Knowledge of temporal radon concentrations is critical for precise radionuclide monitoring and timely radionuclide release identification. Because radon levels vary with seismic activity and other major human-caused geological alterations, radon is beneficial for both early earthquake detection and the discrimination of underground weapons testing from other types of ground tremors. The consumer-grade RadonFTLab RadonEye is an affordable, accurate, and robust detector. Prior RadonEye evaluations were limited to 30 d, inadequate for observing reliability under different environmental conditions. This research expanded the evaluation to hourly intervals over 231 d. The research-grade Saphymo AlphaGUARD were deployed simultaneously with the RadonEyes in a poorly ventilated basement space with historical radon concentrations as high as 3,000 Bq m-3. The space was entered repeatedly and fans turned on and off as part of routine space utilization. This generated multiple distinct transients because of the significant ventilation changes. Both the space and soil radon spontaneously varied during the experiments as a result of diurnal and seasonal variations in pressure, temperature, and humidity. MathWorks MATLAB and Microsoft Excel were used for analysis. The longer time revealed that the RadonEye required regular Bluetooth connections. Without these, the internal timekeeping would deviate significantly from real-time until a connection was re-established. In addition, device data storage was limited, resulting in lost data. These issues were corrected by first applying a moving average to reduce noise. Then daily maximum concentration times were determined, used to correct any timekeeping errors, and help flag missing data. The root mean square errors between devices and the average sensitivities of each RadonEye will be presented. Despite complications with early prototypes, the RadonEye promises to be a reliable and accurate instrument for large-scale deployment for radon gas research.