

**List of the observed wavenumber of absorption bands of  $^{15}\text{N}_2$ .**

C: Wavelength region of 88.667nm - 91.413nm

Wavenumber

112780.7  
112777.2  
112775.9  
112773.7  
112770.2  
112766.9  
112763.7  
112763.2  
112759.4  
112758.3  
112753.9  
112751.3  
112748.1  
112743.9  
112742.6  
112741.4  
112738.0  
112735.7  
112734.9  
112734.0  
112732.2  
112729.4  
112728.2  
112725.5  
112720.7  
112716.3  
112710.4  
112708.3  
112706.2  
112705.7  
112704.6  
112702.9  
112699.0  
112697.7  
112696.1  
112694.5  
112693.2  
112692.1  
112691.0  
112686.2  
112681.9  
112677.0

Wavenumber	$c'_4(4) - X(0)$ $^{14}\text{N}^{15}\text{N}$	$b'(13) - X(0)$ $^{15}\text{N}_2$	$c'_4(4) - X(0)$ $^{15}\text{N}_2$
112672.1			
112670.1			
112663.8	R(3)		
112662.1	R(2)		
112659.8	R(1)		
112657.4	R(0)		
112655.8			
112650.2	P(1)		
112647.9			
112645.9	P(2)		
112640.9	P(3)		
112635.1	P(4)		
112630.1		R(1)R(0)	
112629.2	P(5)	R(2)	
112625.8		R(3)	
112624.1		P(1)	
112621.5		R(4)	
112618.7		P(2)	
112616.3		R(5)	
112614.0			
112611.6		P(3)	
112606.0		R(6)	
112602.8		P(4)	
112600.6			
112597.3			
112593.9			
112592.5		P(5)	
112590.8			
112588.1			
112586.3			
112584.2			
112582.9			
112580.6		P(6)	
112578.8			
112574.7			
112570.0			
112568.1		P(7)	
112564.5			
112561.7			
112561.3			
112557.9			
112556.5			
112546.9			R(3)R(4)R(5)R(6)R(7)
112544.8			R(2)R(8)
112542.7			R(1)R(9)
112540.4			R(0)
112539.7			R(10)
112533.1			P(1)

Wavenumber	$c'_4(4) - X(0)$ $^{15}\text{N}_2$
112530.8	R(11)
112529.0	P(2)
112524.0	P(3)
112518.6	P(4)
112515.0	
112512.5	P(5)
112508.7	
112506.1	P(6)
112499.1	P(7)
112495.4	
112491.6	P(8)
112483.3	P(9)
112474.5	P(10)
112471.0	
112465.1	P(11)
112454.0	P(12)
112449.7	
112438.2	P(13)
112427.1	
112423.9	
112414.9	
112412.1	
112404.4	
112396.6	
112387.9	
112358.3	
112353.8	
112352.3	
112352.1	
112350.1	
112349.2	
112346.3	
112343.5	
112342.1	
112340.6	
112338.2	
112336.6	
112334.7	
112333.5	
112327.5	
112324.7	
112316.9	
112313.7	
112304.6	
112301.0	
112286.4	
112269.8	
112251.7	

Wavenumber	$b'(12) - X(0)$ $^{14}\text{N}_2$	$b(16) - X(0)$ $^{15}\text{N}_2$	$b'(12) - X(0)$ $^{14}\text{N}^{15}\text{N}$
112240.3	R(1)R(0)		
112239.1	R(2)		
112235.7	R(3)		
112234.1	P(1)		
112230.6	R(4)		
112228.3	P(2)		
112223.5	R(5)		
112220.7	P(3)		
112214.6	R(6)		
112211.1	P(4)		
112204.0	R(7)		
112199.9	P(5)		
112192.3		R(1)R(0)	
112191.1		R(2)	
112188.0		Q(1)R(3)	
112187.0	P(6)		
112185.0		Q(2)	
112182.6		R(4)	
112180.7		P(2)	
112179.7		Q(3)	
112177.7	R(9)		
112176.0		R(5)	
112173.7		P(3)	
112173.2			
112172.8		Q(4)	
112171.6	P(7)		
112168.7			
112167.5		R(6)	
112164.3		Q(5)P(4)	
112160.7	R(10)		
112157.2		R(7)	
112154.0		Q(6)P(5)	
112145.3		R(8)	
112141.7		Q(7)P(6)	
112136.2	P(9)		
112131.5		R(9)	
112127.7		Q(8)P(7)	
112118.8			R(1)R(0)
112117.6			R(2)
112116.1			
112114.3			R(3)
112112.2	P(8)		P(1)
112109.2			R(4)
112107.1			P(2)
112102.5			R(5)
112099.7			P(3)
112094.0	P(9)		R(6)
112090.5			P(4)

Wavenumber	$b'(12) - X(0)$ $^{14}\text{N}_2$	$b'(12) - X(0)$ $^{14}\text{N}^{15}\text{N}$	$b'(12) - X(0)$ $^{15}\text{N}_2$	$b(15) - X(0)$ $^{14}\text{N}_2$
112086.9				
112083.5		R(7)		
112079.6		P(5)		
112075.2	P(10)			
112071.5		R(8)		
112066.9		P(6)		
112057.5		R(9)		
112053.7	P(11)			
112052.4		P(7)		
112041.8		R(10)		
112036.1		P(8)		
112031.9				
112031.3				
112024.4		R(11)		
112018.2		P(9)		
112005.4		R(12)		
111998.5		P(10)		
111993.4			R(1)R(0)	
111992.3			R(2)	
111989.0			R(3)	
111987.5			P(1)	
111984.2			R(4)	
111982.0			P(2)	
111977.6			R(5)	
111974.9			P(3)	
111969.4			R(6)	
111966.0			P(4)	
111959.4			R(7)	
111955.5			P(5)	
111947.7			R(8)	
111943.2			P(6)	
111934.4			R(9)	
111929.3			P(7)	
111919.3			R(10)	
111913.6			P(8)	
111902.5			R(11)	
111896.3			P(9)	
111884.1			R(12)	
111877.1			P(10)	
111874.5				R(1)R(0)
111873.0				R(2)
111871.8				
111870.1				R(3)Q(1)
111866.7				Q(2)
111863.8			R(13)	R(4)
111860.9				Q(3)
111856.4			P(11)	

Wavenumber	$b'(12) - X(0)$ $^{15}\text{N}_2$	$b(15) - X(0)$ $^{14}\text{N}_2$	$b'(11) - X(0)$ $^{14}\text{N}_2$	$b(15) - X(0)$ $^{15}\text{N}_2$
111853.7		Q(4)		
111848.5		R(6)		
111841.9	R(14)			
111834.0	R(15)			
111809.6	P(13)			
111783.8	P(14)			
111756.1	P(15)			
111722.2				
111721.0				
111717.9				
111714.6				
111712.6				
111710.3				
111709.3				
111705.9				
111703.2				
111702.3				
111697.1				
111693.5				
111686.9				
111682.9				
111681.3				
111677.6				
111675.3				
111674.4				
111670.3				
111668.2				
111660.8				
111656.0				
111651.7				
111639.9				
111621.5				
111583.1			R(1)R(0)	
111582.1			R(2)	
111578.8			R(3)	
111576.8			P(1)	
111573.8			R(8)	
111571.1			P(2)	
111565.8				R(1)R(0)
111564.7				R(2)
111561.6				R(3)Q(1)
111558.4				Q(2)
111556.6				R(4)
111553.4				Q(3)P(2)
111550.1				R(5)
111546.9				Q(4)P(3)
111544.8				

Wavenumber	$b'(11) - X(0)$ $^{14}\text{N}_2$	$b(15) - X(0)$ $^{15}\text{N}_2$	$b'(11) - X(0)$ $^{14}\text{N}^{15}\text{N}$
111542.0		R(6)	
111538.1		Q(5)P(4)	
111536.4	R(8)		
111534.9			
111532.0		R(7)	
111529.8	P(6)		
111527.9		Q(6)P(5)	
111522.3		R(9)	
111520.7		R(8)	
111515.9		Q(7)P(6)	
111507.2		R(9)	
111505.1			
111502.1		Q(8)P(7)	
111498.9	P(8)		
111492.3		R(10)	
111489.9	R(11)		
111487.0		Q(9)P(8)	
111480.7	P(9)		
111475.6		R(11)	
111468.6		P(9)	R(1)R(0)
111467.6			R(2)
111464.3			R(3)
111462.4			P(1)
111461.4			
111459.4			R(4)
111456.8			P(3)
111455.1			
111453.0			R(5)
111451.0		P(10)	
111449.5			P(3)
111446.5			
111444.8			R(6)
111441.3			
111440.5			P(4)
111438.6			
111437.1			
111434.8			R(7)
111430.8			
111429.6			P(5)
111427.7			
111426.5			
111423.2			R(8)
111421.5			
111417.2			P(6)
111414.8			
111409.7			R(9)
111407.0			

Wavenumber	$b'(11) - X(0)$ $^{14}\text{N}^{15}\text{N}$	$o_3(3) - X(0)$ $^{14}\text{N}^{15}\text{N}$	$b'(11) - X(0)$ $^{15}\text{N}_2$	$o_3(3) - X(0)$ $^{15}\text{N}_2$
111402.9	P(7)			
111399.2				
111394.9	R(10)			
111387.0	P(8)			
111382.8				
111381.5				
111378.9	R(11)			
111370.8		R(4)		
111369.7	P(9)	R(3)		
111367.8		R(2)		
111365.7		R(1)		
111364.5				
111363.1		R(0)		
111361.2				
111359.0		Q(1)		
111358.1		Q(2)		
111356.4		Q(3)		
111354.1		Q(4)		
111352.9				
111351.2			R(1)R(0)	
111349.8	P(10)		R(2)	
111347.0			R(3)	
111345.0			P(1)	
111342.3			R(4)	
111339.6			P(2)	
111336.0			R(5)	
111332.6			P(3)	
111330.0				
111328.1			R(6)	
111327.6				
111325.1				
111323.9			P(4)	
111321.7				
111320.9				
111320.3				
111318.6			R(7)	
111313.5			P(5)	
111309.3				
111307.3			R(8)	
111304.9				
111301.4			P(6)	
111294.8			R(9)	
111287.7			P(7)	
111281.2				R(4)R(5)R(6)
111280.4				R(3)R(7)R(8)
111278.7				R(2)
111278.1				R(9)
111276.5				R(1)
111275.4				



Wavenumber	$b'(11) - X(0)$ $^{15}\text{N}_2$	$o_3(3) - X(0)$ $^{15}\text{N}_2$	$b(14) - X(0)$ $^{14}\text{N}_2$
111273.8		R(0)	
111272.4	P(8)		
111270.1			
111269.3			
111267.4			
111265.3			
111262.6		Q(5)P(2)	
111261.1			
111259.3		Q(6)	
111257.9		P(3)	
111255.6	P(9)	Q(7)	
111252.4		P(4)	
111251.4		Q(8)	
111246.6		Q(9)P(5)	
111244.1			
111241.1		Q(10)	
111240.5		P(6)	
111236.9	P(10)		
111235.3			
111233.3		P(7)	
111229.0			
111225.7		P(8)	
111225.1			
111221.8			
111217.4		P(9)	
111214.4			
111211.6			R(1)R(0)
111210.8			R(2)
111209.0		P(10)	
111207.5			R(3)Q(1)
111206.4			
111203.8			Q(2)
111202.7			R(4)
111199.5		P(11)	Q(3)P(2)
111196.9			
111195.8			R(5)
111193.6			
111191.7			Q(4)P(3)
111187.8			R(6)
111183.8			
111182.6			Q(5)P(4)
111180.7			
111179.7			
111171.7			Q(6)P(5)
111168.4			
111159.4			Q(7)P(6)
111144.9			Q(8)
111144.0			P(7)
111135.0			

Wavenumber	$b(14) - X(0)$ $^{14}\text{N}_2$
111132.5	
111130.5	
111128.7	Q(9)
111127.2	P(8)
111125.2	
111121.3	
111119.7	
111117.0	
111114.2	
111103.0	
111094.1	
111079.4	
111065.9	
111065.1	
111061.6	
111058.3	
111056.9	
111054.1	
111053.3	
111050.4	
111046.5	
111042.2	
111037.7	
111035.4	
111034.1	
111032.2	
111027.3	
111020.7	
111015.0	
111012.2	
111007.4	
111007.0	
111004.7	
111003.2	
111001.3	
111000.2	
110998.9	
110995.2	
110994.8	
110993.2	
110992.1	
110988.6	
110986.1	
110984.6	
110982.4	
110980.5	
110979.7	
110977.5	

Wavenumber	$b'(10) - X(0)$ $^{14}\text{N}_2$	$b(14) - X(0)$ $^{15}\text{N}_2$
110975.3		
110970.4		
110968.9		
110967.0		
110945.1	R(2)R(1)R(0)	
110943.0	R(3)	
110940.7		
110939.8	R(4)	
110938.1	P(1)	
110936.6		
110934.9	R(5)	
110932.5	P(2)	
110929.2	R(6)	
110925.5	P(3)	
110922.0	R(7)	
110916.0		R(1)R(0)
110915.2		R(2)
110912.1		R(3)Q(1)
110908.8		Q(2)
110907.7		R(4)
110903.9		Q(3)P(2)
110901.4		R(5)
110897.4		Q(4)P(3)
110893.3		R(6)
110891.9		
110889.0		Q(5)P(4)
110887.7		
110884.0		R(7)
110878.8		Q(6)P(5)
110872.8		R(8)
110869.1		
110867.3		Q(7)P(6)
110864.9		
110860.0		R(9)
110854.0		Q(8)
110853.2		P(7)
110845.5		R(10)
110839.4		Q(9)
110837.8		P(8) 110833.6
110831.6		
110829.2		R(11)
110828.1		
110827.0		

Wavenumber	$b(14) - X(0)$ $^{15}\text{N}_2$	$b'(10) - X(0)$ $^{15}\text{N}_2$
110823.1	Q(10)	
110821.1	P(9)	
110819.8		
110817.5		
110815.6		
110814.9		
110810.7		
110809.1		
110806.6		
110804.6		
110802.4	P(10)	
110799.5		
110796.8		
110794.2		
110792.1		
110789.6		
110787.5		
110785.8		
110785.2		
110782.0	P(11)	
110773.5		
110763.2		
110759.9	P(12)	
110745.4		
110742.4		
110740.0		
110736.6	P(13)	
110729.8		
110719.9		R(2)R(1)R(0)
110717.6		R(3)
110713.8		P(1)R(4)
110709.5		R(5)
110708.5		P(2)
110706.5		
110703.6		R(6)
110701.6		P(3)
110696.7		R(7)
110693.6		P(4)
110691.9		
110688.9		R(8)
110684.1		P(5)
110680.6		R(9)
110679.4		
110677.6		
110674.6		
110673.2		P(6)
110669.4		

Wavenumber	$b'(10) - X(0)$
	<sup>15</sup> N <sub>2</sub>
110664.3	R(10)
110661.9	
110661.2	P(7)
110660.0	
110658.1	
110656.3	
110652.5	
110651.9	
110647.9	P(8)
110646.2	
110644.5	
110642.3	
110639.0	
110636.0	
110633.6	P(9)
110628.9	
110621.0	
110618.4	P(10)
110615.5	
110613.2	
110612.0	
110610.1	
110607.6	
110604.8	
110602.6	P(11)
110601.7	
110598.5	
110594.2	
110593.3	
110592.2	
110590.6	
110588.8	
110586.9	
110584.2	
110583.1	
110578.7	P(12)
110575.9	
110573.9	
110573.0	
110570.8	
110569.0	
110567.5	
110563.5	
110561.9	
110558.0	
110557.4	
110555.3	
110551.9	

Wavenumber	$c'_4(3) - X(0)$ $^{15}\text{N}_2$
110545.9	
110545.0	
110539.5	
110537.5	
110532.0	
110530.7	
110528.8	
110527.4	
110523.7	
110522.6	
110518.2	
110514.8	
110511.5	
110507.5	
110506.4	
110505.1	
110502.6	
110494.4	
110492.4	
110484.3	R(6)-R(2)
110481.5	R(7)R(1)
110479.0	R(8)R(0)
110476.0	R(9)
110471.9	P(1)R(10)
110467.7	P(2)
110466.2	R(11)
110462.6	P(3)
110459.5	
110457.2	
110456.8	P(4)
110450.8	P(5)
110443.8	P(6)
110440.8	
110436.1	P(7)
110429.0	
110427.8	P(8)
110418.7	P(9)
110408.9	P(10)
110401.2	
110398.1	P(11)
110395.3	
110391.7	
110391.5	
110388.0	
110386.1	P(12)
110384.3	
110379.6	
110377.6	
110373.2	P(13)

Wavenumber	$b(13) - X(0)$ $^{15}\text{N}_2$
110369.5	
110364.4	
110359.6	
110354.2	
110350.9	
110349.3	
110348.7	
110343.5	
110342.7	
110341.0	
110335.8	
110329.3	
110327.5	
110322.6	
110319.2	
110317.6	
110316.9	
110314.1	
110311.7	
110306.6	
110299.8	
110297.5	
110295.4	
110294.4	
110292.3	
110290.4	
110286.1	
110283.1	
110280.9	
110279.2	
110277.0	
110276.2	
110271.9	
110269.2	
110266.8	
110260.9	
110258.7	
110254.6	
110252.7	
110249.1	R(2)R(1)R(0)
110245.4	Q(1)R(3)
110241.7	Q(2)R(4)
110237.2	Q(3)P(2)
110235.4	R(5)
110230.7	Q(4)P(3)
110227.8	R(6)
110222.6	Q(5)P(4)
110218.6	R(7)
110212.4	Q(6)P(5)

Wavenumber	$b(13) - X(0)$ $^{15}\text{N}_2$
110207.9	R(8)
110204.1	
110201.8	Q(7)
110200.5	P(6)
110198.7	
110195.4	R(9)
110192.5	
110190.4	
110188.9	Q(8)
110187.0	P(7)
110184.0	
110181.5	R(10)
110179.4	
110175.8	
110174.5	Q(9)
110172.1	P(8)
110170.2	
110166.0	R(11)
110158.6	Q(10)
110155.4	P(9)
110151.4	
110148.9	
110146.8	R(12)
110140.8	Q(11)
110137.3	P(10)
110132.5	
110129.9	
110126.2	
110121.5	Q(12)
110117.6	P(11)
110116.6	
110113.3	
110112.8	
110109.4	
110107.0	
110104.9	
110101.3	
110098.7	
110096.2	P(12)
110094.3	
110090.8	
110087.8	
110085.4	
110081.3	
110079.1	
110078.6	
110074.9	
110073.3	P(13)



Wavenumber	$b'(9) - X(0)$ $^{15}\text{N}_2$
110070.0	
110062.7	
110056.9	
110054.2	
110053.9	
110048.8	
110044.4	
110042.3	
110033.2	
110024.8	R(1)
110024.4	R(0)
110023.9	R(2)
110021.0	R(3)
110018.7	P(1)
110016.6	R(4)
110013.5	P(2)
110010.6	R(5)
110008.6	
110006.4	P(3)
110003.0	
110002.7	R(6)
110000.8	
109997.9	P(4)
109993.6	R(7)
109987.6	P(5)
109982.6	R(8)
109979.7	
109975.8	P(6)
109970.1	R(9)
109962.3	P(7)
109955.9	R(10)
109954.0	
109951.5	
109950.5	
109949.1	
109947.2	P(8)
109943.8	
109942.1	
109940.1	R(11)
109936.2	
109934.2	
109932.8	
109930.5	P(9)
109927.9	
109926.7	
109924.5	
109922.7	R(12)
109921.6	

Wavenumber	$b'(9) - X(0)$ $^{15}\text{N}_2$	$b(12) - X(0)$ $^{14}\text{N}_2$
109916.1		
109912.2	P(10)	
109906.1		
109903.6	R(13)	
109902.5		
109892.1	P(11)	
109890.4		
109886.9		
109884.0		
109882.8		
109873.3		
109870.6	P(12)	
109860.6		
109856.5		
109847.3	P(13)	
109834.5		
109833.6		R(1)
109833.1		R(2)R(0)
109829.7		R(3)Q(1)
109825.8		R(4)Q(2)
109822.3	P(14)	
109821.1		Q(3)P(2)
109814.0		Q(4)P(3)
109811.8		R(6)
109805.6		Q(5)P(4)
109795.8	P(15)	Q(6)P(5)
109791.0		R(8)
109788.8		
109783.7		Q(7)
109782.0		P(6)
109741.4		
109740.3		
109737.1		
109735.4		
109732.4		
109730.2		
109730.0		
109726.0		
109723.0		
109718.1		
109716.1		
109714.3		
109711.6		
109708.3		
109703.9		
109702.4		
109699.2		
109699.0		

Wavenumber	$b(12) - X(0)$ $^{15}\text{N}_2$	$0_3(2) - X(0)$ $^{14}\text{N}_2$
109696.7		
109695.2		
109693.2		
109691.8		
109690.5		
109689.6		
109683.9		
109681.9		
109678.1		
109675.6		
109672.9		
109669.4		
109668.6		
109666.3		
109664.7		
109662.3		
109654.9		
109652.8		
109650.1		
109645.5		
109642.1		
109639.2		
109636.3		
109627.5		
109624.2		
109611.5		
109607.3		
109593.9		
109589.4		
109573.3		R(4)-R(7)
109572.2		R(2)R(8)
109569.1	R(2)R(1)R(0)	
109565.9	R(3)	
109565.1	Q(1)	
109561.9	Q(2)R(4)	
109559.8		Q(2)
109557.1	Q(3)P(2)R(5)	
109553.0		Q(5)R(14)P(2)
109550.9	Q(4)P(3)	
109549.9	R(6)	
109547.9		P(3)
109545.7		Q(7)
109543.4	Q(5)	
109541.3	P(4)	
109538.4		
109535.8		Q(9)P(5)
109534.3	Q(6)	
109532.5	P(5)	
109529.3		P(6)

Wavenumber	$b(12) - X(0)$ $^{15}\text{N}_2$	$0_3(2) - X(0)$ $^{14}\text{N}^{15}\text{N}$	$0_3(2) - X(0)$ $^{15}\text{N}_2$
109526.8			
109523.7	Q(7)		
109521.0			
109520.7	P(6)		
109515.4		R(4)	
109514.6		R(3)	
109512.4		R(2)	
109510.3		R(1)	
109508.0	P(7)	R(0)	
109503.7		Q(1)	
109502.7		Q(2)	
109501.1		Q(3)	
109498.6		Q(4)	
109495.9		Q(5)	
109493.9			
109492.7			
109491.3			
109488.8			
109485.5			
109483.4			
109479.6			
109478.2			
109474.2			
109473.1			
109466.8			
109464.0			
109456.7			R(4)R(5)R(6)
109456.2			R(3)R(7)
109454.3			R(2)
109452.1			R(1)R(9)
109449.4			R(0)
109445.7			Q(2)Q(1)
109442.9			Q(3)
109440.9			Q(4)
109438.1			Q(5)P(2)
109434.6			Q(6)
109433.5			P(3)
109430.9			Q(7)
109427.9			P(4)
109426.5			Q(8)
109421.9			Q(9)P(5)
109417.5			
109415.8			P(6)R(10)
109408.9			P(7)
109403.7			
109401.2			P(8)
109393.1			P(9)