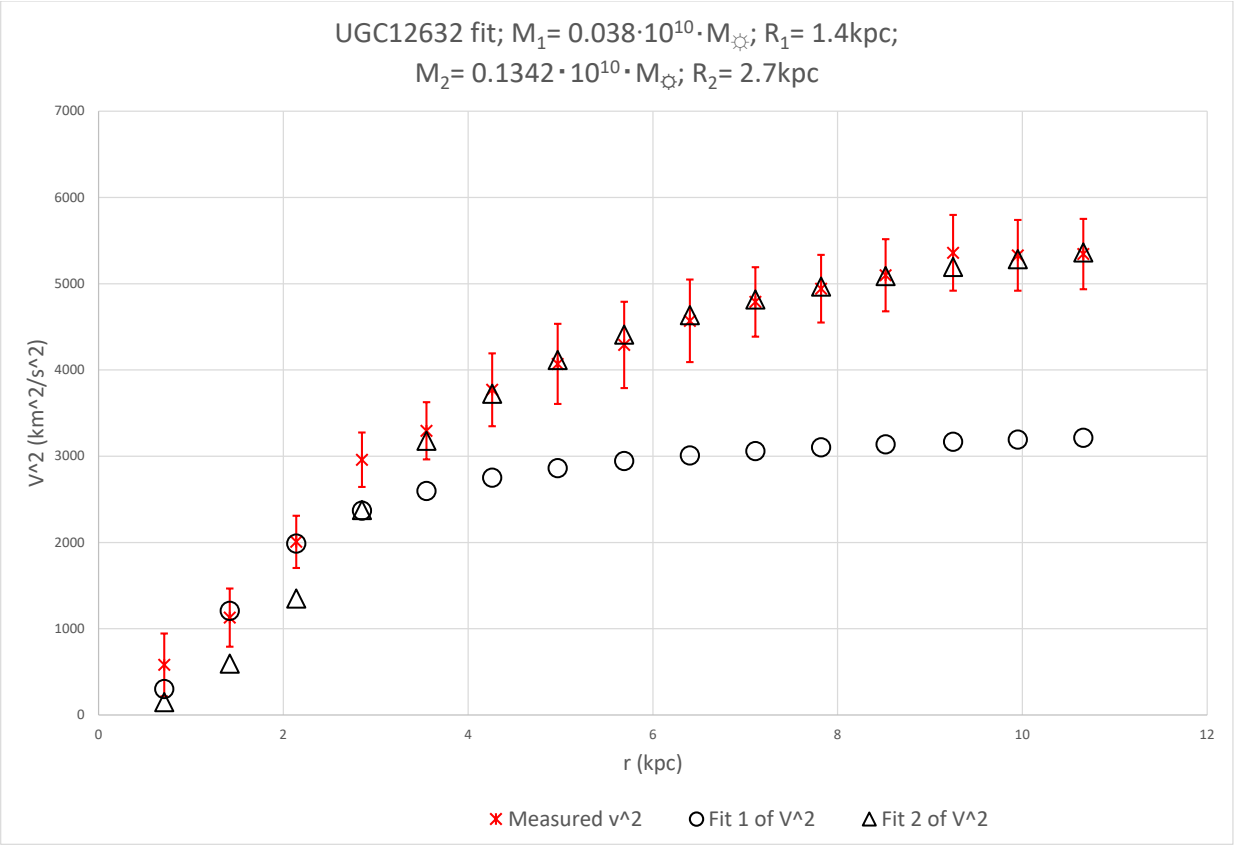

UGC11455 fit; M1= 5.24·10^10·M☼; R1= 5.2 kpc;
M2= 5.8·10^10·M☼; R2= 6.5kpc; M3= 6.2·1010·M☼; R3= 9kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

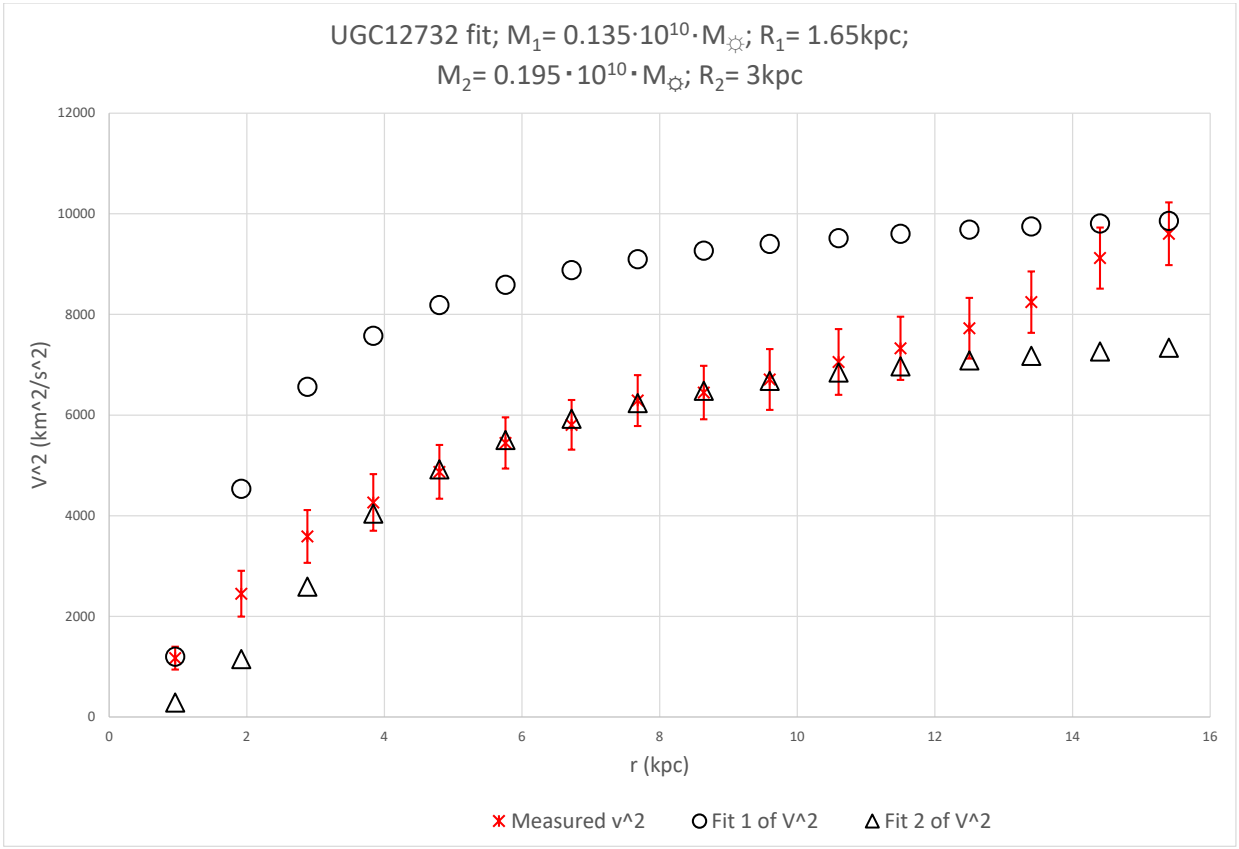

UGC11557 fit; M1= 0.45·10^10·M☼; R1= 4.3kpc; M2= 0.228·10^10·M☼; R2= 3.3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

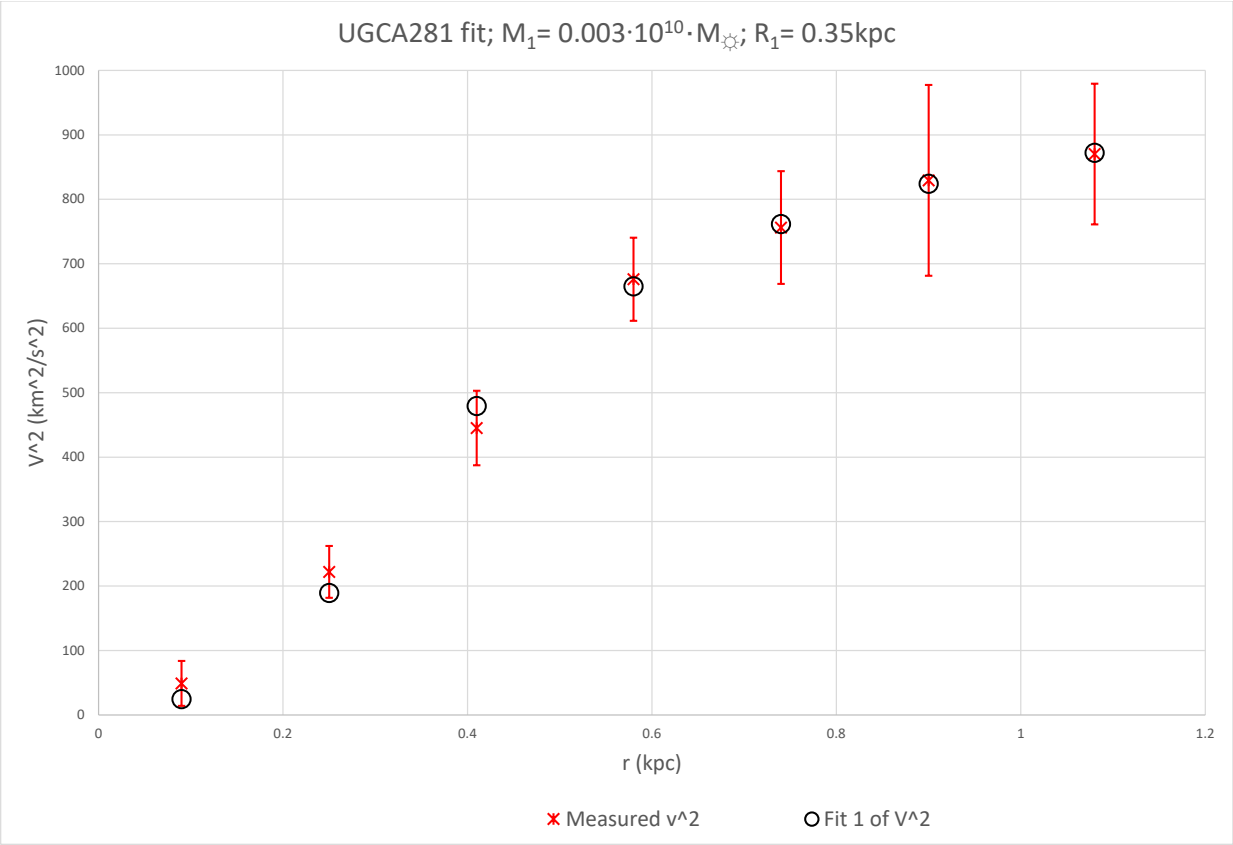

UGC11820 fit; M1= 0.0448·10^10·M☼; R1= 1kpc;
M2= 0.409·10^10·M☼; R2= 5.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2

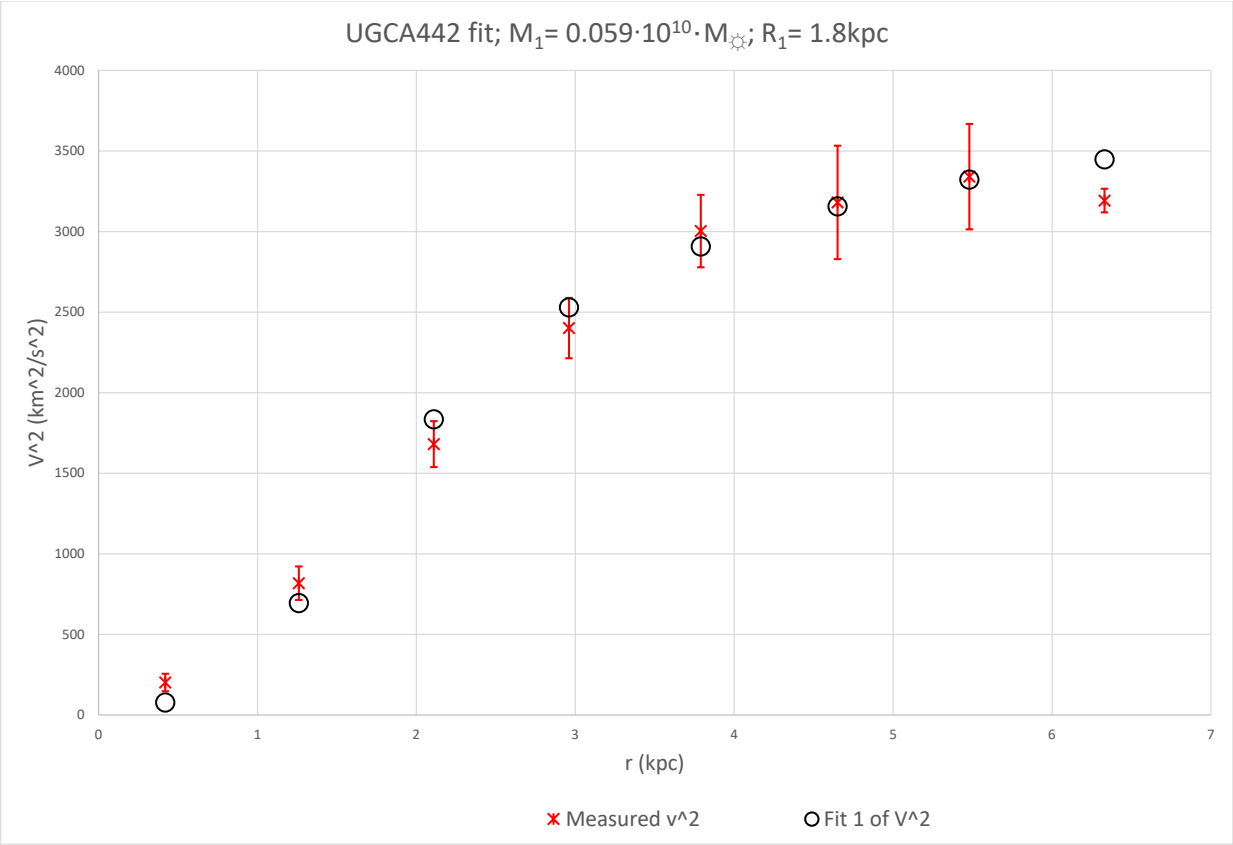

UGC11914 fit; M1= 0.033·10^10·M☼; R1= 0.05 kpc;
M2= 0.325·10^10·M☼; R2= 0.43kpc; M3= 3.3·1010·M☼; R3= 3.5kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2
Fit 3 of V^2

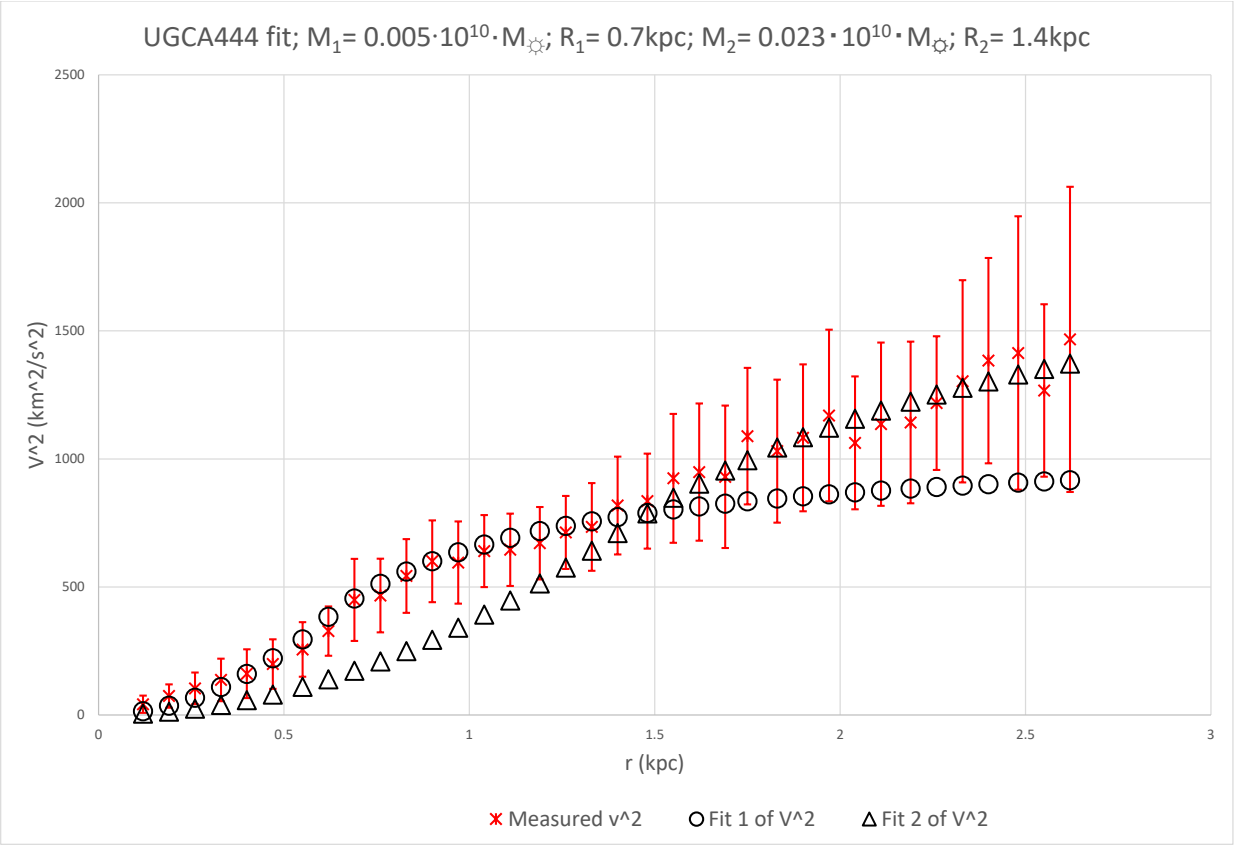

UGC12506 fit; M1= 2.1·10^10·M☼; R1= 3.9kpc; M2= 0.77·10^10·M☼; R2= 1.9kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2


UGC12632 fit; M_1= 0.038·10^10·$M_\odot$; R_1= 1.4kpc;
M_2= 0.1342·10^10·$M_\odot$; R_2= 2.7kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2


UGC12732 fit; M_1= 0.135·10^10·$M_\odot$; R_1= 1.65kpc;
M_2= 0.195·10^10·$M_\odot$; R_2= 3kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2


UGCA281 fit; M1= 0.003·10^10·M☼; R1= 0.35kpc
V^2 (km^2/s^2)
r (kpc)
0
100
200
300
400
500
600
700
800
900
1000
0
0.2
0.4
0.6
0.8
1
1.2
Measured v^2
Fit 1 of V^2


UGCA442 fit; M_1= 0.059·10^{10}·$M_\odot$; R_1= 1.8kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2


UGCA444 fit; M1= 0.005·10^10·M☼; R1= 0.7kpc; M2= 0.023·10^10·M☼; R2= 1.4kpc
V^2 (km^2/s^2)
r (kpc)
Measured v^2
Fit 1 of V^2
Fit 2 of V^2