Program Notes

by Kevin Chilton, Commander of Space Shuttle Mission STS-76

"Close and lock your visors."

These are the last instructions we will receive from the Launch Control Center at Kennedy Space Center before the lift-off of the Space Shuttle Atlantis. We, the crew of six, have only two minutes left on the ground.

The past two and a half hours have been busy yet routine, relaxing yet filled with anticipation. We are lying uncomfortably upside down in chairs stuck to the wall, wearing 60 pounds of gear – pressure suits, water-cooling garments, long underwear, survival gear, parachutes, and helmets – but all of us have taken a moment to nap during the countdown.

Now, with our visors down, it suddenly becomes quiet. Despite the crowded conditions on the flight deck, I feel amazingly alone.

Meanwhile, my brain is working at super speeds, reviewing for one last time the procedures which I have learned, hoping that I will not need to use any emergency measures in the eight and a half minute ride from zero to nearly 18,000 miles per hour. Checking gauges, computer displays, and checklists, I have one eye on the clock as the seconds tick down to zero.

We've all flown on the shuttle before. Still, the power and vibration of the three main engines throttling up to 1 million pounds of thrust at T-6 seconds is awesome. Cockpit gauges blur due to the shaking as the shuttle strains against the 8 bolts that hold her to the launch pad . . . and the clock seems to slow down.

Outside, a huge cloud of steam envelopes Atlantis, obscuring the view of our friends and loved ones who gaze intently across three miles of Florida swamp. And then, a man-made sunrise . . . at 3:13 a.m.

The solid motor rocket ignition slams us back in our seats and the vibration level increases tenfold. Out my left window, the battleship-gray launch tower turns golden from the bright exhaust plume. Seven million pounds of thrust blasts the 4 million pound shuttle/tank/booster combination off the launch pad. Four seconds after lift-off, just above the tower, we are already going 100 miles per hour and accelerating straight up!

Eight seconds . . . the shuttle begins to roll to point us toward the space station Mir, our destination 3 days from now. Thirty seconds . . . the main engines throttle back to minimum power and the shuttle shudders as it begins to fly faster than the speed of sound. At one and a half times the speed of sound, the main engines come back up to full power, and we sink further back into our seats. Two minutes . . . the incessant, violent shaking produced by the solid rocket motors begins to subside. Then a shower of sparks and flames fills the front windscreen as the boosters are rocketed away from the shuttle.

The vibration stops instantly, but the gauges assure us that the smooth-running shuttle main engines are still running. The gentle pressure against my chest will grow slowly over the next six and a half minutes until it feels as if a grown man is sitting on top of me, making breathing difficult and speaking impossible.

Out the side window, I have a breathtaking view of the world. The stark contrast between the beauty of the earth and the blackness of space is etched in my memory forever. From the ground, the shuttle dims from sight and joins the canvas of thousands of stars.

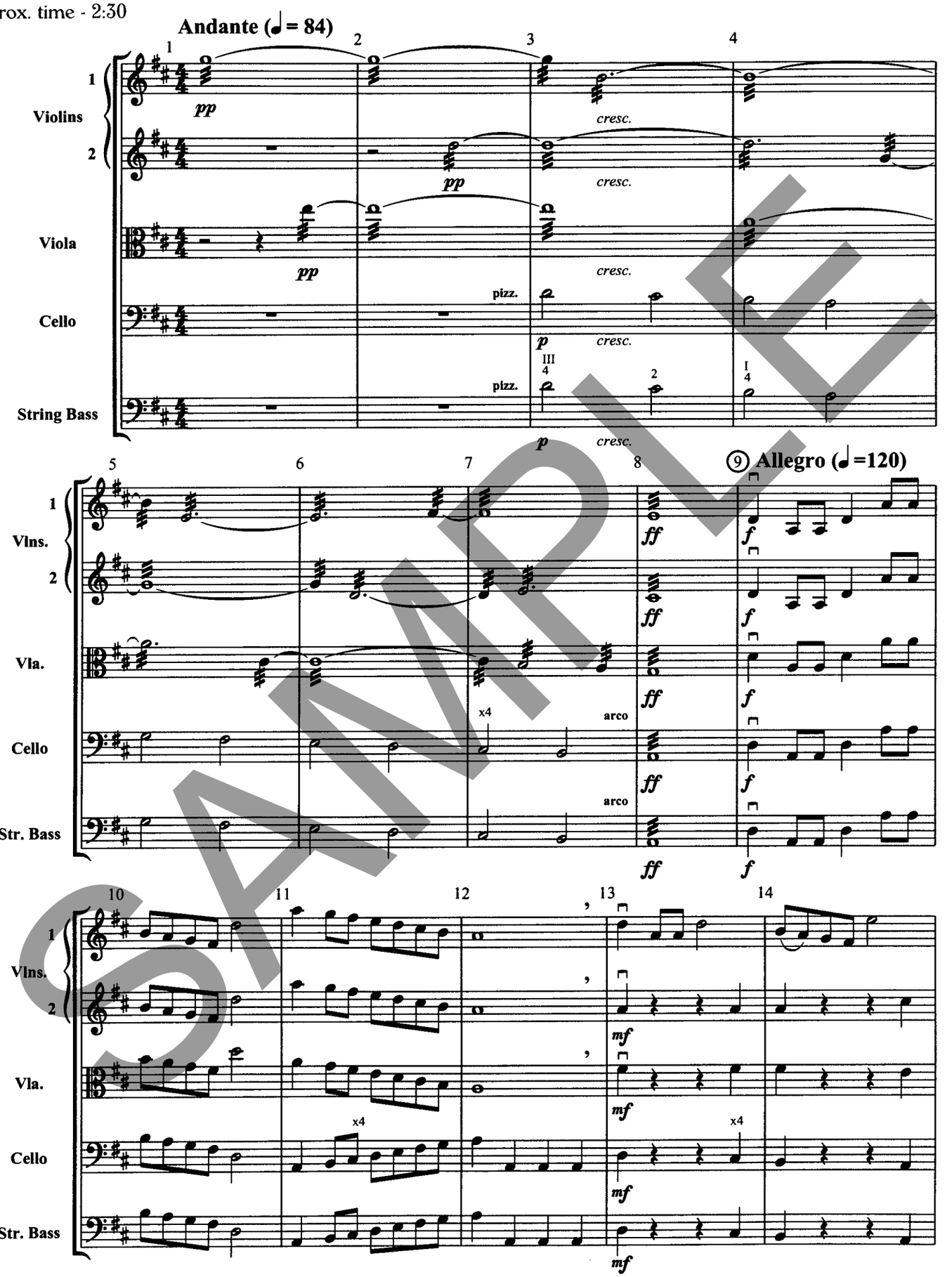
On board, the speedometer continues to accelerate. Fortunately, the ascent is smoother than any of the tortuous simulations we have experienced during training. Then, right on cue, at the proper speed and altitude, the engines quit. Upside down, 65 miles above the earth and coasting toward 160 miles up, we radio our thanks to the ground, and turn to congratulate each other. We are alive and on orbit . . . what could be better!

Lift-Off

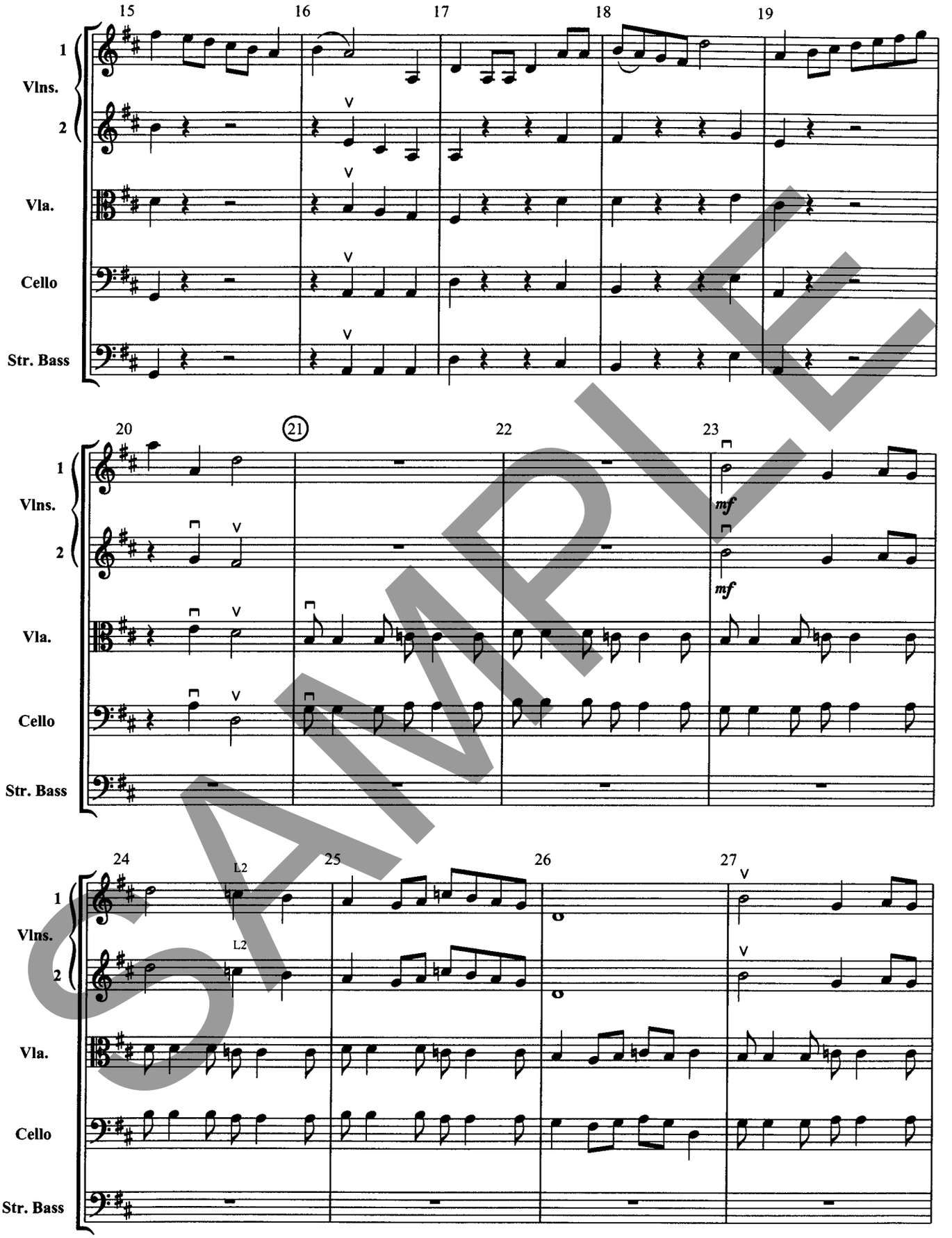
Full Conductor Score

Richard Bell

Approx. time - 2:30



* A part for 3rd Violin (Viola T.C.) is included in this set.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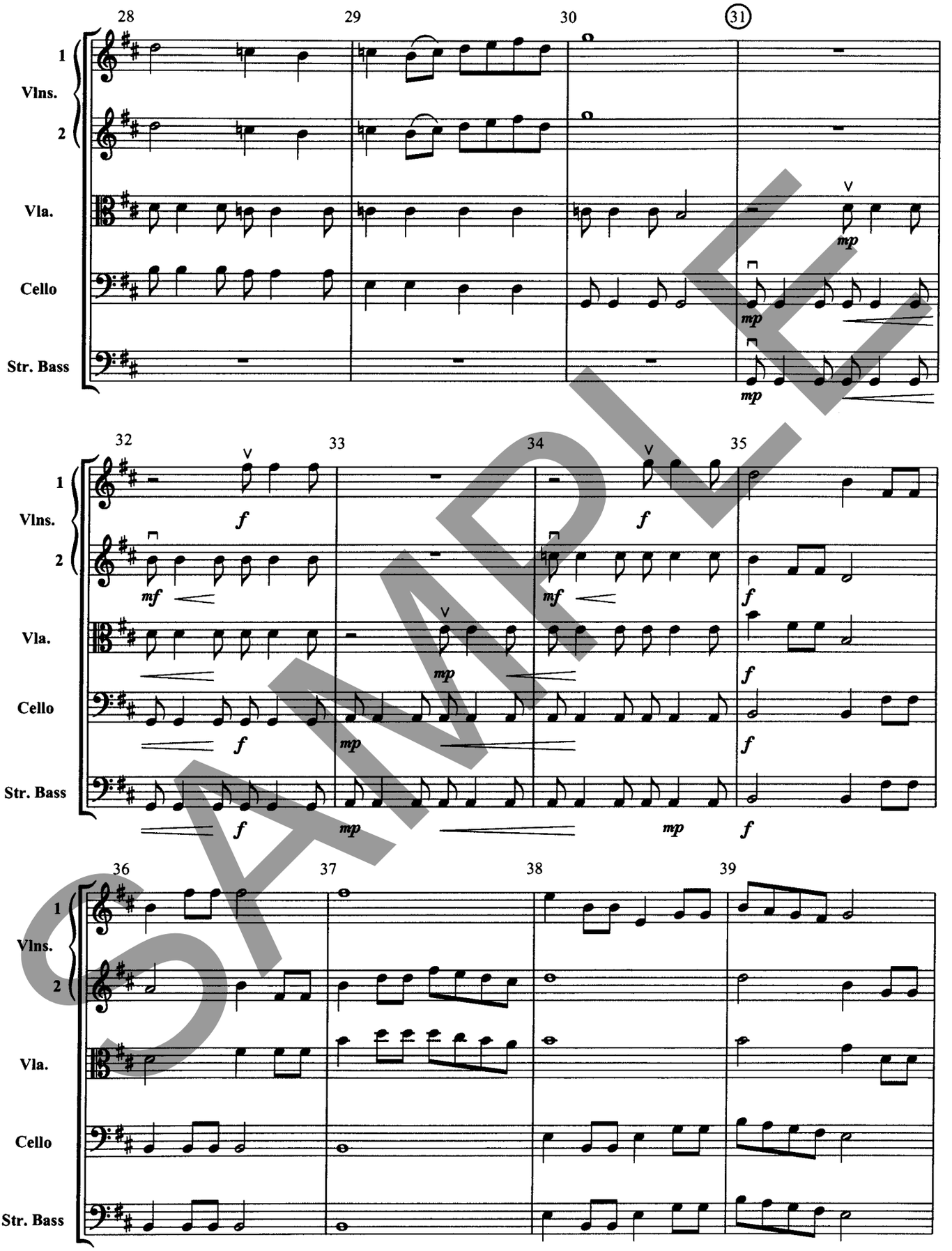
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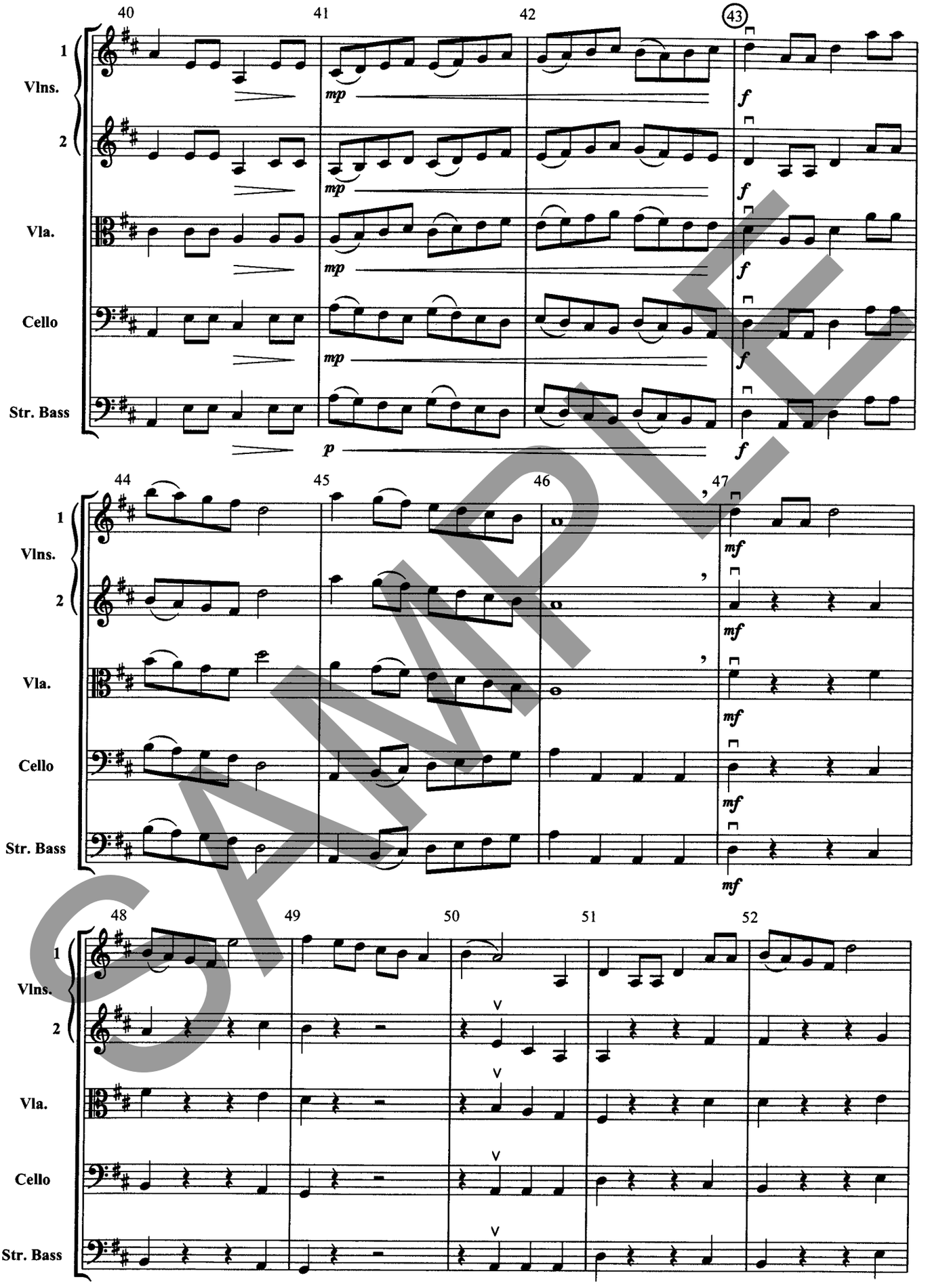
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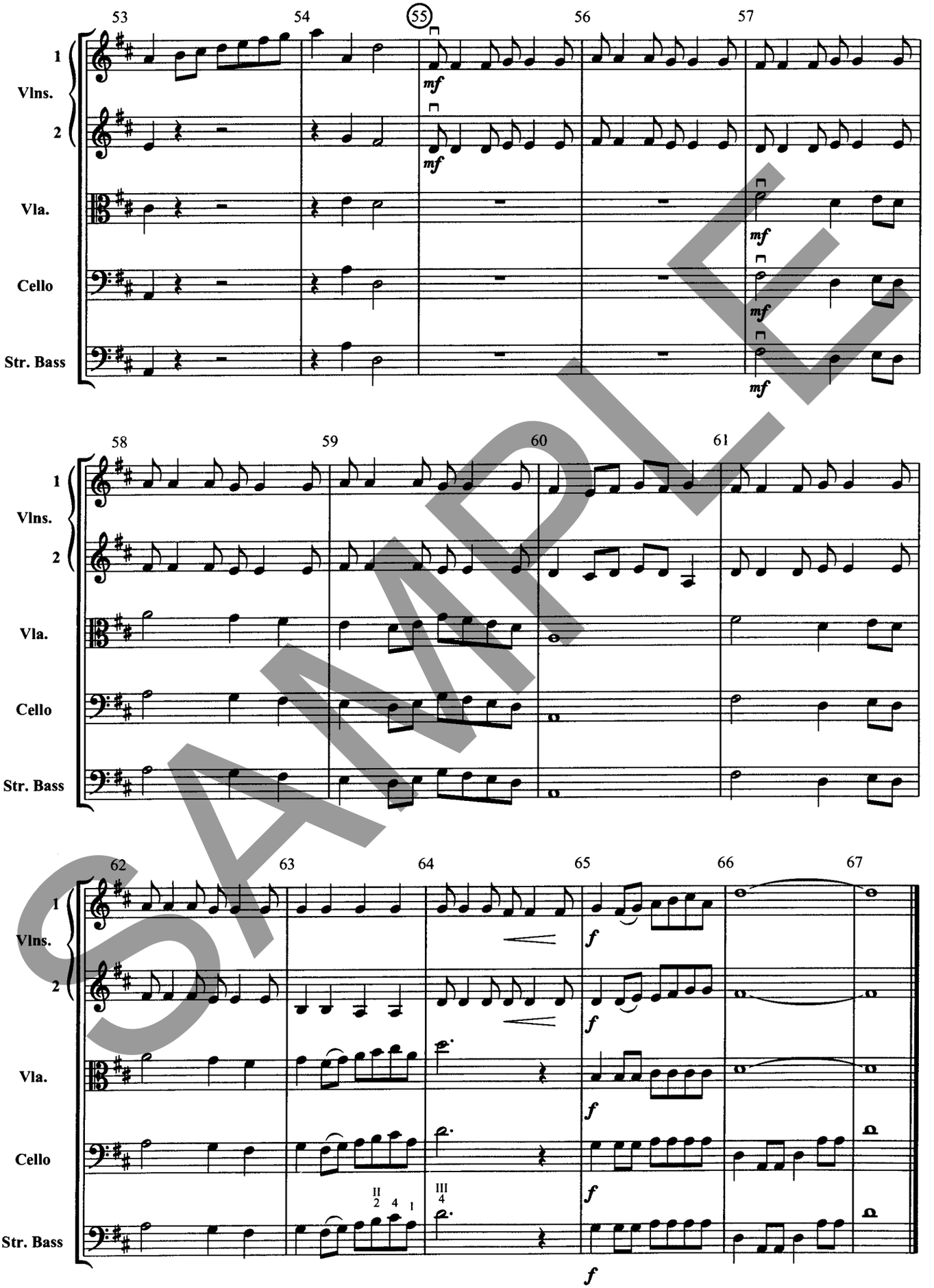
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III
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